The Adult Dispositional Hope Scale (AHS) pada Populasi Indonesia: Struktur Faktor dan Properti Psikometris

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Artikel INFO

Diterima:13 juli 2022
Direvisi: 25 Juli 2022
Disetujui: 2 September 2022

DOI:
http://dx.doi.org/10.24014/jp.v14i2.18273

Abstrak

The Adult Dispositional Hope Scale (AHS) merupakan alat ukur pertama dan paling banyak digunakan untuk mengevaluasi konstruk harapan. Meskipun demikian, struktur faktor instrumen ini masih diperdebatkan. Penelitian ini bertujuan untuk memvalidasi dan mengevaluasi struktur faktor dan properti psikometris dari instrumen AHS versi Indonesia. Partisipan penelitian ini adalah 221 individu dewasa asal Indonesia yang direkrut melalui survei daring. Hasil Confirmatory Factor Analysis menunjukkan bahwa model dua-faktor dapat menggambarkan struktur faktor AHS versi Indonesia dengan baik ($\Delta\chi^2$ (1) = 5.3774, $p < 0.05$). Instrumen AHS versi Indonesia juga menunjukkan validitas dan konsistensi internal yang memadai (ω = .791). Dengan demikian, temuan ini mendukung model dua-faktor pada AHS versi Indonesia dan menunjukkan bahwa instrumen ini valid dan reliabel untuk mengukur konstruk harapan pada populasi dewasa Indonesia.

Kata kunci: Skala Harapan, Struktur Faktor, Properti Psikometris

The Adult Dispositional Hope Scale (AHS) in Indonesian Population: Factorial Structure and Psychometric Properties

Abstract

The Adult Dispositional Hope Scale (AHS) is the first and primary measure that evaluates the hope construct. However, the instrument's factorial structure is still debatable. The present study aims to validate and evaluate the factorial structure and psychometric properties of the Indonesian version of AHS. Participants were 221 Indonesian adults recruited via an online survey. Confirmatory Factor Analysis results showed that the two-factor model best represents the Indonesian version of AHS underlying factors ($\Delta\chi^2$ (1) = 5.3774, $p < 0.05$). The Indonesian version of AHS also showed good validity and adequate internal consistency (ω = .791). Therefore, findings from this study suggest supporting evidence for the two-factor model of AHS and indicate that the Indonesian version of AHS is a valid and reliable instrument to measure hope construct in the Indonesian adult population.

Keywords: Hope Scale, Factorial Structure, Psychometric Properties

Introduction

In the early 21st century, scientists began focusing their attention on understanding the psychology of hope (Gallagher, Pedrotti, Lopez & Snyder, 2019). Various theories of hope have been developed (e.g., Mowrer, 1960; Breznitz, 1986; Averill, Catlin, & Chon, 1990), but most research now mainly revolves around the theory and measures of hope developed by Snyder et al. (1991). Snyder's hope theory involves three cognitive components: goals, pathways, and agency (Snyder, 2002). The construct itself was defined as "a cognitive set that is based on a reciprocally derived sense of successful (a) agency (goal-directed determination) and (b) pathways (planning of ways to meet goals) (Snyder et al., 1991, p. 571)". Thus, the construct of hope has a pivotal role in goal accomplishment studies.

Some might argue that hope has some resemblance with other positive psychological constructs such as optimism (Scheier & Carver, 1985) or self-efficacy (Bandura, 1997). However, these constructs are different in terms

of focus on goal attainment. Both optimism and self-efficacy mainly focus on expectancies for success and future outcomes. In contrast, Snyder's hope theory also addresses the role of barriers, stressors, and emotions (Gallagher et al., 2019). When encountering obstacles that obstruct goal attainment, people appraise such circumstances differently. High-hope persons tend to interpret such barriers as challenges and seek alternative ways and shift their motivation to those strategies. On the other hand, low-hope individuals are typically stuck, they also experience negative emotions and ruminative thoughts that drive them to abandon their goal pursuits. In summary, hope also considers individuals' thoughts about efforts to achieve their goals.

