DOI: https://doi.org/10.53350/pjmhs2023174503

ORIGINAL ARTICLE

Development and Validation of Endemic Hope Scale

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ABSTRACT

Purpose: The objective of this study was to construct and validate a culturally and linguistically relevant scale for measuring hope.

Method: The researchers used a logical-content approach to generate a pool of 42 items, which were then subjected to qualitative item analysis by an expert in the field. Based on this analysis, 29 items were deemed acceptable and 13 were eliminated due to poor content validity and overlapping content. The remaining items were subjected to quantitative item analysis using the Endemic Hope Scale on a sample of 202 participants between 18 to 32 years (M=22.12, SD=2.09). Along with the current scale two standardized instruments named Adult Dispositional Hope Scale (Synder et al,1991) and the Zung Self Rated Depression Scale (Zung,1967) were administered on the sample in order to establish the convergent validity with the former and discriminant validity with the later. Item total correlation was computed and 10 items had a correlation below 0.30.Thus, they were eliminated from the scale and 19 items were retained. Principal Component Factor analysis was carried out using Oblimin rotation method after the confirmation of the KMO measure which had a value of .87.

Findings: The results revealed two factors which explained 39.73 % of the total variance and were labeled as belief specific reliance and universal reliance. The alpha coefficient was .83 which demonstrated high internal consistency, and the scale showed good convergent validity (r = .39) with the Adult Dispositional Hope Scale and good discriminant validity (r = -.31) with the Zung Self Rated Depression Scale.

Conclusion: Based on these results, the Endemic Hope Scale is a reliable and valid measure for assessing hope in an indigenous context.

Keywords: Hope, belief specific reliance, universal reliance, convergent validity, divergent validity, indigenous measure.

INTRODUCTION

Hope, as an integral element of human existence, plays a pivotal role in sustaining optimism amid challenging circumstances[1]. Conceptually, hope encompasses the capacity to envision the future with confidence, anticipation, and positivity, signifying a belief in the improvement of one's life, the occurrence of favorable events, and personal achievement [2]. This optimistic disposition not only enables individuals to perceive opportunities amidst obstacles but also fosters resilience in the face of adversity[3]. Moreover, hope holds profound spiritual significance for many, exemplified in the Islamic faith, where it becomes intricately intertwined with unwavering trust in Allah and His divine plan for the world. Drawing from the Quranic verse, "And whoever fears Allah - He will make for him a way out. And will provide for him from where he does not expect" (65:2-3), this reliance on a higher power bestows individuals with a profound sense of purpose and guidance, even during the most arduous times.

Hope is a powerful virtue that can help individuals overcome hardship and find opportunities for growth and success [4]. Its connection to trust in Allah makes it especially important for many Muslims, who find strength and comfort in the knowledge that their lives are guided by a higher power. By cultivating hope, individuals can tap into this gift and find the strength to face whatever challenges come their way.

Synder, Irving, and Anderson define hope as a "positive motivational state" that arises from the belief that one has the ability to achieve their goals, and from having a clear set of strategies for attaining those goals [5]. Essentially, a hopeful person is someone who is not only determined to achieve their goals but also has a practical plan for making them a reality.

Synder, Rand, and Sigman's theory of hope is a well-known model that seeks to explain the nature and function of hope. At its core, the theory suggests that hope is a positive motivational state that is characterized by two main components: agency and pathways. Agency refers to an individual's belief in their ability to initiate and maintain action towards a desired goal. Essentially, it is the sense of personal power and control that one feels over their life circumstances. This aspect of hope is important because it provides individuals with the confidence and determination necessary to pursue their goals [6].

Pathways, on the other hand, refer to the specific strategies and methods that an individual uses to achieve their goals. This component of hope is crucial because it helps individuals to identify the practical steps that are necessary to turn their aspirations into reality. It allows individuals to think through the obstacles that they may face along the way and to develop a concrete plan for overcoming them [7].Taken together, the agency and pathways components of hope, work in tandem to provide individuals with a sense of direction and purpose in their lives. According to the theory of hope "provides a framework for understanding how people think about their goals, how they pursue them, and how they adjust their thinking and actions when they encounter obstacles "[5]. It is a powerful model that has helped to shed light on the ways in which hope can be fostered, cultivated, and sustained in individuals across a variety of contexts[5].

