RESEARCH ARTICLE

Nurse Educators' Knowledge, Preparation, Application, and Participation in Quality Improvement

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Abstract

Background: The capability of nurse educators to teach and practice quality improvement (QI) is crucial in assisting students in their transition to becoming professionals. Understanding the strengths and limitations of nurse educators on QI can be a logical start to determine if they can keep up with the expectations.

Objectives: This paper aimed to determine the nurse educators' knowledge, preparation, application, and participation in QI, as well as the differences when grouped according to years of teaching and BSN degree completion.

Methods: A descriptive correlational design was utilized involving nurse educators from six nursing schools in Baguio City, Philippines. Only full-time nurse educators with official teaching load during the data gathering, regardless of academic background and position, were eligible. Faculty members who were on leave were excluded. A self-made tool (CVI 0.90, Cronbach's alpha 0.90) was used to gather data. Unpaired t-tests and ANOVA were used to determine the significant differences in the scores. Multiple regression was utilized to compute the relationship between knowledge, preparation, and participation in applying QI.

Results: 104 nurse educators responded. Results show that they are knowledgeable ($\bar{x}$ = 15.82; SD = 0.11), somewhat prepared ($\bar{x}$ = 2.93; SD = 0.08), and participated reasonably well ($\bar{x}$ = 2.77; SD = 0.11) on QI. Higher scores were given to the application of QI in the nursing courses ($\bar{x}$ = 2.44; SD = 0.08) and teaching-learning strategies ($\bar{x}$ = 0.83; SD = 0.07), compared with its application in improving Self as educators ($\bar{x}$ = 2.30; SD = 0.11), and improving student's learning outcomes ($\bar{x}$ = 2.13; SD = 0.11). Scores of nurse educators with more than ten years of teaching experience significantly differed in the extent of knowledge, application in teaching-learning strategies, and application of QI tools to improve Self and participation compared to those with less teaching experience. The scores did not significantly vary when grouped according to BSN degree completion. A positive relationship was observed between preparation and the application of QI tools to improve Self (p = 0.00). Data also showed a positive relationship between participation with application in nursing courses (p = 0.00), application of QI tools to improve Self (p = 0.00), and student learning outcomes. (p = 0.00).

Conclusion: The results of this study are encouraging and show the potential of nurse educators to apply quality improvement in the nursing curriculum. The adept use of technological tools in producing QI projects can augment the strength of nurse educators in meeting patient-centered care. Teaching experience can contribute to a better grasp of the concepts and maximum integration of quality improvement in nursing students' learning. Identifying, mobilizing, and supporting QI champions to spearhead the mentoring of new faculty members on QI may be a viable strategy to sustain a culture that values quality improvement. It further calls for the attention of educational institutions to develop policies to inform nurse educators in applying QI concepts.

Keywords: *Nurses, nurse educators, quality improvement*

Introduction

Background

Quality improvement (QI) in nursing education became a national goal in the early 2000s when the Institute of Medicine published reports on the current status of quality and safety in healthcare (Trent et al., 2017). According to the Philippine Professional Nursing Practice Standards (PPNPS), QI is the analysis of performance, monitoring of the outcome of processes, and applying strategies to improve safe and quality nursing practice (PPNPS, 2017).

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Similar with research studies, QI projects ask questions and solve problems. Evidence generated from research studies, however, are generally applicable while results of a QI project address specific issues in practice or setting (Grys, 2022). Evidence based practice (EBP) and QI are also recognized in improving practice. EBP highlights the use of best evidence to provide quality outcomes for individual patients while QI includes local data to enhance or build a new process in providing care (Grys, 2022; Hashish & Alsayed, 2020).

Educational institutions must develop their approaches to quality and demonstrate to the public that they can deliver consistent quality service (Sallis, 2002). It is based on the premise that nursing education is the bridge to quality and the link to creating the changes needed in the healthcare system (Sherwood, 2011). Surprisingly, no articles have been found focusing on QI to improve the quality of education in institutions of higher learning in baccalaureate nursing programs (Grant et al., 2002). Sallis (2002) also observed a vast gap between theory and practice, and the philosophies of the pioneers of the quality movement need to be translated more accurately into the practice of education.

