Design and Preliminary Validation of an Instrument to Measure Medical Student Attitudes Toward the Homeless

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Rationale: Goals and Objectives

- Recent medical literature has called for an emphasis on the need for health professionals to provide humanistic care for patients and on the need for incorporating the teaching of humanism in medical education.

- The homeless population in particular requires a great deal of humanistic care.

Rationale: Goals and Objectives

- Factors that may be considered regarding the appropriateness and the quality of health care apportioned to the homeless population:
    - Access, continuity, and comprehensiveness of care
    - Economic issues
    - Attitudes of those who provide health care
- An instrument that could measure attitudes of healthcare professionals toward the homeless can offer meaningful information for the design and implementation of educational activities aimed at fostering care to the homeless.

Objectives

1. Describe the process of designing and validating an instrument to measure medical students' and other health care professionals' attitudes towards, confidence in their ability to work with, and interest in working with the homeless

2. Discuss the usefulness of the instrument to asses the impact of educational experiences on attitudes, confidence, and interest in working with the homeless.

Design and Methods

Phase I	Development of the Health Professionals Attitudes Toward the Homeless Inventory (HPATHI)
Phase II	Initial Validation Process: Pilot administration of HPATHI instrument
Phase III	Instrument validation with target population (medical students, residents, and faculty)

Phase I: Development of Questionnaire

- Delphi study with 20 national experts on homeless care

- Ranked ordered a list of statements sent to them and were able to include other statements

- The process resulted in a 35-item questionnaire with a 5-point Likert scale (strongly disagree to strongly agree)

Phase II: Initial Validation

- The Healthcare Professional Attitude Toward the Homeless Inventory (HPATHI) was administered to 76 third-year medical students in its 35-item form

- Two weeks later 34 out of the original 76 students completed a second administration of the instrument for test-retest reliability determination

Phase II: Initial Validation

- Descriptive statistics for initial HPATHI administration (35 items)
  - N=68
  - Mean=3.66
  - Standard Deviation=0.71
- Reliability coefficients
  - Cronbach's Alpha=0.87
  - Test-Retest (2-week interval)=0.69

Phase II: Initial Validation

- Item analysis identified 12 items that either did not present with acceptable item-scale correlations or had too-high item-item correlation and were discarded

- We reduced the HPATHI to a 23-item version—with three subscales—for the continuing validation process :
  - General <u>attitudes</u> towards the homeless (7 items)
  - <u>Confidence</u> in ability to work with the homeless (5 items)
  - <u>Interest</u> in working with the homeless (11 items)

Phase II: Initial Validation:
Descriptive Statistics and Cronbach's Alpha for 23-item Scale & Subscales

	# Items	Mean	SD	Cronbach's Alpha
Overall	23	3.82	0.48	0.88
Attitudes	7	3.78	0.58	0.68
Confidence	5	3.71	0.66	0.62
Interest	11	3.91	0.33	0.84

Phase III: Instrument Validation with Target Population

- Web-based instruments administered to medical students, residents, and faculty over a period of six months
  - HPATHI
  - ATHI—a similar instrument validated for college students
- Reliability analysis
- Validity analysis
  - Concurrent validity
  - Construct validity

Phase III: Instrument Validation with Target Population: Reliability Analysis
Descriptive Statistics and Cronbach's Alpha Coefficients

N=160	# Items	Mean	SD	Cronbach's Alpha
Overall	23	3.36	0.28	0.82
Attitudes	7	3.88	0.44	0.66
Confidence	5	3.70	0.72	0.43
Interest	11	3.90	0.45	0.77

Phase III: Instrument Validation with Target Population: Reliability Analysis

- Other findings
  - Attitude scale's Cronbach's Alpha = 0.71 if item # 2 is deleted
  - Confidence scale's Cronbach's Alpha = 0.52 if item # 16 is deleted
  - Items # 2, 15, and 16 decrease the Cronbach's Alpha coefficient for the overall scale

Phase III: Instrument Validation with Target Population: Validity Analysis

- ## Concurrent Validity
  - Correlation with Attitudes Toward the Homeless Inventory*
    - Entire HPATHI instrument
    - Subscales 1 & 3 (Attitudes & Interest)

- ## Construct Validity
  - Expert opinion
  - Statistical methods
    - Extreme group differences (by medical training and experience with the homeless)
    - Item-scale correlations
    - Factor Analysis

*Kingree & Daves, 1997

Phase III: Instrument Validation with Target Population: Concurrent Validity Results

- HPATHI (23 items)
  - N=160
  - Mean=3.90
  - Standard Dev=0.34
- ATHI (27 items)
  - N=147
  - Mean=3.36
  - Standard Dev=0.28
- Correlation between HPATHI and ATHI=0.68

- HPATHI (18 items)
  - N=160
  - Mean=3.96
  - Standard Dev=0.37
- ATHI (27 items)
  - N=147
  - Mean=3.36
  - Standard Dev=0.28
- Correlation between HPATHI and ATHI=0.67

Phase III: Instrument Validation with Target Population: Construct Validity Results

- Expert opinion generated the 35 statements used in the pilot administration of the HPATHI

- Statistical Methods
  - Extreme group differences (Confidence & Interest Subscales)
    - No significant differences between groups by medical training
      - Pre-clinical Medical Students (MS 1 & 2) vs. Physicians (PGY 1, 2, 3, & Faculty)
    - Significant difference between groups by experience with the homeless
      - Less than 1 month vs. More than 1 year

Phase III: Instrument Validation with Target Population: Construct Validity Results

- Item-Scale Correlations
  - Entire HPATHI scale
    - Items # 1, 2, 15, and 16 showed low item-total correlations (< 0.24)
  - Attitudes Subscale
    - All items moderately to strongly correlated with subscale total (0.38 to 0.67)
  - Confidence Subscale
    - Item # 16 showed low item-subscale total correlation (0.23)
  - Interest Subscale
    - All items moderately to strongly correlated with subscale total (0.49 to 0.68)

Phase III: Instrument Validation with Target Population: Construct Validity Results

- Factor Analysis
  - Principal factor analysis (exploratory) with a direct oblimin rotation
  - Three factors
    - Caring
      - Items # 12, 13, 14, 17, 18, 19, 20, 21, 22, & 23)
    - Commitment
      - Items # 1, 3, 4, 7, 8, 9, & 15
    - Hopelessness
      - Items # 5, 6, 10, & 11

Conclusions

- The instrument has shown promising results psychometrically
  - Overall internal consistency
  - Good test-retest reliability
  - Good concurrent validity with a similar instrument
  - Strong item-scale correlations
  - Good discriminating ability between extreme groups

Conclusions

- Some issues to address
  - One subscale has not shown satisfactory reliability (Confidence)
  - Some items may need to be deleted from the scale
    - Items # 2 and 16
    - Perhaps items # 1 & 15 as well
  - Factor analysis has identified three factors but different from the original ones
- Next steps
  - Continue administration of HPATHI to students, residents and faculty as feasible (our N is still small for instrument validation purposes)
  - Expand administration to other medical schools and residency programs
  - Expand administration to other health care professionals who traditionally work with the homeless

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