Safety Culture and Safety Attitudes of Nurses in the National University Hospital

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Abstract

Purpose: Patient safety issues pose a great burden worldwide. However, there is still inadequate data on the burden of Patient Safety issues in the Philippines to specifically address institutional and national concerns through directed programs, policies, and interventions. This current study aims to describe the safety culture and attitudes of nurses of the National University Hospital in Manila, Philippines.

Design: This study used a non-experimental design that assessed the safety culture and safety attitudes of nurses from the general units of the National University Hospital (NUH) using two assessment tools: the Agency for Healthcare Research and Quality Hospital Survey on Patient Safety Culture (AHRQ-HSOPS) and the Safety Attitudes Questionnaire- Short Form (SAQ). Ethical approval was granted from both the university and the hospital ethics review boards.

Methods: Stratified random sampling was used to ensure representation of staff nurses and nurse administrators. A self-administered survey that included the two tools was translated to Filipino and administered to 200 nurses. Percent of positive responses were obtained to describe the safety culture and attitudes as prescribed by toolkits of AHRQ-HSOPS and SAQ.

Findings: The overall survey response rate yielded 86.77%. Nurses from the National University Hospital displayed both positive Safety Culture and Safety Attitudes based on AHRQ-HSOPS and SAQ. Dimensions that garnered the highest positive perceptions in Safety Culture were Organizational Learning and Teamwork while the lowest were Hospital Handoffs and Non-Punitive Response to Error. On the other hand, dimensions on Safety Awareness that received the highest positive perceptions were Teamwork and Safety Climate while the lowest was Stress Recognition. Perceptions of nurses also varied significantly across ranks in position titles and work settings.

Conclusions: There are identifiable dimensions that can be improved in both Safety Culture and Safety Attitude that can have a positive impact on nurses and potentially impact nurse-patient and hospital-sensitive outcomes through hospital-wide improvement programs.

Key words: patient safety, safety culture, safety attitudes, nurses, work environment, job satisfaction, stress recognition, Philippines

Introduction

There is limited literature on the state of Patient Safety in the Philippines. This present study describes the Safety Culture and Safety Attitudes of nurses in the National University Hospital in an attempt to provide insight on the dimensions that need attention to ensure safe healthcare in the country.

Since the release of the Institute of Medicine (IOM) report, To Err is Human (IOM, 1999), health care organizations started to focus more on patient safety and quality of care. The report highlighted the serious effects of health care errors caused by faulty systems, processes, and conditions resulting in health care professionals committing medication errors or being unable to prevent them from occurring. Healthcare-related errors result in complex problems and burdens to patients, families, and health care providers, organizations, and systems (WHO, 2008). Medication errors increase mortality and morbidity rates around the world and across economic classes. Due to inadequate information from developing countries, including the Philippines, regarding the incidence rate of their medical errors, it is difficult to ascertain actual medical errors and near misses in these countries to be able to make appropriate recommendations to address the problem.

This inability to ensure safe patient care in healthcare settings has been determined and measured based on the organization's safety culture. A safe culture refers to the attitudes, perceptions, competencies, values, and behavior that foster safe care and non-threatening discharge of roles and responsibilities of its healthcare professionals and employees. Successful implementation of safety culture requires awareness of how organizations believe other people perceive their level and quality of performance (Agency for Healthcare Research and Quality, 2014). This has been measured through various angles but some of the most widely measured are safety culture and safety attitudes.

'Safety culture' includes behavior by management and staff of health care organizations, procedures, and systems that define safe patient care and the perceptions by staff and nursing management about safe actions and approaches. On the other hand, 'safety attitude' reflects an aspect of 'safety culture' and incorporates dimensions used in describing the status of the culture of an organization (Wilson, 2007). The maturity of members of an organization when it comes to safety culture and attitude reflects in their ability to be informed and to be flexible in addressing safety issues (Robb and Seddon, 2010). Safety attitudes, although reflecting culture, can be measured separately because it is assumed that the healthcare personnel's safety attitudes is more temporal and individualistic in terms of perception. Hence, determining both aspects may provide a holistic view of both the individual healthcare worker and the whole institution.