As hospitals face increasing demands to be involved in QI activities, the role and influence of nurses in this endeavor are also escalating. As such, new nurses are expected to enter the workforce prepared to participate in QI activities at a beginning level (Kovner et al., 2010). Buerhaus and Norman (2001) suggest that they must develop skills in QI in their educational programs rather than depend on health organizations to provide all the necessary experiences to develop these skills after graduation. Failure of the curriculum to provide graduates with the required attributes can compromise patient safety (Van de Mortel & Bird, 2010).

In the Philippine setting, the Commission on Higher Education (CHED) issued Memorandum Order No. 14, series of 2009 (CMO No.14), with the subject Policies and Standards for Bachelor of Science in Nursing program. This CMO embodies the BSN program curriculum that incorporates "Quality Improvement" as one of the identified eleven (11) key areas of responsibility, which is expected to be exemplified by all graduates of the BSN program. Three years later, the Professional Regulations Commission, in collaboration with the CHED Technical Committee on Nursing Education, released the 2012 National Nursing Core Competency Standards prepared by the Board of Nursing, which again incorporates "Quality Improvement" under the beginning nurses' role on research. These standards clearly show that nurses should have developed competencies in QI when they graduate from a nursing school. This expectation from the graduates can be positively influenced by the capability of their teachers to guide them through the QI process. However, since QI was only reflected in the curriculum in 2009, all nurses educated before that year may have a limited understanding of the concept, including the nurse educators teaching in the academe. It is presumed that the curricular framework of earlier nursing graduates may have a minimal integration of QI concepts. Training or seminars on QI were also scarce, which influenced the faculty's knowledge and skills in its use. These observations offer a set of reasons why the years of teaching in the academe and the year of BSN degree completion were included as the variables of this study.

In Baguio City, Philippines, six schools offer nursing programs. CHED accredited one as a center of excellence in nursing education, including QI as one of the aspects of evaluating students' performance in the clinical area starting the sophomore year. However, the QI concept has yet to be introduced, and it will only be discussed thoroughly when students reach their senior year in the Management and Leadership course. Although a QI project is required in the senior year, the faculty and students need clarification about implementing its guidelines. Faculty and students from other schools also confirmed that QI is given little emphasis in the classroom or related learning experiences (i.e., hospital and community rotations). Understanding the strengths and limitations of nurse educators in the quality improvement process can be a logical start to determine if they can keep up with the expectations. Still, a comprehensive literature search provided limited evidence about this topic.

In response to the need to integrate the concept of quality improvement into the nursing curriculum, it is worthwhile to determine the capability of nurse educators. This paper aimed to determine the nurse educators' knowledge, preparation, application, and participation in quality improvement.

Objectives

This study aimed to determine the nurse educators' knowledge, preparation, application, and participation in quality improvement. Specifically, it sought answers to the following questions:

1. What is the profile of nurse educators in terms of?
    a. Quality improvement training
    b. Source of learning quality improvement

2. What is the extent of the attributes of nurse educators on quality improvement (QI) in terms of?
    a. Knowledge
    b. Preparation
    c. Participation
    d. Application

3. Is there a significant difference in nurse educators'

knowledge, preparation, application, and participation in quality improvement when grouped according to?
   a. Years of teaching in the academe
   b. Year of BSN degree completion

4. What is the relationship between knowledge, preparation, and participation of QI among nurse educators to the application of QI?

Methods

Study design

This study utilized a descriptive correlational design.

Setting

The study was conducted in six schools of nursing in Baguio City, Philippines.

Participants

Only full-time nurse educators with official teaching load during the data gathering, regardless of academic background and position, were eligible. Faculty members who were on leave were excluded.

Data measurement

A self-made tool was developed based on the review of literature conducted on quality improvement. The first part of the tool contains demographic data questions which are also used as study variables. The instrument consists of 19 questions for the knowledge answerable by "Yes" or "No"; 25 questions for both the preparation and participation areas utilizing a 4-point Likert scale (Very Prepared to Not At All Prepared and Participated Very Well to No participation respectively); 16 items for QI application in the courses; 18 items for the QI application in teaching strategies using a 3-point Likert scale (Very Much Applied to Not Applied); and 16 items for application of QI for improvement of self (faculty) and student nurses with 3-point Likert scale each (Very Much Applied; Somewhat Applied; Not Applied). The tool was subjected to content validity evaluation by four experts in research and quality improvement, which statically yielded a 0.9 result. It also underwent a reliability test utilizing ten nurse educators who were excluded as final respondents of the study. The test-retest result was 0.9 using Pearson r.

