

Philippine professional core competencies' impact on nurses' key performance indicators (KPIs) for patient safety outcomes



Alfredo Z. Feliciano ^{1,*}, Evelyn E. Feliciano ^{1,2}, Joan Russel D. Feliciano ¹, Zenaida S. Fernandez ¹, Paulo Carl G. Mejia ³, Mohammad Ryan L. Diamla ⁴, Samikshay Devkota ⁵, Amira Y. Boshra ², Ma. Teresa S. Cabanayan ¹, Maria Fe M. Mallari ¹, Shannon Rey P. Pelayo ¹, Milagros C. Si ¹, Anita B. Viray ¹

¹College of Nursing, Angeles University Foundation, Angeles, Philippines

²Department of Nursing, College of Applied Medical Sciences, Majmaah University, Al Majmaah, Saudi Arabia

³Department of Nursing, Al Ghad International College for Applied Medical Sciences, Najran, Saudi Arabia

⁴College of Health Sciences, Mindanao State University, Marawi, Philippines

⁵Medical Intensive Care Unit Department, Om Hospital and Research Center Pvt. Ltd., Kathmandu, Nepal

ARTICLE INFO

Article history:

Received 26 June 2019

Received in revised form

18 October 2019

Accepted 20 October 2019

Keywords:

Professional core competencies

Philippines

Key performance indicators

Patient safety outcomes

ABSTRACT

Patient safety becomes topmost priority-almost always comparable to the quality of healthcare in the facade of disturbing rates of hospital imprecisions and resultant deaths. Expansive clinical experience, exposure to evidence-based practices and active research engagement can potentially address these problematic consequences. This descriptive-correlational study identified the 304 registered nurses' professional core competencies from selected government and non-government hospitals in the Philippines and determined their impact on KPIs for patient safety outcomes. Most of the nurses' professional core competencies displayed very high grade ($\bar{x}=3.52$, $SD\pm 0.090$) specifically on safe nursing practice ($\bar{x}=3.88$, $SD\pm 0.087$, very high) followed by leadership and management ($\bar{x}=3.68$, $SD\pm 0.086$, very high) and research ($\bar{x}=3.01$, $SD\pm 0.097$, high). KPIs showed an overall mean score of 3.17 ($SD\pm 0.418$, high) and among the five (5) indicators, blood management ($\bar{x}=3.45$, $SD\pm 0.0611$, very high) and medication safety ($\bar{x}=3.55$, $SD\pm 0.493$, very high) obtained the highest scores. Finally, a significant relationship exists between the nurses' professional core competencies and KPIs for patient safety outcomes and further disclosed a highly positive correlation ($r=0.950$, $p=0.000$) that undoubtedly determined the impact of professional core competencies on KPIs. Ultimately, the results concluded the vital importance of safe nursing practice, research, leadership, and management, as professional core competencies in ensuring patient safety in hospitals.

© 2019 The Authors. Published by IASE. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Notwithstanding consistent hospital efforts to produce a positive impact on safety and quality of care, risks and actual harm to patients continue to exist due to nurses' incompetence (Kahriman and Öztürk, 2016). Nurse practitioners who often assume leadership functions claimed malpractice errors in public data gathered from the National Practitioner Data Bank (Sweeney et al., 2017). While the culture of safety is inversely proportional with the rate of errors in the clinical setting (Abusalem et al., 2019;

Sholl et al., 2019), Kieft et al. (2014) asserted the chief significance of quality of healthcare interventions to achieve a worthy patient experience, which a basic advocacy concept among nurses (Abbasinia et al., 2019). As the significant surgeon nurses' demands drastically ensued, the lack of appropriate education and experience is of considerable concern because professional competence constantly emanates from suitable knowledge and executive function (Feliciano et al., 2019; Sousa and Alves, 2015). Managerial competencies in various healthcare settings address the indispensable firmness in safeguarding nurses' ability to deliver expected roles and to manage available resources and to establish proficiencies that link together the appropriate knowledge and technical skills desired (Heinen et al., 2019; Lowen et al., 2015). Moreover, continuous innovations facilitate nurse leaders in evaluating nursing services

* Corresponding Author.

