WONCA 2024

APR Conference

21 – 24 August | Singapore

In conjunction with Singapore Primary Care Conference 2024

The Chinese Version of Patient Experience with Treatment and Self-management: Translation and Validation in Patients with Multimorbidity in Primary Care

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Disclosures

I have no financial disclosure and no conflicts of interest related to the presented content of this speech.

Background

Multimorbidity in primary care

- Multimorbidity is defined as the presence of two or more chronic conditions.

- The prevalence of multimorbidity in primary care ranged from 12.9% to 95.1% globally. The prevalence was from 25.4% to 54% in Hong Kong and 81.2% in mainland China.

- Patients suffering from multimorbidity often face issues such as polypharmacy, high healthcare costs, conflicting treatment recommendations, and the need for coordinated care across different specialities.

- By understanding the patient experience in this population, healthcare professionals can tailor treatment regimens to patients' realities, enhance adherence, and improve overall patient well-being and outcomes.

Background

Patient Experience with Treatment and Self-management Version 2.0 (PETS vs. 2.0)

Medical information	Role and social activity limitations
Medications	Physical and mental exhaustion
Medical appointments	Difficulty with healthcare services
Monitoring health	Medical & healthcare expenses
Interpersonal challenges	And use of medical equipment
Exercise/physical therapy	Bother due to reliance on medicine
Diet	Bother due to side effects of medicine

- Scores range from 0-100.
- Higher scores indicate greater treatment burden.

- Developed by Eton et al. in 2016.
- 14 domains with 60 items.
- Comprehensive evaluation of the patient's experience with treatment and self-management.
- Norwegian, Swahili, and Spanish versions available.
- Widely used in cross-sectional and longitudinal studies in Western countries.

Objectives

1. To translate PETS vs. 2.0 into Chinese;

2. To validate the Chinese version of PETS vs. 2.0 in patients with multimorbidity in primary care.

Hypothesis

The Chinese version of PETS vs. 2.0 would have similar psychometric properties and interpretability in treatment burden as the original scale in English-speaking populations.

Methods

Participants

Subjects with multimorbidity were recruited from three general out-patient clinics (GOPC) in New Territories East in Hong Kong.

Inclusion criteria

1) being 18 years and above;
2) having two or more doctor-diagnosed chronic diseases lasting for at least six months;
3) being able to understand Chinese;
4) being personally willing to participate after an informed consent process.

Sample size calculation

- 5-10 participants per question, a sample size of 300-600 was needed.
- Sample size of 300 corresponds to good, and 500 to very good (Comrey et al's graded scale).

Methods

Translation

- Functional Assessment of Chronic Illness Therapy (FACIT) Translation, Formatting, and Testing Guidelines (FACIT.org)

1. Forward and back-translation;
2. Review by FACITtrans and revision;
3. Cognitive debriefing in 20 primary care; patients with multimorbidity;
4. Finalization.

Results

Participant characteristics

- Reached 1778 primary care patients

- Recruited 502 participants

- Mean age 64.9 years (SD=10.4)

Characteristics	n	%
Age		
<60	106	21.1
60-69	221	44.0
70+	175	34.9
Gender		
Male	220	43.8
Female	282	56.2
Marriage		
Married	367	73.1
Unmarried	135	26.9
Employment		
Employed	150	29.9
Unemployed	352	70.1
Education		
Primary school or below	140	27.9
Middle school	280	55.8
Preparatory or above	82	16.3
Number of chronic diseases		
2	172	34.3
3	145	28.9
≥4	185	36.9

Results

Concurrent validity

Spearman's correlations between each domain of PETS and

- Quality of life (European Quality of Life Questionnaire, EQ-5D)

- Frailty (Clinical Frailty Scale, CFS)

- Depression (9-item Patient Health Questionnaire, PHQ-9)