The aforementioned theory suggests that hope is a process where the subject aims to achieve a goal through pathways and requires motivation (agency) to attain it. Barriers can obstruct the attainment of goals, and in such cases, individuals can either give up or create new routes through pathway thinking. Snyder distinguishes between Trait hope and State hope, with the former being a dispositional hope that relates to one's temperament and usual attitude, and the latter being an individual's attitude towards a particular situation that reflects their current goal-directed thinking [8]. While dispositional hope is relatively permanent and stable, state hope is greatly influenced by ever-changing environmental conditions. Regardless of whether hope is measured as a trait or a state, it is related to positive outcomes. Empirical evidence shows that higher hope is consistently related to better outcomes in academics, athletics, physical health, psychological adjustment, and psychotherapy. On the other hand, individuals who have abandoned hope are more likely to experience depression, anxiety, panic attacks, and other problems [9,10, 11].

Rationale: Hope is a fundamental element of life that helps individuals to achieve their goals and fulfill their aspirations. It serves as a motivator for people to take action towards achieving their desired outcomes. The power of hope is such that it can transform the lazy into active individuals and motivate those who are already active to perform better in order to attain excellence.

Hope is an indispensable factor for success in life, and it is equally crucial for success in the hereafter. It provides individuals with the strength and courage to face life's challenges and it instills in them a positive outlook towards the future. Furthermore, hope is essential for the advancement of sciences, as it encourages researchers and specialists in various fields to discover the hidden realities and make new breakthroughs. Carver et al. highlighted in their study that how hope and optimism play a significant role in maintaining good health outcomes and overall well-being [12]. Furthermore, in the context of the need for a culturally, religiously, and linguistically relevant scale to measure hope; Fata et al. studied Iranian patients with heart disease that provides insight into the importance of religious hope in the context of specific cultural and religious beliefs. The study suggests that understanding the role of religious hope is crucial for providing effective support and guidance to individuals facing illness or other challenges [13].

Although various instruments have been developed for measuring an individual's level of hope, including the Adult Trait Hope Scale [14], State Hope Scale [15], Children's Hope Scale (for ages 8 to 16) [16] but despite its importance, there is currently no indigenous scale available for the measurement of different dimensions of hope that is culturally, religiously, and linguistically relevant. Scales developed and standardized in Western countries may not provide the desired information when used with individuals from different cultural backgrounds and specific religious beliefs. Hope is about some future aspect or aspiration; in an Islamic perspective hope is mostly related with believe in Allah's powers and reliance on it. Islamic supplications instill hope in a religious context, e.g., praying and hoping that one's prayers will be accepted, hope about forgiveness of one's sins by the supreme deity etc. so it is very important to develop a scale that encompasses hope in a broader context, covering both neutral and Islamic aspect of hope. Similarly it is important to devise the scale in the national language Urdu which is widely spoken language in Pakistan. Although some of the scales might have been translated in Urdu but as they are not indigenous scales, they still miss the religion element of hope in assessment.

Given that we are citizens of an ideological state where the dominant religion is Islam, and our national language is Urdu, it is crucial to develop a scale that addresses these two aspects while tapping hope. This scale would help measure the level of hope among individuals and provide insight into how different factors impact their hope levels. It could also help identify areas where individuals need more support and guidance to maintain or increase their hope levels. In conclusion, hope is an essential element of life that plays a crucial role in our personal and professional development. Developing a culturally, religiously, and linguistically relevant scale to measure different dimensions of hope would be an important step towards understanding and enhancing this vital aspect of our lives.

METHOD

The present study aimed to create an assessment tool that is culturally and linguistically appropriate for individuals who speak and understand the Urdu language. The first step in creating such a tool was to generate a pool of items that would be included in the assessment. To accomplish this, the researchers used a logical-content approach to item writing. This method involved creating items that were logically and conceptually relevant to the construct being measured, in this case, hope.