Email Address: azfeliciano@yahoo.com (A. Z. Feliciano)

<https://doi.org/10.21833/ijaas.2020.01.001>

Corresponding author's ORCID profile:

<https://orcid.org/0000-0002-4318-9435>

2313-626X/© 2019 The Authors. Published by IASE.

This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

through systematic inquiry and persistent improvement (Andersen et al., 2019).

The 2012 Philippine Board of Nursing's core competency standards encompass safe nursing practice, leadership and management, and research. Meanwhile, the 2015 Australian Council of Healthcare Standards (ACHS) Key Performance Indicators (KPIs) for patient safety outcomes include medication safety, infection control, pressure ulcer prevention, fall prevention, and blood management. As disputes on professionalism and safety culture persistently associate with alarming rates of hospital malpractice, a study came into a decision to undertake in determining the impact of these professional core competencies on the identified KPIs for patient safety outcomes (Abusaleem et al., 2019; Sholl et al., 2019).

2. Methods

2.1. Study design

The study employed a descriptive-correlational design with the intent to determine the professional nursing competencies and evaluated the KPIs for patient safety outcomes of staff nurses in both government and non-government hospitals in the Philippines. It also identified the impact of these professional nursing competencies on KPIs for patient safety outcomes through the identification of significant relationships between identified variables.

2.2. Setting and sample

Three hundred four (304) nurses coming from both government and non-government hospitals were gathered through purposive sampling. Inclusion criteria specified that they should be currently working in secondary hospitals (Angeles City, Marikina City, and Laguna and Pasig City) in the Philippines employed as a registered nurse with an active license to practice. Exclusion criteria were those who worked in other fields of nursing and non-related fields, volunteers and trainees in hospitals.

2.3. Ethical consideration

The College of Health Sciences at Mindanao State University granted the certificate of ethical research clearance (code number of 12-2018). Confidentiality and anonymity were maintained throughout the study. The respondents were informed of the research objectives, risks, and benefits and assured that they can withdraw from the study at any time.

2.4. Measurement/instrument

The self-reported questionnaire contained two (2) sections that started with the professional nursing competencies through a nurse competence tool, a Likert-type scale with competency grades

(low, moderate, high and very high). The second part encompassed the KPIs that was based on the 2015 Australian Council of Healthcare Standards and was presented on a Likert-type scale with summarized patient safety outcomes grades (low, moderate, high and very high). The experts in the Christian University of Thailand examined the developed questionnaire for validity (construct and content). Reliability and internal consistency achieved scores of 0.96 and 0.78, respectively.

2.5. Data collection procedure

After securing permission from respective hospital authority and explanation of the study's purpose and procedure to the respondents through informed consent, the 304 nurses answered the self-reported questionnaire and were collected from mid-January to March 2018. Data organization, tabulation and statistical treatment ensued thereafter.

2.6. Data analysis

In this study, an SPSS software package (version 23) was used for descriptive (mean, \bar{x}) and inferential (Pearson's product moment correlation, r) statistics.

3. Results

3.1. Professional nursing core competencies

Presented in Table 1, the nurses' professional core competencies revealed highest mean score on safe nursing practice (\bar{x} =3.88, SD ±0.087, very high) followed by leadership and management (\bar{x} =3.68, SD ±0.087, very high) and research (\bar{x} =3.01, SD ±0.097, high) with an overall mean score of 3.52 (SD ±0.090, very high).

3.2. Key performance indicators (KPIs) for patient safety outcomes

The results on KPIs for patient safety outcomes are shown in Table 2 where the overall mean score of 3.17 (SD ±0.418, high) was obtained. Among the five (5) indicators, blood management (\bar{x} =3.45, SD ±0.611, very high) and medication safety (\bar{x} =3.55, SD ±0.493, very high) received the highest scores.

3.3. Impact of professional nursing core competencies on KPIs for patient safety outcomes

As unveiled in Table 3, a significant relationship exists between the nurses' professional core competencies and KPIs for patient safety outcomes. The findings revealed a highly positive correlation (r =0.950, p =0.000) that proved the impact of professional core competencies on KPIs.

