Psychometric properties of the Management of Aggression and Violence Attitude Scale in Hong Kong's emergency care setting

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ABSTRACT

Background: Emergency unit is one of the most high-risk areas for patient violence. However, in Hong Kong, little research has been test psychometric properties of assessment tool of Emergency unit nurses' attitude toward violence.
Methods: The Management of Aggression and Violence Attitude Scale's (MAVASs) Scale- and Item-Content Validity Index were established by 5-experts panel. A convenience sample of 123 nurses working in 4 public Emergency Department in Hong Kong was recruited. The construct validity was tested using exploratory factor analysis and the reliability was assessed by Cronbach's alpha and test-retest reliability.
Results: The Scale-Content Validity Index was 97.0% and the Item-Content Validity Indexes ranged from 80.0% to 100.0%. Exploratory factor analysis indicated 4-factors solution (i.e., "importance of communication with patients", "perceived effectiveness of interventions", "pitfalls of interventions" and "perceived need for intervention"). Its' internal consistency was satisfactory (Cronbach's alphas = 0.40–0.77) across the 4 subscales and test-retest reliability over 4-week interval was satisfactory (Pearson's coefficient = 0.85).
Conclusion: MAVAS was found to be a valid and reliable tool to examine nurses' attitudes towards patients' violence in emergency care setting, and provides useful information to those developing training and intervention programmes for management of aggression.

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1. Introduction

While a safe and therapeutic environment is imperative to enable healthcare staff to deliver high quality and effective care to patients, patient violence towards nurses and other healthcare workers is a common global phenomenon in most healthcare settings. A recent literature review on nurses' exposure to violence in different work settings found that about two-thirds of nurses are exposed to verbal abuse, one-third to physical violence, and one-quarter to sexual harassment [1]. In addition, about one-third of nurses who have been assaulted are physically injured; whereas, physical violence is found to be most prevalent in not only psychiatric care facilities but also emergency departments [2].

The Emergency Department (ED) is the main gateway to healthcare for most general populations [3]; and it is also one of the highest risk areas for patient violence [4]. As a major part of the workforce and the first contact person in the healthcare team, nurses working in EDs often expose to patient violence and are

responsible for managing these incidents. Indeed, the prevalence of patient violence in EDs has risen to an alarming level worldwide. The findings of Gacki-Smith et al. [5] study indicated that approximately 25% of the nurses had experienced of physical assaults had seen a significant increase compared to the previous three years. In addition, about one-fifth of them had experienced frequent verbal abuse from patients and/or their relatives. In Hong Kong, ED nurses are also found to be the most frequent victims of workplace violence, followed by nurses in the community nursing service [6].

Since nurses' attitudes towards patient violence may influence their clinical management of patient violence, recent research has focused on exploring this topic in relation to nurses' perceptions of the underlying causes or factors and consequences of violence in acute care settings [7]. Three instruments, which are common to be used for measuring nurses' attitudes towards patients' aggressive and violent behaviors include the Attitudes Towards Patient Physical Assault Questionnaire (ATPPAQ) by Poster and Ryan [8], Perception of Aggression Scale (POAS) by Jansen et al. [9] and Management of Aggression and Violence Attitude Scale (MAVAS) by Duxbury [7]. Among these three questionnaires, it appears that the MAVAS is the only one that examines the

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nurses' attitudes towards the strategies in violence management currently used in their work settings.

The MAVAS comprising 27 statements measures nurses' perceptions of the causes of violence (13 items), and the common methods of violence management (14 items) [7]. It reflects three main causative factors of patient violence in health care, including patient-related, physical environment and nurse-patient interaction problems. Although the MAVAS is the only instrument designed to measure the staff attitudes towards the causes of patient violence and the common strategies used for its management, it has mostly been tested and/or adopted in mental healthcare settings. Few studies have been conducted in other healthcare settings such as ED. Therefore, this study aimed to test the validity and reliability of the MAVAS in an ED.

2. Methods

2.1. Content validation

An expert panel consisting of five emergency care professionals (i.e., one specialist physician, one ward manager, two nursing officers, and one registered nurse in EDs) was established to evaluate the content validity of the MAVAS. The purpose of the study, background information of the MAVAS, instructions for reviewers, and definitions of the main concepts/terms concerning patient violence and nurses' attitude used in this study were explained and discussed with individual panel members. The Scale- and Item-level Content Validity Index (CVIs) of the MAVAS were rated by individual panel members in terms of the relevance of its individual items, using a 4-point Likert scale (i.e., 1 – 'irrelevant'; 2 – 'item needs major revision to be relevant'; 3 – 'item needs minor revision to be relevant'; and 4 – 'highly relevant'). As suggested by Polit and Beck [10], the Scale-level Content Validity Index (CVI) was determined by two levels of calculations: (1) averaging the item-level CVIs (i.e., averaging method); and (2) identifying the proportion/percentage of items with full agreement of relevance by the expert panel (i.e., universal agreement method; those rated as 3 or 4 by all panel members).

