The Journal of Nursing Research ■ VOL. 28, NO. 1, FEBRUARY 2020

OPEN

Translation, Adaptation, and Validation of the Malay Version of the Cardiac Rehabilitation Barriers Scale

Li Sze CHAI[1] • Sidiah SIOP[2]* • Zabidah PUTIT[2] • Lily LIM[1] • Azylina GUNGGU[1] • Suk Fong TIE[3]

Downloaded from https://journals.lww.com/jnr-twna by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3OIGlyw74G19QX5UKXN+Ao6U2T5j/uPRgLkZ9HbeyMh on 02/02/2020

ABSTRACT

Background: The rate of cardiac rehabilitation attendance at the Sarawak Heart Centre was identified as very low, and the reason has not been investigated. A scale is needed to identify barriers to participation in cardiac rehabilitation among patients with heart disease in Sarawak, Malaysia.

Purpose: The purposes of this study were to translate, adapt, and evaluate the Malay-language version of the Cardiac Rehabilitation Barriers Scale (CRBS) and to measure the psychometric properties of the Malay-version CRBS to justify its use in Sarawak.

Methods: A forward and back-translation method was used. Content validity was assessed by three experts. Psychometric testing was conducted on a sample of 283 patients who were eligible to participate in cardiac rehabilitation. A construct validity test was performed using factor analysis. Cronbach's alpha was used to examine the internal consistency. The test–retest reliability was calculated using the intraclass correlation coefficient on 22 participants. Independent-samples *t* test and analysis of variance were conducted to assess the criterion validity. Mean scores for total barriers of the scale and each individual factor were compared among the different patient characteristics.

Results: The Malay-version CRBS showed an item level of content validity index of 1.00 for all of the items after improvements were made based on the experts' suggestions. The factor analysis, using principal component analysis with direct oblimin rotation, extracted four factors that differed from the original study. These four factors explained 52.50% of the cumulative percentage of variance. The Cronbach's alphas ranged from .74 to .81 for the obtained factors. Test–retest reliability was established using the intraclass correlation coefficient value of .78. Criterion validity was supported using the significant differences in the mean score for total barriers among educational level, driving distance, travel time to the hospital, and cardiac rehabilitation attendance.

Conclusions/Implications for Practice: This study found the Malay-version CRBS to be a valid and reliable instrument. It may be used with inpatients to identify barriers to participation in cardiac rehabilitation to promote rehabilitation attendance and improve patient care.

KEY WORDS:
translation, adaptation, psychometric testing, Cardiac Rehabilitation Barrier Scale, Malay.

Introduction

After in-hospital treatment, survivors of coronary heart disease (CHD) face substantial risks of recurrent cardiac event and death (Thune et al., 2011). Cardiac rehabilitation (CR) is an integral component in the management of CHD. The benefits of CR have been shown in a number of studies. Participation in CR has been associated with a 58% reduction in mortality (Beauchamp et al., 2013) and a significant reduction in hospital readmissions (Dunlay, Pack, Thomas, Killian, & Roger, 2014; Martin et al., 2012), which in turn may lower the overall costs of healthcare (Dendale, Hansen, Berger, & Lamotte, 2008). Despite these benefits, attendance rates as low as 7% and relatively high discontinuation rates of 8%–23% in CR programs have been reported (De Vos et al., 2013; Poh et al., 2015).

In an effort to improve CR attendance in Sarawak, a scale is necessary to address relevant patient and healthcare factor-related barriers. Sarawak, the largest state in Malaysia with an area of 124,450 km^2 and a population of 2.14 million, is located on Borneo Island (Department of Statistics Malaysia, 2017). Sarawak Heart Centre is the only government heart center in the state. Sarawak has a low catheterization laboratory to population ratio of 0.019 per 10,000, and the Sarawak Heart Centre manages about 7.2% of the total number of patients with heart disease in Malaysia (Wan Azman & Sim, 2015). The center is also the only government hospital in Sarawak to provide structured outpatient CR care at no cost to patients. However, an unpublished rehabilitation staff record from 2015 indicates suboptimal attendance in the outpatient CR program, with an attendance rate of 37.4% for all patients who were eligible to participate.

[1]*MSc, RN, Lecturer, Faculty of Medicine and Health Sciences, Department of Nursing, Universiti Malaysia Sarawak, Malaysia* • [2]*PhD, RN, Associate Professor, Faculty of Medicine and Health Sciences, Department of Nursing, Universiti Malaysia Sarawak, Malaysia* • [3]*MSc, RN, Matron, Sarawak Heart Centre, Malaysia.*

Copyright © 2019 The Authors. Published by Wolters Kluwer Health, Inc. All rights reserved.

This is an open access article distributed under the Creative Commons Attribution License 4.0 (CCBY), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.