
RESEARCH ARTICLE

Fostering Self-Efficacy among Filipino Nursing Students Post-Pandemic: Effectiveness of Dedicated Education Units

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ABSTRACT

The COVID-19 pandemic has posed unprecedented challenges to nursing education in the Philippines, prompting the exploration of innovative strategies to support students' self-efficacy. This study investigates the implementation of the Dedicated Education Unit (DEU) model in Filipino nursing education post-pandemic. Drawing from international research and theoretical frameworks such as Bandura's Social Cognitive Theory, the study explores the potential benefits of DEUs in enhancing students' self-efficacy. A pre-test, post-test experimental design was employed to evaluate the impact of DEU implementation on nursing students' self-efficacy levels. Statistical analyses reveal a significant increase in students' self-efficacy post-intervention ($p\text{-value}=0.003$), indicating the efficacy of the DEU model in fostering students' confidence and belief in their clinical abilities. The average score before the intervention was 2.81, while after the intervention, it increased to 3.67. Discussion highlights the positive outcomes associated with DEUs, including improvements in student self-efficacy, critical thinking, and successful transition to professional practice. The study concludes with implications for future research and practice, emphasizing the importance of continued exploration and adaptation of innovative clinical education models to meet the evolving needs of nursing students and healthcare systems.

KEYWORDS

Dedicated Education Units (DEU), Self-Efficacy, Nursing Students, Post-pandemic.

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1. Introduction

The COVID-19 pandemic has brought unprecedented challenges to nursing education in the Philippines, disrupting traditional clinical training methods and necessitating innovative approaches to support students' self-efficacy—the belief in one's ability to perform specific tasks and achieve desired outcomes (Bittner et al., 2021). In this context, the Dedicated Education Unit (DEU) model emerges as a promising strategy to enhance the self-efficacy of Filipino nursing students' post-pandemic.

DEUs represent a collaborative partnership between academic institutions and healthcare facilities, providing nursing students with immersive clinical experiences under the guidance of expert preceptors (Hixon et al., 2022). While the DEU model has been widely adopted in Western countries, its applicability and effectiveness in the Filipino context remain underexplored. However, insights from international research can offer valuable perspectives on the potential benefits of DEUs for Filipino nursing students.

Research conducted by Santos (2018) in the Philippines highlighted the importance of self-efficacy in predicting nursing students' performance and academic achievement. The study underscored the need for interventions aimed at enhancing students' self-efficacy, particularly in the face of challenges such as the COVID-19 pandemic. DEUs, with their focus on hands-on learning, mentorship, and supportive learning environments, present a promising avenue for fostering self-efficacy among Filipino nursing students.

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Moreover, studies conducted in other cultural contexts have demonstrated the positive impact of DEUs on nursing students' self-efficacy. For example, research by Hooper et al. (2019) in the United Arab Emirates found that participation in a DEU program led to significant improvements in students' confidence, competence, and readiness for clinical practice. These findings suggest that the principles underlying the DEU model—such as structured learning experiences, active engagement, and collaborative learning—may resonate with Filipino nursing students and contribute to their self-efficacy development.

Furthermore, theoretical frameworks such as Bandura's Social Cognitive Theory (1994) provide insights into the mechanisms through which DEUs influence self-efficacy. According to Bandura (1994), self-efficacy is influenced by factors such as mastery experiences, vicarious learning, social persuasion, and physiological responses. DEUs offer opportunities for Filipino nursing students to engage in hands-on learning, observe expert clinicians, receive feedback and encouragement, and manage stress and anxiety in the clinical setting, thereby enhancing their self-efficacy beliefs.

As the Philippines continues to navigate the challenges posed by the COVID-19 pandemic, the role of DEUs in supporting nursing students' self-efficacy becomes increasingly relevant. By synthesizing existing research and literature, this study aims to contribute to the understanding of how DEUs can be effectively implemented to improve self-efficacy among Filipino nursing students post-pandemic. Through rigorous evaluation and adaptation to the local context, DEUs have the potential to empower Filipino nursing students, enhance their confidence and competence, and prepare them for success in the dynamic healthcare landscape of the future.