Domains of PETS vs. 2.0	n[#]	EQ-5D	CFS	PHQ-9
Medical information	501	-0.32***	0.20***	0.29***
Medications	493	-0.22***	0.17***	0.24***
Medication reliance bother	494	-0.30***	0.12**	0.35***
Medication side effects bother	494	-0.31***	0.22***	0.32***
Medical appointments	502	-0.27***	0.17***	0.31***
Monitoring health	491	-0.23***	0.18***	0.29***
Diet	330	-0.18**	0.12*	0.25***
Exercise or physical therapy	345	-0.22***	0.23***	0.33***
Medical equipment	388	-0.25***	0.18***	0.27***
Relationships with others	502	-0.36***	0.19***	0.45***
Medical and healthcare expenses	487	-0.33***	0.13**	0.36***
Difficulty with healthcare services	486	-0.35***	0.21***	0.34***
Role and social activity limitations	502	-0.38***	0.23***	0.41***
Physical and mental exhaustion	502	-0.47***	0.25***	0.68***

*p<0.05, **p<0.01, ***p<0.001. [#] Number of participants with available data.
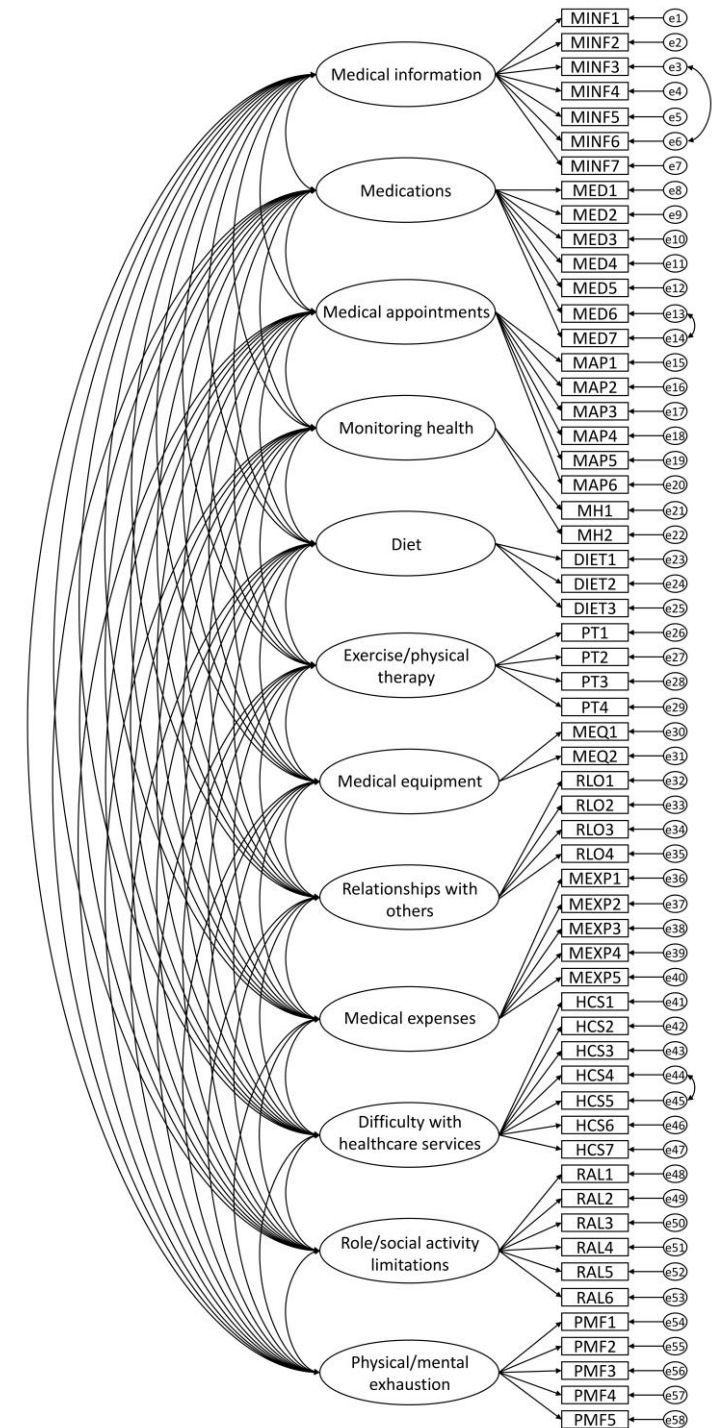
Results

Internal reliability

- The Cronbach's alpha coefficients of the subscales of the PETS ranged from 0.67 to 0.93.