Bias

The researchers indicated in the informed consent form and reiterated to the respondents that their answers will be used for academic purposes only. It was also emphasized that the data will not be shared with their specific schools and will not be used as a basis of their performance evaluation.

Study size

An enumeration of 140 nurse educators from the six nursing schools in Baguio City was employed. The eligibility was based on the set inclusion and exclusion criteria.

Statistical methods

The data were tallied, and weighted means were computed using Microsoft Office Excel. Scales of interpretation were used to determine the extent of knowledge, preparation, participation, and application of quality improvement among nurse educators. Unpaired t-test and ANOVA were used to determine the significant difference between years of teaching and years of BSN completion, respectively. Multiple regression was utilized to compute the relationship between knowledge, preparation, and participation in applying QI.

Ethical considerations

This research was approved by the Ethics Committee of Saint Louis University (SLU-REC Protocol No. 2019-08) and two universities in the locale that required ethical clearance in their institution. Informed consent was sought before data gathering, and the respondents' right to withdraw during the study was emphasized. The questionnaires were coded to ensure anonymity and that only the researchers could access all data collected. All submitted questionnaires were stored in a locked cabinet, and encoded data was saved on a password-protected computer. The data were only for research purposes, and the respondents were informed that it would not be used as a basis for their performance evaluation and promotion.

Results

Participants

Of the 140 nurse educators from the six nursing schools in Baguio City as possible respondents, 10 were part of the reliability testing, and 13 questionnaires were discarded due to incomplete data. From potential 117 respondents, 104 participated (response rate = 88.89%).

Descriptive data

Most respondents (n=65, 62.50%) have more than ten years of teaching in nursing. 57 (54.81%) of the faculty respondents completed their BSN degree earlier than 2000. Of the total respondents, less than 50% had training on quality improvement.

The data also shows varied sources of knowledge about QI, but more than half of the population identified faculty meetings (53.85%) and faculty education development (52.88%) as the

most common sources. The profile of the respondents is seen in Table 1.

Table 1. *Profile of respondents (N=104)*

Years of teaching	**F**	**%**
1-10 years	39	37.50
11 years and above	65	62.50
BSN completion	**F**	**%**
Year 2006-2019	23	22.11
Year 2000-2005	24	23.08
Year 1999 and earlier	57	54.81
Training	**F**	**%**
With training	50	48.08
Without training	54	51.92
Source of knowledge (Multiple responses)	**F**	**%**
Faculty Meeting	56	53.85
Faculty Educational Development	55	52.88
Self-study	42	40.38
Graduate Program	42	40.38
Internet websites	40	38.46

The extent of knowledge, preparation, participation, and application of nurse educators on quality improvement (QI) is shown in Table 2. Different scales were utilized to interpret the mean scores of each domain due to the variation in the number of items asked in the questionnaire. Results show that the nurse educators are knowledgeable ($\bar{x}$ = 15.82; SD = 0.11) and very much applied QI in their nursing courses ($\bar{x}$ = 2.44; SD = 0.08) and teaching-learning strategies ($\bar{x}$ = 0.83; SD = 0.07). Although the data also reveals that they are somewhat prepared ($\bar{x}$ = 2.93; SD = 0.08), participated reasonably in QI activities ($\bar{x}$ = 2.77; SD = 0.11), and somewhat applied QI in improving themselves as educators ($\bar{x}$ = 2.30; SD = 0.11) and in improving student's learning outcomes ($\bar{x}$ = 2.13; SD = 0.11).

In the extent of knowledge, the nurse educators had the highest scores in the items 'QI in nursing education is the use of a structured organizational process for involving personnel in planning and executing the flow of improvements to provide a quality education that meets or exceeds expectations of customers' and 'Nursing students, as supervised by nurse educators are part of systems of care and care processes that affect outcomes for patients and families.'

The highest scored items that revealed the preparation and participation of nurse educators on QI are on infection control and patient-centered care. However, the lowest score on the item 'Using technology to reduce reliance on memory' stirs up concern considering the need to be adept to the technological advancement needed to improve patient care processes.

