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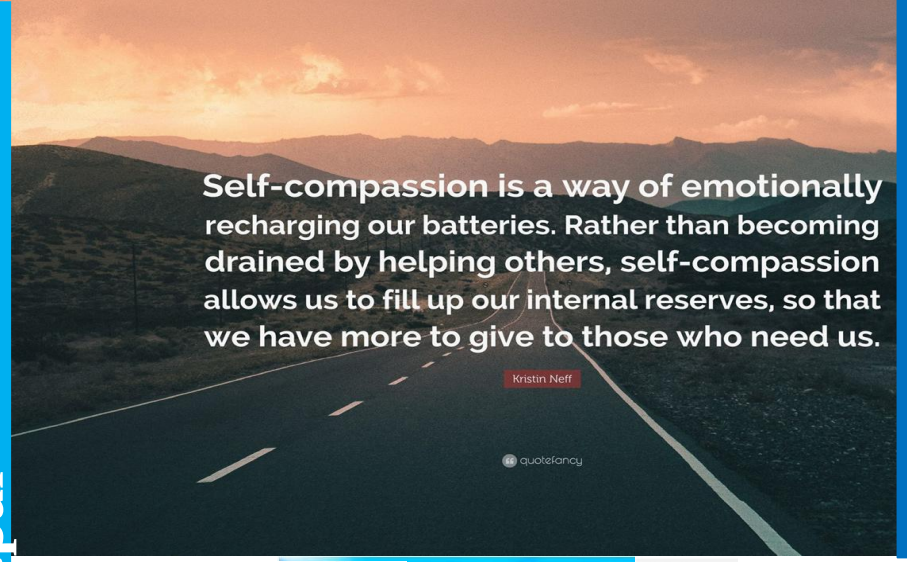

Development and Psychometric Evaluation of State Self-compassion Scale for Nepalese Older Adults With Chronic Diseases [SSCS-NOACD]: A Mixed Method Sequential Exploratory Study

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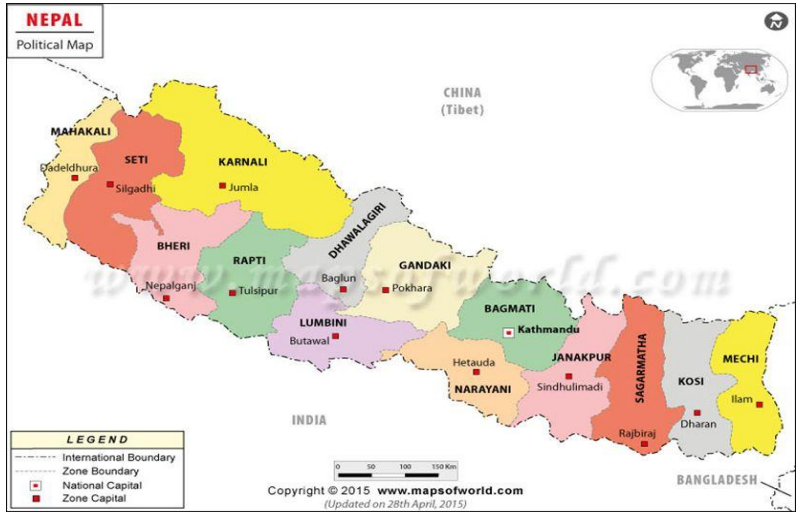
Outlines of Presentation

1. Background of the Study
2. Objectives
3. Methods
4. Results
5. Conclusions & Recommendation
6. References
7. Acknowledgement

Background of the Study

- **Global Geriatric Population: An increasing trend** (World Health Organization [WHO], 2021a). including in Nepal (Government of Nepal [GoN]; National Planning Commission [NPC], 2017; National Statistics Office, 2023).

- **80% of older adults aged ≥ 65 years** had at least one chronic disease and 68% of them had at least two or more (National Council on Aging [NCoA], 2021)



- Globally, **71% of mortality is** caused by **non-communicable diseases** (WHO, 2021b)

- **In Nepal, nearly half** of older adults had **at least one chronic health condition,** and **one in seven had multiple chronic conditions** (Yadav et al., 2021).

Self-Compassion

(Neff, 2003)

- **Some tools are available to measure self-compassion:** Gilbert et al. (2011); Neff (2003); Neff et al. (2021); Neff et al. (2020); Raes et al. (2011)
- All in **international contexts**, focusing on the **general** and **youth population**

- **Have not been focused** on older adults with chronic diseases in International and Nepalese contexts and culture

Objectives

1. To identify the suitable components of the **state self-compassion** of Nepalese older adults with chronic diseases

2. To develop a **scale of state self-compassion for Nepalese older adults with chronic diseases** (SSCS-NOACD)

3. To examine the **psychometric properties** of the newly developed SSCS-NOACD

Methods

- **Study Design**
  Sequential exploratory mixed-method research
- **Study Population and Setting**
  Older Adults; Kathmandu Metropolitan City [KMC]

