Perceived competence of Filipino nursing students graduating during pandemic

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ABSTRACT

Introduction: Given the importance of maintaining competence, limited published research is conducted in the local setting touching on the competence of nursing students graduating during the pandemic. This study determined graduating nursing students' perceived fundamental nursing skills and core competence.

Methods: The research design is quantitative descriptive cross-sectional. The study participants were the 102 graduating nursing students of a public university in Iloilo City, Philippines. The Perceived Competence of Filipino Nurses Questionnaire was used to gather data in May 2022 and these were analyzed using SPSS software version 23.

Results: The results revealed that, while the majority of nursing students reported that their nursing competencies were greatly affected by the shift to the online learning platform, most still had a high perception of their fundamental nursing skills competence (M=6.97) and core competence (M=8.03). The areas of elimination (M=5.41) and research (M=7.63) were the lowest-ranked fundamental skill and core competencies, respectively. There was a significant difference (p< .05) in nursing students' perceived competence based on self-reported academic performance.

Conclusions: Despite the reduced exposure in the clinical setting due to the pandemic, graduating nursing students perceive themselves to be highly confident in their capabilities as future professional nurses. Nonetheless, areas for improvement were identified that warrant further assessment, validation, and enhancement.

Keywords: competence, nursing skills, nursing students, pandemic, Philippines

Introduction

The high transmissibility of coronavirus disease (COVID-19) makes healthcare systems worldwide drastically overwhelmed. This catastrophic event highlighted the need for skilled healthcare workers, particularly nurses (Lynch & Pusey-Murray, 2021). To be a skilled professional nurse, one must have the fundamental skills and core competencies (Fukada, 2018; Xie, 2019). Skills and competence are closely related since competence is generally defined as the ability to act accordingly and be recognized by others (Nascimento et al., 2021). Competence in nursing is defined in various ways, and each focus on a particular educational topic. Clinical competence, one of the most tackled definitions, is the knowledge reinforced by a mix of cognitive, psychomotor, and affective or attitudinal abilities appropriately implemented in a given scenario (Weeks et al., 2019). Being a discipline that is based on hands-on practice, the critical challenge in nursing education is teaching students core competencies and providing various opportunities to sharpen and improve their fundamental skills, especially when performing on actual patients (Gregersen et al., 2021; Oducado et al., 2019). Fukada (2018) defined nursing core competence as the ability to use rational reasoning and accurate nursing skills to provide quality nursing services that satisfy the needs of the clients being cared for. Sumagaysay and Oducado (2019) identified the core competencies based on the 11 Key Areas of Responsibilities (KAR). The KAR was incorporated in

2012 in the National Nursing Core Competencies Standards, serving as a framework for the practice and education of nursing in the Philippines and defining what nursing graduates are expected to perform in professional nursing practice (Belo-Delariarte et al., 2018; Nabizadeh-Gharghozar et al., 2021). On the other hand, the term "fundamental nursing skills" is not thoroughly defined in any existing literature. However, it's usually referred to as basic clinical skills or essential prerequisites for novice nurses when they start working as professionals (Missen et al., 2016). In the same study by Ubas-Sumagaysay and Oducado (2019) fundamental clinical nursing skills encompass technical nursing skills.

Worldwide, nursing practice is generally founded on professional nursing skills and core competence (Fukada, 2018; Staykova et al., 2017). Practical nursing skills involve technical, theoretical, and practical aspects, caring perspectives, as well as ethical and moral considerations (Gregersen et al., 2021). In nursing education, the classroom and clinical environment are interconnected and complementary because students must apply in clinical practice what they have learned in the classroom, online, and through other modalities (Oducado et al., 2019). When approaching the end of their nursing education, students are expected to have gained adequate skills and competence to fulfill their duties safely and effectively without the need for direct supervision, fully allowing them to build trusting relationships with their patients (Cowen et al., 2018; Leonardsen et al., 2021). Hence, the competence of graduating nursing students is important as it is associated with upholding the culture of high-quality nursing care, professional standards, and patient safety (Kajander-Unkuri, 2014).