Table 2. *Extent of knowledge, preparation, participation, and application of nurse educators on quality improvement*

Domain	**Mean**	**SD**	**Interpretation**
Knowledge	15.82	0.11	Knowledgeable
Preparation	2.93	0.08	Somewhat prepared
Participation	2.77	0.11	Participated reasonably
Application in nursing courses	2.44	0.08	Very much applied
Application in teaching-learning strategies	0.83	0.07	Very much applied
Application in Improving Self as Educator	2.30	0.11	Somewhat applied
Application in improving student learning outcomes	2.13	0.11	Somewhat applied

Legend:

Mean scores in Knowledge: Knowledgeable (13-19), Moderate Knowledge (7-12), Limited Knowledge (1-6), No Knowledge (NK 0)

Mean scores in Preparation: Very Prepared (3.00-4.00), Somewhat Prepared (2.00-2.99), Not Prepared (1.00-1.99), Not At All Prepared (0-0.99)

Mean scores in Participation: Participated Very Well (3.25-4.00), Participated Reasonably (2.50-3.24), Participated Poorly (1.75-2.49), No Participation (1.00-1.74)

Mean scores in Nursing courses, improving self as educators, and improving student's learning outcomes: Very Much Applied (2.34-3.00), Somewhat Applied (1.67-2.33), Not Applied (1.00-1.66)

Mean scores in teaching-learning strategies: Very Much Applied (0.66-1.00), Somewhat Applied (0.33-0.65), Not Applied (0-0.32)

Table 3 reveals that there is a significant difference in the nurse educator's knowledge (p=0.00), application in teaching-learning strategies (p=0.00), application of QI tools to improve Self (p=0.00), and participation in QI (p=0.02) when grouped according to the years of teaching. In contrast, no significant difference was found in preparation (p=0.08), application of QI in nursing courses (p=0.08), and application of QI tools to student's learning (p=0.10).

The analysis of variance also revealed no significant differences in the scores of the respondents when grouped according to BSN degree completion (Table 4).

Table 3. *Differences in the nurse educators' knowledge, preparation, application, and participation in quality improvement according to the years of teaching in the academe*

Variables	1-10 years of teaching experience		≥11 years of teaching experience		*t*	*p*-value
	N= 39		N= 65			
	Mean	SD	Mean	SD		
Knowledge	14.97	2.40	16.32	1.93	-3.15	**.00***
Preparation	2.80	0.77	3.00	0.66	-1.44	.08
Application in Nursing courses	2.33	0.53	2.50	0.59	-1.47	.07
Application in teaching-learning strategies	0.77	0.26	0.87	0.17	-2.56	**.00***
Application of QI tools to improve Self	2.15	0.50	2.39	0.45	-2.53	**.00***
Application of QI tools to student's learning outcomes	2.05	0.53	2.18	0.49	-1.26	.10
Participation	2.59	0.75	2.88	0.66	-2.05	**.02***

** Significant at p-value <.05*

Table 4. *Differences in the nurse educators' knowledge, preparation, application, and participation in quality improvement according to BSN degree completion*

Variables	2006-2019		2000-2005		1999 -earlier		*f*	*p*-value
	N= 23		N= 24		N= 57			
	Mean	SD	Mean	SD	Mean	SD		
Knowledge	15.26	2.22	16.58	1.47	15.71	2.39	2.28	.11
Preparation	2.86	0.17	3.04	0.61	2.90	0.74	0.44	.64
Participation	2.68	0.74	2.82	0.70	2.78	0.70	0.25	.78
Application in Nursing courses	2.27	0.50	2.57	0.41	2.45	0.63	1.67	.19
Application in teaching-learning strategies	0.95	0.32	0.95	0.16	1.00	0.29	0.48	.62
Application of QI tools to improve Self	50.21	0.43	56.35	0.38	2.32	0.52	0.87	.42
Application of QI tools to student's learning outcomes	1.99	0.49	2.23	0.44	2.13	0.52	1.29	.28

Table 5. *Multiple regression analysis of nurse educators' knowledge, preparation, participation, and the application of quality improvement.*

	Application in Nursing courses		Application in Teaching-learning strategies		Application of QI tools to improve Self		Application of QI tools to improve student learning outcomes	
	Coefficients	p-value	Coefficients	p-value	Coefficients	p-value	Coefficients	p-value
	1.36	0.00	1.10	0.00	0.71	0.01	0.60	0.06
Knowledge	0.00	0.91	0.02	0.10	0.01	0.42	0.02	0.30
Preparation	0.13	0.20	0.04	0.46	0.22	**0.00***	0.12	0.15
Participation	0.24	**0.02***	0.04	0.42	0.25	**0.00***	0.31	**0.00***

**Significant at p-value <.05*

The results of the multiple regression analysis in Table 5 reveal a positive relationship between preparation and the application of QI tools to improve Self (p=0.00). Data also showed a positive relationship between participation with application in nursing courses (p=0.00), application of QI tools to improve Self (p=0.00), and student learning outcomes. (p=0.00).