2. Methods

A pre-test post-test design in experimental research was employed in this study. The pre-test provides a baseline measure of the students' self-efficacy levels, establishing a starting point for comparison. After the intervention, the post-test measures any changes in self-efficacy. If there is a significant increase in self-efficacy from the pre-test to the post-test, it suggests that the DEU may have positively impacted the students' confidence and belief in their abilities as nurses.

The study utilized a pre/post-intervention design to assess the effects of implementing the DEU model, with self-efficacy as the main outcome measure. The primary outcome measure chosen was self-efficacy, which is a widely utilized and evidence-based assessment tool to evaluate the clinical experiences of nursing students across various training models. It is widely accepted as a reliable indicator of an individual's belief in their ability to achieve a specific level of competence. The researchers adopted the modified Generalized Self-Efficacy (mGSE) scale from Van Housen (2023) with 10 items, which is determined to be reliable (Cronbach's Alpha=.861) and valid for assessing self-efficacy. The mGSE scale was utilized in this project to assess the levels of self-efficacy among students in the surveys conducted before and after the intervention. Subjects were asked to rate the degree of truthfulness of each item following the rating scale: 4-Exactly true, 3- Moderately true, 2- Hardly true, and 1- Not true at all.

The internal reliability of the scale was assessed using the IBM Statistical Package for Social Sciences (SPSS). The analysis yielded a Cronbach's Alpha coefficient of 0.89, indicating a strong level of internal reliability. An electronic survey link was used to administer a survey that included the self-efficacy scale before and after the intervention. The assessment of the intervention's impact involved analyzing the disparity in survey responses between the pre-intervention baseline and the post-intervention period for both students and clinical instructors. The pre-and post-intervention responses were analyzed using descriptive statistics, paired samples t-tests, and the Wilcoxon Signed Rank test to identify any differences. The student clinical objectives, which were approved as part of the nursing school curriculum, served as a process measure to assess the students' learning experience throughout the project.

2.1. DEU Intervention

In all five hospitals, the DEU model was implemented within the Medical-Surgical units. As part of the initiative, ten nurses were to be trained as clinical instructors. Fifty students, who were randomly selected from the College of Health Sciences of Dr. Yanga's Colleges, Inc, were assigned to their new clinical instructors throughout their clinical rotations. Managers of nursing units were essential stakeholders in the implementation of this model. The nursing schools and the nursing units have "shared staff" in the form of the newly appointed clinical instructors. The staffing task has been a considerable challenge for the nurse manager. Staffing the unit with sufficient personnel to attend to the patients assigned to it is the unit manager's top priority. Thus, the establishment of a collaborative partnership and spirit of cooperation between the academic faculty and the nurse manager was a critical success factor for the endeavor. Students hold a pivotal stake in the DEU model's viability and success. Throughout their month-long clinical learning experience, the nursing students maintained a partnership with the same clinical instructor. By establishing this method, a rapport was created between the nursing student and clinical instructor, which facilitated constructive feedback and mentoring. The literature review identified the characteristics of this model, which encompassed increased student satisfaction with their clinical experience and a significant factor in the rise in the proportion of students who effectively transition into new graduate nurses and opt to remain employed by the organization (Dlmino et al., 2020).

The primary intervention of this endeavor was to prepare staff nurses to instruct clinical procedures via a six-hour course that

emphasized team processes, patient safety, and quality. In addition, this training furnished an overview and framework for the DEU model. Although all clinical instructors are required to meet the adjunct clinical faculty requirements of the nursing schools, they continue to be employed by the hospital and adhere to their regular working hours. A total of ten nursing students and ten patients were assigned to each clinical instructor. During the clinical days, individual students were assigned to each patient. As a result, instructors, as well as students, were able to fully engage with the DEU framework and establish efficient systems of work and communication. During the initial two days of clinical, a student-to-patient ratio of 1:1 facilitated an adequate opportunity to emphasize fundamental student competencies, including secure medication administration and assessment. For one month, each nursing student was paired with a clinical instructor. A pre-assessment was conducted for students prior to the beginning of the semester. On a weekly basis, the nurse manager, academic faculty, and the College of Health Sciences administration convened to evaluate the advancement of the project and deliberate on any required modifications. Through monthly meetings involving the clinical instructors, nursing unit managers, and students, valuable feedback and improvements were also solicited. A post-assessment was conducted in the concluding week of the clinical experience to evaluate the progress made in the self-efficacy of the students with regard to clinical learning.