With the increasing need for skilled nurses in both local and global healthcare settings, it is vital to determine the fundamental nursing skills and core competence of graduating nursing students, especially as they are nearing graduation and about to enter professional nursing practice. However, previous studies conducted in the pre-pandemic have shown contrasting and inconsistent findings on the level of competence and fundamental skills of graduating nursing students. For instance, the Orkaizagirre-Gómara et al. (2020) study conducted in Spain and Mohamadirizi et al.'s (2015) in Iran before the COVID-19 pandemic, revealed that final-year or senior nursing students were found to have competent clinical skills. In contrast, single institute-based studies conducted in multiple developed countries, including the USA, Australia, and Iran, reported deficits in graduating nursing students' clinical skills, and very few of them possessed entry-level competencies and practice readiness (Jamshidi et al., 2016; Kavanagh, 2017; Missen et al., 2016). According to Park and Han (2013), in clinical settings, freshly graduated nurses fall short of the clinical performance required to fulfill a variety of health-related demands. In addition, research indicates that many graduating or newly graduated nurses desire to be more competent and knowledgeable about the procedures they are expected to become skilled at (Sheahan, 2015).

To safeguard students from the virus, face-to-face education was replaced by virtual remote learning, and clinical experiences were halted (Agu et al., 2021). Despite a study claiming that online learning bears the potential to enhance clinical reasoning and knowledge retention (Padilha et al., 2019), some nursing students assert that online learning does not consistently deliver prompt feedback and responses when compared to traditional in-person classes (Li et al., 2019). Additionally, Nkenke et al. (2012) claimed that the online setup lacks supervision, which may affect learning performance. Due to infection concerns and a lack of personal protective equipment, the COVID-19 pandemic has prompted a sudden transition from in-person to remote learning, reducing clinical experience (Powers et al., 2021). As there exist contrasting results of different studies on the impact of online learning on the development of the competencies of nursing students, few to no studies, have been conducted yet touching on the graduating nursing students' level of perceived fundamental nursing skills and core competence in the online modality at the time of the pandemic, particularly at the Philippine setting. Whereas the study of Ubas-Sumagaysay and Oducado (2020) conducted before the pandemic reported a relatively high level of competency among new graduate Filipino nurses, it is unknown whether or not the level of competence of graduating nursing students has worsened with the emergency shifting to online modalities at the time of the pandemic.

With the pandemic still prevailing, most, if not all, graduating nursing students in the Philippines are still stuck inside their home's sans clinical experience. As the time of graduation approaches, wherein a new set of fresh graduates will be produced, the importance of assessing how graduating nursing students perceive their competencies should be acknowledged as a crucial need to improve professional nursing practice. Therefore, this study focuses on determining the fundamental nursing skills and core competencies reported by the graduating nursing students in a public University in the Philippines.

Materials and Methods

A quantitative research design, specifically descriptive-cross sectional research design, was utilized in this study. The study participants included all (135) undergraduate students from the fourth year or graduating class of Bachelor of Science in Nursing in a public University in Iloilo City, Philippines. There were 102 responses obtained from the electronic survey getting a response rate of 75.56%. Based on the Cochran (1977) formula, the sample size required given the population of 135 given a 5% level of precision, and a 95% confidence level is only 101.

The data for this study were collected using an online questionnaire with four (4) parts. Part One, Respondents' Profile, covers the personal information. In addition, the questionnaire included the students' self-reported academic performance as reported by Terry and Peck (2020), with responses ranging from "Very Poor" to "Very Good." Part Two and Three included the Perceived Competence for Filipino Nurses Questionnaire (PCFNQ) of Ubas-Sumagaysay and Oducado (2020). Part Two covers the graduating students' fundamental nursing skills, measured using the Fundamental Nursing Skills Competency Scale (FNSCS) of the PCFNQ. The FNSCS consisted of 99 items with 14 domains. Part Three covers the graduating students' nursing core competencies, measured using the Nursing Core Competency Scale (NCCS) of the PCFNQ. The original NCCS consists of 151 performance indicators. However, we excluded ten (10) items in this study since these performance indicators do not apply to graduating nursing students. Hence, the version in this study included a total of 141 items. This part measured the students' degree of self-reported competence based on the 11 Key Areas of Responsibility (KAR). Responses in the PCFNQ were graded on a 10-point scale, wherein one (1) corresponds to "Not Competent" and ten (10) indicates "Very Highly Competent." High scores indicate a high level of competency. The PCFNQ has very high internal consistency with Cronbach's alpha based on the actual data being 0.987 and 0.996 for FNSCS and NCCS, respectively. Part Four covers the extent to which graduating nursing students think the current online learning platform has affected the development of their fundamental nursing skills and core competencies. Two questions were asked, "To what extent do you think the current online learning platform has affected the development of your fundamental nursing skills competencies?" and "To what extent do you think the current online learning platform has affected the development of your nursing core competencies?" with five (5) choices ranging from "Very Low" to "Very High."