Several instruments were developed to assess the hope construct since the emergence of hope theory in the early '90s. To date, Snyder and colleagues have developed three measures to assess hope, which are the Adult Dispositional Hope Scale (AHS; Snyder et al., 1991), the State Hope Scale (SHS; Snyder et al., 1996), and the Children's Hope Scale (CHS; Snyder et al., 1997). The AHS is a 12-item self-report instrument that was designed to measure dispositional hope in adults (ages 15 and older) (Gallagher et al., 2019). Four items measure agency thought, four measure pathways thought, and the other four are filler items/distracters. The instrument used an 8-point Likert-type scale ranging from 1 = definitely false to 8 = definitely true.

The AHS has been translated and used in many languages such as Japanese (Kato & Snyder, 2005), Dutch (Brouwer, Meijer, Weekers, & Baneke, 2008), Chinese (Sun, Ng, & Wang, 2011), French (Gana, Daigre, & Ledrich, 2013), Spanish (Galiana, Oliver, Sancho, & Tomas, 2015), and Portuguese (Marques et al., 2014). However, the AHS has never been adapted to the Indonesian population, and so far no studies have been conducted to validate the AHS in the Indonesian context.

It also remains unknown which factorial structure better represents the AHS. The original theoretical framework (Snyder et al., 1991; Snyder, 2002) and some researchers view the factorial structure of the instrument consists of two correlated components – agency and pathways (Creamer et al., 2009; Marques et al., 2014; Roesch & Vaughn, 2006; Kato & Snyder, 2005). On the other hand, some researchers found that the unidimensional model that treats agency and pathways as indistinguishable provides a better explanation for the AHS structure (e.g., Brouwer et al., 2008; Galiana et al., 2015). Therefore, it is also important to investigate which factorial structure that represents AHS better, to provide better understanding about the instrument's factorial structure in various cultures.

Adaptation of the AHS is needed to allow cross-cultural comparisons and evaluate the measures in the Indonesian context, especially with the growing number of research related to positive psychology. This study aimed to evaluate the factorial structures and psychometric properties of the Indonesian version of the AHS. We followed the guidelines for translation and cross-cultural adaptation of self-report measures provided by Beaton, Bombardier, Guillemin, and Ferraz (2000). We examined the factorial structures of the Indonesian version of AHS via confirmatory factor analysis (CFA), assessed the instrument's psychometric properties, and inspected its correlation with other positive psychological measures (i.e., subjective happiness and general self-efficacy).

Methods

Procedure

We followed Beaton et al. (2000) guidelines for translating and adapting the AHS. First, an informed translator (T1) and an uninformed translator (T2) independently translated the instrument into Bahasa Indonesia. Then, translations from two translators were synthesized into T-12. After synthesized translation (T-12) has been obtained, an English native speaker back-translated the instrument into English to ensure the quality of the translation and avoid conceptual errors

in the translation. After passing the quality control in the back-translation process, the instrument is administered to the participants for field testing.

Participants

The participants consisted of 221 (158 women, 63 men) adults. Kline (2005) suggested that sample size at least N = 200 would be adequate to conduct confirmatory factor analysis. The mean age of the participants was 21.42 years (range = 18 - 35 years, SD = 2.49), and all participants had at least a high school education. Participants were recruited via an online survey with convenience sampling techniques. Informed consent has been obtained from all participants in this study.

Measures

The Adult Dispositional Hope Scale (AHS; Snyder et al., 1991). The AHS is a 12-item self-report measure that evaluates adults' dispositional hope. Four items reflect agency (e.g., "Saya mengejar tujuan saya dengan bersemangat."), four reflect pathways (e.g., "Bahkan ketika orang lain putus asa, saya tahu bahwa saya dapat menemukan jalan keluar untuk menyelesaikan permasalahan tersebut."), and another four are distractors (e.g., "Saya mudah sekali dijatuhkan saat berargumen."). The AHS used an 8-point Likert-type scale ranging from 1 = definitely false to 8 = definitely true. Total AHS scores ranged from 8 to 64. Agency and pathways items can be summed to examine the factors separately or summed to yield a total hope score.

The General Self-Efficacy Scale (GSES; Schwarzer & Jerusalem, 1995). The GSES is a 10-item self-report measure designed to assess individual generalized sense of self-efficacy (e.g., "Saya yakin bahwa saya dapat bertindak dengan baik dalam situasi yang tidak terduga"). The GSES used an 4-point Likert-type scale ranging from 1 = Not at all true to 4 = exactly true. Total scores of GSES ranged from 10 to 40. Our prior investigation found that the Indonesian version of GSES has a good validity and reliability (see Novrianto & Marettih, 2018; Novrianto et al., 2019). McDonald's ω of the instrument was .86.

The Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). The SHS is a 4-item self-report measure that evaluates individuals' global subjective happiness (e.g., "Beberapa orang pada umumnya sangat bahagia. Mereka sepenuhnya menikmati kehidupan mereka terlepas dari apa yang sedang terjadi. Sejauh mana karakteristik ini menggambarkan diri Anda?"). The SHS used a 7-point Likert-type scale. Total SHS scores ranged from 4 to 28. McDonald's ω of the measure was .79.

Analysis

Confirmatory factor analysis (CFA) was conducted to assess construct validity and factorial structures of the Indonesian version of AHS. The CFA was conducted using lavaan (latent variable analysis) package version 0.6-9 (Rosseel, 2012) in R version 4. 0. 2 (R Core Team, 2020). The analyses were estimated using the "MLM" estimator (maximum likelihood estimation with robust standard errors and a Satorra-Bentler scaled test statistic) (Rosseel, 2021). We evaluate the model fit criteria suggested by Hu and Bentler (1999): RMSEA < .06, CFI > .95, and SRMR < .08. To compare the two proposed factorial structures of the Indonesian version of AHS, the chi-square difference test was used to compare nested models following the Satorra-Bentler formula (Satorra & Bentler, 2001) and the Akaike Information Criterion (AIC), which a better fit model indicated with smaller index (Akaike, 1974). We also conducted correlation analysis to assess the convergent validity of hope and its subscales with general self-efficacy and subjective happiness—these analyses with JASP version 0.14.0 (JASP Team, 2020).

Results

The participants were mostly female (n = 158, 71.5%) with ages ranging from 18-35 years old with M_{age} = 21.41 years old (SD = 2.49). The

participants' levels of education varied from senior high school to master's degree, who mostly were senior high school graduates (n = 147, 66.5%).

The two factor model had a good fit, with all three indices met the cut-off criteria. On the other hand the unidimensional model had acceptable fit, with only one out three indices met the cut-off criteria. The two factor model had a significantly better fit than the unidimensional model ($\Delta\chi^2$ (1) = 5.3774, p < 0.05) and smaller Akaike Information Criterion (AIC). Details of model fit indices and comparisons are presented in Table 1.

Table 1. Result of Model Comparison

Model	Satorra-Bentler χ^2	df	RMSEA [90% CI]	SRMR	CFI	AIC
Unidimensional Model	37.974	20	0.064 [0.037, 0.089]	0.060	0.940	4941.468
Two Factor Model	33.171	19	0.058 [0.029, 0.085]	0.056	0.953	4936.888

Reliability and internal consistency of the Indonesian version of AHS are provided at scale, subscales, and item levels. Inter-item correlations, corrected item-total correlations (CITC) for each subscale, and the full scale are presented in Table 3. Although the two-factor model was the best fitting, reliability coefficients were calculated for the agency, pathways, and the general hope scale. McDonald's ω was 0.761 for pathways, 0.640 for agency, and 0.791 for the general hope scale.

We also examined the Indonesian version of AHS convergent validity by correlating pathways and agency factors with subjective happiness and general self-efficacy. The pathways factor was strongly correlated with subjective happiness (r (219) = .630, p < .001), and moderately correlated with general self-efficacy (r (219) = .311, p < .001). Likewise, the agency factor was strongly correlated with subjective happiness (r (219) = .535, p < .001), and moderately correlated with general self-efficacy (r (219) = .414, p < .001). Both subscales also displayed strong positive correlations (r(219) = .567, p < .001) indicated that agency and pathways are related but not necessarily overlapped.