Inclusion Criteria

- People aged **60 years and above residing** at KMC and who could **communicate**
- At **least one chronic disease**, identified by their present medical illness history and medical records

Exclusion Criteria

- **Severe psychiatric morbidities**, as revealed by their medical record book and history given by family members
- **Cognitive problems** revealed by the WHO Cognitive Decline Screening tool (WHO, 2020), and family members, and personal medical records

Phase 1: SSCS- NOACD Development

Step 1: Content Domains Determination

Step 2: Item pool Generation (Draft-1)

Step 3: Determine the Instrument Format (Draft 1)

Phase 2: Psychometric Evaluation of the SSCS- NOACD

Step 4: Content Validation of Initial Item Pool (Draft 1)

Step 5: Considering Validation Items Inclusion through Pre-testing (Draft 2) (n = 42)

Step 6: Administer Scale to the Development Sample (Draft 3) (n = 500)

Step 7: Item Evaluation (Draft 4)

Step 8: Scale Length Optimization (Draft 5)

Figure 1. Summary of the Eight Steps Scale Development and Psychometric Test Steps (DeVellis, 2017) of the SSCS- NOACD

Sampling and Sample Size

First Phase

- **Qualitative Approach**
  - ❖ Purposive Sampling
  - ❖ 15 Participants

Second Phase

- **Pretesting:** Convenience Sampling; 42 Older Adults
- **Field Test:** Quota Sampling; 500 Older Adults following reference by Hair et al. (2019)
- **Contrast Group Approach:** Convenience Sampling; 60 Older Adults

Data Collection Procedure

Ethical Aspects

Applied: all **ethical procedure**

Ethical Approval: Nepal Health Research Council

Data Collection Techniques

Data Collection: **Trained Research assistants** [RAs] & **Researcher**

Face-to-face interview: each older adult at their respective homes, and their feasible places

Data Collection Instruments

1st Phase

- Nepalese Version In-depth-Interview Guide

2nd Phase

- Newly Developed SSCS-NOACD
- 13-items Social Desirability Scale (Reynolds, 1982)

Data Management & Analysis

1. Editing: Field and Central Editing

2. Classification and **Coding Manually**, Double Checking of Data

3. Epi data Software: Double Data Entry, Data Validation, and Data Cleaning

4. Transfer Data to **SPSS Software Version 16** and **AMOS 21 version software**

5. Data Analysis (2nd Phase)

a. Exploratory Factor Analysis [EFA]
b. Confirmatory Factor Analysis [CFA]
c. Contrast Group Approach
d. Reliability Testing
e. Floor & Ceiling Effects
F. Correlation of SDS with SSCS-NOACD

Results

Phase II: Psychometric Evaluation of the SSCS-NOACD

(DeVellis, 2017)

Step 4: Reviewed the Initial Item Pool (Draft 1 SSCS-NOACD) by Experts

SSCS-NOACD: 26 Items (Draft-2) After Excluding 52 items

Content Validity

Seven Experts

Item Level Content Validity Index [I-CVI] = 1 for each item

[Reference: .78 or higher if more than 5 experts (Polit & Beck, 2021) should be retained in the scale.

Average Overall Scale Content Validity Index [S-CVI/Ave] = 1

[Reference: Score of .90 or greater: Excellent Content Validity (Polit & Beck, 2021)]

S-CVI/UA = 1

[Reference: SCVI/UA: 1 (Polit & Beck, 2021)]

Content Validity Ratio [CVR]: 1 for each Item

[Reference: Critical CVR = 0.99 for a panel size of **Seven Experts** (Lawshee, 1975)]

Face Validity

Ten Experts

Item Level Face Validity Index [I-FVI]:1

[Reference: 0.83 {Acceptable I-FVI} (Dalawi et al., 2023)]

Average Overall Scale Face Validity Index [S-FVI]**:** 1

[Reference: 0.9 {Acceptable S-FVI/Ave} (Dalawi et al., 2023)]