3. Results

The data that were gathered were subjected to statistical analysis using the IBM Statistical Package for Social Sciences (SPSS). The results are presented in this portion, as well as its implication to the objectives of this research paper through discussion.

Table 1. Means and Standard deviations of Students’ ratings on their Self-Efficacy before and After DEU Implementation

Self-Efficacy Items		Mean	SD	Mean	SD
		Pre-test		Post-test	
1	I can always manage to solve difficult problems in the clinical unit if I try hard enough.	3.06	0.24	3.80	0.32
2	If someone opposes me in the clinical unit, I can find the means and ways to get what I want	2.32	0.24	3.79	0.34
3	It is easy for me to stick to my aims and accomplish my goals in the clinical unit	2.80	0.23	3.90	0.24
4	I am confident that I could deal efficiently with unexpected events in the clinical unit	3.03	0.58	3.30	0.31
5	Thanks to my resourcefulness, I know how to handle unforeseen situation in the clinical unit	2.89	0.31	3.58	0.30
6	In the clinical unit, I can solve most problems if I invest the necessary effort	3.00	0.55	3.85	0.42
7	In the clinical unit, I can remain calm when facing difficulties because I can rely on my coping abilities	2.90	0.36	3.65	0.36
8	When I am confronted with a problem in the clinical unit, I can usually find several solutions	2.03	0.23	3.20	0.22
9	If I am in trouble in the clinical unit, I can usually think of a solution	3.20	0.63	3.90	0.24
10	I can usually handle whatever comes my way in the clinical unit	2.90	0.42	3.76	0.24
Grand Mean		2.81	0.37	3.67	0.29

Overall, the results of the student answers on their self-efficacy pre- and post-DEU implementation indicate evident mean differences in all of the ten (10) items, with a grand mean of 2.81 (SD=0.37) and 3.67 (SD=0.29), respectively. This reflects the apparent positive effect of the intervention on the self-efficacy of the nursing students. Among the ten aspects of clinical self-efficacy, item 3 (It is easy for me to stick to my aims and accomplish my goals in the clinical unit), item 9 (If I am in trouble in the clinical unit, I can usually think of a solution), and item 6 (In the clinical unit, I can solve most problems if I invest the necessary effort) got the highest mean scores of 3.90 (SD=0.24), 3.90 (SD=0.24), and 3.85 (SD=0.42).

Table 2. Difference on the Nursing Students' Self-Efficacy Before and After DEU Implementation

<i>Variables</i>	<i>Mean</i>	<i>t Stat</i>	<i>P value</i>	<i>Decision</i>
Pre-test	2.81	1.79	0.003	Significant
Post-test	3.67			

Paired samples T-tests were employed to evaluate the effect of the DEU implementation on subjects' survey responses before and after the intervention and to ascertain whether any observed differences were statistically significant. There was a significant increase in student mGSE survey scores after the intervention. The average score before the intervention was 2.81 (SD= 0.37), while after the intervention, it increased to 3.67 (SD = 0.29). The statistical analysis showed a t-value of 1.79 and a p-value of 0.003. The average increase in mGSE scores was 0.86, with a 95% confidence interval. The non-parametric Wilcoxon Signed Rank test was utilized to ascertain the statistical significance of the differences in student mGSE scores between the pre-and post-intervention periods. The test decision to reject the null hypothesis demonstrated the DEU implementation's efficacy in enhancing the nursing students' self-efficacy.

4. Discussion

One significant result of the project was an increase in students' perceived self-efficacy in handling clinical quality, safety, and team processes associated with their participation in the DEU. The students who took part in the study showed a significant (13%) increase in their average self-efficacy scores, as determined by statistical analysis. The increase in self-efficacy aligns with the findings of published studies on the outcomes of students engaged in DEU models for clinical experience.

Two crucial determinants of success regarding student outcomes in a nursing education program are achieving a passing score on the national licensure examination and effectively transitioning from being a student to becoming a competent practicing nurse. Multiple studies have examined the superiority of the DEU model compared to the traditional clinical experience model in terms of knowledge, skills, and abilities that can impact licensure passing rate, transition to practice, and competencies (Bittner et al., 2021; Flott et al., 2020; Rusche et al., 2018). The DEU model yields favorable outcomes when compared to the traditional clinical experience model. There is consistent evidence that it improves student self-efficacy and critical thinking, as well as facilitates the transition from student to licensed, practicing nurse (Schoening et al., 2021; Vnenchak et al., 2019; Williams et al., 2021). These studies provide evidence that the DEU model is a strong and reliable method to enhance student self-efficacy while also increasing the capabilities and providing a positive experience for staff nurses acting as clinical instructors.