Following the approval of the University Ethics Committee (Protocol Number WVSU.URERC-2022.CON_002), the researchers obtained permission to conduct the study from the Office of the Dean and the Division Chairperson of the College of Nursing. Assistance was sought from the Level IV division chairperson and curriculum officer in contacting each class chairperson to serve as a link between the researchers and participants through school email or Facebook Messenger. Since the researchers have no access to the respective group chats and the Facebook group of the Level IV nursing students, the chairpersons were requested to share the link in their group chats and Facebook groups. Electronic informed consent was included in the first part. As the minimum sample size was met, the responses of the participants were compiled, organized, and consolidated in the spreadsheet.

All statistical computations were done via the Statistical Package for the Social Sciences (SPSS) software version 23.0. The Kolmogorov-Smirnov test was utilized to determine the normality of the data, and descriptives, t-Test, and ANOVA set at 0.05 level of significance were used to analyze the data.

Results

In total, 102 responses were included in this analysis. Table 1 shows the average age of the participants, which is 22.20 years (SD=0.51), and the majority were female (60.8%) and reported an acceptable level of academic performance (80.4%).

Table 2 shows that graduating nursing students had a high level (M = 6.97, SD=1.17) of perceived fundamental nursing skills. The graduating nursing students reported a very high level of perceived

Table 1 Profile of the participants

Categories	f	%
Age [M = 22.20; SD = 0.51]		
Sex		
Male	40	39.2%
Female	62	60.8%
Academic Performance		
Very Poor	0	0
Low	6	5.9%
Acceptable	82	80.4%
High	14	13.7%
Very Good	0	0
Total	102	100%

Table 2 Level of perceived fundamental nursing skills competencies

Fundamental Skills	Min.	Max	M	SD	Interpretation
Asepsis	5.17	10.00	8.57	1.02	Very High
Activity and Exercise	2.27	10.00	7.86	1.43	High
Health Assessment	4.58	9.58	7.84	0.98	High
Medications	2.69	9.46	7.24	1.38	High
Fluid, Electrolyte, and Acid-Base Balance	1.56	10.00	6.91	1.50	High
Safety	3.00	9.33	6.80	1.34	High
Hygiene	2.78	9.33	6.64	6.64	High
Pain Management	1.50	10.00	6.64	1.75	High
Perioperative Nursing	2.00	9.25	6.47	1,61	High
Oxygenation	1.38	9.50	6.45	1.69	High
Nutrition	1.20	9.60	6.36	1.82	Moderate
Wound Care	1.86	9.14	5.93	1.65	Moderate
Diagnostic Testing	2.17	8.50	5.91	1.54	Moderate
Elimination	1.00	9.40	5.41	1.93	Moderate
Composite Score	3.26	9.26	6.97	1.17	High

NOTE: 1.00-2.79 (Very Low), 2.80-4.59 (Low), 4.60-6.39 (Moderate), 6.40-8.19 (High), and 8.20-10.00 (Very High)

fundamental nursing skills in asepsis (M= 8.57, SD=1.02) and lowest in elimination (M= 5.41, SD=1.93) with only a moderate level of competence.

Table 3 shows that the graduating nursing students had a high level of perceived nursing core competence (M= 8.03, SD=.14). Among the 11 KAR, the graduating student nurses reported being most competent in personal and professional development (M= 8.37, SD=1.05) and collaboration and teamwork (M= 8.24, SD=1.18) and although high, research (M= 7.63, SD=1.32) ranked lowest among the 11 domains of core nursing competencies.

