

The Pictorial Fit-Frail Scale—Malay version (PFFS-M): reliability and validity testing in Malaysian primary care

Sally S. Ahip^{1,2,*}, Sazlina S. Ghazali^{3,4}, Olga Theou^{2,5}, Azah A. Samad⁶, Sabrina Lukas⁷, Ummu K. Mustapha⁸, Mark Q. Thompson², Renuka Visvanathan^{2,9}

¹Kota Samarahan Health Clinic, Sarawak, Malaysia

²National Health and Medical Research Council Centre of Research Excellence, Adelaide Medical School and Adelaide Geriatrics Training and Research with Aged Care (GTRAC) Centre, Faculty of Health and Medical Sciences, The University of Adelaide, Adelaide, SA, Australia

³Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia

⁴Malaysian Research Institute on Ageing (MyAgeingTM), Universiti Putra Malaysia, Malaysia

⁵Physiotherapy and Medicine, Dalhousie University, Halifax, Dalhousie, Canada

⁶Shah Alam Section 7 Health Clinic, Selangor, Malaysia

⁷Universiti Malaysia Sarawak, Sarawak, Malaysia

⁸Dengkil Health Clinic, Selangor, Malaysia

⁹Aged and Extended Care Services, The Queen Elizabeth Hospital and Basil Hetzel Institute, Central Adelaide Local Health Network, Adelaide, SA, Australia

*Corresponding author: Kota Samarahan Health Clinic, Jalan Datuk Mohammad Musa, 94300 Kota Samarahan, Sarawak, Malaysia.

E-mail: sally.ahip@gmail.com

Background: This study investigated the reliability and convergent validity of the PFFS-Malay version (PFFS-M) among patients (with varying educational levels), caregivers, and health care professionals (HCPs). PFFS-M cutoffs for frailty severity were developed.

Methods: This is a cross-sectional study from 4 primary care clinics where 240 patients aged >60 years and their caregivers were enrolled. Patients were assigned to a nurse or a health care assistant (HCA) for 2 separate PFFS-M assessments administered by HCPs of the same profession, as well as by a doctor during the first visit (inter-rater reliability). Patients were also administered the Self-Assessed Report of Personal Capacity & Healthy Ageing (SEARCH) tool, a 40-item frailty index, by a research officer. The correlation between patients' PFFS-M scores and SEARCH tool scores determined convergent validity. Patients returned 1 week later for PFFS-M reassessment by the same HCPs (test-retest reliability). Caregivers completed the PFFS-M for the patient at both clinic visits. Classification cut-points for the PFFS-M were derived against frailty categories defined through the SEARCH tool.

Results: The inter-rater (intraclass correlation coefficient [ICC] = 0.92 [95% CI, 0.90–0.93]) and test-retest (ICC = 0.94 [95% CI, 0.92–0.95]) reliability between all raters was excellent, including by patients' education levels. The convergent validity was moderate ($r = 0.637$, $p < 0.001$), including for varying educational background. PFFS-M categories were identified as: 0–3, no frailty; 4–5, at risk of frailty; 6–8, mild frailty; 9–12, moderate frailty; and >13, severe frailty.

Conclusion: PFFS-M is a reliable and valid tool with frailty severity scores now established for use of this tool in primary care clinics.

Key words: frailty, geriatric assessment, preventative care

Introduction

Globally, population aging is being experienced in the developing and developed world, attributable to improvements in health care systems, declining fertility, and lower mortality rates.¹ Many low- and middle-income countries (LMICs) are facing the challenges of adapting their health and social care services to better meet the health needs of ageing populations.^{2,3}

Frailty is a state of reduced physiological reserve and increased vulnerability to adverse health outcomes.⁴ From a policy and public health perspective, frailty is prevalent and of growing significance to LMICs because it places an increased demand on health resources.³ However, frailty is dynamic and improvement is possible through early identification and management.⁵ Frailty screening improves the opportunity for timely intervention.⁴

The Pictorial Fit-Frail Scale (PFFS) is a frailty screening tool developed specifically using pictograms rather than words to overcome language and health literacy barriers.⁶ The PFFS is reliable when administered by physicians and nurses within specialist geriatric medicine ambulatory settings^{7,8}; however, the tool is yet to be validated in the primary care setting of a LMIC. The PFFS is simple and can be completed by patients, caregivers and HCPs in under 5 min.⁸

Several challenges exist to the implementation of frailty screening in primary care, including a lack of tertiary skilled health care workers and the low health literacy of patients and caregivers.² Malaysia is a LMIC that operates a widely distributed network of publicly funded primary care clinics servicing patients of all ages; however, there is currently no systematic approach to frailty screening.⁹ Nontertiary qualified health care assistants (HCAs) undertake clinical