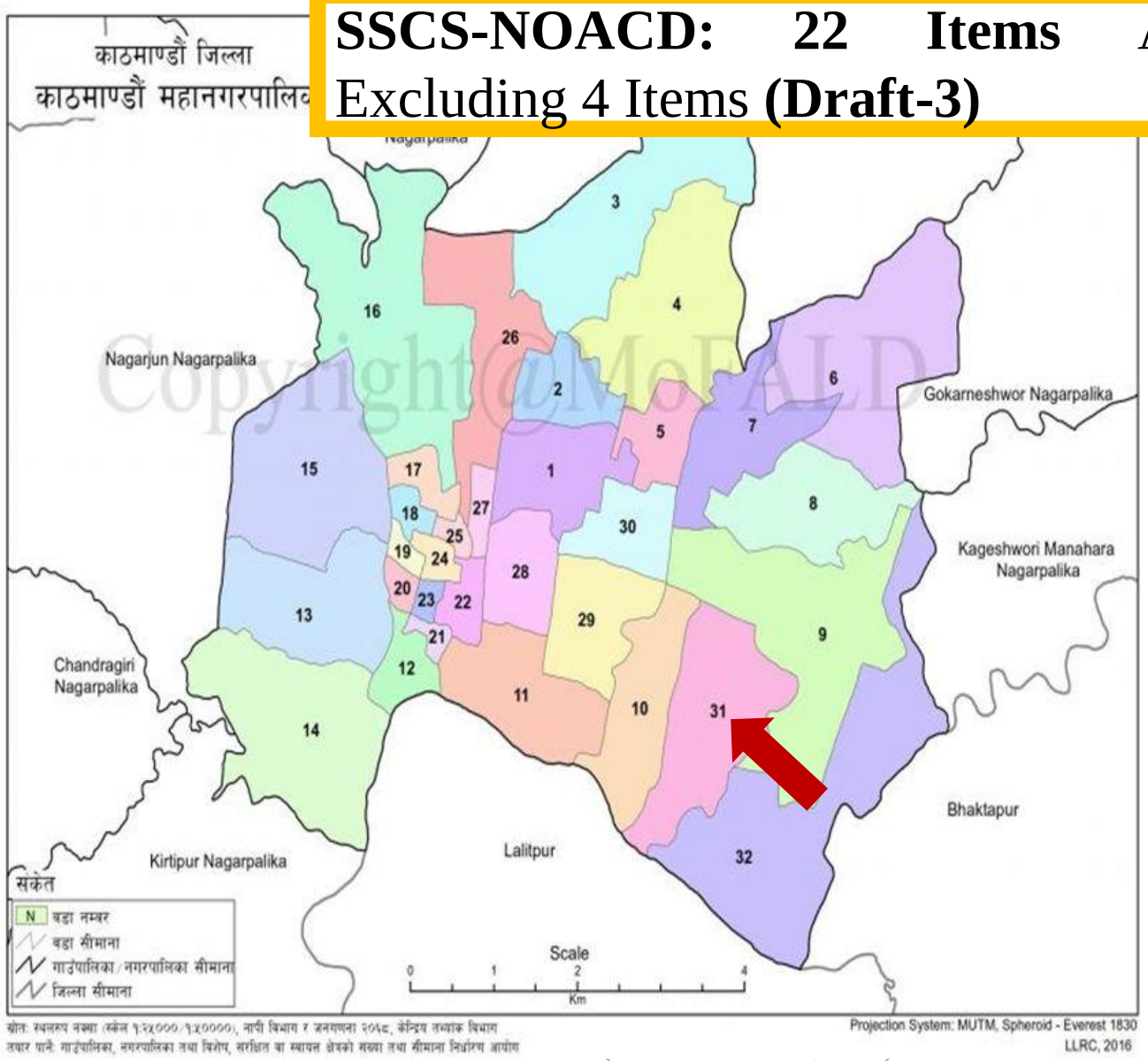
Step 5: Considered the Inclusion of Validated Items Through Pretesting (N = 42)

Cronbach's Alpha (α) = >.7

After Excluding 4 Items with Corrected Item-Total Correlation: <.02

- **Older adults** of KMC following the prior mentioned eligibility criteria
- **Used SSCS-NOACD: 26 Items (Draft-2)** and **SDS-Short Form** (Reynolds, 1982)

SSCS-NOACD: 22 Items After Excluding 4 Items **(Draft-3)**



Step 6: Administered Scale to the Development Sample (SSCS-NOACD-22 Items: Draft 3) (*N* = 500)

Data from 500 samples were randomly split into a **50/50 approach** (Orcan, 2018), i.e., **250 samples for EFA**, and **250 samples for CFA**

EFA & CFA, & Internal Consistency Reliability
(*N* = 500: 125 samples from each selected setting)