Table 2. Descriptive Statistics and Standardized factor loadings of the two-factor model of the Indonesian Version of AHS

Items	Standardized Factor Loadings		Mean	Standard Deviation
	Pathways	Agency		
1	0.728		6.751	0.994
4	0.679		7.281	0.983
6	0.692		6.778	1.096
8	0.580		6.558	1.094
2		0.670	6.986	1.002
9		0.552	7.281	1.067
10		0.460	5.267	1.400
12		0.463	5.995	1.118

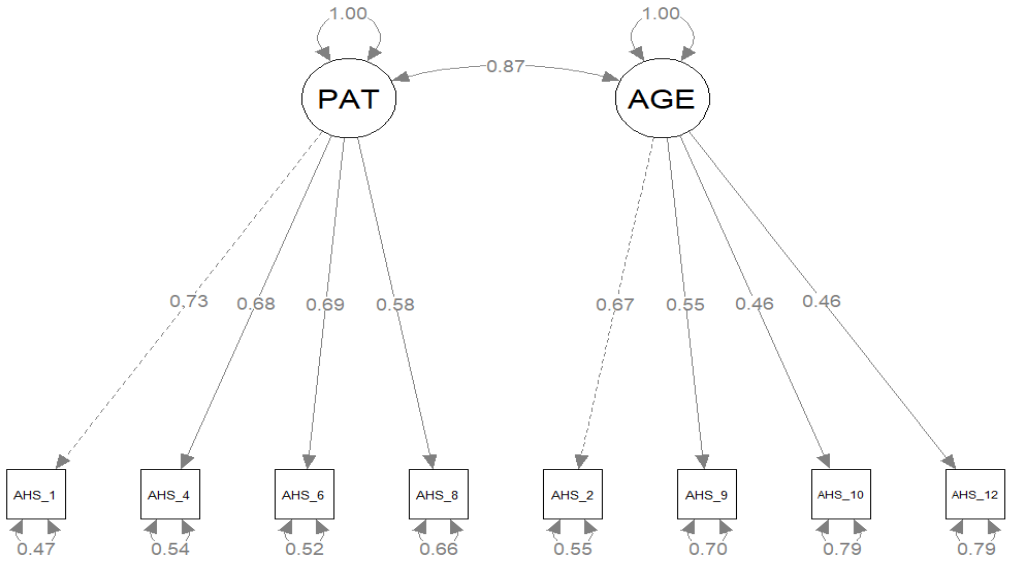

Figure 1. Two Factor Model of the Indonesian Version of AHS that Fit with the Data.

Table 3. Corrected Item-Total Correlations (CITC) and Inter-Item Correlations of the Indonesian Version of AHS

Items	CITC Pathways	CITC Agency	CITC Scale	Inter-item Correlations							
				Item 1	Item 4	Item 6	Item 8	Item 2	Item 9	Item 10	Item 12
1	0.612		0.604	-							
4	0.563		0.548	0.560	-						
6	0.571		0.594	0.450	0.455	-					
8	0.503		0.482	0.432	0.336	0.450	-				
2		0.427	0.554	0.407	0.368	0.469	0.347	-			
9		0.324	0.454	0.340	0.367	0.384	0.290	0.390	-		
10		0.437	0.407	0.290	0.223	0.273	0.173	0.262	0.205	-	
12		0.450	0.425	0.277	0.233	0.237	0.236	0.296	0.165	0.468	-
Scale Reliability (McDonald's ω)										0.791	
Pathways Subscale Reliability (McDonald's ω)										0.761	
Agency Subscale Reliability (McDonald's ω)										0.640	

All correlations were statistically significant at $p < 0.05$

Discussion

The study was aimed to evaluate the factorial structures and psychometric properties of the Indonesian version of AHS. Both the unidimensional and two-factor model of the instrument fit the data. Even though both factorial structures were found to be valid to describe the instrument, the two-factor model was found to fit the data better. All items standardized factor loadings on the pathways and agency factors were also satisfactory.

These results were found to be consistent with prior findings with the original (Snyder et al., 1991), French (Gana et al., 2013), Chinese (Sun, Ng, & Wang, 2011), Portuguese (Marques et al., 2014) and Arabic (Abdel-Khalek & Snyder, 2007) version.

Reliability analysis indicated an adequate level of internal consistency for both subscales and for global hope. However, the agency subscale had lower internal consistency compared to the pathways subscale and the global hope. This result was attributed to the inter-item correlation and corrected item-total correlation between items in the agency subscale, which were slightly lower than the pathways subscale. Nevertheless, the reliability level was still acceptable. These results were consistent with previous studies, which also found that the agency subscale tended to have lower reliability (see Gana et al., 2013; Galiana et al., 2015).

