

**THE RELATIONSHIP BETWEEN PROFESSIONAL NURSING COMPETENCIES AND KEY PERFORMANCE INDICATORS (KPIs) FOR PATIENT SAFETY OUTCOMES AMONG THE FILIPINO STAFF NURSES IN SELECTED PRIVATE SECONDARY HOSPITALS IN THE PHILIPPINES**

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ABSTRACT

This paper aims to determine the clinical competencies and compliance to patient safety among Filipino staff nurse respondents. The independent variable was staff nurses' clinical competencies and the dependent variable was a key performance indicator (KPI) for patient safety outcomes. This descriptive-correlational study was conducted in 3 private secondary hospitals in the Philippines. From the 560,000 Filipino registered nurses, the respondents of the study included a total of 191 Filipino staff nurses, which were selected using purposive sampling (inclusion and exclusion criteria). The instrument tools underwent tool reliability, and internal consistency with Cronbach alpha scores of 0.96 and 0.78 respectively. Using SPSS software package, the following statistical formulas were utilized: mean (\bar{x}), standard deviation (SD), and Pearson Product Moment Coefficient Correlation (r). The results of the study yield that a majority of Filipinos staff nurses were young age adults, females, Bachelor degree holders, and have 1-3 years and more than 10 years of hospital experience. Most of the Filipino staff nurse respondents have very high competence (\bar{x} = 3.47, $SD \pm 0.079$) to professional nursing competencies (safe nursing practice, leadership and management, and research). The majority of the Filipino staff nurse respondents have very high compliance (\bar{x} = 3.13, $SD \pm 0.439$) as key performance indicators for patient safety outcomes (medication administration safety, infection control pressure ulcer prevention, fall prevention, blood management). Study findings revealed that there is a significant relationship between clinical competencies and compliance to patient safety standards among staff nurses ($r = .953$; $p = .000$).

KEYWORDS: Nursing competencies; key performance indicators for patient safety outcomes.

BACKGROUND AND SIGNIFICANCE OF THE PROBLEM

The risk and incidence of harm in patients while in the hospital facilities continues to increase despite several years of efforts to produce safe and quality healthcare (Drake, 2015). Specifically, the Institute of Medicine reported that 98,000 hospital deaths each year are attributable to errors committed by hospital staffs in the United States of America (Thomas, 2011). Medical errors may occur in all areas of healthcare and, therefore, affect a massive number of people. Majority of medical errors or adverse events are classified as preventable occurrences (Borromeo, 2014).

Patient safety among healthcare professionals is affected because of an increasing complexity in the healthcare

environment (Borromeo, 2014). The nurse must understand the importance of an organizational safety climate which is substantial in promoting patient safety interventions (Taylor, 2008). Thus, patient safety is among the top priorities of every healthcare organization. Nursing leaders must develop strategies and implement the best healthcare practices to promote and to ensure patient safety. In addition, attitudes toward patient safety are the foundation of patient safety culture. As a result, the professional regulatory board must concentrate in understanding patient safety, developing safety culture, and improving health outcomes (Chenot, 2007). Furthermore, the quality and safety of nursing practice are major concerns in nursing clinical practice settings (Fentianah, 2012).

Currently, staff nurses' managerial responsibilities have significantly increased (Min, Her, Chung, & Hung, 2007). Not receiving a good education and training in management principles is becoming an issue of significant importance (Min, Her, Chung, & Hung, 2007). Also, it seems that the staff nurses' preparation for these managerial functions appears to be minimal or even non-existent (Min, Her, & White, 2005). Management's role is of great importance in all nursing settings (Ellis & Hartley, 2005). The need for critical management competencies to enhance the staff nurse's ability in managing resources is also essential (Min, Her, & White, 2005). Furthermore, both clinical competency and ability to manage resources effectively to deliver effective nursing care are required for staff nurses. Understanding of management principles and participating in management activities are important nursing responsibilities (Ellis & Hartley, 2005).

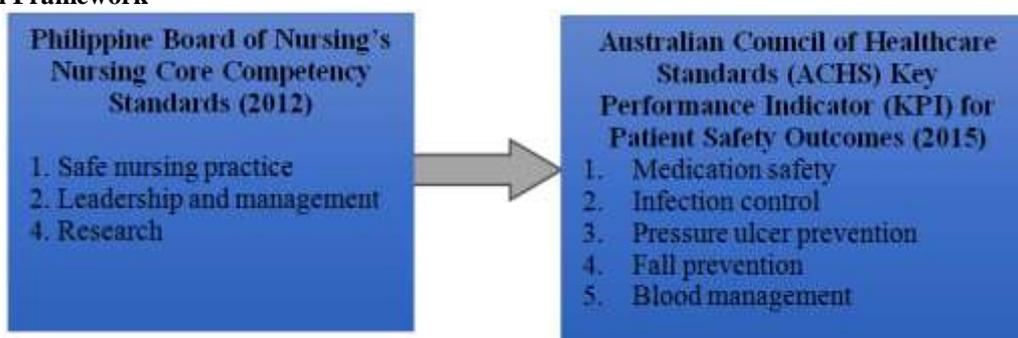
Nursing research is also crucial because it builds a knowledge base and provides a framework for assisting nurse managers in the evaluation of nursing service delivery. There are only a few studies in which

