Development of a Scale for Assessment of Patient Comfort After Hip Replacement*

Hulya Saray Kilic, PhD, RN

Department of General Surgery Unit, Gulhane Military Medical Academy, Ankara, Turkey

Sevinc Tastan, Associate Professor, PhD, RN

School of Nursing, Gulhane Military Medical Academy, Ankara, Turkey

* Surgical Nursing Doktoral Thesis

Faculty Disclosure

Faculty Name	Gulhane Military Medical Academy, Ankara, Turkey
Conflict of interest	None
Employer	Turkish Armed Forces
Sponsorship/ Commercial Support	None

Goals and Objectives

- Session Goal:
  - To explain the Hip Replacement Comfort Scale's development phases

- Session Objectives
  - The learner will be able to learn about the Hip Replacement Comfort Scale

  - The learner will be able to know the usage of the Hip Replacement Comfort Scale

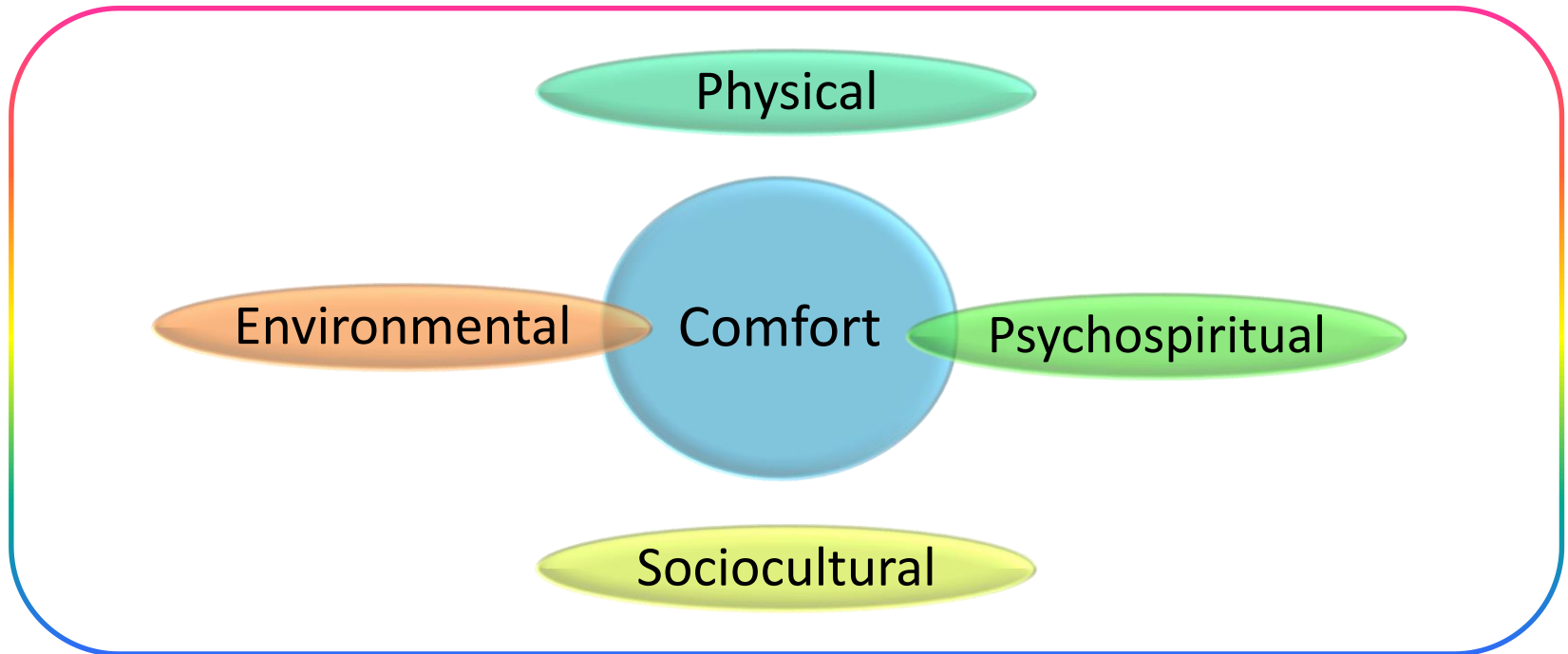27th International Nursing Research Congress, Cape Town, South Africa

Purpose

The aim of this study is to develop a "Hip Replacement Comfort Scale"

→ and to analyze the validity and reliability of the scale.

