



Psychometric Evaluation of the Nursing Students’ Attitudes Toward Nursing Education Research Questionnaires

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Background and Significance

- Nursing students’ attitudes toward clinical research are generally positive.¹⁻⁴
 - Nursing students see value in research for clinical practice.^{3,5}
- More favorable attitudes toward nursing research are significantly associated with prior research experience and interest in a specific research area.^{2,6}
- Although, some nursing students have negative perceptions of clinical research, identifying it as complex, boring, and time-consuming.^{5,7}
- Only one qualitative study to date has explored nursing students’ experiences as research participants in the United Kingdom.⁸
 - Students’ had positive perceptions of being research participants, identifying benefits both personally (i.e., self-growth and knowledge development) and professionally (i.e., clinical practice).⁸
- No instruments were found in the published literature that specifically measure students’ attitudes toward nursing education research.¹

Purpose

The purpose of this study was to develop and test the validity and reliability of the *Nursing Students’ Attitudes toward Nursing Education Research Questionnaire* (NSANERQ).

Theoretical Framework

Katz’s Functional Attitudes Theory⁹

- An attitude is defined as the value that an individual places on something or someone.
- People generally act in a manner that benefits them.
- As such, people are more likely to act positively when they have favorable attitudes toward something or someone.

Design and Methods

NSANERQ Development

- Adapted with permission from the *Nursing Students’ Attitudes and Awareness of Research and Development in Nursing* (NSAARDN) scale.
 - The NSAARDN scale measures nursing students’ attitudes toward clinical research.
 - The NSAARDN scale has excellent internal consistency reliability ($\alpha = 0.92$).
- Psychometric properties of the NSANERQ were assessed in three phases:
 - Content Validity
 - Internal Consistency Reliability & Construct Validity
 - Test-Retest Reliability

Phase One: Content Validity

Methods

- Three experts in nursing education and instrument development reviewed the original version of NSANERQ.
- Changes were made based on expert feedback.
- Five experts in nursing education and instrument development reviewed the final version of the NSANERQ.

NSANERQ Results

- The initial NSANERQ scale-content validity (S-CVI) was 0.76
- After revision, the final version of the NSANERQ demonstrated a S-CVI of 0.92 with all items demonstrating excellent item-content validity (0.8 - 1.0).

Phase Two: Internal Consistency Reliability and Construct Validity

Sample Size and Sample Characteristics

- **N = 156** Baccalaureate Nursing Students
- **Age:*** *M* = 20.55 (19 - 37) years old
- **Gender:*** *Female* N = 137 (95.8%)
- **Race:*** *White* N = 128 (89.5%)
- **Ethnicity:*** *Non-Hispanic / Latino* N = 132 (92.3%)
- **Year in Program:***
 - Sophomore* N = 48 (33.6%)
 - Junior* N = 51 (35.7%)
 - Senior* N = 44 (30.8%)

**N* = 143

Methods and Results

Internal Consistency Reliability

- Data were analyzed using Cronbach's alpha.
- Good internal consistency reliability ($\alpha = 0.88$).
- Deletion of any items did not improve the Cronbach’s alpha coefficient for the instrument.

Construct Validity

- Data were analyzed using factor analyses:
 - Exploratory Factor Analysis:
 - Extraction: Principal Components Analysis
 - Rotation: Varimax
 - Item Loadings: > 0.35
 - Confirmatory Factor Analysis:
 - Method: Maximum Likelihood Estimations

Phase Three: Test-Retest Reliability

Sample Size and Characteristics

- **N = 49** Freshman Baccalaureate Nursing Students
- **Age:** *M* = 18.35 (18 – 19) years old
- **Gender:** *Female* N = 43 (89.6%)
- **Race:** *White* N = 41 (85.4%)
- **Ethnicity:** *Non-Hispanic / Latino* N = 44 (91.7%)

Methods

- Data were collected two weeks apart.
- Data were analyzed using Pearson’s correlations.

NSANERQ Results

- Acceptable test-retest reliability ($r = 0.71$).

Exploratory Factor Analysis (EFA)