systematic investigation of a nursing administrative issue was performed. Moreover, it appears that nursing administrative research is lacking in both substance and quantity. The body of research dealing with nursing administrative problems has lagged behind clinical nursing research (Patterson, 2016).

As a result, the Department of Health (2011) emphasized that there are government efforts initiated to promote patient safety in order to promote safety culture and reduce healthcare-related harm in the country.

Thus, the researcher had come up with research entitled, "The correlation of professional nursing competencies and Key performance indicators (KPIs) to patient safety outcomes among Filipino staff nurses in selected private secondary hospitals in the Philippines," because the researcher is interested in determining if nursing competence is significantly related with patient safety outcomes. Moreover, this will determine if the staff nurses' competency is attributed to patient safety outcomes in the hospitals.

Conceptual Framework



This research study utilized Nursing Core Competency Standards, which includes 3 major roles among registered nurses: (a) safe nursing practice, (b) leadership and management, and (c) research (Philippine Board of Nursing, 2012). On the other hand, the Australian Council of Healthcare Standards (ACHS) Key Performance Indicator (2015) include five key patient safety outcomes, namely: medication safety, infection control, pressure ulcer, fall prevention, and blood management. These reflect the conceptual framework of study.

Research Objectives

- 1) To determine the professional nursing competencies of Filipino staff nurses in selected private secondary hospitals in the Philippines
- 2) It also aims to determine the key performance indicators (KPIs) for patient safety outcomes among Filipino staff nurses in selected private secondary hospitals.
- 3) To determine the relationship between professional nursing competencies and key performance

indicators (KPIs) for patient safety outcomes among Filipino staff nurses

Research Methodology

This research used a descriptive and correlational study design to determine the significant relationship between professional nursing competencies (independent variables) and key performance indicators (KPIs) of patient safety outcomes (dependent variables). The research procedures are as follows:

Population and Samples

The population of interest includes all nurses working in the hospitals in the country. The study includes a total of 191 Filipino staff nurses as respondents of the study who were selected using purposive sampling. Inclusion and exclusion criteria were applied in the study. Inclusion criteria include: a) nurses must be currently employed as professional nurses; b) must be working/employed in a secondary hospital; and c) a registered nurse must have an active license in the Philippines.

Exclusion criteria of the study include: a) registered nurses who practice other areas in nursing (nursing

education, nursing research, community health nurse, private duty nursing); b) Filipino staff nurses who are registered nurses in the Philippines but working outside the Philippines (Overseas Filipino Worker); c) registered nurses who practice other careers (call center agent, medical insurance representative, secondary school teacher) and c) nurses who are currently deployed as volunteers, trainees, and on-the-job trainee in the hospitals

Research Setting

The researcher selected a total of 3 private secondary hospitals in the Philippines as research settings of the study. The said hospitals are located in Marikina City, Laguna, and Pasig City, Metro Manila, Philippines.

Research Instrument

The researcher utilized the self-administered questionnaire (SAQ) which contained the 1) a nurse competence tool and 2) key performance indicators (KPIs) of patient safety outcome survey tool.

The first survey tool was a nurse competence tool. This was adapted from the 2012 Philippine Board of Nursing Core Competencies Standards among Filipino Nurses. The researcher made use of 4-point Likert scale (1 for strongly disagree, 2 for disagree, 3 for agree, and 4 for strongly agree). This was interpreted using the summated rating scale which denoted 1.00-1.60 for very low competence, 1.61-2.20 for low competence, 2.21-2.80 for moderate competence, 2.81-3.40 for high competence; and 3.41-4.00 very high competence.

The second survey tool was adapted from the Australian Council of Healthcare Standards (ACHS) Key

Performance Indicator (2015). The researcher made use of 4-point Likert scale (1 for rare, 2 for seldom, 3 for sometimes, and 4 for always). This was interpreted using the summated rating scale which denoted 1.00-1.60 for very low patient safety outcomes, 1.61-2.20 for low patient safety outcomes, 2.21-2.80 for moderate patient safety outcomes, 2.81-3.40 for high patient safety outcomes; and 3.41-4.00 very high patient safety outcomes.