The item pool consisted of 42 items that were generated based on the logical-content approach. This approach ensured that the items were relevant to the construct of hope and culturally appropriate for Urdu-speaking individuals. The researchers likely spent a considerable amount of time carefully crafting each item to ensure that it accurately captured the intended construct.

Developing a culturally and linguistically relevant assessment tool is essential to accurately measure constructs in diverse populations. It is crucial to consider cultural and linguistic differences when creating assessments, as these factors can significantly impact an individual's understanding and interpretation of the items. By using a logical-content approach to item writing, the researchers were able to generate items that were both relevant to the construct being measured and appropriate for the population being assessed.

Objectives:

1. The primary goal of this research project was to create a precise and reliable tool for assessing levels of hope in the Urdu language, which is widely spoken and comprehended by a significant portion of the population.
2. To establish psychometric properties of the scale so that it can be used for making inferences.
3. To identify the factor structure of the scale in order to get a better understanding of the concept of hope.

Sample: In the present study, the participants were chosen through convenience sampling from the student body of Peshawar University. The sample comprised a total of 202 participants, out of which 104 were males and 98 were females. The age range of the participants was between 18-32 years, with a mean age of 22.12 years and a standard deviation of 2.09. It is important to note that all participants had completed at least a bachelor's level of education, which ensures a certain level of educational background and intellectual capacity among the participants. Overall, the sample size and characteristics of the participants in the present study are appropriate for the research question and objectives. However, future studies may benefit from using more diverse sampling techniques to enhance the generalizability of the results.

Instruments: Endemic Hope Scale: The study's objective was to create and validate a local scale that operationalized a positive attitude toward achieving desired goals. A pool of 42 items was generated for this purpose, and a PhD-level Psychometrics expert evaluated each item qualitatively. Following the evaluation, 29 items were selected for retention, while 13 were discarded. Of the retained items, 3 were negatively worded to reduce the influence of acquiescence response bias, while the remaining 26 were positively worded and organized into a Likert-type four-point rating scale. The response options included "Absolutely True," "True," "False," and " Absolutely False," which were scored 4, 3, 2, and 1, respectively, for positively worded items. For negatively worded items, the scoring was reversed, with 1 representing " Absolutely True" and 4 representing " Absolutely False." A higher score on the scale indicated a greater level of hope.

Adult dispositional hope scale: The study employed the Adult Dispositional Hope Scale by Synder et al. to establish convergent validity [8]. The scale includes 12 items, with four distractors, four items relating to agency, and four items pertaining to pathway thinking. Distractors were excluded to increase the scale's reliability. Respondents used a four-point continuum to answer, with a score of 32 indicating a high level of hope. The scale demonstrated high reliability, with the overall scale ranging from .74 to .84, and the agency and pathway subscales demonstrating moderate to high reliability with Cronbach's alpha ranging from .71 to .80, thus indicating its internal consistency. This scale is further validated by Roesch and Vaughn by reporting the positive correlation between Dispositional Hope with self-esteem and optimism [17]; furthermore Pacico , Micheline, Zanon, & Hutz also correlated the adult dispositional hope scale with cognitive hope (r = 0.43) and optimism (r = 0.49) [18].

Zung Self Rated Depression Scale: The Zung Self-Rated Depression Scale was developed by William and Zung (1965) and used in the study to establish discriminant validity. It measures four common characteristics of depression (pervasive effect, physiological equivalents, other disturbances, and psychomotor activities) and is used as a screening tool and for clinical research purposes. The scale consists of 20 items and uses a four-point Likert scale. Scores on the scale range from 20-80, with various ranges indicating different levels of depression i.e., with 20-44 considered normal, 45-59 mildly depressed, 60-69 moderately

depressed, and 70 and above severely depressed. The author reported a split-half reliability of 0.73, and the scale has demonstrated excellent construct validity.