After Hip Replacement Surgery…

Patients are affected both;

Konfor

Katharine Kolcaba

RN, MSN, PhD

KATHYKOLCABA@YAHOO.COM

Associate Professor, Emeritus Status
College of Nursing
The University of Akron

Curriculum Vitae

| Background | Education | Awards & Honors | Volunteer Activities | Research & Publi |

I love working with students and researchers through their contacts to me via the web. I
consulting business with Colleges of Nursing and various health care institutions. With colleagu
University of Akron, I continue to design comfort studies in various arenas: instrument developmen
and testing of comfort theory in different settings and with different theoretical questions. I think the Magn
Status initiative demonstrates a true marriage between theory and practice.

Comfort Theory

The desired outcome of being strengthened by having needs for relief, ease and transcendence met in physical, psycho spiritual, social and environmental context.

Comfort Scales

1988 - ...

General Comfort Scale

Hip Replacement Comfort Scale ???

...ment

...sychiatric Comfort Questionnaire

Urinary Incontinence & Frequency Comfort Questionnaire

Comfort Theory Pr... A Holistic ... and...
Katharine Kolcaba

Methods

This study was conducted as

**a methodological study**

to develop a new scale to assess patient comfort after hip replacement.

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Methods

January 2014 – December 2015

3 Education and Research Hospitals
in Ankara, TURKEY

180 patients who underwent
hip replacement surgery

Methods

GMMA and Other Hospitals' Local Ethics Committees

Participants

Methods

Data Collection Forms	
1	Data Collection Form for Demographics
2	Data Collection Form for Surgery
3	Hip Replacement Comfort Scale
4	General Comfort Scale

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Methods

1st stage	**Item Development**	Literature Rewiev
		Individual interviews
		Expert Opinion
2nd stage	**Trial Application**	Data Collection Forms
3th stage	**Psychometric Analysis**	Item analysis
		Reliability
		Validity

Results

1st stage	Item Development	Literature Rewiev
		Individual interviews
		Expert Opinion

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Results

1st stage	Item Development	Literature Rewiev
		Individual interviews
		Expert Opinion

Results

1st stage

Item Development

- Literature Rewiev
- Individual interviews
- Expert Opinion

22 patients

43 items were developed

Results

1st stage | **Item Development** | Literature Rewiev

Individual interviews

Expert Opinion

Expert Opinion

1st — 20 experts

2nd — 5 experts

- Orthopedics and traumatology doctors
- Surgical nursing instructors
- Experts in scale development
- Orthopedics and traumatology nurses
- Physiotherapists
- A psychologist
- A patient who underwent hip replacement surgery

Results

1st stage	Item Development	Literature Rewiev
		Individual interviews
		Expert Opinion

5 items removed
38 items left

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Results

1st stage	Item Development	Literature Rewiev
		Individual interviews
		Expert Opinion
2nd stage	Trial Application	Data Collection Forms
3th stage	Psychometric Analysis	Item analysis
		Reliability
		Validity

Results

2nd stage	Trial Application	Data Collection Forms

Results

Post-operative 2nd day

	Data Collection Forms	
1	Data Collection Form for Demographics	for descriptives
2	Data Collection Form for Surgery	for descriptives
3	Hip Replacement Comfort Scale	for scale development
4	General Comfort Scale	for testing validity

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Results

1st stage	Item Development	Literature Rewiev
		Individual interviews
		Expert Opinion
2nd stage	Trial Application	Data Collection Forms
3th stage	Psychometric Analysis	Item analysis
		Reliability
		Validity

