



Original article

The perceptions of patient safety culture: A difference between physicians and nurses in Taiwan

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ARTICLE INFO

Keywords:

Safety attitudes questionnaire
 Confirmatory factor analysis
 Pearson correlation analysis
 Patient safety culture

ABSTRACT

Aims: In order to pursue a better patient safety culture and provide a superior medical service for patients, this study aims to respectively investigate the perceptions of patient safety from the viewpoints of physicians and nurses in Taiwan.

Background: Little knowledge has clearly identified the difference of perceptions between physicians and nurses in patient safety culture. Understanding physicians and nurses' attitudes toward patient safety is a critical issue for healthcare organizations to improve medical quality.

Methods: Confirmatory factor analysis (CFA) is used to verify the structure of data (e.g. reliability and validity), and Pearson's correlation analysis is conducted to demonstrate the relationships among seven patient safety culture dimensions.

Results: Research results illustrate that more teamwork is exhibited among team members, the more safety of a patient is committed. Perceptions of management and emotional exhaustion are important components that contribute to a better patient safety. More importantly, working conditions and stress recognition are found to be negatively related from the perceptions of nurses. Compared to physicians, nurses reported higher stress and challenges which result from multi-task working conditions in the hospital.

Conclusions: This study focused on the contribution of a better patient safety culture from different viewpoints of physicians and nurses for healthcare organizations in Taiwan. A different attitudes toward patient safety is found between physicians and nurses. The results enable the hospital management to realize and design appropriate implications for hospital staffs to establish a better patient safety culture.

1. Introduction

Over the past few decades, Taiwan's medical service system has provided a comprehensive health care to the public. In 1995, the public health insurance only covered 60% of the population. Taiwan's government thus executed a new National Health Insurance (NHI) in order to provide a robust medical care to all citizens in Taiwan. The citizens nowadays receive more benefits than ever, such as high-quality medical care and convenient access to treatment (Shieh, Wu, & Huang, 2010). According to the annual report of the National Health Insurance Administration (NHIA), the NHI system now covers 99.6% of Taiwan's population in 2016 (NHIA, 2016). Patients not only pay more attention to the professionalism of medical service providers, but they also expect

quality medical care (Ho & Lee, 2013; Lee & Hsieh, 2009). However, the average of nurse-patient ratio reaches 1:9 in 2015, which is higher than the ratio of 1:6 internationally (NHIA, 2016). Chen et al.'s (2013) research also reveals that overwork and burnout issues among Taiwan physicians still generally exist, which could result in several risky errors, including medical malpractice and shortage in human resources. All these negatively outcomes can strictly threat patient safety. Under such circumstances, establishing a positive patient safety culture has become an important way to improve physician-patient and nurse-patient relationship and should be conducted as first priority to enhance advantages in competitive healthcare markets (Coulter, 2011; Lee et al., 2017).

Evidence reveals that hospital staff with higher perceptions of

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patient safety are more likely to compete tasks as a team and more negative outcomes are reduced (Nie et al., 2013; Göethals, Dierckx de Casterlé, & Gastmans, 2013; Lee, Huang, Huang, and Wu, 2016). For example, Lee, Huang, Huang, and Wu (2016) have suggested that hospital staffs with positive patient safety can help healthcare organizations to reduce medical adverse events, such as patient fall, medical errors, and work absence. Normally, Physicians and nurses under pressures and challenges in the working environments (Göethals et al., 2013). Chen et al. (2013) report that lots of physicians are under high pressure which result from mental depression, hospital culture, and long working hours. Many further results reveal that physicians and nurses experience burnout which represents a loss of passion for work, emotional exhaustion and feelings of depersonalization (Shanafelt et al., 2010; Shanafelt et al., 2012). A high level of burnout affects physicians' well-being and work-life balance, which in turn causes a poor quality of healthcare (Shanafelt et al., 2010; Shanafelt et al., 2012; Dyrbye et al., 2014; Lee, Huang, Huang, and Wu, 2016). Similarly, sickness absence, medical errors, and job dissatisfaction are associated with nurses' burnout (Kovács, Kovács, & Hegedűs, 2010; Cimiotti, Aiken, Sloane, & Wu, 2012; Lee, Huang, Huang, and Wu, 2016; Lee, Huang, Weng, et al., 2016). Lee, Huang, Huang, and Wu (2016) further demonstrate that hospital management can make implementations to improve the resilience and reduce the potential medical errors when the higher degree of burnout hospital staffs are identified. It is therefore essential to examine the physicians' and nurses' conditions either physical or emotional in order to provide excellent medical services for patients.