Procedure: The study's participants were approached at their educational institution and provided with a brief overview of the study's purpose. They were asked if they were willing to participate and those who agreed were given three questionnaires (Endemic Hope Scale, Adult Dispositional Hope Scale, and Zung Self-Rated Depression Scale) to complete. Participants were instructed to read and answer all questions carefully without skipping any. The questionnaires were kept anonymous and the true purpose of the study was not revealed to prevent the influence of social desirability. The test constructor was present to clarify any confusion in completing the instruments. Most questionnaires were filled out in the presence of the constructor, and those who couldn't complete the questionnaires on the spot returned them the following day. Out of the 220 questionnaires distributed, 202 were deemed usable and 18 were rejected due to incomplete information. Only 100% filled questionnaires were used for data analysis, which was conducted using SPSS version 22.

RESULTS

Table 1: Item total correlation of Endemic Hope Scale (Items 29,N=202)

Item no	R	Item no	R
1	.26	16	.37
2	.45	17	.30
3	.50	18	.47
4	.29	19	.44
5	.02	20	.53
6	.31	21	.28
7	.48	22	.37
8	.45	23	.30
9	.26	24	.43
10	.39	25	.43
11	.39	26	.51
12	.37	27	.47
13	.27	28	.49
14	.18	29	.15
15	.40		

Table 1 shows the correlation of each item with the total score. Items 1,4,5,9,13,14,21 and 29 are excluded as they have a correlation below.30

Table 2: Item total correlation of retained items of Endemic Hope Scale (Items 21,N=202)

Item no	R	Item no	R
2	.43	18	.49
3	.53	19	.43
6	.27	20	.57
7	.47	22	.38
8	.49	23	.36
10	.47	24	.41
11	.34	25	.50
12	.39	26	.56
15	.41	27	.52
16	.37	28	.51
17	.25		

Findings in table 2 shows that item no 6 and 17 have correlation below .30,thus these items are excluded from the scale.

Table 3: KMO and Bartlett's Test of Sphericity of sampling adequacy for Endemic Hope Scale

Kaiser-Meyer-Olkin Measure of Hope	Bartlett's Test of Sphericity	Df	P
	Approx Chi-square		
.87	1152.62	171	.00

Findings in table 3 reveals that the Bartlett test of Sphericity is significant and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is 0.87 which is near to 1 thus showing that the data is appropriate to run the factor analysis.

Table 4: Eigen values and Percentages of Variances explained by two factors of the Endemic Hope Scale

Factors	Eigen value	Percentage of variance	Cumulative percentage
1	5.84	30.74	30.74
2	1.70	8.99	39.73

Table 4 is showing the eigen values, percentage of variance and cumulative percentage of the two factors. First factor is explaining 30.74 % of the variance and the second factor is explaining 8.99% of the variance. Overall the two factors have explained 39.73 % of the total variance.

Table 5: Factor Loadings of Endemic Hope scale with Direct Oblimn in Rotation

Endemic Hope Scale Items	Factor loadings	
	1	2
Factor 1: Belief-specific reliance		
3.	.69	.03
8.	.57	.13
10.	.56	.12
15.	.49	.05
22.	.50	.02
25.	.90	-.17
26.	.71	.06
27.	.81	-.09
28.	.71	-.00
Factor 2: Universal reliance		
2.	-.02	.65
7.	.17	.43
11.	-.16	.66
12.	.03	.52
16.	-.03	.50
18.	.22	.44
19.	.09	.53
20.	.11	.67
23.	.19	.30
24.	-.02	.56

Table 5 shows the factor loadings of the Endemic Hope scale on two factors. Factor 1 comprises 9 items (3,8,10,15,22,25,26,27,28) with factor loadings ranging from .49 to .90. Factor 2 comprises of 10 items (2,7,11,12,16,18,19,20,23,24) with factor loadings in the range of .30 to .67.