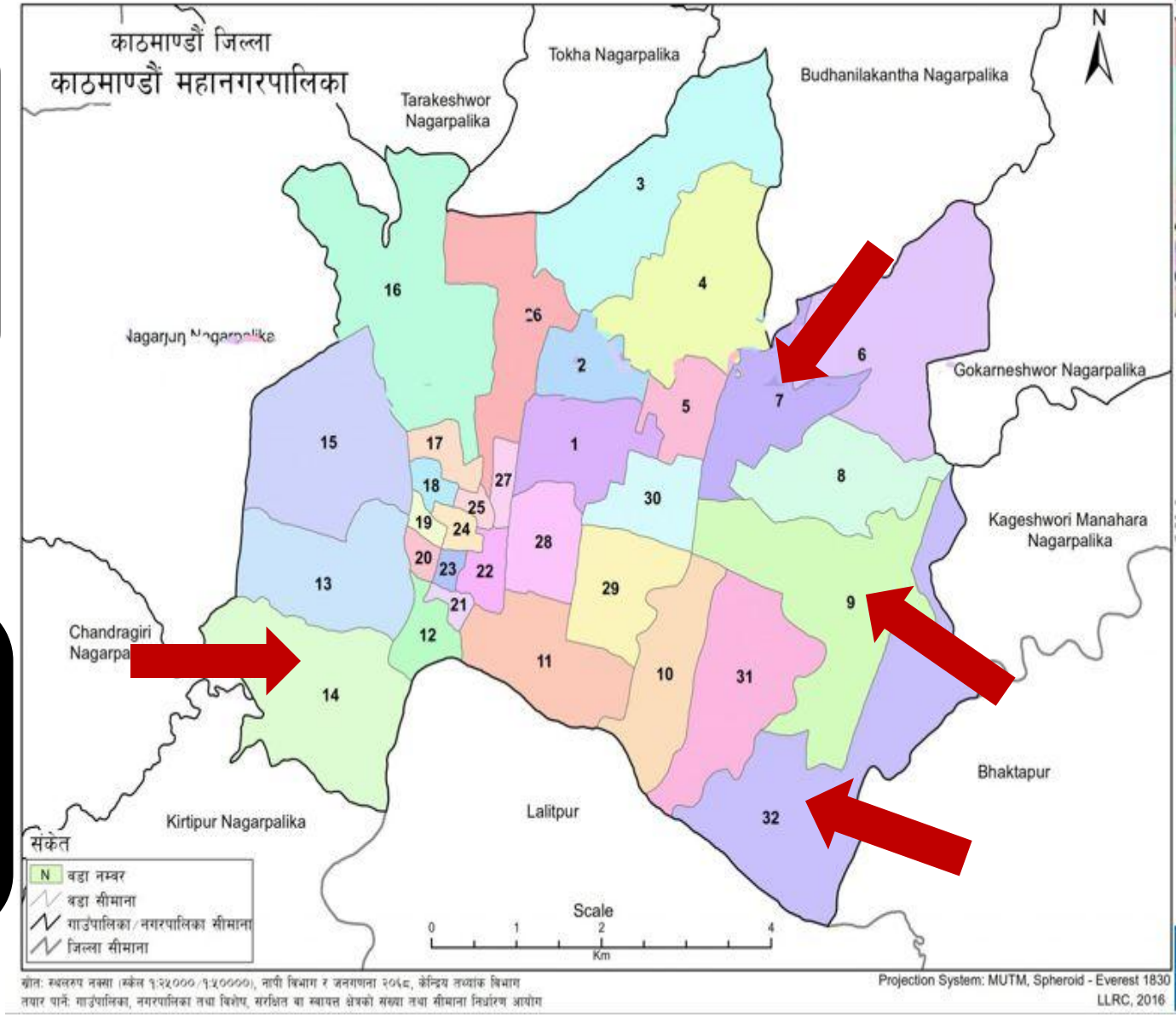
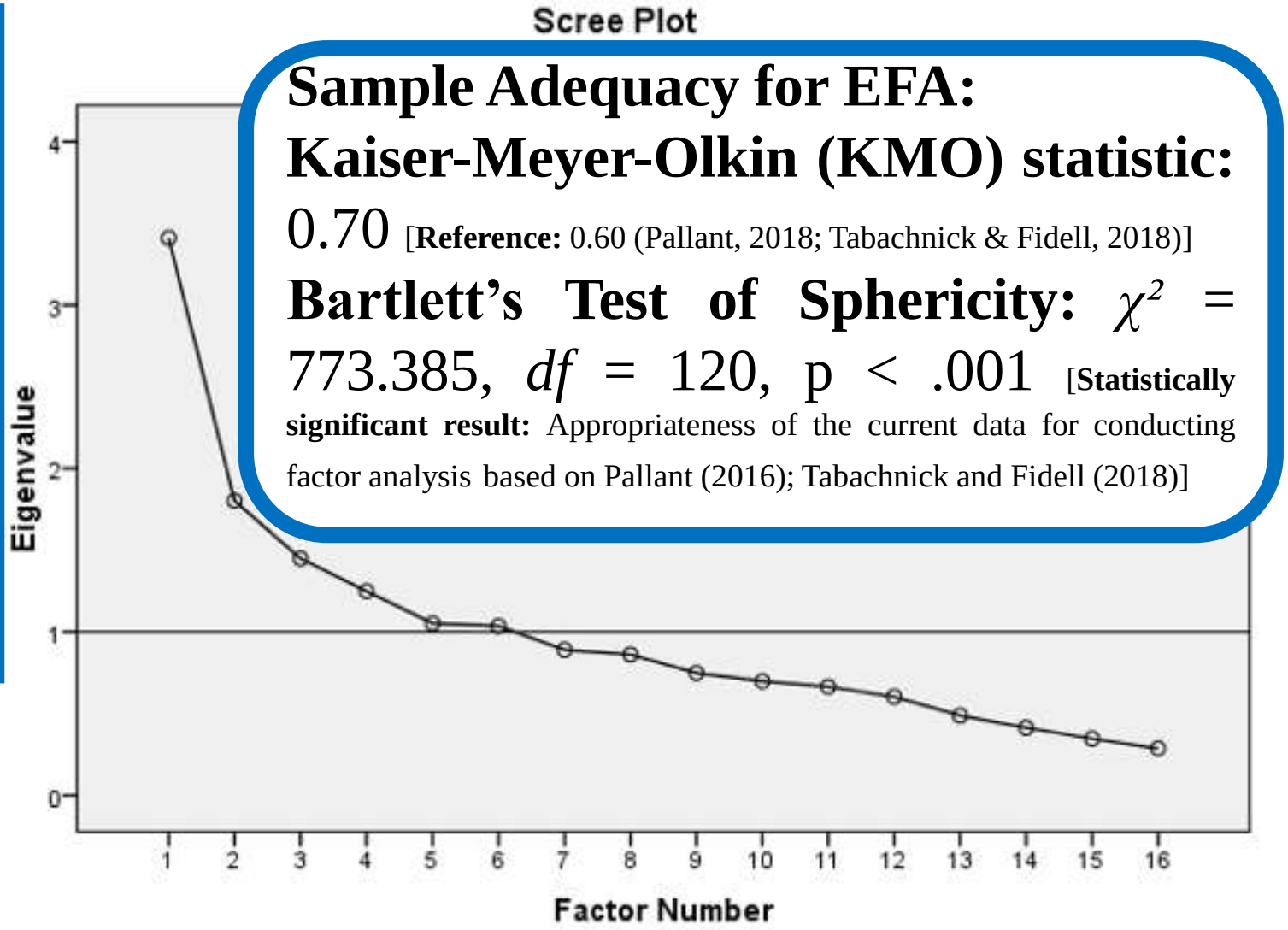