Maslach burnout inventory-human services survey (MBI-HSS) is a validated tool for assessing burnout, which contains 22 questions dividing into three dimensions: emotional exhaustion, personal accomplishment and depersonalization (Lee, Chien, & Yen, 2013; Poghosyan, Aiken, & Sloane, 2009). Ample research has provided evidences for the predictive validity of MBI-HSS in assessing burnout in a substantial proportion of fields; for example, nurse burnout (Adriaenssens, De Gucht, & Maes, 2015; Loera, Converso, & Viotti, 2014), disability workers (Lunsky, Hastings, Hensel, Arenovich, & Dewa, 2014; Smyth, Healy, & Lydon, 2015), and welfare workers (Lizano & Barak, 2015; Rittschof & Fortunato, 2016). In 2014, the Taiwan Joint Commission on Hospital Accreditation has integrated the Sexton et al.'s (2006) Safety Attitudes Questionnaire (SAQ) and the MBI-HSS to develop a revised Chinese version of safety attitudes questionnaire for measuring patient safety culture in the healthcare organizations (Sexton et al., 2006; Lee, Huang, Weng, et al., 2016).

Physicians and nurses are core staffs with professional skills, who dedicated to service patients in healthcare organizations (Lee et al., 2015; Liu, Matharu, Howland, Revzin, & Simonian, 2012). However, little knowledge has clearly identified the difference of perceptions between physicians and nurses in patient safety culture. In fact, physicians and nurses may face different tasks and challenges even in the same medical environment (e.g. divisions, operating room, and laboratory) and their attitudes toward patient safety may vary. Understanding physicians and nurses' attitudes about patient safety could help hospital management to make proper patient safety policies and strategies. Therefore, it is critically important to recognize the opinions and attitudes toward patient safety from the viewpoints of physicians and nurses. Following this introduction, the Section 2 of this study presents a review of the literature. The Section 3 then illustrates details of the methods used in the empirical study. The research results are discussed in Section 4. Finally, the conclusions and implications are presented.

2. Patient safety culture

Evaluating patient safety culture has been widely considered as a critical approach to improve the quality of medical services for patients (Lee, Huang, Weng, Hsieh, & Wu, 2014; Mitchell, Parker, Giles, &

Boyle, 2014). Several studies have indicated that medical errors and adverse events can be significantly reduced if physicians and nurses are devoted to committing to the safety of patients (Najjar, Nafouri, Vanhaecht, & Euwema, 2015; Wang et al., 2014). Generally, the Sexton et al.'s (2006) SAQ is most commonly used to assess the perceptions of patient safety in healthcare organizations (Lee et al., 2015; Nguyen, Gambashidze, Ilyas, & Pascu, 2015). The SAQ questionnaire contains 30 items, categorized into six dimensions: teamwork climate (relationships and cooperation among staff), safety climate (organizational commitment to patient safety), job satisfaction (positive about work experience), stress recognition (stress factors that link to work performance), perceptions of management (administrator approval), and working conditions (perceived work-environment quality).

Based on the Sexton et al.'s (2006) SAQ, the Taiwan Joint Commission on Hospital Accreditation has incorporated the MBI-HSS to further completely assess the attitudes of hospital staff toward a better patient safety culture (Lee, Huang, Huang, and Wu, 2016; Lee, Huang, Weng, et al., 2016). Particularly, emotional exhaustion dimension from the MBI-HSS, and work-life balance were integrated into the questionnaire. Therefore, the newest Chinese safety attitude survey contains 46 questions into eight patient safety culture dimensions. The detailed information of the questionnaire is provided in Table 1.

3. Methods

3.1. Data collection and sample characteristics

The case hospital was selected as a representative example because it contains > 30 divisions with 774 hospital staffs (143 physicians and 631 registered nurses), providing 500 hospital beds, and the nurse-patient ratio is around 10.3 in 2016 (NHIA, 2016). Meanwhile, the hospital is one of the best general and teaching hospital in Taiwan (MOHW, 2015). Therefore, there is a need to evaluate patient safety provided by the case hospital for continuously improvement.

A small-scale pretest was initially conducted to confirm the accuracy of the questionnaire by surveying 50 hospital members (Hair, Black, Babin, Anderson, & Tatham, 2006). After pretest procedures, an intra-organizational online survey was used to assess patient safety culture. Physicians and nurses received an email explaining the purpose of the study and the link to the questionnaire. Respondents were asked to submit the surveys between November 2 and November 9, 2015 in this case hospital. Physicians and nurses were required to answer 39 questions on five-point Likert-type scale, where 1 and 5 represented strongly disagree and strongly agree, respectively. Additionally, emotional exhaustion was measured using nine reversed questions such that each respondent's answer was adjusted. That is, the original answer of strongly agree represents the poorest perceptions of measuring outcome.

A total of 376 valid questionnaires were collected. For physicians, the sample profile demonstrated that most respondents are male (92.9%), age ranged from 31 to 50 years (66.7%), education of the bachelor (69.0%) or graduate degree (31.0%), and > 5 years working experiences were around 54.7%. For nurses, most respondents were male (94.6%), age ranged from 21 to 40 years (79.0%), education of the bachelor's level (96.4%). Around one-half of respondents with relevant working experiences were more than five years in the hospital.

3.2. Data analysis methods

This following section outlines the assessment of the measures used to evaluate patient safety. Item analysis was initially used to analyze the degree of being able to test scale items. The total item analysis herein includes descriptive statistics test (e.g. average test, standard deviation test, skewness test, extreme groups test, and test of item-total correlation coefficient (Wu & Tu, 2005)). As shown in Table 1, seven patient safety dimensions with 39 items were estimated the structure of the

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