Both survey tools were examined for construct and content validity by three experts in nursing working as faculty members in Christian University of Thailand. Tool reliability and internal consistency were also done using Cronbach alpha which obtained a reliability scores of 0.96 and 0.78, respectively.

Research Considerations

The researcher requested permission to conduct the study of the selected private secondary hospitals in the Philippines. After approval, the researcher then provided an informed consent to the respondents who agreed to participate in the study. In here, the researcher explained the purpose of the study, discussed the potential risks and benefits, assured the respondents of the confidentiality and anonymity of the information that was gathered, explained the rights to participate and rights to withdraw from the study.

Data Analysis

Using SPSS software package, the following statistical formulas were utilized: mean (\bar{x}) for descriptive statistics and Pearson's product moment correlation (r) for inferential statistics.

RESEARCH FINDINGS/RESULTS

Table 1: Professional Nursing Competencies among the Filipino Staff Nurses Respondents.

Professional Nursing Competencies	\bar{x}	S.D.	Level of Competence
1. Safe nursing practice	3.64	.096	Very High
2. Leadership management	3.52	.065	Very High
4. Research role	3.24	.077	High
OVERALL MEAN	3.47	.079	Very High

Table 1 showed the results of the study that most of the Filipino staff nurse respondents have very high competence (\bar{x} = 3.47, $SD\pm$ 0.079) to professional nursing competencies. Specifically, the mean score for the nurse competence role in safe nursing practice among Filipino staff nurse respondents was very high (\bar{x} =3.64, $SD\pm$

0.096). It also revealed that there was a very high nurse competence in leadership and management role with a mean score (\bar{x} = 3.52, $SD\pm$ 0.065). Meanwhile, the mean score for the nurse competence role in research was also very high (\bar{x} = 3.24, $SD\pm$ 0.077).

Table 2: Key Performance Indicators (KPI) for Patient Safety Outcomes.

Key Performance Indicators (KPI) for Patient Safety	\bar{x}	S.D.	Level of Patient Safety Outcomes
1. Medication safety	3.26	.423	Very high
2. Infection control	3.12	.404	High
3. Pressure ulcer	2.88	.368	High
4. Fall prevention	3.13	.345	High
5. Blood management	3.27	.656	Very high
OVERALL MEAN	3.13	.439	High

Table 2 depicted the summary of values showing the mean, standard deviation and interpretation of key performance indicators (KPIs) for patient safety outcomes in terms of medication safety, infection control, pressure ulcer prevention, fall prevention, and blood management among Filipino staff nurse respondents. In general, most of the Filipino staff nurse respondents have a high level of patient safety outcomes (\bar{x} = 3.13, $SD\pm 0.439$).

Specifically, the mean score for key performance indicators (KPIs) for patient safety outcomes in terms of medication safety was very high level (\bar{x} =3.26, $SD\pm 0.423$). Also, there was a high patient safety outcome in terms of infection control with a mean score (\bar{x} = 3.12, $SD\pm 0.404$). Meanwhile, the mean score for patient safety outcomes in terms of pressure ulcer was only of high level (\bar{x} = 2.88, $SD\pm 0.368$). The mean score for key performance indicators (KPIs) for patient safety outcomes in terms of fall prevention was high (\bar{x} =3.13, $SD\pm 0.345$). It also revealed that there was a very high level of patient safety outcomes in terms of infection control with a mean score (\bar{x} = 3.27, $SD\pm 0.656$).

Table 3: Correlation Coefficient between Professional Nurse Competencies and Key Performance Indicators (KPIs) for Patient Safety Outcomes.

Variables	Competencies	KPI
Professional Nursing Competencies	1	.953**
Key Performance Indicators (KPIs) to Patient Safety Outcomes	.953**	1

** Correlation is statistically significant at 0.01 levels (2-tailed).

Table 3 depicted the summary of values showing the Pearson Product Moment Correlation Coefficient (r) value of the significant relationship between the clinical competencies and compliance to patient safety standards among Filipino staff nurses. The findings yielded a highly positive correlation between professional nursing competencies and Key performance indicators (KPIs) of patient safety outcomes among Filipino staff nurse respondents ($r = .953$; $p = .000$) at a significant level .01.