Table 1: Respondents' Sociodemographic Characteristics

Variables	EFA (N = 246)	CFA (N = 250)
Age Group in Completed Years	Mean, *SD* = 71.20, 7.60	Mean, *SD* = 71.58, 7.75
<65 Years	52 (21.1)	52 (20.8)
65-74	112 (45.5)	112 (44.8)
75-84	73 (29.7)	76 (30.4)
≥85	9 (3.7)	10 (4.0)
Gender		
Male	160 (65.0)	150 (60.0)
Female	86 (35.0)	100 (40.0)
Marital Status		
Married	153 (62.2)	174 (69.6)
Unmarried/Widow/Widower	93 (37.8)	76 (30.4)
Literacy Status		
Literate	163 (66.3)	152 (60.8)
Illiterate	83 (33.7)	98 (39.2)

Figure 1: Scree Plot of SSCS-16 (EFA Samples; N = 246)

- **Factor Extraction:** Principal Axis Factoring
- **Rotation Method:** Promax with Kaiser Normalization
- **Cumulative% of Variance** = 62.48
- **Factor Loadings:** 0.40 to 0.88 [Factor loadings above 0.20 based on Kellar & Kelvin, 2013)



Sample Adequacy for EFA: Kaiser-Meyer-Olkin (KMO) statistic: 0.70 [**Reference:** 0.60 (Pallant, 2018; Tabachnick & Fidell, 2018)]

Bartlett's Test of Sphericity: χ^2 = 773.385, *df* = 120, p < .001 [**Statistically significant result:** Appropriateness of the current data for conducting factor analysis based on Pallant (2016); Tabachnick and Fidell (2018)]

Note. **Multivariate Outliers:** Four samples were excluded from 250 samples prior to EFA.
Achieved Assumptions: Normality and Linearity tests. No Multicollienearity Based on Variance Inflation Factor [VIF]: 1.22 to 2.07; Tolerance: .45 to .85 [Acceptable limits, with tolerance values exceeding 0.1 and VIF values between 3 and 5 deemed acceptable (Hair et al., 2019)]