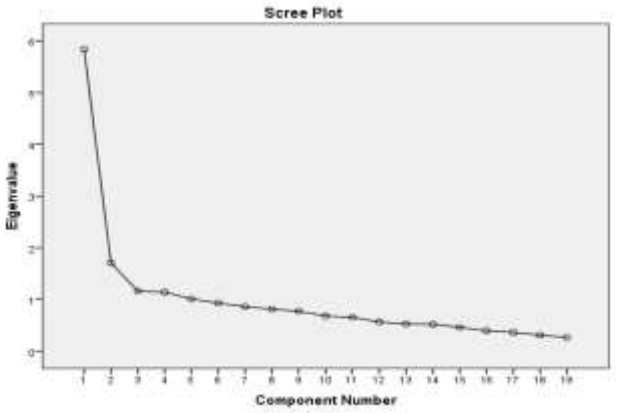

Figure 1: Scree Plot for Factor Matrix of 19 items of Endemic Hope Scale through Principal Component Analysis using Direct Oblimin Method(N = 202)

The Scree plot clearly shows the two factor structure of the scale as the point of inflection starts after the second factor.

Table 6: Alpha Reliability of Endemic Hope Scale, Adult Dispositional Hope Scale and Zung Self-Rated Depression Scale

Scales	No of items	Alpha Coefficient
Endemic Hope Scale	19	.83
Adult Dispositional Hope Scale	8	.76
Zung Self Rated Depression Scale	19	.65

As evident from Table 6, coefficient alpha for 19 items of the Endemic Hope Scale is .83 which suggests that the scale is highly reliable, whereas coefficient alpha obtained for the Adult Dispositional Hope Scale is .76 which also indicates a high reliability of the scale and for Zung Self Rated Depression Scale the value of coefficient alpha is .65 thus showing a moderate reliability.

Table 7: Inter-scale correlation between Endemic Hope Scale, Adult Dispositional Hope Scale and Zung Self Rated Depression Scale

Scales	I	II	III
Endemic Hope	---		
Adult Dispositional Hope	.39**	---	
Zung Self Rated Depression	-.31**	-.53**	---

**=p<.01

Findings in Table 7 shows that a positive correlation(r=.39) exists between Endemic Hope Scale and Adult Dispositional Hope Scale while a negative correlation of -.31 is indicated between Endemic Hope Scale and Zung Self Rated Depression Scale. The correlation between Adult Dispositional Hope Scale and Zung Self Rated Depression Scale is -.53 which confirms that hope is negatively correlated with depression.

DISCUSSION

The aim of this study was to create and validate an original hope scale tailored to the local population. Since currently available hope scales are designed for Western individuals, they may not be applicable to individuals from different cultural, linguistic, and religious backgrounds. To address this gap, a scale was developed using the logical content approach, which involved defining the construct of hope and generating 42 items to measure it. The items were then analyzed qualitatively by subject experts to assess their language difficulty, relevance, and meaning. Based on this analysis, 13 items were removed due to inappropriate content and redundancy, while 29 items were retained and 18 of them were modified.

Following the qualitative item analysis, the items of the scale underwent quantitative item analysis. An experimental tryout was conducted on a sample of 202 participants with ages ranging from 18 to 32 years (M=22.12, SD=2.09). To establish convergent validity of the Endemic Hope Scale, two standardized scales, the Adult Dispositional Hope Scale and Zung Self-Rated Depression Scale, were used, and discriminant validity was established with the latter. One item from the Zung Self-Rated Depression Scale was excluded as it was not culturally relevant. Item-total correlation was computed, and out of the 29 items, eight (8) items had a correlation below .30, and therefore they were removed from the scale (as listed in Table 1). Item-total correlation was then conducted again, and it was found that item no. 6 and 17 also had a correlation below .30, resulting in their removal from the scale. In total, 19 items were retained, and the excluded items included two (2) negatively worded items, and the rest did not convey the meaning in an appropriate manner, resulting in their low reliability and removal from the scale. The nineteen-item scale was subjected to Factor Analysis to identify the valid items. Kaiser-Meyer-Olkin was used to verify the sampling adequacy, and the KMO measure was found to be .87 (as shown in Table 3), indicating that the sample was appropriate for conducting factor analysis. Bartlett's test of sphericity was also highly significant (df=171, χ^2=1152.62, p=.00), suggesting that factor analysis could be performed on the data. Principal Component Analysis with Direct Oblimin rotation was used to determine the factor loadings. Five factors were initially extracted, each with eigenvalues greater than 1. The criterion for retaining items in a factor was a loading of .30 or higher [19]. Items falling within this range were kept in the respective factor. However, the scree plot showed only two factors, indicating that it would be appropriate to conduct another analysis with a restricted two-factor solution. The two factors that were extracted explained 39.73% of the total variance (as shown in Table 4). The first factor had an eigenvalue of 5.84, explaining 30.74% of the variance, while the second factor had an eigenvalue of 1.70, explaining 8.99% of the variance.