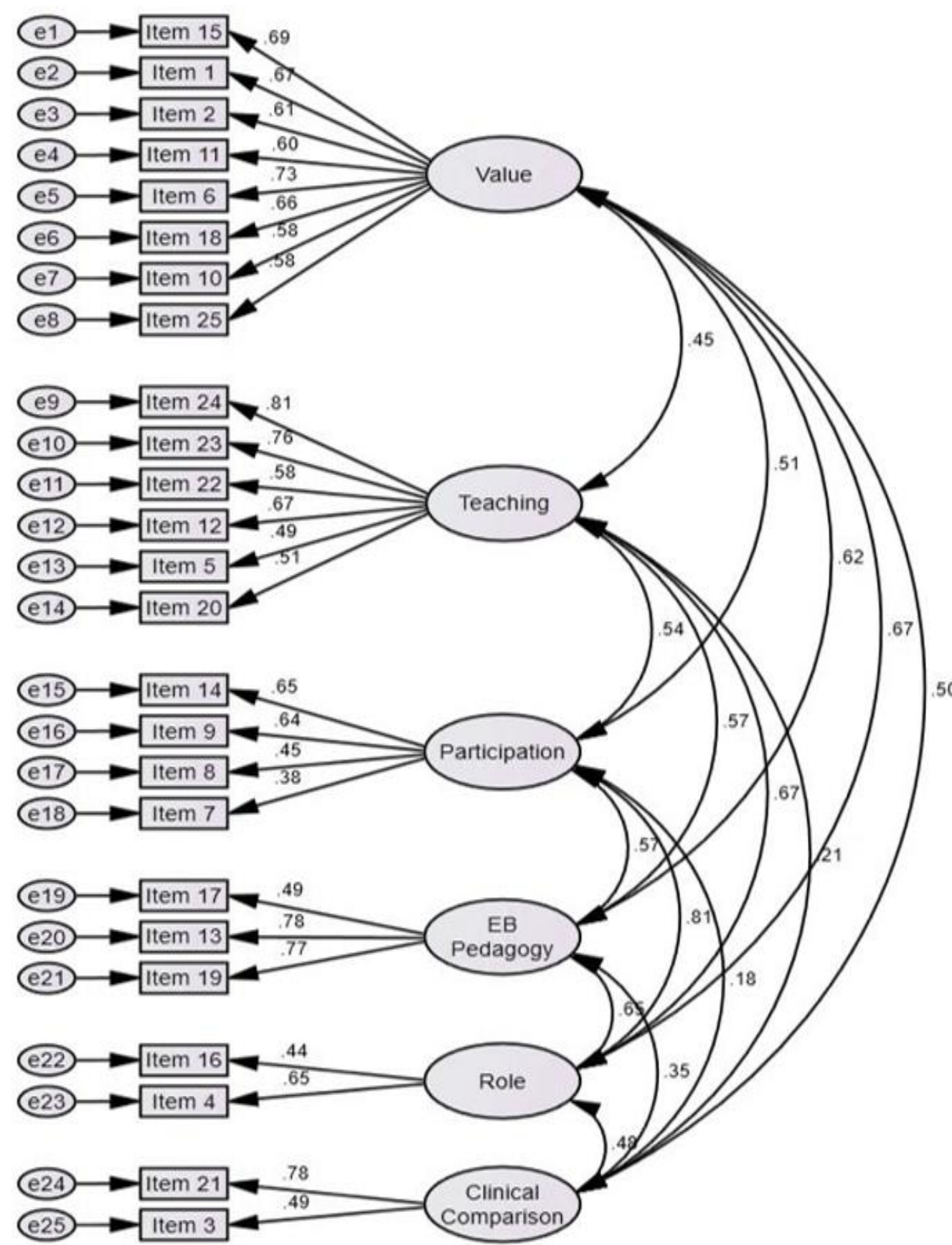
NSANERQ Item	Factor 1 "Value"	Factor 2 "Teaching"	Factor 3 "Participation"	Factor 4 "EB Pedagogy"	Factor 5 "Role"	Factor 6 "Clinical Comparison"
Item 15	0.745					
Item 1	0.732					
Item 2	0.670					
Item 11	0.666					
Item 6	0.657					
Item 18	0.598				0.374	
Item 10	0.566					
Item 25	0.553					
Item 24		0.846				
Item 23		0.808				
Item 22		0.759				
Item 12		0.475				
Item 5		0.384				
Item 20		0.359				
Item 14			0.701			
Item 9			0.695			
Item 8			0.501			
Item 7			0.391			
Item 17				0.795		
Item 13				0.686		
Item 19				0.667		
Item 16					0.694	
Item 4					0.573	
Item 21						0.760
Item 3						0.735

Item loadings > 0.35 are shown. Bold loading values were retained in the final six-factor EFA Solution.

Confirmatory Factor Analysis

Standardized Structural Model of the Confirmatory Factor Analysis using Maximum Likelihood Estimations.

Goodness of Fit Statistics:
 $\chi^2(260) = 410.030$, df 260, $p < 0.001$,
 $TLI = 0.85$
 $CFI = 0.87$
 $RMSEA = 0.06$
 $SRMR = 0.05$



Nursing Implications

Nursing Education

- The NSANERQ is a valid and reliable instrument that may be used to:
 - facilitate the exploration of nursing students’ attitudes toward education research.
 - appreciate students’ attitudes toward nursing education research, which may be used to develop a student - driven framework for pedagogical research.
 - Refine current pedagogical research strategies.
 - Develop interventions to enhance students’ attitudes.

Future Research

- Additional psychometric testing of the NSANERQ with larger, more diverse samples.
- Studies using the NSANERQ are needed to determine nursing students’ attitudes toward education research.

Limitations

- Recruitment from a single university
- Relatively small sample size
- Lack of sample diversity
- Missing data

Conclusions

- Preliminary testing of the NSANERQ demonstrated adequate reliability and validity.
- NSANERQ can be used to describe and evaluate changes in baccalaureate nursing students’ attitudes toward nursing education research.
- Additional psychometric testing is warranted in larger, more diverse samples of nursing students.

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