Results

3th stage   Psychometric Analysis

Item analysis

Reliability

Validity

Results

Item Correlations

Lower-Higher Group Averages

3th stage

Psychometric Analysis

Item analysis

Reliability

Validity

Results

Lower-Higher Group Averages

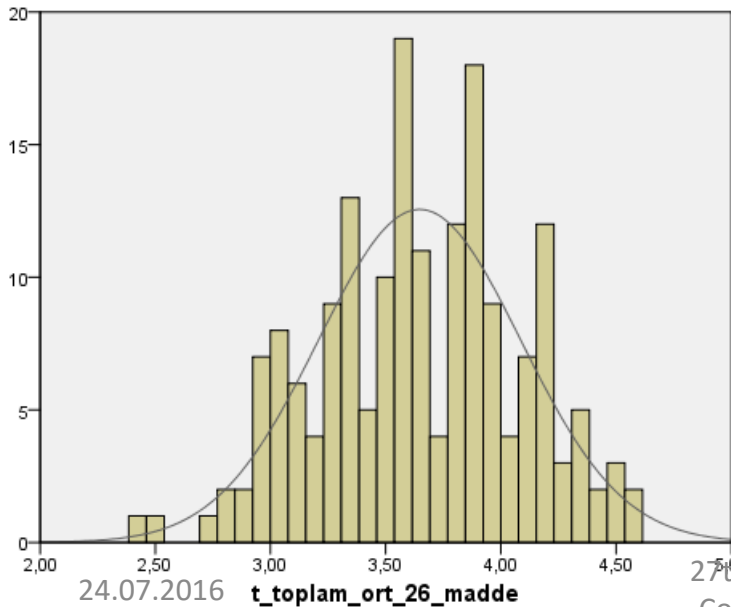3th stage

Psychometric Analysis

Item analysis

Reliability

Validity

Lower-Higher Group Averages

%27
Lower
Group

%27
Higher
Group

Independent samples t test

↓

Items removed from the scale		
4	19	26
t=-1.349	t=-1.267	t=-1.982
p=0.181	p=0.209	p=0.050

Results

Item Correlations

3th stage | Psychometric Analysis

Item analysis

Reliability

Validity

Item Correlations

If corrected item-total item correlation score is <u>negative</u>

If corrected item-total item correlation score is <u>lower than 0.20</u>

If <u>Cronbach alfa score increases</u> when item removed

Criterias for removing items from the scale

Item Correlations

Ölçek maddeleri	Madde silindiğinde ölçek puan ortalamaları	Madde silindiğinde ölçek varyansı	Düzeltilmiş madde toplam puan korelasyonu	Madde silindiğinde ölçek Cronbach alfa
Madde 1	114.70	164.680	0.263	0.755
Madde 2	115.32	160.586	0.266	0.753
Madde 3	115.51	158.676	0.243	0.755
Madde 5	115.89	157.190	0.256	0.754
Madde 6	115.95	155.132	0.331	0.749
Madde 7	116.44	160.639	0.156	0.761
Madde 8	117.29	160.265	0.175	0.759
Madde 9	115.74	158.831	0.234	0.755
Madde 10	114.53	166.384	0.145	0.758
Madde 11	115.41	160.210	0.239	0.754
Madde 12	114.98	161.614	0.255	0.754
Madde 13	114.82	163.670	0.240	0.755
Madde 14	114.69	164.247	0.242	0.755
Madde 15	117.49	161.413	0.211	0.756
Madde 16	116.54	152.093	0.406	0.744
Madde 17	116.84	155.942	0.310	0.751
Madde 18	115.77	159.197	0.319	0.751
Madde 20	116.14	163.420	0.119	0.761
Madde 21	114.92	163.614	0.190	0.757
Madde 22	117.14	161.342	0.190	0.757
Madde 23	115.61	157.726	0.312	0.751
Madde 24	115.31	158.919	0.277	0.753
Madde 25	115.24	161.549	0.262	0.754
Madde 27	114.78	166.383	0.090	0.760
Madde 28	115.34	156.562	0.434	0.746
Madde 29	114.92	160.597	0.370	0.750
Madde 30	117.22	158.531	0.238	0.755
Madde 31	117.01	159.207	0.251	0.754
Madde 32	116.12	154.644	0.403	0.746
Madde 33	115.36	158.880	0.302	0.751
Madde 34	116.04	158.210	0.228	0.756
Madde 35	116.76	158.085	0.288	0.752
Madde 36	115.12	157.165	0.437	0.746

N=180
Madde sayısı=33
Cronbach alfa=0.759

7 items removed with item correlations analysis and 26 items left

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Results

internal consistency

test re-test analyses

3th stage Psychometric Analysis

Item analysis

Reliability

Validity

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Results

internal consistency

	Cronbach Alfa
36 items	0.756
26 items	0.758
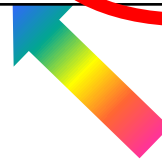
3th stage