Table 5 presented results demonstrating that the items were significantly loaded onto two factors. A careful examination of the item content was conducted to identify the underlying dimensions of hope and assign labels to the factors. The two factors were named belief-specific reliance and universal reliance.The subscale of belief specific reliance comprises nine (9) items, all of which pertain to a firm conviction in the mercy and assistance of Allah. It reflects an individual's inclination to rely on Allah's supremacy, recognizing Him as the Provider and Manager of all circumstances, and that everything unfolds according to His plan. With this belief, a person is able to confront stressful life events without falling into despair or becoming hopeless and negative, and can navigate life's obstacles with unwavering hope.

The Universal Reliance subscale is comprised of 10 items that measure a person's overall positive outlook on life. This factor captures an individual's level of hope in a broad sense, rather than being limited to specific domains. Once the factor structure was determined and the factors were labeled, the alpha coefficient was calculated to estimate the scale's reliability. The initial reliability of the scale was 0.80, but after removing the problematic items, the reliability increased to 0.83, as shown in table 6. The study found that the Endemic Hope Scale is a highly reliable instrument for measuring the level of hope in individuals. To establish its validity, the scores of the Endemic Hope Scale were correlated with those of the Adult Dispositional Hope Scale and the Zung Self Rated Depression Scale, as shown in table 7. The results indicated a positive correlation (r=0.39) between the Endemic Hope Scale and the Adult Dispositional Hope Scale, providing evidence of convergent validity. In contrast, a negative correlation (r=-0.31) was found between the Endemic Hope Scale and the Zung Self Rated Depression Scale, confirming the discriminant validity of the scale. The negative correlation between the Adult Dispositional Hope Scale and the Zung Self Rated Depression Scale further supports the idea that hope and depression are negatively related. A high score on the Endemic Hope Scale suggests a high level of hope, the median score in the present study was 67, future studies can keep median found in their data as a cut point for discriminating between high and low scorers [20].

Limitations and Suggestions: While the present study confirmed that the newly developed scale is a valid and reliable measure of the construct, there are still some limitations that need to be addressed.

1. As the present study only included students in its sample, the findings cannot be extrapolated to the entire population. Thus, it is recommended for future test developers to collect data from individuals belonging to various socioeconomic groups to gain a broader understanding of people's attitudes and expectations.
2. The belief that women tend to give up easily and lose hope in challenging situations is commonly held; in future studies with larger sample gender wise norms can be developed for the current scale.
3. The sampling technique used in the selection of respondents was convenience sampling, which is a non-probability sampling technique. One of the main disadvantages of this technique is that the degree of generalizability of the results is questionable. Therefore, it is suggested that future studies employ a probability sampling technique to increase the generalizability of the findings.

Implications: The Endemic Hope Scale has wide-ranging potential use in various settings, particularly in clinical and educational environments. In clinical settings, the scale can be

valuable in assessing the level of hope in patients who are undergoing serious illnesses or experiencing significant losses. The scale can provide clinicians with a better understanding of patients' psychological states, which can help tailor treatment plans and support interventions accordingly. Similarly, the Endemic Hope Scale can be beneficial in educational institutions for measuring students' level of hope, which has been shown to be strongly associated with academic success. Those students with low levels of hope can be identified and provided with appropriate help and support to improve their academic performance. Furthermore, the Endemic Hope Scale can also be used to assess an individual's level of belief in Allah's power, which is an essential aspect of many people's lives. Belief in Allah's power can lead to feelings of contentment and tranquility, which can positively impact an individual's overall well-being. Thus, the scale has the potential to be useful in both clinical and non-clinical settings to improve an individual's psychological and emotional well-being.

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