Table 1: Professional nursing core competencies

Professional nursing competencies	\bar{x}	SD	Competency grade
Leadership management	3.68	.086	very high
Research role	3.01	.097	high
Safe nursing practice	3.88	.087	very high
Overall mean	3.52	.090	very high

Table 2: Key performance indicators (KPIs) for patient safety outcomes

KPIs for patient safety	\bar{x}	SD	Patient safety outcomes grade
Blood management	3.45	.611	very high
Fall prevention	3.01	.242	high
Infection control	3.02	.415	high
Medication safety	3.55	.493	very high
Pressure ulcer	2.80	.331	high
Overall mean	3.17	.418	high

Table 3: Impact of professional nursing core competencies on KPIs for patient safety outcomes

	Competencies	KPIs
Professional nursing competencies	1	.950**
KPIs for patient safety outcomes	.950**	1

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

4. Discussion

The results affirmed that Filipino nurses displayed very high competency grade based on the standards set by the Philippine Board of Nursing, which considerably parallels the healthcare goal to ascertain that nurses provide acceptable, safe and quality patient care. While active patient involvement enhances patient safety outcomes, nurses have the likelihood of observing first-hand safety concerns in clinical areas, thus they have the accountability in preserving a safe hospital work environment on a regular basis to create a positive influence on patient safety (Arnetz et al., 2019; Bucknall et al., 2019; Choi et al., 2019; Christiansen et al., 2019; Yoong et al., 2019).

Nurse leaders must continuously provide directives necessary for analysis and formulation of innovations to address clinical weaknesses, to improve quality of healthcare and to retain nurses through a more conducive work environment while their needs for professional development are met (Andersen et al., 2019; Karlsson et al., 2019; Sweeney et al., 2017). More specifically, Liu et al. (2019) reported that a higher level of job satisfaction among nurses leads to higher patient safety outcomes and burnout among nurses reduces patient safety index.

Meanwhile, the results on KPIs signify its connection with some researches' findings where safety in the hospital's clinical environment obtained a positive remark (Paguio and Pajarillo, 2016). This is in contrast, however with the study of Kahrman and Öztürk (2016) revealed the 1,092 nurses' experience on medical errors due to fatigue, communication barriers and insufficient staffing levels.

In fact, inadequate staffing is highly correlated with an increased risk of nosocomial infections (Di

Muzio et al., 2019; Saville et al., 2019; Shang et al., 2019). Furthermore, Sholl et al., (2019) claimed that staff nurses' lack of competence and professionalism creates a great impact on the patients' safety in terms of physical, emotional and psychological aspects. Openness in communication is statistically significant with an enhancement of safety culture and that the patients must demonstrate active engagement in this process (Ansari et al., 2019; Chagini et al., 2019; Lee and Quinn, 2019). Communication in clinical settings is so vital that it must be practiced in all areas of care plans including medication management, such as medical reconciliation even in complex areas (Manias et al., 2019; Martyn et al., 2019; Stark et al., 2019).

After careful determination of the significant impact of the nurses' professional core competencies and KPIs on patient safety outcomes, such a relationship discusses the qualified consequence of having professional nurses who uphold safety on nursing practice, leadership and management and research for the patients' outcomes critical to safety concerns. This is of particular similarity with the findings of Ansari et al. (2019) implicating awareness, communication, decision-making, conflict resolution, teamwork and leadership with significant improvement of safety culture. At a particular note, nurses must always assess and achieve a safe working environment for patients to prevent errors related to medication and blood transfusion, falls, pressure sores and nosocomial infections (Arnetz et al., 2019; Ricklin et al., 2019; Shang et al., 2019). A high safety competency grade creates a positive influence on patients' overall safety due to enhanced teamwork, workshops and processes (Choi et al., 2019; Jin and Yi, 2019; Kahrman and Öztürk, 2016).

5. Conclusion

The study presented the very high grade of professional core competencies among nurses, which created a highly positive and significant impact on the five (5) KPIs for patient safety outcomes. Ultimately, the results concluded the vital importance of safe nursing practice, research, leadership and management in ensuring patient safety in hospitals.

Acknowledgment

Special appreciation to all nurses from Angeles City, Marikina City, and Pasig City and Laguna who participated in the study.

Compliance with ethical standards

Conflict of interest

The authors declare that they have no conflict of interest.

Informed consent

Informed consent was secured from all nurses who participated in the study.