- All the coefficients were no less than 0.7, except for diet (alpha=0.67).

Domain	Cronbach's alpha
Medical information	0.86
Medications	0.93
Medical appointments	0.89
Monitoring health	0.76
Diet	0.67
Exercise/physical therapy	0.76
Medical equipment	0.70
Relationships with others	0.83
Medical expenses	0.89
Difficulty with healthcare services	0.70
Role/social activity limitations	0.92
Physical/mental exhaustion	0.89

Results

Construct validity (Confirmatory factor analysis)

- Hypothesized factor structure identified by Lee et al (12 multi-item domains with 58 items).

- Robust maximum likelihood method.

- Original model fit: $\chi 2/df$ =2.241; RMSEA=0.041; SRMR=0.061; CFI=0.898; TLI=0.890.

- Model fit after adding correlated errors between items within a domain suggested by modification indices: ($\chi 2/df$ =1.741; RMSEA=0.038; SRMR=0.058; CFI=0.911; TLI=0.903).

- All standardized factor loadings were 0.30 or above after adjustment (0.30 to 0.94).

Results

Construct validity (Factor correlations of the 12-factor model)

	MINF	MED	MAP	MH	DIET	PT	MEQ	RLO	MEXP	HCS	RAL	PMF
MINF	1.00											
MED	0.60	1.00										
MAP	0.60	0.78	1.00									
MH	0.69	0.68	0.69	1.00								
DIET	0.35	0.28	0.32	0.41	1.00							
PT	0.24	0.22	0.25	0.48	0.65	1.00						
MEQ	0.49	0.68	0.63	0.71	0.22	0.17	1.00					
RLO	0.41	0.44	0.51	0.46	0.42	0.37	0.31	1.00				
MEXP	0.44	0.35	0.38	0.44	0.33	0.29	0.37	0.30	1.00			
HCS	0.55	0.45	0.64	0.55	0.51	0.38	0.46	0.47	0.56	1.00		
RAL	0.37	0.22	0.33	0.41	0.38	0.35	0.22	0.57	0.35	0.50	1.00	
PMF	0.41	0.30	0.38	0.47	0.42	0.33	0.25	0.58	0.41	0.50	0.65	1.00

DIET: Diet; HCS: Difficulty with healthcare services; MAP: Medical appointments; MED: Medications; MEQ: Medical equipment; MEXP: Medical expenses; MH: Monitoring health; MINF: Medical information; PMF: Physical/mental exhaustion; PT: Exercise/physical therapy; RAL: Role/social activity limitations; RLO: Relationships with others.

Conclusions

- The Chinese version of PETS vs. 2.0 was found to be a reliable and valid tool for assessing perceived treatment burden in patients with multimorbidity in primary care.

- All domains and items in the original questionnaires were retained.

- It can be used by healthcare professionals and researchers with a health background to evaluate patient treatment burden.

Acknowledgement

- Research Team
  **JC School of Public Health and Primary Care (JCSPHPC),
  The Chinese University of Hong Kong (CUHK)**
  - Prof. Samuel Wong (Director & Professor, JCSPHPC, CUHK)
  - Dr. Daisy Dexing Zhang (Research Asistant Professor, JCSPHPC, CUHK)
  - Dr Violet Zijun Xu (Postdoc, JCSPHPC, CUHK)

  The George Institute for Global Health
  - Dr. William Yang Zhao (Senior Research Fellow, TGI)
  - Prof. David Peris (Chief Scientist, TGI; Professor, Faculty of Medicine, UNSW Sydney)
  - Dr Arpita Ghosh (Head Biostatistics and Data Science, TGI)

- GOPCs (Lek Yuen, Ma On Shan, Fanling), New Territories East Cluster (NTEC), Hospital Authority Hong Kong SAR

- All the patients in the study