Although there are limited published studies about safety culture in Philippine hospitals and in terms of the impact of healthcare-related harm in the country, several efforts to promote patient safety have been initiated since 2008. One such initiative is the National Policy on Patient Safety (Department of Health, 2011) that mandates Continuous Quality Improvement (CQI) patient safety programs in all healthcare facilities. These programs are supported by various organizations with the Department of Health (DOH) through Memorandum 2011-0160 designating a National Patient Safety Day. Healthcare organizations dedicate this event to safe patient care activities. Most initiatives are done at institutional levels during various local fora. However, these events were not documented which would have been useful for benchmarking.

Because of this limitation, this study aims to add to the sparse literature on the state of patient safety in the country from the perspective of nurses in one the largest government hospitals in the Philippines. This study aims to answer the following research questions: What are the perceptions of NUH nurses towards Safety Culture? What is the Safety Attitude of nurses working in the NUH? What is the relationship between Safety Attitude and Safety Culture among NUH nurses?

Methodology and Methods

Design

This study used a descriptive-exploratory and non-experimental design to describe the safety culture and safety attitudes of NUH nurses. The attitude and perceptions are presented using descriptive statistics related to the survey questions on patient safety attitude and safety culture. The said design was selected to adequately describe the dimensions of safety culture and safety attitudes without attempting to control or manipulate the clinical scenario at a particular point in time. No intervention was done to increase the level of awareness or change the practice towards patient safety. Rather, safety culture and safety attitudes were assessed while the institution is initiating efforts to increase patient safety through existing safety programs.

Correlation between the dimensions of safety culture is examined against the respondents' safety attitudes. This design is similar to prior single-institution studies (Pronovost & Sexton, 2005) and multi-institution or large scale studies (El-Jardali, Dimassi, Jamal et al., 2011; Huang, Clermont, Kong et al., 2010; Chen & Li, 2010; Kho, Carbone, Lucas et al., 2005) that analyzed safety culture and safety attitudes among health care personnel through a descriptive, non-experimental approach.

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In addition, this study used a close-ended and self-administered survey to determine the safety culture and safety attitudes of the nurses.

Setting

A tertiary-level hospital with a total bed capacity of 1,500 was used in the study. It has 1,000 beds allotted for charity or indigent patients (Charity Wards) and seven (7) Pay Service Units. Staff to patient ratio in the general units are 1:5-15 depending on patient acuity.

Sampling

Stratified random sampling was used. The study sample consisted of staff nurses and nurse administrators from both the Charity Wards and Pay Service Units. The sample size was determined utilizing power analysis for correlation through Cohen's test. To achieve a sample power of 0.80 alpha (α) at a 0.05 level of significance with medium effect size of 0.50, a minimum total number of 64 staff and 64 nursing management staff was the computed ideal sample size (total n = 128).

The inclusion criteria was patterned after the recommendation of the AHRQ-HSOPS Toolkit to study a subset of staff from all hospital units which only includes those who were assigned in the practice areas and those who have been employed for at least six (6) months or more. The inclusion criteria ensure that the study participants are familiar with the hospital system to provide information relevant to the study.

A total of 200 survey forms were distributed to 100 nurse administrators and 100 staff nurses. Of the 200 survey forms, 25 were not returned, and among the 175 returned survey forms, 11 were rejected due to incomplete responses following the defined inclusion and exclusion criteria. Completed survey forms came from 24 patient care units of the NUH with a total response rate of 86.77%.

Tools

The self-administered survey used in this study was composed of two tools: the AHRQ-HSOPS and the SAQ. The Agency for Healthcare Research and Quality (AHRQ) Hospital Survey of Patient Safety (HSOPS) is one of the most widely used tools to measure safety culture (Agency for Healthcare Research and Quality, 2016). It is a five-point Likert scale that is comprised of 42 items measuring 12 composites of patient safety culture. On the other hand, the HSOPS includes components measured through hospital and unit-level dimensions and outcome variables. The percentage of positive responses for each item was calculated where negatively worded items were reversed as the percentage of positive responses were computed. Composite level scores were computed by summation of the items within the composite scales and divided by the number of items with non-missing values.