References

- Abbasinia M, Ahmadi F, and Kazemnejad A (2019). Patient advocacy in nursing: A concept analysis. *Nursing Ethics*. <https://doi.org/10.1177/0969733019832950> PMID:31109243
- Abusalem S, Polivka B, Coty MB, Crawford TN, Furman CD, and Alaradi M (2019). The relationship between culture of safety and rate of adverse events in long-term care facilities. *Journal of Patient Safety*. <https://doi.org/10.1097/PTS.0000000000000587> PMID:30889049
- Andersen J, Robert GB, Nunes FG, Bal R, Burnett S, Karlton A, and Fulop NJ (2019). Translating research on quality improvement in five European countries into a reflective guide for hospital leaders: The 'QUASER hospital guide'. Oxford University Press, Oxford, UK. <https://doi.org/10.1093/intqhc/mzz055> PMID:31187862
- Ansari SP, Rayfield ME, Wallis VA, Jardine JE, Morris EP, and Prosser-Snelling E (2019). A safety evaluation of the impact of maternity-orientated human factors training on safety culture in a tertiary maternity unit. *Journal of Patient Safety*. <https://doi.org/10.1097/PTS.0000000000000609> PMID:31145175
- Arnetz J, Sudan S, Goetz C, Counts S, and Arnetz B (2019). Nurse work environment and stress biomarkers: Possible implications for patient outcomes. *Journal of Occupational and Environmental Medicine*, 61(8): 676-681. <https://doi.org/10.1097/JOM.0000000000001642> PMID:31205209
- Bucknall T, Digby R, Fossum M, Hutchinson AM, Considine J, Dunning T, and Manias E (2019). Exploring patient preferences for involvement in medication management in hospitals. *Journal of Advanced Nursing*, 75(10): 2189-2199. <https://doi.org/10.1111/jan.14087> PMID:31162718
- Chegin Z, Janati A, Bababie J, and Pouraghaei M (2019). The role of patients in the delivery of safe care in hospital: Study protocol. *Journal of Advanced Nursing*, 75(9): 2015-2023. <https://doi.org/10.1111/jan.14045> PMID:31087572
- Choi EW, Kim GY, Shim JL, and Son YJ (2019). Hospital nurses' perceived patient safety culture and adverse nurse outcomes in Korea. *Research and Theory for Nursing Practice*, 33(2): 134-146. <https://doi.org/10.1891/1541-6577.33.2.134> PMID:31123159
- Christiansen AB, Simonsen S, and Nielsen GA (2019). Patients own safety incidents reports to the Danish patient safety database possess a unique but underused learning potential in patient safety. *Journal of Patient Safety*. <https://doi.org/10.1097/PTS.0000000000000604> PMID:31135597
- Di Muzio M, Dionisi S, Di Simone E, Cianfrocca C, Di Muzio F, Fabbian F, and Li S (2019). Can nurses' shift work jeopardize the patient safety? A systematic review. *European Review for Medical and Pharmacological Sciences*, 23(10): 4507-4519.
- Feliciano E, Boshra A, Mejia P, Feliciano A, Maniago J, and Alsharyah H (2019). Understanding Philippines nurses' competency in the delivery of healthcare services. *Journal of Patient Care*, Volume 5: 146. <https://doi.org/10.4172/2573-4598.1000146>
- Heinen M, Van Oostveen C, Peters J, Vermeulen H, and Huis A (2019). An integrative review of leadership competencies and attributes in advanced nursing practice. *Journal of Advanced Nursing*, 75(11): 2378-2392. <https://doi.org/10.1111/jan.14092> PMID:31162695
- Jin J and Yi YJ (2019). Patient safety competency and the new nursing care delivery model. *Journal of Nursing Management*, 27(6): 1167-1175. <https://doi.org/10.1111/jonm.12788> PMID:31069860
- Kahrman İ and Öztürk H (2016). Evaluating medical errors made by nurses during their diagnosis, treatment and care practices. *Journal of Clinical Nursing*, 25(19-20): 2884-2894. <https://doi.org/10.1111/jocn.13341> PMID:27335283
- Karlsson AC, Gunningberg L, Bäckström J, and Pöder U (2019). Registered nurses' perspectives of work satisfaction, patient safety, and intention to stay-A double-edged sword. *Journal of Nursing Management*, 27(7): 1359-1365. <https://doi.org/10.1111/jonm.12816> PMID:31211908
- Kieft RA, de Brouwer BB, Francke AL, and Delnoij DM (2014). How nurses and their work environment affect patient experiences of the quality of care: A qualitative study. *BMC Health Services Research*, 14: 249. <https://doi.org/10.1186/1472-6963-14-249> PMID:24923663 PMCID:PMC4064111
- Lee SE and Quinn BL (2019). Safety culture and patient safety outcomes in East Asia: A literature review. *Western Journal of Nursing Research*. <https://doi.org/10.1177/0193945919848755> PMID:31122162
- Liu J, Zheng J, Liu K, Liu X, Wu Y, Wang J, and You L (2019). Workplace violence against nurses, job satisfaction, burnout, and patient safety in Chinese hospitals. *Nursing Outlook*, 67(5): 558-566. <https://doi.org/10.1016/j.outlook.2019.04.006> PMID:31202444
- Lowen IMV, Peres AM, Crozeta K, Bernardino E, and Beck CLC (2015). Managerial nursing competencies in the expansion of the family health strategy. *Revista da Escola de Enfermagem da USP*, 49(6): 964-970. <https://doi.org/10.1590/S0080-62342015000600013> PMID:27419681
- Manias E, Braaf S, Rixon S, Williams A, Liew D, and Blackburn A (2019). Communicating with patients, families and health professionals about managing medications in intensive care: A qualitative observational study. *Intensive and Critical Care Nursing*, 54: 15-22. <https://doi.org/10.1016/j.iccn.2019.05.001> PMID:31155314
- Martyn JA, Paliadelis P, and Perry C (2019). The safe administration of medication: Nursing behaviours beyond the five-rights. *Nurse Education in Practice*, 37: 109-114. <https://doi.org/10.1016/j.nepr.2019.05.006> PMID:31132586
- Paguio J and Pajarillo E (2016). Safety culture and safety attitudes of nurses in the national university hospital. *Philippine Journal of Nursing*, 86(1): 10-16.
- Ricklin ME, Hess F, and Hautz WE (2019). Patient safety culture in a university hospital emergency department in Switzerland-A survey study. *GMS Journal for Medical Education*, 36(2). <https://doi.org/10.3205%2Fzma001222>
- Saville CE, Griffiths P, Ball JE, and Monks T (2019). How many nurses do we need? A review and discussion of operational research techniques applied to nurse staffing. *International Journal of Nursing Studies*, 97: 7-13. <https://doi.org/10.1016/j.ijnurstu.2019.04.015> PMID:31129446
- Shang J, Needleman J, Liu J, Larson E, and Stone PW (2019). Nurse staffing and healthcare-associated infection, unit-level analysis. *JONA: The Journal of Nursing Administration*, 49(5): 260-265. <https://doi.org/10.1097/NNA.0000000000000748> PMID:31008835