Table 4 shows that, when the participants were classified according to sex, there was no significant difference in their perceived fundamental nursing skills competence (t=-.034, p=.973) and their perceived core competencies (t=-.636, p=.526). Based on self-reported academic performance, there was a significant difference in their perceived fundamental nursing skills competence (F=4.225, p=.017) and core competencies (F=3.681, p=.029).

Table 5 shows that the majority reported that the online learning platform has a very high effect on their perceived fundamental skills (48%) and core competence (46.1%).

Discussions

This study assessed the competence of graduating nursing students, with participants posting the highest competency in asepsis, activity and exercise, health assessment, and medications. Similar to the result of this study, asepsis, activity and exercise, and medications were among the three essential clinical skills with the highest level of competence identified by new graduate nurses in the Philippines in the pre-pandemic study of Ubas-Sumagaysay and Oducado (2020). With the advent of the pandemic, the importance of hand hygiene and aseptic techniques are continuously reinforced in all settings as protective and preventive measures. Given the numerous interventions and campaigns promoting this action, high compliance levels are expected. This finding may also be attributed to the recent clinical exposure in perioperative nursing for completing their scrubs requirements, which coincided during data gathering. Nonetheless, these skills are frequently done even in the pre-pandemic setting. Moreover, while this study found a high perceived level of competency in medication management, the two studies conducted by Cleary-Holdfort and Leufer (2020) in Ireland found that medication management was among the areas of concern identified by senior nursing students.

Table 3 Level of perceived core competencies

Core Skills	Min.	Max	M	SD	Interpretation
Personal and Professional Development	5.86	10.00	8.37	1.05	Very High
Collaboration and Teamwork	3.75	10.00	8.24	1.18	Very High
Ethico-moral Responsibility	2.57	10.00	8.17	1.43	High
Records Management	2.36	10.00	8.16	1.33	High
Communication	5.00	10.00	8.14	1.17	High
Legal Responsibility	5.13	10.00	8.12	1.18	High
Quality Improvement	3.55	10.00	8.05	1.20	High
Health Education	3.42	10.00	7.97	1.25	High
Safe and Quality Nursing Care	3.33	10.00	7.93	1.16	High
Management of Resources and Environment	2.36	10.00	7.88	1.25	High
Research	3.55	10.00	7.63	1.32	High
Composite Score	4.51	10.00	8.03	1.14	High

NOTE: 1.00-2.79 (Very Low), 2.80-4.59 (Low), 4.60-6.39 (Moderate), 6.40-8.19 (High), and 8.20-10.00 (Very High)

Table 4 Differences in perceived competence

Independent Variables	Fundamental Skills				Core Skills			
	M	SD	Test Statistics	p-value	M	SD	Test Statistics	p-value
Sex			-.034	.973			-.636	.526
Male	6.97	1.14			7.94	1.00		
Female	6.97	1.20			8.09	1.22		
Academic Performance			4.225	.017			3.681	.029
High	7.37	0.95			8.59	0.89		
Acceptable	6.99	1.15			8.00	1.13		
Low	5.77	1.39			7.16	1.32		

NOTE: M (Mean), SD (Standard Deviation)

By contrast, complex wound care, diagnostic testing, and elimination areas revealed lower means of competence. Ubas-Sumagaysay and Oducado (2020) explained that these skill sets highlight the areas uncommonly practiced by nursing students in a resource-limited setting like the Philippines. For instance, ECG recording and interpreting, administering cleansing enemas, changing a stoma appliance, and blood withdrawal may not be part of some nursing schools' routine return demonstration practice (Ubas-Sumagaysay & Oducado, 2020). In addition, opportunities to perform these skills are rare, especially in a resource-limited setting like the Philippines, where most concerns are rooted in the lack of financial resources, equipment, and technological advances (Dela Cruz & Ortega-Dela Cruz, 2019). Given the pandemic with which face-to-face classes were halted, opportunities and chances for the graduating nursing students to have much exposure in the clinical area were also affected, putting the focus more on prioritizing the requirements for graduation. Kirwa and Gakere (2016) noted that nursing students value the repetitive practice of nursing skills as the continuous hands-on practice of skills demonstrates boosted performance and competence. Inadequacy in clinical skills development may also be significantly attributed to the pandemic, where face-to-face classes and clinical exposure were suspended. Despite the shift to online learning to address the educational barrier (Oducado, 2021), the lack of actual exposure, resources, and supervision may have hampered the practice and enhancement of the nursing students' skills in the complex areas of diagnostic testing and elimination. Activities like ostomy