Meanwhile, the Safety Attitudes Questionnaire (SAQ) is a well-validated and a widely used instrument (Sexton, Helmreich, Neilands et al., 2006). This is a 32-item tool that assesses safety attitudes across six domains—perceptions of management, job satisfaction, working conditions, stress recognition, teamwork climate, and safety climate. Each item is measured on a 5-point Likert scale (Disagree Strongly to Agree Strongly) which is then converted to a 0–100 scale. Each factor score equals the mean score of its component survey items. A positive score is defined as ⩾75 out of 100.

Data Gathering

After providing the potential respondents full disclosure regarding the study, research assistants handed the survey forms to them. Respondents were given one (1) week to complete the survey. Once completed, these were placed in the provided opaque envelope, sealed, and returned. The sealed envelope and the completed questionnaires had no markers or personal identifiers to maintain the confidentiality of the respondents. Completing and submitting the questionnaire is their implied consent to participate in the survey.

The following criteria were followed as recommended by the AHRQ Toolkit for possible exclusions. Responses were excluded if the respondent answered (1) less than one entire section of the survey, (2) fewer than half of the items throughout the entire survey (in different sections), or (3) each item was rated the same, e.g., all "4s" or all "5s").

Data Analysis

Descriptive statistics and *t*-test using Statistical Package for the Social Sciences (SPSS) version 10 was used to explore the differences in average positive response rate between nurse administrators and staff nurses. Spearman's rank correlation coefficient (ρ) was used to test the association between the Patient Safety Grade (High, Moderate, Low) as the reflection of safety culture and safety attitude dimensions.

Ethical Approval

Ethical approval to conduct the study was obtained from the University of the Philippines Manila - Ethics Review Board of UP Manila and the Expanded Hospital Research Office.

Findings

Demographics

There is an equal distribution of respondent for both staff positions being compared in this study with 51.8% (n=85) staff nurses (Nurse I and Nurse II) while 48.2% (n=79) are nurse

administrators/managers composed of 29.9% (n=49) junior head nurses, 15.2% (n=25) senior head nurses, and 3.0% (n=5) chief nurses.

Most respondents have considerable experience in the NUH, in their respective clinical units, and in their clinical specialization with 54.3% working in the hospital and their respective units for more than a year (29.9% for 1-5 years and 24.4% for those with 6-10 years experience). The same can be said of the nurses' length of service in their respective clinical areas or units. An overwhelming number (72%) of the nurses have been working in the same unit for 1-5 years (47%) and another 25% for 6-10 years. Those who have practiced in their current specialty for 1-5 years yielded 34.1%, while those in the same clinical specialty for 6-10 years were 25%, for a combined total of 59.1% of the total respondents working in the same clinical specialty.

This indicates that the nurses are familiar with the processes, systems, protocols, values, and the culture of the hospital, unit, and their respective clinical expertise. One can likewise surmise that the respondents have a considerable exposure to the NUH patient safety culture and its organization's attitude. Hence, the respondents are likely to provide reliable data on the patient safety status of the NUH.

On Perceptions of Safety Culture and Safety Attitudes

There is a general positive response to the dimensions of Safety Culture and Safety Attitude among the respondents (Table 1). Majority of the nurses gave NUH an Overall Patient Safety Grade of 'Very Good' (53%) and 'Acceptable' (34%), as well as, an Overall Safety Attitude Score of 70.86%. Both these results indicate that the nurses of NUH perceive that their individual units and their hospital promote patient safety.

With regards to the dimensions of AHRQ-HSOPS alone, the dimensions with the highest positive perceptions were Organizational Learning (90.41%), Teamwork within Units (87.63%), and Feedback and Communication about Error (78.98%), while the

dimensions with the least positive perception or areas with greatest potential for improvement were Hospital Handoffs and Transitions (15.31%), Non-Punitive Response to Error (38.43%), and Communication Openness (44.90%). On the other hand, the nurses' Safety Attitude dimensions that had the highest positive perceptions were Teamwork Climate (86.78%), Safety Climate (85.56%), and Job Satisfaction (84.07%), while the lowest response is in Stress Recognition (44.10%).