The Indonesian version of AHS was also found to have a moderate positive correlation with self-efficacy and a strong positive correlation with happiness. These results were consistent with previous research (Kato & Snyder, 2005). The pathways and agency subscales were strongly related but do not overlap with each other. This is consistent with Snyder's (2002) theory of hope that despite agency and pathways being distinct, hope is operative only when these two components act together. Results also imply that it would be better to examine hope to its underlying subscales to obtain a more comprehensive understanding about related phenomena.

The main strength of the present study is that AHS is a widely used measure of hope. It has also been proved to be a brief instrument with good psychometric properties, in both validity and reliability. As far as we know, the present study is also the first in terms of validation and assessing the AHS factorial structure in the Indonesian population. Although the present study also came with several limitations, as the participants were only assessed once, no evidence of test-retest reliability was provided in the current study. Another limitation is that we did not include any clinically-related measures (e.g., depression, anxiety) to establish criterion-related validity which would give additional insight about how this instrument would interact with clinically-related variables. Future studies could explore and provide more explanation for these limitations.

Conclusion

This study provides evidence for factorial structures and psychometric properties of the AHS in the Indonesian population. The confirmatory factor analysis showed that the two-factor model was the best structure to represent the instrument. Reliability test also provides information about the adequacy of the Indonesian version of AHS internal consistency. Therefore, we hope this instrument will open a path for more researchers to investigate hope in the Indonesian population and encourage cross-cultural studies on this construct.

References

Abdel-Khalek, A., & Snyder, C. R. (2007). Correlates and Predictors of an Arabic Translation of the Snyder Hope Scale. *The Journal of Positive Psychology*, 2(4), 228–235. https://doi.org/10.1080/17439760701552337.

Akaike, H. (1974). A New Look at the Statistical Model Identification. *IEEE Transactions on Automatic Control*, *19*(6), 716–723. https://doi.org/10.1109/TAC.1974.1100705.

Averill, J. R., Catlin, G., & Chon, K. K. (1990). *Rules of Hope*. New York: Springer-Verlag.

Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York: W. H. Freeman.

Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures. *Spine*, *25*(24), 3186–3191. https://doi.org/10.1097/00007632-200012150-00014

Breznitz, S. (1986). The Effect of Hope on Coping with Stress. In M. H. Appley & P. Trumbull (Eds.), *Dynamics of stress: Physiological, Psychological, and Social*

Perspectives (pp. 295–306). New York: Plenum Press.

Brouwer, D., Meijer, R. R., Weekers, A. M., & Baneke, J. J. (2008). On the Dimensionality of the Dispositional Hope Scale. *Psychological Assessment*, *20*(3), 310–315. https://doi.org/10.1037/1040-3590.20.3.310

Creamer, M., O'Donnell, M. L., Carboon, I., Lewis, V., Densley, K., McFarlane, A., Silove, D., & Bryant, R. A. (2009). Evaluation of the Dispositional Hope Scale in Injury Survivors. *Journal of Research in Personality*, *43*(4), 613–617. https://doi.org/10.1016/j.jrp.2009.03.002

Gallagher, M. W., Pedrotti, J. T., Lopez, S. J., & Snyder, C. R. (2019). Hope. In M. W. Gallagher & S. J. Lopez (Eds.), *Positive Psychological Assessment: A Handbook of Models and Measures (2nd ed.)* (pp. 77 - 96). Washington, D. C.: American Psychological Association.

Galiana, L., Oliver, A., Sancho, P., & Tomás, J. M. (2015). Dimensionality and Validation of the Dispositional Hope Scale in a Spanish Sample. *Social Indicators Research*, *120*, 297–308. https://doi.org/10.1007/s11205-014-0582-1

Gana, K., Daigre, S., & Ledrich, J. (2013). Psychometric Properties of the French Version of the Adult Dispositional Hope Scale. *Assessment*, *20*, 114–118. https://doi.org/10.1177/1073191112468315

Hu, L.-t., & Bentler, P. M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. *Structural Equation Modeling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

JASP Team (2020). *JASP* (Version 0.14.0) [Computer software].