2.2. Psychometric testing

2.2.1. Participants and study setting

A convenience sample of 290 ED nurses working in five different regional hospitals in Hong Kong was recruited to test the psychometric properties of the MAVAS. Since exploratory factor analysis was used to establish construct validity of the MAVAS, at least five participants per item of the MAVAS were required [11]. Thus, the estimated sample size was approximately 135 respondents.

2.2.2. Data collection

The researcher distributed the survey questionnaires to the nurses in the EDs in person. An information sheet was attached with the MAVAS and used to inform the respondents about the purpose and procedure of the study, and invite them to participate. After completing the questionnaire, they returned the questionnaire to a collection box at the nurses' station. Consent for study participation was implied by their return of the completed questionnaire. The researcher provided contact information for the respondents to clarify any questions raised during their completion of the questionnaire. While the researchers collected the completed questionnaires every week from the collection boxes, reminders were sent to all nurses in the EDs where the response rates were low. The same set of survey questionnaires was re-administered one month after the first completion.

2.2.3. Measures

The design of the original MAVAS was based on the internal, external and interactional models of the dynamics of aggression suggested by Duxbury [12]. The internal model describes the internal environment or personal factors influencing aggression. For instance, an individual's mental state or psychiatric symptoms and intoxication with alcohol or medication can strongly contribute to his/her aggressive behaviors. The external model focuses on the physical and social stimulations or factors from one's environment, which may induce aggression. For example, physical assaults are often triggered by various external factors resulting in feelings of distress, anger and frustrations such as inaccessible or inappropriate services or care provided, poor ward environment, or social stigma and discrimination [7]. However, the interactional model highlights the importance of interpersonal relationships or interactions to induce aggression or violent behaviors; whereas, poor staff-patient relationships or communication and interpersonal conflicts can lead to patient aggression.

Through expert validation and pilot testing [7,12], the scale consisted of four domains: (a) the interactional perspective, including five statements measuring interpersonal and interactional situations between staff and patients (Items 2, 3, 6, 20, and 23); (b) the external perspective, including three statements measuring environmental situations (Items 1, 16 and 27); (c) the biological perspective, including five statements measuring internal factors influencing aggression (Items 4, 5, 7, 9, and 14); and (d) the perceptions for clinical management, including 14 statements measuring nurses' attitudes towards different approaches to management of patient violence (Items 8, 10–13, 15, 17–19, 21, 22, and 24–26).

The MAVAS was scored on a 5-point Likert scale (i.e., 1 = 'strongly agree' to 5 = 'strongly disagree'). Higher scores could indicate lower levels of the respondents' agreements with the items regarding the specific explanatory model of violence. The MAVAS score can be used to estimate nurses' attitudes towards each of the explanatory models of violence, and compare their attitudes between different strategies in the management of patient violence. Duxbury and Whittington [13] demonstrated that the psychometric properties of this scale are satisfactory in a psychiatric care setting, with a test-retest reliability index (Pearson's r) of 0.89 at 1-month interval.

2.3. Ethical considerations

Ethical approval was obtained from the Clinical Research Ethics Committees of the hospital clusters in Hospital Authority, Hong Kong, and the Human Subjects Research Ethics Subcommittee of The Hong Kong Polytechnic University. Respondents were fully informed about the purpose and procedure of this study. They were also assured of their right to freely participate or withdraw from the study at any time, without any negative impact on their employment and career advancement. The participants were encouraged to seek help from the researcher if they experienced any distress or any negative emotion after their completion of the questionnaire; and they would be referred to the counseling service at The University or their hospitals, as needed. The personal identity of individual participants would not be revealed in any research documents or reports, thus maintaining their anonymity. All data were safely stored in a locked cabinet and could only be accessed by the researchers in the study period. All raw data would be destroyed after completing the study.

2.3.1. Data analysis

Descriptive and inferential statistics were employed to analyze the data using SPSS, version 22; and the level of significance was set at p <0.05. For content validity testing, the Item-level and Scale-level CVIs of >0.8 by using the averaging method, together