RESEARCH NOTE

Development, validation and translation of cardiopulmonary resuscitation and automated external defibrillator training and placement bilingual questionnaire

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Abstract

Objectives: This paper describes the development and translation of a questionnaire purported to measure (1) the perception of the placement strategy of automated external defibrillator, (2) the perception on the importance of bystander cardiopulmonary resuscitation and automated external defibrillator (3) the perception on the confidence and willingness to apply these two lifesaving interventions as well as (4) the fears and concerns in applying these two interventions. For construct validation, exploratory factor analysis was performed using principal axis factoring and promax oblique rotation and confirmatory factor analysis performed using partial least square.

Results: Five factors with eigenvalue > 1 were identified. Pattern matrix analysis showed that all items were loaded into the factors with factor loading > 0.4. One item was subsequently removed as Cronbach's alpha > 0.9 which indicates redundancy. Confirmatory factor analysis demonstrated acceptable factor loadings except for one item which was subsequently removed. Internal consistency and discriminant validity was deemed acceptable with no significant cross-loading.

Keywords: Construct validation, Exploratory factor analysis, Confirmatory factor analysis, Cardiopulmonary resuscitation, Automated external defibrillator, Forward translation, Backward translation

Introduction

While a number of questionnaire measuring the various dimensions of bystander cardiopulmonary resuscitation (CPR) [1–4] and AED [2–7] have been published, there are few questionnaires that combine both bystander CPR and automated external defibrillator (AED) measurement [8, 9]. We reported the development and construct validation (exploratory factor analysis, EFA and confirmatory factor analysis, CFA) of a bilingual (English and local Malay language) questionnaire that comprehensively measures four objectives: (1) the perception of AED placement strategy, (2) the perception on the importance of bystander CPR and AED, (3) the perception on the confidence and willingness to apply these two lifesaving interventions as well as (4) the fears and concerns in applying these two interventions.

Main text

Methods

Participants

For EFA, 184 administrative employees from Universiti Malaysia Sarawak (UNIMAS) (who were participants of CPR and AED workshops), responded to the questionnaire. Healthcare employees such as doctors, nurses and paramedic staff were excluded from this study. The mean age of the participants was 37.6 years (standard deviations ± 6.85); and 100 of them (54.3%) were male participants. The number of participants who responded

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