Psychometric Analysis

Item analysis

Reliability

Validity

Results

test re-test analyses

3th stage	Psychometric Analysis	Item analysis
		Reliability
		Validity

Test-retest analysis

	n	M±SD	p	r*
Test	44	3.58±0.42	<0.001	0.817
Re-test	44	3.68±0.49		

44
Patients
(24.4%)

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Results

Scope validity

Surface validity

Criterion validity

Construct validity

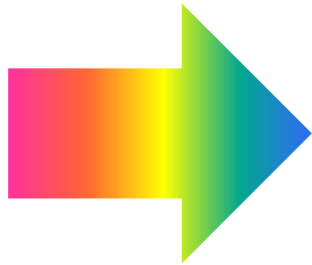| 3th stage | Psychometric Analysis | Item analysis |
| | | Reliability |
| | | Validity |
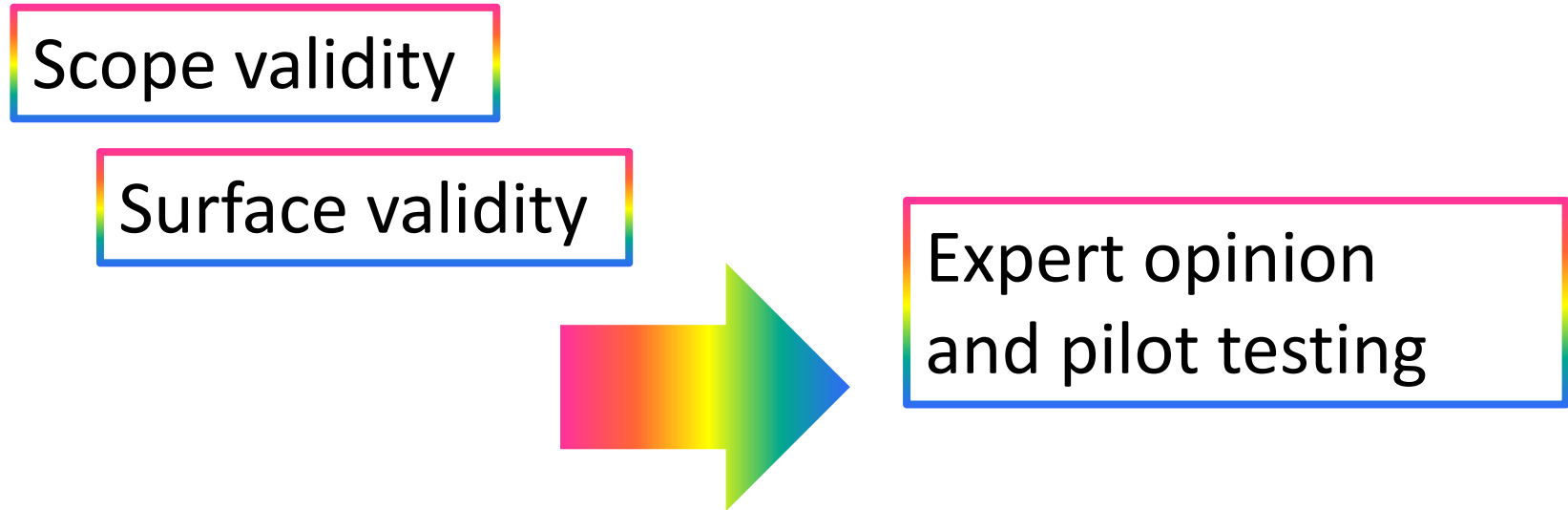
Results

Scope validity

Surface validity

Expert opinion
and pilot testing

3th stage

Psychometric Analysis

Item analysis

Reliability

Validity

Results

	General Comfort Scale (0-4) (2.97±0.30)
Hip Replacement Comfort Ssale (0-5) (3.64±0.43)	n=180 r=0.701* p<0.001

Criterion validity

3th stage

Psychometric Analysis

Item analysis

Reliability

Validity

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Results

Construct validity

Exploratory factor analysis	Confirmatory factor analysis	Result
• 10 factors • 4 factors • 3 factors	• 4 factors • 3 factors	• ?

