Psychometric evaluation of the Perceived Barriers to Health Care-seeking Decision in Chinese patients with acute coronary syndromes

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ABSTRACT

Objectives: This study aimed to develop the Chinese version of the Perceived Barriers to Health Care-seeking Decision (PBHSD-C) and evaluate its psychometric properties in Chinese patients with acute coronary syndromes (ACS).
Background: The assessment of the level of perceived barriers in the care-seeking trajectory of ACS patients is important for the understanding of its impact on pre-hospital delay in seeking care.
Methods: The psychometric properties of PBHSD-C were evaluated among 114 ACS patients in the cardiac unit of two major hospitals in Hong Kong.
Results: The Content Validity Indexes were ranged from .88 to 1. The Cronbach's alpha of the PBHSD-C was .74. The intraclass correlation coefficients of all items were above .80. The convergent validity of the PBHSD-C was also supported.
Conclusion: The PBHSD-C is reliable and valid to be used to assess the level of perceived barriers in the care-seeking of Chinese patients with ACS.

Introduction

According to the World Health Organization, cardiovascular disease is the most prevalent illness and it is the leading cause of death worldwide. It was estimated to cause 30% of all deaths globally in 2008.[1] In Hong Kong, cardiovascular disease ranks the second leading cause of death and caused 15.0% of the total mortality in 2011.[2] Among the various cardiovascular disorders, coronary heart disease (CHD) is the most dominant one that accounting for majority of the cardiovascular deaths.[1,2] CHD is responsible for 12.7% of total deaths worldwide in 2008.[1] In Hong Kong, up to 68.9% of all cardiovascular deaths were caused by CHD in 2011.[2] An increasing trend was observed for the CHD incidence among various age groups of Hong Kong Chinese population.[3] Together with the improved survival rate of CHD in the developed countries, as well as Hong Kong as a modern city, it results in a high level of disease burden worldwide.[3,4]

Acute coronary syndromes (ACS) are the acute and severe manifestation of CHD. It is a unifying term that encompasses both acute myocardial infarction (ST-segment elevation myocardial infarction and non-ST-segment elevation myocardial infarction) and unstable angina.[5] Rapid diagnosis of this medical emergency is very important to allow prompt initiation of reperfusion therapy in patients with ST-segment elevation myocardial infarction (STEMI). This is a substantial treatment goal, as the efficacy of reperfusion therapy is highly time-dependent and the extent of myocardial injury is closely related to the length of total ischemic time.[6] For patients with non-ST-segment elevation myocardial infarction (NSTEMI) and unstable angina, the early initiation of anti-thrombin therapy and anti-platelet therapy is also important to prevent disease progression.[7] Moreover, some global statistics suggest that

up to 70% of the deaths related to CHD happen prior to arrival at hospital.[4] This highlights the importance of seeking early treatment when warning signs appear. However, many patients tend to delay in seeking treatment when symptoms arise, and thus leading to poor prognosis.[8,9] The median prehospital delay time has remained steadily between 2.2 and 6.0 h over the past two decades, with limited improvement irrespective to interventions aiming to reduce the delay time.[10] The prehospital delay is the dominating component of the total ischemic time that limits ACS patients to receive effective and optimal treatments, thus exposing them to a greater risk of sudden death prior to hospital admission.[9]

The prehospital delay in seeking treatment of ACS patients is also a significant health problem in the Chinese community. A multicentre registry involving 20 hospitals in China reported that the median prehospital delay time was 4 h and up to 20% of them delayed for more than 12 h before seeking care.[11] Furthermore, in Hong Kong, the most recent study in exploring the prehospital delay in ACS patients in Hong Kong was a qualitative study and conducted in 2006. The median delay was 15.8 h in men and 53.9 h in women.[12] Given the huge and growing disease burden of CHD in the Chinese population, it is imperative to identify the factors which affect help-seeking behaviors.

The perceived barriers in enacting a particular behavior refer to the belief concerning the actual cost and imagined consequence of enacting that behavior.[13] Its influence on health-seeking behaviors has been well explained by the Health Belief Model.[13,14] The Health Belief Model proposed that an individual's health and illness behaviors are influenced by his or her perceptions of the illness threat and evaluations of the behavior to counteract this threat. This model proposed that if the individual perceives a high level of barriers in enacting a particular behavior, he or she is unlikely to enact that behavior in a timely manner.[13] Perceived barrier has been consistently found to be the most powerful single predictor for various disease preventive and sick-role behaviors.[15] Although the assessment of perceived barriers seldom explicitly applied to investigate its influence on care-seeking behavior of ACS patients, it is persistently reported in the literature that patients delay to seek treatment due to various reasons that are in line with the concept of perceived barriers, such as they expressed the fear of care-seeking; they did not want to trouble other family members or the health care professionals; they were embarrassed to seek care; they wanted to maintain their roles and responsibility of taking care their families, etc.[9,10] These findings show an imminent need of a comprehensive assessment tool to measure the construct of perceived barriers in seeking care of ACS patients.