On the Relationship between Safety Culture and Safety Attitudes of NUH Nurses

There is a significant and strong positive correlation (Table 2) between Safety Culture (using the Overall Patient Safety Grade) and the different dimensions of the nurses' Safety Attitudes in terms of the following dimensions: Teamwork Climate, Safety Climate, Job Satisfaction, Perceptions of Management, Working Conditions, Unit Management, and Hospital Management. However, there is a significant and strong negative correlation with Stress Recognition. These findings suggest that the Safety Attitudes of the nurses in the NUH promote a positive Safety Culture while poor Stress Recognition negatively affects Safety Culture.

Table 1. Percent of Positive Responses per Dimension on Safety Culture and Safety Attitudes

Dimensions	Percentage of Positive Responses n=164 (Staff Nurses=85, Nurse Administrators=79)
Safety Culture Dimensions (AHRQ HSOPSC)	
Organizational Learning—Continuous Improvement	90.41%
Teamwork Within Units	87.63%
Feedback and Communication About Error	78.98%
Overall Perceptions of Safety	60.62%
Hospital Management Support for Patient Safety	58.40%
Frequency of Events Reported	52.97%
Teamwork Across Hospital Units	47.92%
Staffing	46.94%
Supervisor/Manager Expectations & Actions Promoting Safety	45.71%

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Table 2. Relationship between Safety Culture and Safety Attitudes among NUH Nurses

	Teamwork Climate	Safety Climate	Job Satisfaction	Stress Recognition	Perceptions of Management	Working Conditions	Unit Management	Hospital Management
Spearman's rho	0.41*	0.36*	0.42*	-0.36*	0.35*	0.34*	0.43*	0.39*
***p*-value**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
n	125	150	130	151	151	151	151	151

Values significant at α = 0.01

Discussion

The findings reflect the presence of Safety Culture in the National University Hospital. However, one cannot determine the level of maturity of the organization. There is some awareness of the concepts of patient safety among the nurses as shown by strong scores in several dimensions of Safety Culture and Safety Attitudes. Strength is evident in the areas of Teamwork, Learning as an Organization, Job Satisfaction, and Positive Perception towards management. However, there remains issues on Managing Event Reporting, Low Rates of Events Reported, need for improvements in Nurse-Patient Ratio, inability to recognize the Impact of Job Stress to Incidence of Errors, Persistence of Individual Blaming, and arduous hierarchical processes when Communicating Errors.

On Error Reporting and Staffing

Nurses working at the NUH perceive Safety Culture in their organization positively. The greatest strengths are in the dimensions of Teamwork within Units, Organizational Learning-Continuous Improvement, and Feedback and Communication about Error. On the other hand, the greatest opportunities for improvement are in the dimensions of Non-Punitive Response to Error and Staffing. Based on the results, errors are made known for learning purposes, but the focus is still learning from the mistake of the individual and not the system. In this case, Just Culture promoting Patient Safety where trust, non-punitive, and a blame-free error-reporting atmosphere is not discernible (Sammer, Lykens, Singh et al., 2010).

More than 88% of the nurses had 0-2 events reported in the past 12 months with more events submitted by Pay Service Unit nurses (66.2%) as compared to nurses from Charity Wards (43.6%) where services are given with very little cost to indigent patients except for medical supplies.

There is likely underreporting of adverse events by nurses in Pay Service Units which is significantly more than Charity Ward nurses. Moreover, the increased number of reports from nurses in Pay Service units may be attributed to their perception that paying patients are litigious, while non-paying patients are just grateful for the free care they receive. It may also be possible that healthcare workers have reservations reporting errors for fear of reprisals, damage to the reputation of the organization, and the health professionals' loss of license (Listyowardojo, 2012).