- Sholl S, Scheffler G, Monrouxe LV, and Rees C (2019). Understanding the healthcare workplace learning culture through safety and dignity narratives: A UK qualitative study of multiple stakeholders' perspectives. *BMJ Open*, 9: e025615. <http://doi.org/10.1136/bmjopen-2018-025615>
PMid:31133580 PMcid:PMC6538093
- Sousa JM and Alves ED (2015). Nursing competencies for palliative care in home care. *Acta Paulista de Enfermagem*, 28(3): 264-269. <https://doi.org/10.1590/1982-0194201500044>
- Stark HE, Graudins LV, McGuire TM, Lee CYY, and Duguid MJ (2019). Implementing a sustainable medication reconciliation process in Australian hospitals: The world health organization high 5s project. *Research in Social and Administrative Pharmacy* (In Press). <https://doi.org/10.1016/j.sapharm.2019.05.011>
PMid:31176651
- Sweeney CF, LeMahieu A, and Fryer GE (2017). Nurse practitioner malpractice data: Informing nursing education. *Journal of Professional Nursing*, 33(4): 271-275. <https://doi.org/10.1016/j.profnurs.2017.01.002>
PMid:28734486
- Yoong W, Assassi Z, Ahmedani I, Abdinasir R, Denning M, Taylor H, and Nauta M (2019). Why are patients not more involved in their own safety? A questionnaire-based survey in a multi-ethnic North London hospital population. *Postgraduate Medical Journal*, 95(1123): 266-270. <https://doi.org/10.1136/postgradmedj-2018-136221>
PMid:31129621