Discussion

Nurse educators' extent of knowledge indicates that they have embraced the concept of quality improvement (QI) in their role in educating students. The awareness of what QI is and the processes involved, through its integration into the course curriculum, can contribute to the development of mastery of the salient areas in QI. This point is similar to the observation of Kramer et al. (2013), where nurses with greater exposure to the QI process have developed better understanding and participation.

Although Murray et al. (2010) reported that many nursing education programs need more theoretical experience in QI, the results of this study are contrary. One reason for this is the conduct of QI activities in collaboration with the students and colleagues. The immersion of nurse educators in promoting quality improvement projects among their students allows them to be familiar with the steps and tools needed. Headrick and Khaleel (2008) even emphasized that QI needs to be learned in a real-life context where doing it firsthand and working with others can influence productivity.

Interestingly, the results also show that the nurse educators are not fully prepared and only participated reasonably well. As the integration of QI in the curriculum is still in its transition period, the limited experience and relevant training of those teaching it may influence their confidence. Specific QI tools may be new to nurse educators and put them in a hit-or-miss or exploratory stage. A report has even criticized the questionable skills of nurse educators in teaching evidence-based practice and quality improvement (Mthiyane & Habedi, 2018). Nursing informatics, for example, is highly utilized in quality improvement. Nurse educators may need to be fully prepared to use varied tools in nursing informatics because it is uncommon in other nursing courses they teach.

Further, the demographic profile shows that over half finished their BSN degrees earlier than 1999. Prensky (2001) described this generation of nurse educators as digital immigrants who adapt to a new environment of technological advancements, such as the use of computers and the internet, as compared to their younger counterparts, described as digital natives, who were born in and are more familiar with the use of technology. In this case, the preparation of nurse educators in terms of maximizing technology in QI is limited. Although they still need to be fully prepared, the data suggests that they are continuously embracing the learning curve and adjusting to the demands of the QI process.

Despite the knowledge of QI, limited skills may hinder the preparation and participation in QI activities. The results highlight the need to reinforce the education and training of nurse educators on QI (Alexander et al., 2021). From a broad perspective, studies have found that the ability to prepare and participate can also be molded by the environment where nurse educators learn, teach, and perform QI activities (Alexander et al., 2022; Berwick, 2003; Ott & Ross, 2014). Organizational culture and leadership were considered powerful influencers in the engagement of the frontline members of an institution (Alexander et al., 2021). The successful participation of stakeholders requires adequate support from administrators and the organization.

The preparation and participation of the nurse educators are acceptable based on the scores. Expectedly, the results of the QI application follow this pattern. Higher scores were given on applying QI in nursing courses and teaching-learning strategies compared with the application of QI on improving Self as educators and improving student's learning outcomes. These data can be explained by the need to integrate QI into the nursing curriculum, requiring educators to apply the concepts and processes of QI in the nursing process. Such expectations may have been added to the teaching load of the educators that ought to be administered to the students. This situation gives educators a specific time frame to integrate QI into their lesson plans. Similar to the findings of Alexander et al. (2021), the dedicated time has been observed to be one of the highest facilitators in applying quality improvement.

Based on the results, the strength of the nurse educators is notable in providing patient-centered care, particularly in infection control. The inherent humanistic relation in nursing practice puts caring as the center of the profession. It allows nurses to connect with their patients and translates nursing science as an art of human caring. It is also essential to recognize that the dynamic landscape of health care shapes the way nurse educators perform and adapt to the changes. One way is to augment the practice with the use of technological tools. This study shows that the preparation and participation of nurse educators on QI in using technology is an area of limitation that requires attention from their educational institutions. It also reflects the need to respond to their professional obligations in keeping up-to-date and responsive to the current trends.

Mthiyane and Habedi (2018) point out that a positive attitude toward QI influences its application on one's performance and others. Nurse educators who do not fully apply the principles of QI in improving themselves may have a ripple effect on their position as role models to their students. This perception may transcend to what they do and how they mold a conducive learning environment for the students. In the study of Kovner et al. (2010), they determined what new nurses working in a hospital learned about QI in their education program. Unfortunately, 38.6% of the nurses thought they were poorly or very poorly prepared or had never heard of QI. This observation highlights the crucial role of nurse educators in improving the integration and application of QI concepts in the student's educational program. It also mirrors the capability of nurse educators to translate the concepts of QI in preparing students for their professional practice.