The successful implementation of DEUs is reinforced by favorable student outcomes, as evidenced by reports from nursing students who feel a sense of inclusion (Leighton et al., 2021), experience a strong sense of belonging within the team (Marcellus et al., 2021), and are treated with the same level of respect as professional nurses (Hixon et al., 2022). Research conducted by Dimino et al. (2020) has demonstrated that students in DEUs experience a notable enhancement in self-efficacy. Additionally, Williams et al. (2021) found that these students also exhibit improvements in their perception of competence and confidence. Furthermore, Vnenchak et al. (2019) discovered that DEUs foster collaboration between nurses and nursing students, as well as among nurses themselves.

In response to the COVID-19 pandemic, nurse educators had to promptly adapt student learning experiences to facilitate the acquisition of clinical skills. In the aftermath of the pandemic, nurse educators have a chance to utilize their experience in order to investigate innovative approaches to clinical training. This will help to expand the number of student clinical placements and enhance the confidence of nurses working in challenging clinical environments. On this note, it was found in the literature that the Dedicated Education Unit model is a compelling and well-supported alternative to conventional clinical education. The viability of the DEU model as a clinical education option, which is comparable to traditional models, was demonstrated to key stakeholders using evidence from the literature (Bittner et al., 2021; Lapinski & Ciuzyński, 2020; Rusche et al., 2018). Furthermore, it was shown that implementing the DEU model does not jeopardize nursing program outcomes, such as licensing exam pass rates (Flott et al., 2020). The analysis of published studies uncovered staff nurses' apprehension regarding their insufficient formal instruction in equipping students for the transition into their roles as licensed professionals (Marcellus et al., 2021). The DEU project tackled this concern by providing explicit training to staff nurses, enabling them to take on the role and responsibilities of clinical instructors.

5. Conclusions

Due to the increasing demand for skilled nurses surpassing the available global workforce, it is necessary to develop new approaches to clinical education in order to train a larger number of nursing students who can deliver clinical care that is of high quality, safe, and team-based. Consistent with the results of this study, compelling evidence substantiates the adoption of a DEU

model as a practice change to enhance quality by utilizing the benefits of academic-practice partnerships. This practice modification will enhance the healthcare organization's and nursing school's access to clinical placement opportunities. This model also presents an opportunity for cost-saving advantages by establishing a continuous supply of highly skilled recent nursing graduates to replace temporary registered nurses.

6. Implications

Potential advancements for future DEU cohorts involve extending the duration of each clinical day from eight hours spent at the patient's bedside to a 12-hour shift. This extension would enable students to partake in a comprehensive clinical shift at the patient's bedside, ensuring consistent patient assignments and involving students in supplementary team activities like bedside shift reports. An alternative approach that could have significant effects on maintaining a change in practice is conducting a longitudinal study on the outcomes of DEU students, specifically focusing on their success rates in national and international licensure examinations. Conducting comparative research on the time it takes to onboard and the costs associated with orientation for newly hired nurses who have undergone clinical experiences in a Dedicated Education Unit (DEU) as opposed to traditional models would significantly contribute to our understanding of the financial impact on healthcare organizations when adopting a DEU model. This model provides experienced nurses with the opportunity to advance their careers by becoming clinical instructors while still being able to continue working at the hospital. The model also helps alleviate the financial strain caused by expensive contracted staff by retaining skilled clinical instructors on the patient's side and boosting enrollment in nursing schools.

The intervention implications for enhancing nursing practice involve bolstering student nurses' perceived self-efficacy and confidence in their understanding of quality, safety, and team practices. The committed mentorship relationship offers a method to expedite clinical learning and readiness for autonomous practice. The majority of research on student satisfaction regarding the clinical learning experience in the DEU model primarily focuses on qualitative results (Dimino et al., 2020). Quantitative research is necessary to establish a connection between enhanced self-efficacy, confidence, and clinical knowledge gained through the DEU program and the successful transition to a licensed nurse role in practice.

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