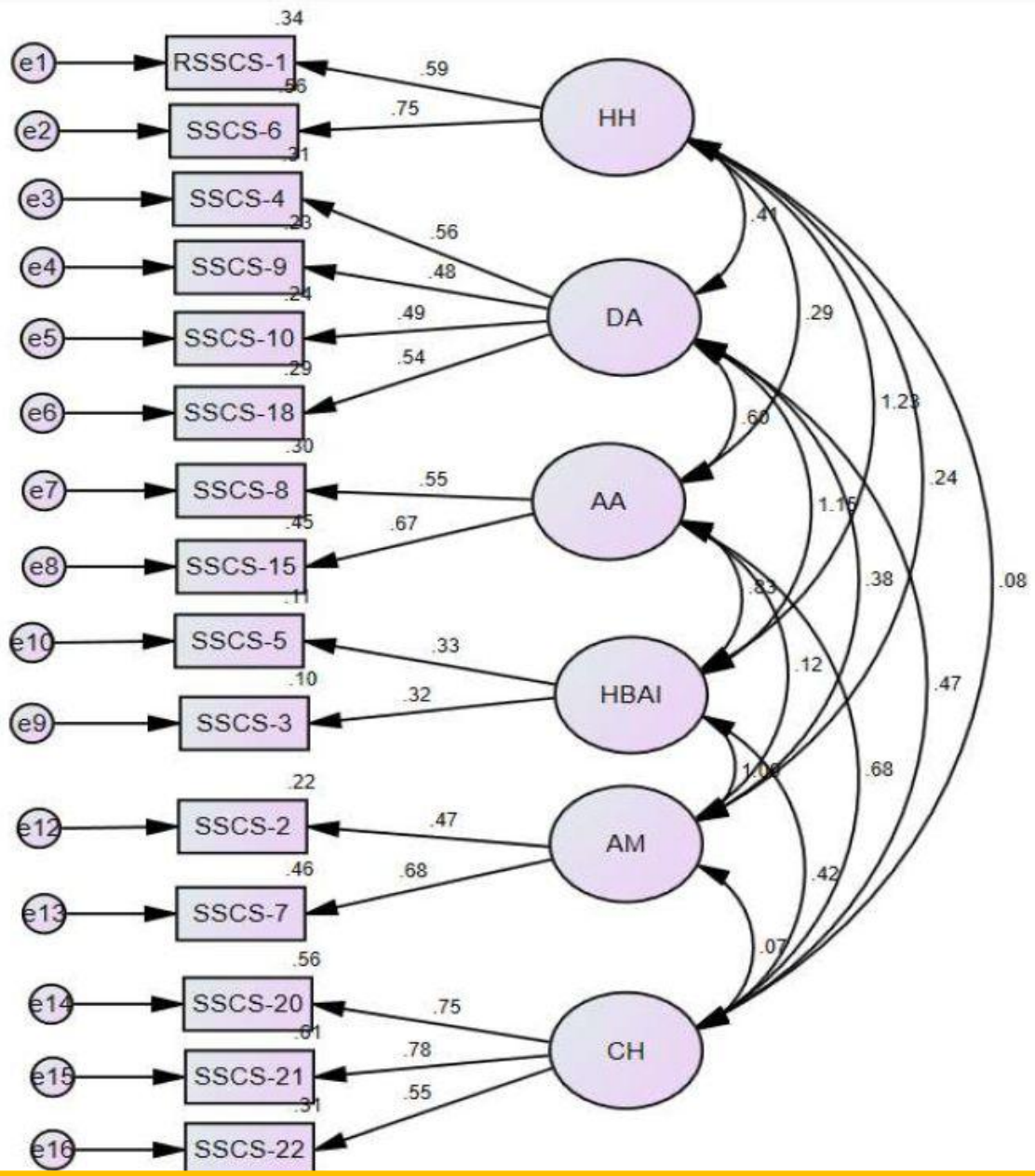
SSCS-NOACD-16 Items After Excluding 6 Items of Factor Loadings <.3 (Draft-4)

Figure 2. CFA of SSCS-NOACD (N = 250)

Factor Loadings: .32 to .78

Reliability Coefficient in terms of Cronbach's Alpha = 0.76 [Satisfactory to Good (Hair et al., 2021; Taber, 2017)]

Corrected Item-Total Correlation: Values range between 0.21 to 0.42 of each item (Acceptable if value 0.20 based on Kline, 1986)



SSCS-NOACD: 15 Items After Excluding One item (Draft-5)

Note. **Achieved Assumptions: Multivariate Outliers; Normality and Linearity tests; No Multicollinearity** Based on **Variance Inflation Factor [VIF]:** 1.21 to 1.81; **Tolerance:** .55 to .82 [Acceptable limits, with tolerance values exceeding 0.1 and VIF values between 3 and 5 deemed acceptable (Hair et al., 2019)]

Table 2. Model Fit Statistics of the State Self-compassion Scale for Older Adults with Chronic Diseases in CFA Samples (N = 250)

Statistical Tests	Hypothesized Model **Draft-5**	Reference Criteria of Goodness of Fit Value **Good to Acceptable Fit**
Absolute Fit Indices		
Chi-square	(112.918, p = .003)	> .05 [As cited in Sathyanarayana & Mohanasundaram, 2024]
Normed Chi-Square ($\chi 2$: *df* ratio)	(112.918: 75 = 1.506)	2:1 [As cited in Sathyanarayana & Mohanasundaram, 2024]
GFI	.944	> 0.90 [As cited in Sathyanarayana & Mohanasundaram, 2024]
AGFI	.911	>.90 [As cited in Sathyanarayana & Mohanasundaram, 2024]
RMR	.058	Lower values indicate better fit [As cited in Sathyanarayana & Mohanasundaram, 2024]
SRMR	.053	≤ .08 [As cited in Sathyanarayana & Mohanasundaram, 2024; Tabachnick & Fidell, 2018]
RMSEA [95% CI], PCLOSE	.045 (.027, .061], .671	< .05 to .08 [As cited in Sathyanarayana & Mohanasundaram, 2024]
Incremental Fit Indices		
CFI	.939	>.90 [As cited in Sathyanarayana & Mohanasundaram, 2024]
NFI	.844	>.95 [Byrne, 2016; Hair et al., 2019]; Marginal Fit >.8 (Khairi et al., 2021)
NNFI [TLI]	.914	>.90 [Sathyanarayana & Mohanasundaram, 2024]