3th stage

Psychometric Analysis

Item analysis

Reliability

Validity

Results

HRCS Score Average

3.64±0.43 (1-5)

Results

	n(%)	M±SD	p	t*
Gender				
Female	123 (68.3)	3.60±0.43	0.045	-2.018
Male	57 (31.7)	3.74±0.42		

*t: Student-t test

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Results

	n(%)	M±SD	p	F*
The reason to have surgery				
Femur fractures	42 (23.3)	3.59±0.43		
Primary osteoarthritis	79 (43.9)	3.74±0.42	0.011	4.670
Secondary osteoarthritis	58 (32.2)	3.52±0.42		
Tumor	1 (0.6)	4.57		
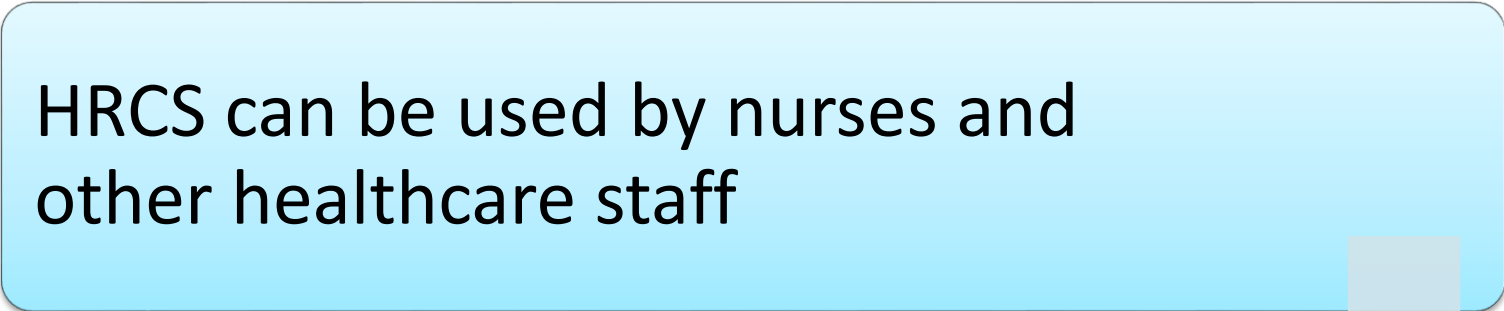
*t: ANOVA test

Conclusion
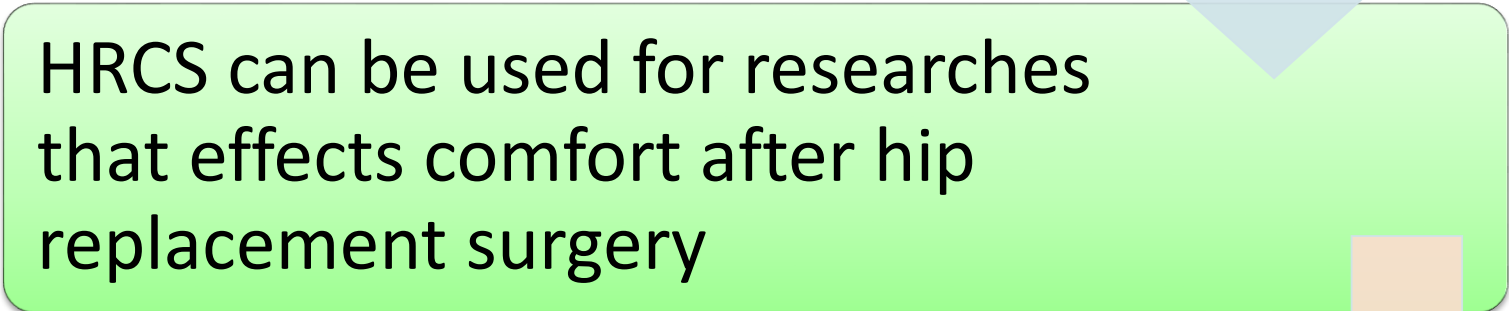
HRCS is a valid and reliable scale with 26 items to assess comfort after hip replacement surgery

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Suggestions

HRCS can be used by nurses and other healthcare staff

HRCS can be used for researches that effects comfort after hip replacement surgery

Other researchers can develope the HRCS for their countries

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