The results also show that those with longer years of teaching experience significantly differ in the knowledge, application, and participation in quality improvement compared to the respondents who have been teaching for ten years or less. It can be explained by a more comprehensive network of connections among tenured educators where they seek guidance and collaboration. Their exposure to other educators who are more adept at QI can be a good resource for getting ideas about QI. Oshodi et al. (2017) described it as professional maturity, where educators with more teaching experience develop a clear framework for maximizing productivity. Moreover, tenured educators have greater exposure to and experience with QI activities (Kramer et al., 2013). All of these attributes contributed to the competency of nurse educators with more teaching experience where they can grasp an in-depth understanding of QI, its practical application in the nursing discipline, and their valuable roles in meeting the desired outcomes.

On the other hand, there was no significant difference when the respondents were grouped according to their BSN degree completion. The results indicate that nurse educators have embraced the concept of QI and its inherent demand to respond to the current need to improve practice continuously. It can be further attributed to the responsive efforts of nurse educators and their schools to integrate quality improvement into students' curricula. As such, strategic implementation of training needs analysis, benchmarking, and faculty development sessions provided the educators, regardless of BSN completion, an opportunity to understand, implement, and teach QI.

The role of peer mentors may also explain the data. Despite having different educational backgrounds (i.e., BSN degree completion), nurse educators with more experience in QI tend to share what they know and how they do it. Alexander et al. (2021) documented that access to a QI mentor in an institution is one of the highest facilitators of engagement in QI. Similarly, all respondents in the study may have been given a teaching load in supervising students in developing QI projects where they are given adequate time to brainstorm and learn the process (Blok et al., 2022).

Nurse educators' participation in QI has shown a significant relationship with the application of QI to Nursing courses, the application of QI to improve Self, and the application to improve student learning outcomes. It is suggested in these results that the immersion of nurse

educators through action or participation in QI activities plays an essential role in achieving the positive outcomes of integrating QI into the nursing curriculum. Further, nurse educators' participation in QI activities allows them to test their theoretical knowledge and reaffirm their preparation for implementing QI. Participating in QI activities also allows educators to collaborate with their colleagues as well as with their students. Consequently, this effort becomes a nurturing ground for nurse educators to translate the principles of QI in improving themselves professionally and providing services to their students.

Nurse educators may have exhibited an enhanced awareness of their limitations, particularly in QI activities. This recognition puts them at an advantage wherein they can strategically adopt applicable QI principles essential for their growth and improvement. As the principles of QI dictate, improvement is dynamic and requires the users to be immersed in being curious about how processes can be improved. The sense of attaining a better performance or outcome can be gained by doing QI firsthand. In this regard, as nurse educators participate and learn from others, their ability to integrate QI in their teaching gains depth and further identification of areas to be improved.

Limitations

The results are based on the local context and a limited sample size and should be interpreted cautiously. Although these limitations are recognized, this study will likely present the current situation of QI among nurse educators in the chosen locality.

Conclusion and Recommendations

The results of this study are encouraging and show the potential of nurse educators to apply quality improvement in the nursing curriculum. The adept use of technological tools in producing QI projects can augment the strength of nurse educators in meeting patient-centered care. The evidence also shows that teaching experience can contribute to a better grasp of the concepts and maximum integration of quality improvement in nursing students' learning. This study suggests a regular training needs analysis of nurse educators to monitor the areas of quality improvement that need enhancement. Identifying, mobilizing, and supporting QI champions to spearhead the mentoring of new faculty members on QI may be a viable strategy to sustain a culture that values quality improvement. It further calls for the attention of educational institutions to develop policies to inform nurse educators in applying QI concepts.

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Acknowledgment

The authors would like to express their gratitude to Dr. Norenia Dao-ayen, Dr. Elizabeth Bautista, Dr. Aldren Remon, and Professor Emily Abad for the guidance and substantial recommendations in writing this paper.

Disclosure Statement

No funding was granted in the completion of this study. The authors are employed as clinical instructors at Saint Louis University.

"Let us never consider ourselves finished, nurses. We must be learning all of our lives."

—Florence Nightingale