HERO Wellness Scale:
Examining the Validity and Reliability of a New Mental Wellness Scale
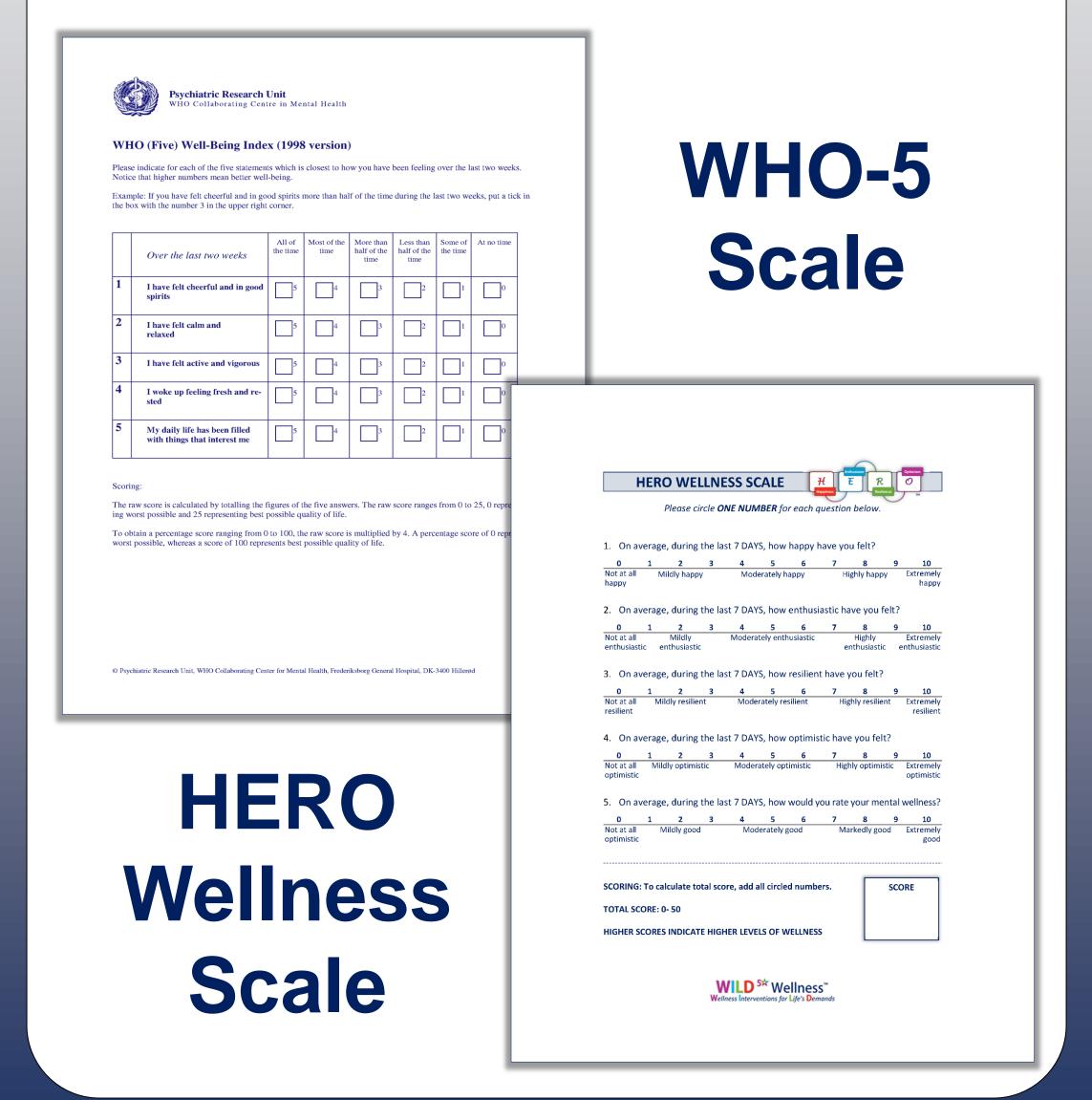
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Objective

Examining the reliability and validity of a newly developed mental wellness scale called the HERO Wellness Scale, that was developed to assess wellness in a diverse clinical and non-clinical population.