Kato, T., & Snyder, C. R. (2005). The Relationship between Hope and Subjective Well-Being: Reliability and Validity of the Dispositional Hope Scale, Japanese Version. *Japanese Journal of Psychology*, *76*(3), 227–234. https://doi.org/10.4992/jjpsy.76.227

Kline, R. B. (2005). *Principles and Practice of Structural Equation Modeling*. New York: Guilford Press.

Lyubomirsky, S., & Lepper, H. S. (1999). A Measure of Subjective Happiness: Preliminary Reliability and Construct Validation. *Social Indicators Research*, *46*(2), 137–155. https://doi.org/10.1023/A:1006824100041

Marques, S. C., Lopez, S. J., Fontaine, A. M., Coimbra, S., & Mitchell, J. (2014). Validation of a Portuguese Version of the Snyder Hope Scale in a Sample of High School Students. *Journal of Psychoeducational Assessment*, *32*, 781–786. https://doi.org/10.1177/0734282914540865

Mowrer, O. H. (1960). *Learning Theory and Behavior*. New York: Wiley.

Novrianto, R., & Marettih, A. K. E. (2018). Self-Efficacy dan Optimism sebagai Prediktor Subjective Well-Being pada Mahasiswa Tahun Pertama. *MEDIAPSI*, *4*(2), 83-91. https://doi.org/10.21776/ub.mps.2018.004.02.4

Novrianto, R., Marettih, A. K. E., & Wahyudi, H. (2019). Validitas Konstruk Instrumen General Self Efficacy Scale Versi Indonesia. *Jurnal Psikologi*, *15*(1), 1-9. http://dx.doi.org/10.24014/jp.v15i1.6943

R Core Team (2020). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org/.

Roesch, S. C., & Vaughn, A. A. (2006). Evidence for the Factorial validity of the Dispositional Hope Scale. *European Journal of Psychological Assessment*, *22*, 78–84. https://doi.org/10.1027/1015-5759.22.2.78

Rosseel, Y. (2012). Lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, *48*(2), 1-36. https://doi.org/10.18637/jss.v048.i02.

Rosseel, Y. (2021). *The Lavaan Tutorial*. Ghent: Department of Data Analysis, Ghent University, Belgium.

Satorra, A., & Bentler, P. M. (2001). A Scaled Difference Chi-Square Test Statistic for Moment Structure Analysis. *Psychometrika*, *66*(4), 507–514. https://doi.org/10.1007/BF02296192

Scheier, M. F., & Carver, C. S. (1985). Optimism, Coping, and Health: Assessment and Implications of Generalized Outcome Expectancies. *Health Psychology*, *4*(3), 219–247. https://doi.org/10.1037//0278-6133.4.3.219

Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy Scale. In J. Weinman, S. Wright, & M. Johnston. (Eds.), *Measures in Health Psychology: A User's Portfolio. Causal and Control Beliefs* (pp. 35-37). Windsor: NFER-NELSON.

Snyder, C. R. (2002). Hope theory: Rainbows in the Mind. *Psychological Inquiry*, *13*, 249–275. https://doi.org/10.1207/S15327965PLI1304_01

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., . . . Harney, P. (1991). The Will and The Ways: Development and Validation of an Individual-Differences Measure of Hope. *Journal of Personality and Social Psychology*,*60*, 570–585. https://doi.org/10.1037/0022-3514.60.4.570.

Snyder, C. R., Sympson, S. C., Ybasco, F. C., Borders, T. F., Babyak, M. A., & Higgins, R. L. (1996). Development and Validation of the State Hope Scale. *Journal of Personality and Social Psychology*, *70*(2), 321–335. https://doi.org/10.1037/0022-3514.70.2.321.

Snyder, C. R., Hoza, B., Pelham, W. E., Rapoff, M., Ware, L., Danovsky, M., . . . Stahl, K. J. (1997). The Development and Validation of the Children's Hope Scale. *Journal of Pediatric Psychology*, *22*, 399–421. https://doi.org/10.1093/jpepsy/22.3.399.

Sun, Q., Ng, K.-M., & Wang, C. (2011). A Validation Study on a New Chinese Version of the Dispositional Hope Scale. *Measurement and Evaluation in Counseling and Development*, *45*(2), 133–148. https://doi.org/10.1177/0748175611429011.