Table 5 Self-reported extent of effect of online learning platform on perceived competence

Categories	Fundamental Skills		Core Skills	
	f	%	f	%
Very High	49	48.0	47	46.1
High	20	19.6	20	19.6
Moderate	19	18.6	18	17.6
Low	12	11.8	13	12.7
Very Low	2	2.0	4	3.9

care and venipuncture rely heavily on a resource-based learning approach, and virtual experience may not be sufficient to develop these skills. Ramos-Morcillo et al. (2020) disclosed that nursing students from two Spanish public universities perceived clinical training as indispensable and could not be substituted. Oducado and Estoque (2021) further elaborated that not all areas of nursing education can be performed digitally, such as those entailing more practical aspects. Moreover, final-year nursing students in India were also reported to be least competent in elimination among the nursing skills domains (Upashe et al., 2022). It was noted in the same study that only a portion of the nursing students were able to independently perform nursing skills like venipuncture and ostomy care, which was attributed to inadequate clinical experience. Furthermore, clinical placements in Delivery Room and Operating Room were given priority for this particular sample in the study to comply with academic requirements needed for the nearing graduation and licensure examination, thus resulting in limited clinical experience in other areas. Despite the barriers above, graduating nursing students showed favorable results regarding their perceived fundamental nursing skills.

Furthermore, this study's respondents displayed a high regard for personal and professional development. Professional development begins with academic achievement and practice (Pullen, 2021). Professional practice experience and good role models are important for students' professional identity development (Vabo et al. (2021). Felstead and Springett (2016) also noted that having nursing educators who can role model professional attributes appears crucial to developing professionalism in nursing students. Moreover, graduating student nurses reported being highly competent in collaboration and teamwork. Effective collaboration and teamwork among nursing students exist with the understanding that conflict is inevitable, and productive conflict resolution is encouraged with open communication (Regis College, 2023). Nursing students believe that good communication and collaborative decision-making are strengths that can

help prevent time delays and improve overall management (Morphet, 2014).

Although high levels of competence were reported in resource and environmental management and research, these two areas ranked lowest among the 11 Key Areas of Responsibility. Studies show that nursing staff cannot do all the essential nursing tasks due to the scarcity of resources in patient care (Primc, 2020). Nurses from five teaching hospitals in Iran similarly identified inadequate resources as one of the most noteworthy barriers in care environments leading to disrupted, missed, or delayed care nursing delivery (Rivaz et al., 2017). Moreover, according to the findings of Bahadori et al. (2016), the most significant barrier to using research findings from the perspective of nursing students was the need for more time. Studies on the factors that impede nurses' research participation included lack of time, knowledge, funding, and support services and poor attitude of nurses toward research (Nkrumah et al., 2018). Similarly, the results of earlier studies in the Philippines conformed to the low self-reported competence in research (Oducado & Penuela, 2014; Ubas-Sumagaysay & Oducado, 2020).

This study showed that sex does not affect graduating nursing students' perceived fundamental nursing skills and core competence. The finding is similar to previous studies, such as a systematic review by Chan et al. (2014), which said that male and female nursing students perform similarly in most aspects with minimal differences in some areas. This result is also consistent with prior research concluding that sex had not been shown to influence the skills and competence of nursing students (Harrison, 2019; Kajander-Unkuri et al., 2014; Park & Choi, 2020; Ubas-Sumagaysay & Oducado, 2020).

Not surprisingly, this study also demonstrated that the level of self-assessed academic performance affected the level of fundamental nursing skills and core competence. The finding suggests that those with high academic performance, compared to those with low academic performance, are more likely to have higher self-reported nursing skills and core competence. This finding is congruent with a study by Kim and Kim (2021) conducted in South Korea, wherein graduating nursing students with high academic achievement in their classes were also found to have high clinical performance and competence. Evidence from the Philippines has also demonstrated a correlation between performance in the classroom and clinical setting (Oducado et al., 2019). The Self-Efficacy Theory of Albert Bandura (1977) hypothesized that the level at

which individuals perform is directly related to how well they perceive their capabilities.