Method

Eighty-four college students from Beloit College in Wisconsin enrolled in the WILD 5 Wellness Program, a 30-day wellness intervention. This program consists of 30 days of activities focusing on exercise, mindfulness, sleep hygiene, improved social connectedness, and improved nutrition. Participants completed multiple scales before the study started and at the end of 30 days. Study instruments included a 'gold standard' wellness measurement scale, the WHO-5 Wellbeing Index, as well as our newly developed wellness instrument, the HERO Wellness Scale. The HERO scale is comprised of five 10-point Likert-type items measuring happiness, optimism, enthusiasm, resiliency, and mental wellness. Each item is anchored by 1, not at all, and 10, extremely. HERO Wellness Scale data were assessed for measures of reliability and validity.

WHO-5 Scale

HERO Wellness Scale

Statistical Analysis

Item-Total Statistics

	Cronbach's Alpha if Item Deleted
HERO - Happy	.904
HERO - Enthusiastic	.906
HERO - Resilient	.935
HERO - Optimistic	.898
HERO - Mental Wellness	.897

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation
HERO - Happy	20.30	74.742	.835	.742
HERO - Enthusiastic	20.69	74.481	.832	.709
HERO - Resilient	20.46	76.131	.671	.478
HERO - Optimistic	20.57	68.224	.856	.736
HERO - Mental Wellness	20.55	66.974	.862	.775

Inter-Item Correlation Matrix

	HERO - Mental Wellness
HERO - Happy	.824
HERO - Enthusiastic	.798
HERO - Resilient	.607
HERO - Optimistic	.807
HERO - Mental Wellness	1.000

Inter-Item Correlation Matrix

	HERO Happy	HERO Enthusiastic	HERO Resilient	HERO Optimistic
HERO - Happy	1.000	.785	.568	.777
HERO - Enthusiastic	.785	1.000	.610	.752
HERO - Resilient	.568	.610	1.000	.672
HERO - Optimistic	.777	.752	.672	1.000
HERO - Mental Wellness	.824	.798	.607	.807

Results

Reliability: Using scores from baseline data (N = 84), internal consistency was calculated using Cronbach's α and was found to be excellent ($\geq$ .9) for the 5-item HERO Composite, α = .93. For the corrected item-total correlations, all 5 items were adequate ($\geq$.5) ranging from .67 (Resilience) to .86 (Mental Wellness). The inter-item correlation matrix revealed that all 10 correlations were statistically significant ($p <$ .001) and ranged from .57 (Happy with Resiliency) to .82 (Happy with Mental Wellness).

Validity: Evidence Based on Scale Content. Validity evidence can be obtained from an analysis of the relationship between the content of a scale and the construct it is intended to measure. The experts designed and developed HERO and judged the relationship between HERO items and the construct of wellness. Determined by expert judgement, HERO covers a representative sample of the domain of wellness. It diverges considerably from WHO-5 items by specifically assessing for well-established positive psychology traits such as happiness, enthusiasm, resilience and optimism.

Validity: Evidence Based on Relations to Other Variables. Relationships between scale scores and other measures intended to assess same or similar constructs provide convergent evidence of validity (APA, 2014). HERO scale scores would be expected to relate closely to other measures of wellness. Concurrent evidence, which avoids temporal change, is particularly helpful for psychological testing. A Pearson correlation coefficient was computed to assess the relation between the HERO composite scale scores and WHO-5 Wellbeing Index scores at baseline (N = 84). There was a statistically significant positive correlation, r = .79, $p <$ .001. According to Cohen (1988), correlations $\geq$ .50 represent a large effect size and with a correlation of .79, 62% of the variance of either variable is associated linearly with variance in the other. Although the large and significant correlation is strong evidence of validity, HERO and WHO-5 Wellbeing Index scales are not so closely related to one another as to be identical measures. Correlations between individual HERO items and WHO total scores at baseline were all statistically significant ($p <$ .001): Happiness, .75; Enthusiasm, .74; Resilience, .54; Optimism, .71; and Mental Wellness, .74.

Conclusions

Analyses of the HERO Wellness Scale demonstrated strong evidence of reliability and validity. The Cronbach's α was found to be excellent ($\geq$ .9) and therefore this scale should be considered for individual-level assessment of mental wellness. As there was a strong correlation with the WHO 5 Wellbeing Index, the HERO Wellness Scale clinicians who wish to directly assess positive psychology traits such as happiness, enthusiasm, resilience optimism, and overall mental wellness, could consider using HERO Wellness Scale in their practice.

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