Marginal Fit

Table 3. Inter-factor Correlation of SSCS NOACD-15 in CFA Samples (N = 250)

Variables	1	2	3	4	5	6	7
1. HH	1						
2. DA	.24***	1					
3. AA	.15*	.35***	1				
4. HBAI	.42***	.39***	.28***	1			
5. AM	.15*	.21**	.07	.35***	1		
6. CH	.08	.34***	.46***	.18**	.07	1	
7. SSCS	.49***	.79***	.62***	.63***	.40***	.66***	1

Note. **AA:** Acknowledgement and Acceptance. **AM:** Adherence to Medicine. **CH:** Common Humanity. **HBAI:** Health Behavior Adherence and Independence. **HH:** Healthy Habits. **DA:** Different Activities.

Table 4. Relationship Between Social Desirability and SSCS-NOACD-15 Among CFA Samples

(N = 250)

Variables	1	2
1. Total Scores of SDS-13	1	
2. Total Scores of SSCS-NOACD-15	.14 (p = .032)	1

[Strength of the relationship: Minimal based on Cohen (1988)]

- **Overall Scores of SSCS-NOACD-15:** No Floor or Ceiling Effects
- **Floor Effect:** Two Items Out of 15 Items
- **Ceiling Effects:** 13 Items Out of 15 Items

[When 15% or more of participants receive the lowest score available on a scale, indicating a lack of sensitivity at the lower end (Floor Effects), and at the upper end (Ceiling Effects) (Terwee et al., 2006).

Step 7: Evaluated Item (Draft 5) through Contrast Group Approach

Table 5: Mean Differences in Respondent's Total Self-Compassion Score (SSCS-NOACD-15) Based on Socio-demographic Characteristics [a, b] ***(N = 60)***

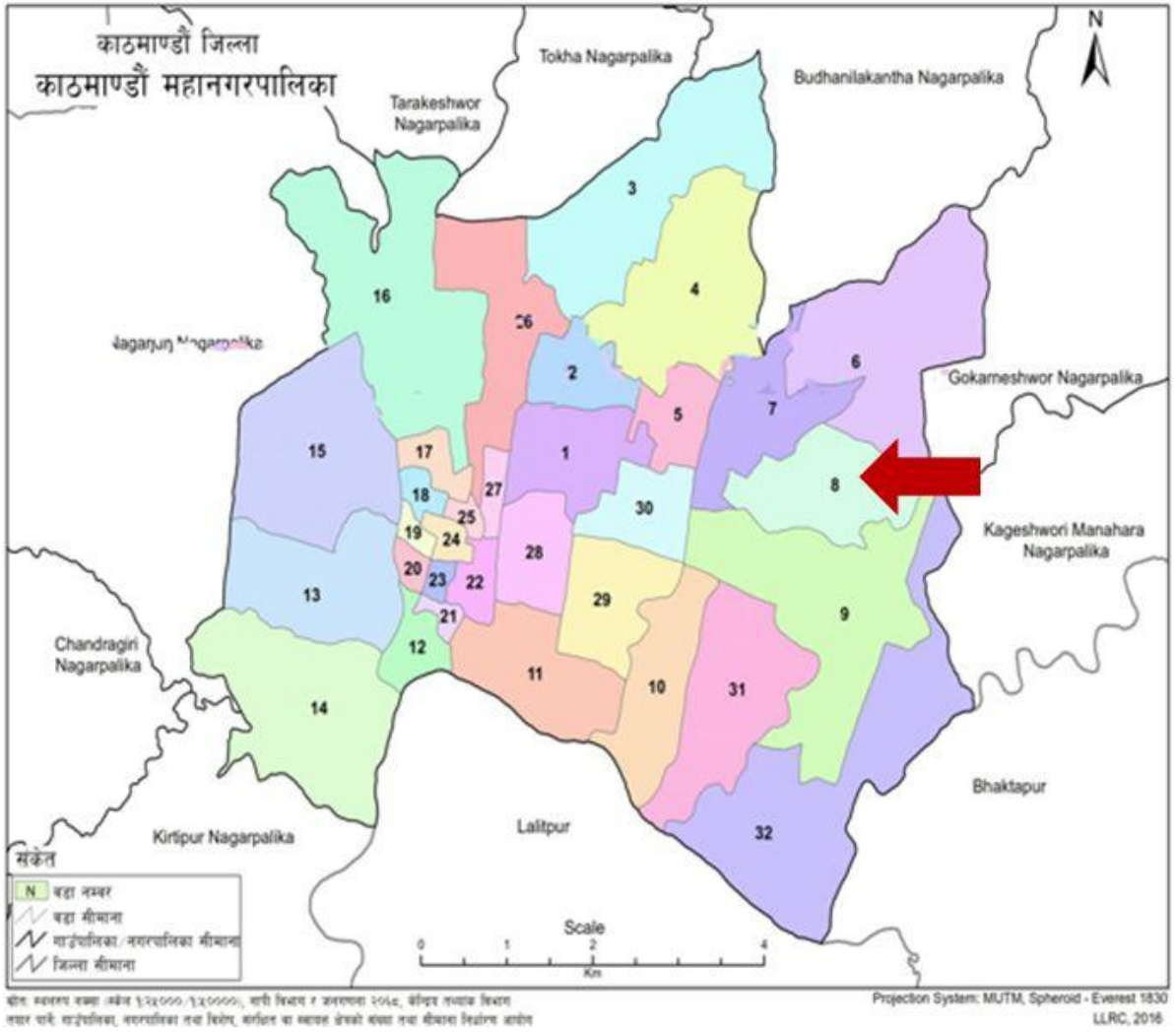
Variables	Self-compassion Score			Mean Difference	*t*-value	*p*-value	95% CI	Eta-Square(η^2)
	N	M	SD					
Marital Status								
Married	30	42.90	6.44	5.43	2.38	0.023*	[.87, 10.00]	0.09
Unmarried/ Widower/Widow	30	37.47	10.71					
Literacy Status								
Illiterate	42	36.11	10.91	5.82	2.33	0.021*	[.83, 10.81]	0.09
Literate	18	41.93	7.84					
Parental Status								
Having Children	56	41.18	8.33	14.93	3.42	.001**	[6.18, 23.68]	0.17
Not Having Children	4	26.25	10.44					