In the dimension of Staffing, results reflect that nurses in the unit work longer hours than what is best for patient care as reflected by many patient-nurse ratio issues. This result is similar to the HSOPS Comparative Database Report (Sexton et al., 2006) where 'Staffing' is the third lowest positive response across 6,407 hospitals included in the database. The lack of adequate staff positions allocated by the government may be the greatest contributor to inadequate staffing. Furthermore, among the themes that came from the respondents' comments on patient safety issues in their respective units is with Nurse-Patient Ratio issue being the highest (44%), followed by Patient Acuity Imbalance (28%).

On Nurses' High Score on Job Satisfaction

Despite this great concern on staffing, both nursing management and staff nurses gave high Job Satisfaction scores for working in NUH. Job Satisfaction marks are also significantly higher among nurses working in Charity Wards where conditions are less than ideal and resources are sparse. Several nurses attributed this to their commitment to care for underserved populations despite budgetary and resource limitations. This is also supported by positive responses on Teamwork within Units and Teamwork Climate. The dimension on Working Conditions also contribute to positive Safety Attitudes and positive Teamwork, where nurses believe that good working conditions facilitate better

collaboration with other professionals that prevent communication breakdowns causing care delays and adverse events.

On Low Stress Recognition

When describing their work conditions, few nurses perceive that they are likely to commit errors during tense situations but acknowledge that fatigue impairs their performance during situations of high stress. Azimi et al., 2012 reported in their study that low Stress Recognition scores were also found among their respondents. They found that after a series of training programs, there was significant improvement in many safety culture dimensions except for Stress Recognition. They concluded that when stress becomes regular and consistent, it becomes readily unrecognized and integral to the working conditions making it unhealthy and unsafe.

Limitations

Although the study was able to capture a representation of the nurses in the general units of the hospital, it cannot be generalized to the critical care and emergency care areas, and other healthcare personnel. In addition, the safety culture and safety attitudes measured in the study cannot be used to reflect other Philippine hospitals as each institution will have different variables to reflect the culture of the institution.

Conclusions/Recommendations

The outcomes of this present research validate that nurses of the National University Hospital scored the institution positively in terms of Patient Safety Culture and Safety Attitude. There is more work that needs to be done to improve in the areas of Staffing, Non-Punitive Response to Error, and Stress Recognition. Safety Attitude significantly affects Patient Safety Culture where a strong Safety Attitude among healthcare personnel will enhance Safety Culture. Staff nurses and nursing management perceive Patient Safety Culture and Safety Attitude differently. In addition, nurses working in Charity Service areas have more positive perceptions about Patient Safety Culture in the NUH as compared to nurses assigned to Pay Service units.

The study recommends that the National University Hospital develop a hospital-wide Patient Safety program. This should be collaborative and in concert with nursing management and staff nurses, hospital administration, and all health and non-health professionals and workers. This program should include regular evaluative and inter-professional assessments in the form of continuous quality improvement measures. The study further recommends closer analysis of cultural and work environment

factors surrounding Low Event Reporting and Low Stress Recognition that contribute to errors across the organization. Likewise, an institution-wide approach is required to identify a more decent and a more realistic nurse-patient ratio that promotes a safe work environment for both patients and providers. This research also emphasizes the importance on patient Safety Culture and Safety Attitude in the mindset of nurses and other healthcare staff in third world countries with the focus on quality and safe patient care continuing to be a global priority. The outcome of this study is an excellent addition to the limited literature in third world countries about this important healthcare issue. An established benchmark is valuable for use by other healthcare organizations where this study might be replicated, as well as, in other less developed and other developing countries worldwide.

Postscript to this Research

Results of this study were presented to the National University Hospital's administrative leaders and staff, resulting in the revision of its Patient Safety Manual. The NUH Division of Nursing Research and Development also conducted follow-up research studies on patient safety based on outcomes of this research. Several university-led studies are presently being conducted across healthcare providers in all units of the NUH to guide the next steps in promoting a safe culture. •

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Acknowledgements

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> " *The oak fought the wind and was broken, the willow bent when it must and survived.* "
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> — **Robert Jordan, The Fires of Heaven**