The Arabic and English version of the PBHSD has been developed in a Jordanian population to serve the purpose of measuring the perceived barriers in seeking care of ACS patients.[16] The items were generated in accordance with the theoretical definitions and the literature review. The Arabic version of the PBHSD has good content and face validity. Its Cronbach's alpha was reported as .74. As for the Chinese population, such assessment of the perceived barriers in seeking care is hindered by the lack of a linguistically and culturally appropriate instrument. The purpose of this study was to develop the Chinese version of the PBHSD and evaluate its psychometric properties in Chinese ACS patients. The translation equivalency, content validity, face validity, reliability, and convergent validity were evaluated.

Methods

Setting and sample

The study sample was recruited from the coronary care unit and general cardiac unit of two regional hospitals in Hong Kong, and the members of the sample were consecutively admitted for management of their ACS events. ACS is an umbrella term that includes unstable angina, NSTEMI and STEMI. The medical diagnosis was ascertained by the latest universal definition of AMI (encompassing both STEMI and NSTEMI) that was established in 2012 by the Joint European Society of Cardiology, the American College of Cardiology Foundation, the American Heart Association, and the World Heart Federation.[17] The core diagnostic criterion is the detection of rise and/or fall of cardiac troponin with at least one value above the 99th percentile of the upper reference limit, in addition to one of the following criteria: presenting with one or more symptoms of ischemia, new or presumably new electrocardiographic ST-segment-T wave changes or new left bundle branch block, developing new electrocardiographic pathologic Q waves, imaging evidence of new loss of viable myocardium or regional wall motion abnormality, or identifying an intracoronary thrombus by angiography.[17] In the case of unstable angina, this was ascertained by Braunwald's definition (1989).[18] The angina have to be compatible with at least one of the three following features: (1) angina occurs at rest with prolonged duration, usually longer than 20 min; (2) new-onset angina of at least Canadian Cardiovascular Society (CCS) classification class III severity; and (3) previously diagnosed angina that becomes more frequent, longer in duration, or increases by one CCS class to at least CCS class III severity.[5,18] Other inclusion criteria of the current study include having Chinese ethnicity, being at least 18 years of age, and having a stable general condition with normal hemodynamic status. The exclusion criteria were: patients who were unable to answer the questionnaire; those with a current and past history of psychiatric illnesses; and those who were unconscious before arrival at hospital. To test the relationship between perceived barriers and self-efficacy by adopting a medium-effect size with a power of .80 at the 5% level of significance, the minimum sample size required is 85.[19] The retest was conducted at a two-week interval with the estimated attrition rate arbitrarily set at 10%. The estimated sample size is 94. A total of 114 ACS patients were recruited. This sample size was deemed adequate to answer the research question.

Hypothesis testing

The convergent validity of the PBHSD-C was evaluated by hypothesis testing. The hypothesis was based on the theoretical proposition of the Health Belief Model[13,14] and the Social Cognitive Theory.[20] In the Social Cognitive Theory, self-efficacy is a crucial construct which is described as people's beliefs in their capabilities to exercise control over challenging demands and over their own functioning.[20] This theory states that self-efficacy plays an important role in human functioning by not only affecting how people feel, think and act, but also by affecting their perception of the impediments in the social environment.[20,21] Such an impact of self-efficacy is in line with the concept of perceived barriers in the Health Belief Model. The concept of perceived barriers is defined as the potential negative aspects of a particular action as impediments to undertaking a certain action.[13] Rosenstock and colleagues (1988) compared the Health Belief Model and the Social Cognitive Theory, and they concluded that the concept of self-efficacy of the Social Cognitive Theory was implicit in the construct of perceived barriers of the Health Belief Model.[22] People with greater belief in their capabilities to exercise control over challenging demands are supposed to perceive a lower level of barriers to undertake a certain action. Therefore, it was hypothesized that a negative correlation of self-efficacy and the perceived barriers to seek care would provide evidence for the construct validity of the PBHSD-C.