However, it should be noted that this study's academic performance was measured according to self-assessment. Kajander-Unkuri et al. (2016) disclosed that the self-assessment of graduating nursing students of their competence tends to be incongruent with the assessment of their mentors. Specifically, graduating nursing students rate their competence higher than their mentors could observe (Kajander-Unkuri et al., 2016). Another point to consider is that this study was conducted during the COVID-19 pandemic when the participants could not have face-to-face classes, skills laboratory practices, and clinical exposure. Students may need more learning experiences to solidify their competence. Students' relatively high competence evaluation could be attributed to the Dunning-Kruger effect. According to Dunning (2011), those who do not have sufficient knowledge are subject to ignorance. This ignorance may lead to them to being unaware of any mistakes they might commit, leading to an inflated perception of their capabilities. The participants of this study have only been given very little time to practice their skills in the actual care setting. Likely, they may need more encounters to test the extent of their nursing skills in real-life clinical environments. Given that role transition remains difficult for new graduate nurses and continues to be an unresolved issue for decade (Oducado & Ubas-Sumagaysay, 2019), it may be necessary to provide students who graduated at the time of the pandemic with adequate support, constant feedback, and mentoring in their transition into the nursing workforce.

Finally, this study showed that the majority of graduating nursing students acknowledged that the online learning environment had a significant impact on their fundamental nursing skills and core competence. However, the current study failed to explore further whether this effect is negative or positive. Nonetheless, a systematic review of online learning during the COVID-19 pandemic found that, on average, students in the health sciences expressed more negative than positive perceptions (Abdull Mutalib et al., 2022). Findings are congruent with numerous studies conducted in the Philippines (Oducado & Soriano, 2021), Jordan (Maqableh & Alia, 2021), and Indonesia (Pramana et al., 2022; Simanullang et al., 2021) that tackle the experiences of students in the virtual setup. Most medical students in Jeddah and India said online learning affected their clinical skills (Ibrahim et al., 2021; Khan et al. (2021). Oducado and Estoque (2021) also

noted that most undergraduate nursing students in the Philippines were unsatisfied with the online learning platform, and the pandemic has significantly affected their academic performance. Likewise, Li et al. (2021) found a low satisfaction rate among international medical and nursing students as influenced by numerous factors, including but not limited to the absence of practical classes.

This study has limitations as it only involved graduating nursing students enrolled in one public university in the Philippines in the second semester of the school year 2021-2022. Thus, the results of this study will only be generalizable among study participants and not to all nursing students in the Philippines and other countries. This study focused on the perceived 13 fundamental nursing skills competence and 11 core competencies and whether it is influenced by sex and academic performance. This study did not cover other factors and circumstances that could affect nursing students' competence. As this is a cross-sectional study, it cannot establish causal linkages between variables and cannot follow changes over time. Also, given the use of online survey questionnaires, another drawback of this study is the biases and limitations related to self-report data. Self-reports are subject to the constraints associated with honesty, social desirability, and introspective ability. Lastly, the instrument used in this study appears to have a very high Cronbach's alpha, which may be attributed to the relatively lengthy scale. A more robust test of the psychometric properties of the instrument and a shorter version scale is recommended.

Conclusions

The virtual or remote teaching and learning mode has significantly affected nursing students' skills and competence. However, despite limited exposure in the clinical field brought about by the pandemic, the graduating nursing students perceive themselves to be proficient in performing basic nursing skills and in their capabilities in what they are expected to perform in professional nursing practice. Nonetheless, areas for improvement warrant further assessment, validation, and enhancement. Assessing graduating nursing students' competence is critical for determining their ability and readiness to provide quality healthcare services. Despite viewing themselves as proficient, it is still suggested that academic and healthcare institutions give due attention to the clinical practice of graduating nursing students to address areas of concern regarding skills and competence development. New nurses who

had limited hands-on clinical experience and graduated during the pandemic may need more appropriate guidance and supervision during their transition to professional practice to supplement the limited hands-on clinical exposure and facilitate a smooth role transition experience.

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