CONCLUSION AND DISCUSSION

1. The majority of the Filipino staff nurse respondents have very high nursing competence. The Philippine Board of Nursing (2012) identified the three major professional nursing core competencies among Filipino registered nurses. These include safe nursing practice, leadership and management, and research. Based from study findings, it revealed that the Filipino staff nurse respondents always demonstrated and performed professional nursing competencies. This can be interpreted that nurses must be highly competent enough to ensure the effectiveness of the delivery of safe and quality nursing practice. This finding supported the study of Cong (2011) which concludes that nurse core

competency in general hospitals among staff nurses in Hubei province in China was at a high level and the average score of nurse core competency was 3.29 ($SD\pm 0.57$). Thus, nurses must demonstrate high competencies in performing the nursing process, nursing documentation, ethical and legal practice, collaborative care, and professional growth and development to provide a safe nursing practice in taking care of clients. The result further showed that Filipino staff nurse respondents demonstrate very high competencies in leadership and management. This finding supports the study of Hassan (2013) which states that the majority of the newly graduate registered nurses in America demonstrated excellent performance in performing the six domains of nursing competencies include leadership and management skills. Staff nurses must demonstrate competent leadership and management skills competencies in order to efficiently provide, manage and coordinate nursing care. Thus, leadership and management competency is important, essential and a required role among staff nurses in Canada (Yoon, 2008). Furthermore, the study showed that Filipino staff nurse respondents demonstrated very high research competence. The result supported the study of Keshk and Mersal (2017) which concludes that new entry-level nurses demonstrated a greater assessment in terms of research competencies in Saudi Arabia.

2. The findings of the study regarding "High compliance to key performance indicators (KPIs) for patient safety standards among Filipino staff nurse respondents" is similar studies in the Philippines, America, and Saudi Arabia. Paguio (2016) concludes that the majority of Filipino staff nurses in a national university hospital gave an overall patient safety grade of very good (53%) acceptable (34%) and an overall safety climate score of 85.56%. Thomas (2011) states that nursing staffs working in nursing homes in South Florida have higher patient safety culture scores which decreases the likelihood of incidence of falls and infections. Moreover, the findings also support the study of Aboshaiqah (2010) which states that a majority (52%) of staff nurses positively perceived compliance of patient safety culture at King Fahad Medical Centre, Riyadh, Saudi Arabia. Lastly, the result of the study is consistent with the study findings of Merrill (2011) which concludes that Registered nurses were reported to have a moderate to a high unit safety climate in selected hospitals in Utah. Thus, compliance to patient safety standards is currently needed in order to prevent medication errors, incidence of falls, pressure injuries, incidence of nosocomial infections, and blood transfusion reactions. Nursing units in the hospitals must be strict enough to ensure that staff nurses are compliant with patient safety.

3. Results showed that clinical competencies among Filipino staff nurse respondents were significantly related with compliance to key performance indicators (KPIs) for patient safety outcomes. Specifically, study revealed that there is a highly positive correlation

between clinical competencies and compliance to patient safety outcomes ($r = .953$). Thus, it showed that a competent nurse leads to favourable health outcomes in patients. The study findings support the study in Florida, California, Carolina, and Virginia. Accordingly, Upadhyay (2017) states that nursing staffs across the nursing unit influence patient safety culture perceptions. Thus, staff nurses have a positive role in improving patient safety outcomes and nursing performance. Drake (2015) concludes that nurse behaviour is highly related with higher rating of patient safety culture and patient safety practice. On a similar study, Thomas (2011) reveals that higher ratings of patient safety culture are significantly related to better nursing care processes. The study finding is also consistent with the study of Smith (2016) which concludes that safety nursing practices policies were positively associated with the reduction of medical errors and increased the quality of care of patients. The result of the study supports the study of Thornlow (2007) which states that acute care hospitals in Virginia with higher levels of nurse staffing were more likely to utilize patient safety practices. Thus, the result of this study indicates that a stronger safety culture is significantly related to better nurse outcomes. The study measured the nurse competency in the acute care setting and patient outcomes which revealed that there is a strong link between nurse competency and patient outcomes on managing patient care. The finding of the study supports the study of Fentianah's (2012) which concluded that nursing competence potentially influenced safe and quality of nursing care provided to patients in the Kingdom of Saudi Arabia. Lastly, Merrill (2011) concluded that Nurse staffing variables were significantly related to nurse-sensitive patient outcomes (like fall and pressure injuries) in selected hospitals in Utah.

Recommendations

Tertiary general hospitals need to enhance their initiative to improve nurses' core competency through staff enhancement and development training programs to ensure safe entry-level nursing practice. The study recommends the development of policies and procedures designed to prevent adverse events in the hospital like medication error, a hospital-acquired. The result of the study is valuable information for the nursing education to improve nursing curriculum by gearing towards the competency-based and outcome-based nursing curriculum. Lastly, the study also recommends continuous professional development in patient safety as well as intensification of employing the 2012 National Nursing Core Competency Standards set by Philippines Board of Nursing.

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