Cronbach's Alpha (α) = .81

Note. [a]: Independent *t*- test. [b]: Equality of variance assumed. * = *p*-value significant at ≤ 0.05 level. ** = *p*-value significant at < 0.01 level. $\eta^2 = t^2/t^2+(N1+N2-2)$ (Pallant, 2016)

Step 8: Scale Length Optimization (Draft 5)

Finalized SSCS-NOACD with 15 items



Conclusion: SSCS-NOACD-15

- **Valid:** Face validity confirmed; construct validity supported by EFA, CFA, and contrast group analysis (six-factor model)
- **Reliable:** Demonstrated satisfactory internal consistency
- **Minimal bias:** Weak negative association with social desirability
- **Sensitive:** No significant floor or ceiling effects (overall scale)

Take Home Message

- **Useful:** Nurses and other healthcare professionals
- **Way Forward:** Necessary to Further validation across broader settings and larger, more diverse populations to enhance generalizability

Acknowledgement

- **University Grant Commission** for the Financial Support
- **Assoc. Prof. Dr. Busakorn Punthmatharith**; **Asst. Prof. Dr. Umaporn Boonyasopun**; and **Prof. Dr. Praneed Songwathana**; Prince of Songkla University, Faculty of Nursing, Hat Yai, Thailand
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- All the **Experts** for Content and Face Validation, and Translation Procedure
- All the **Research Assistants**
- All the **Older Adults** of KMC

Sample Questions

State Self-Compassion Scale for Older Adults with Chronic Disease-15 [SSCS-NOACD-15)

Instructions: We show compassion to others and help others when they face problems. You may also be facing many health problems and challenges due to illness. I request you to answer the following questions based on how often do you engage in the following activities by being self-compassionate if you were experiencing a similar problem.

S.N.		Never	Rarely	Sometimes	Often	Always
1.	SSCS-1: How often do you perform activities that could harm your health? [a]					
2.	SSCS-2: How often do you follow your prescribed medication schedule as advised by the doctors?					
3.	SSCS-3: How often do you follow the dietary regimen the doctor/nutritionist/dietician prescribes?					
4.	SSCS-4: How often do you perform physical activities daily?					
5.	SSCS-5: How often do you take additional care as needed when experiencing health problems?					
6.	SSCS-6: How often do you adopt healthy habits?					
7.	SSCS-7: How often do you make sure (check) that there is any medicine you need to take every day at home?					

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"Rather than harshly judging oneself for personal shortcomings, the self is offered warmth and unconditional acceptance." (Kristine Neff)

THANK YOU

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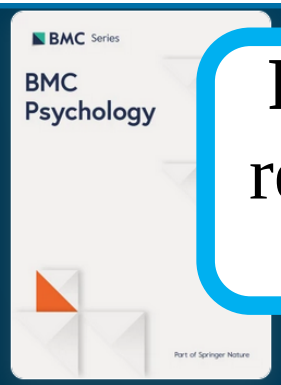

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Sections | References

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- Her work focuses on advancing nursing education, compassionate care, and geriatric health, with **multiple publications** and **prestigious academic awards**.