Check for updates

Research Paper

Factors Related to Nursing Students' Competence in Pandemic Situation

Wahyu Rochdiat Murdhiono[1], Nisya Aulia Aziza[1]*, Rizky Erwanto[1], Venny Vidayanti[1]

[1] Universitas Respati Yogyakarta, Indonesia

Abstract

Due to the epidemic, nursing students were barred from practising in hospitals throughout their co-assistance phase. A comprehensive examination of their perceptions of their skills throughout this period will help enhance education, eliminate gaps, and produce well-trained nurses. Therefore, this study examines co-assistant nursing students' perspectives on their competency and the factors that influence it. The research method was a correlational survey approach. There were 297 co-assistant nursing students chosen as a sample using a consecutive sampling technique from 1085 co-assistant nursing students who were registered at PD-DIKTI. The Nurse Professional Competence Scale Short Form (NPCS-SF), which has 35 items, was used to measure the clinical competence of respondents. Bivariate analysis used the Chi-Square test with a 95% confidence interval, while multivariate analysis used Logistic Regression. From the research process, this study found that most respondents perceive that they are less competent in learning during this pandemic (71.4%). It also can be concluded that respondents' satisfaction with learning methods and facilities is significantly related to students' competence (<0.05). Based on the value of OR, respondents who are satisfied with the learning method during the pandemic will be 1.7 times the opportunity to be competent compared to those who do not. From the logistic regression results, only the respondents' satisfaction with learning facilities during the pandemic significantly affected their perceptions of their competence. In conclusion, the clinical competence of co-assistance nursing students is strongly influenced by the learning facilities they get. Pandemic conditions cause students to not be facilitated optimally at a hospital or other clinical settings, ultimately reducing their confidence in the competencies experienced.

Keywords *Nursing, Clinical Competence, Learning Facilities, Pandemic.*

INTRODUCTION

As a result of the COVID-19 epidemic, millions of students were compelled to complete the semester via distance learning, causing significant disruptions in higher education, especially in nursing education (Clabaugh et al., 2021). The current social distancing protocol provides obstacles to the educational system. The quality of nursing education directly impacts the clinical care that nurses offer patients in their job (Geng et al., 2021; Smith et al., 2021).

Uneven access to online distance learning, disruption of academic calendars, cancellation of clinical placements, teaching and learning gap, lack of facilities for online learning, disruption of professional development, and inability to conduct proper clinical assessments and standard operationalization procedures were the major impacts of COVID-19 on nursing education. Students expressed worry about the implications of a break in their nursing education for their future professions as Registered Nurses. Some students expressed selfishness and apprehension about not achieving the career goals they had worked so hard (Dewart et al., 2020; Ilankoon et al., 2020; Kim et al., 2021).

The impact of the COVID-19 epidemic somewhat exacerbates the decline in the initial competency of New Graduate Registered Nurses since many conventional in-person clinical and classroom experiences have been altered or reduced. The pandemic of COVID-19 widened the gap in New Graduate Registered Nurses' preparation. While no one can confidently anticipate the

pandemic's long-term effects, there is little doubt that healthcare and education responded significantly and impressively quickly (Bonilla-Asalde et al., 2020; Kavanagh & Sharpnack, 2021; Nabolsi et al., 2021).

A similar situation happened in Indonesia, where nursing students were barred from practising in hospitals throughout their co-assistance phase owing to the epidemic. Previous research had analyzed the competency of nursing students but was carried out before the epidemic (Krisdianto & Kusumawati, 2019; Naafi'a et al., 2019; Rahadian, 2018). A comprehensive examination of their perceptions of their skills throughout this period will help enhance education, eliminate gaps, and produce well-trained nurses. As a consequence of the learning process throughout the pandemic, this study examined co-assistant nursing students' perspectives of their competency and the factors that influence it.

LITERATURE REVIEW

The academic and co-assistance stages are the two stages of undergraduate nursing education in Indonesia. While students study in the classroom during the academic stage, they also learn in clinical settings during the co-assistance stage. The nursing education process in Indonesia has evolved due to the Covid-19 epidemic, particularly at the co-assistance level. Previous studies have shown that nursing instructors and students in this stage do not always feel ready to contribute to the pandemic situation. Lack of personal protective equipment in the practice scenario, lack of health insurance, preceptor supervision, and inadequate development of all course-required skills are the key problems relating to nursing students. Access to information and communication technology (ICT) varies, among other things (Dewart et al., 2020; Lira et al., 2020). This can lead to a lack of student competency as a nurse.

Competencies are a group of observable knowledge and abilities that support and boost an activity's effectiveness or success. Any educational program's objective, set at various educational levels, is the development of competencies. While certain abilities are common to all educational programs, others are exclusive to a particular subject area. Competencies are often developed in cycles and in an integrated way throughout education. While pursuing their education and afterwards via professional practice, nurses should learn and develop the necessary competencies. Competencies are crucial to the nursing profession because they uphold its social standing and are worthwhile in ensuring the high quality and efficacy of healthcare (Ivanišević et al., 2022; Nilsson et al., 2014; Prosen et al., 2021).

RESEARCH METHOD

In this study, co-assistant nursing students' perception of their competency and the factors that affect it while studying during the pandemic were measured using a quantitative study using a correlational survey approach. Variables in this study are gender, satisfaction with learning methods, satisfaction with learning facilitation, practice hours per day and perception of competence.

There were 297 co-assistant nursing students from a private college in Yogyakarta. Respondents were obtained by consecutive sampling technique from 1085 co-assistant nursing students who were registered at PD-DIKTI (Student database owned by the Ministry of Education in Indonesia). This amount has exceeded the minimum sample calculated using the Slovin formula, which is 293 respondents. The inclusion criteria in this study were students taking the co-assistant program phase, had experienced online learning at the co-assistant program phase, had mobile phones and were willing to be research respondents. Students who did not fill out the questionnaire within the time range (2 weeks) were excluded from being respondents.

This study used The Nurse Professional Competence Scale Short Form (NPCS-SF), which

has 35 items and measures six different areas of expertise; it was created in 2017 by some of the same authors who created the Nurse Professional Competence Scale (NPCS): nursing care, value-based nursing care, medical and technical care, care pedagogy (e.g., education of patients, relatives, colleagues, and students), documentation and administration of nursing care and development, and leadership and organizational skills (Table 1) (Nilsson et al., 2018; Prendi et al., 2022; Xu et al., 2021).

The questionnaire and its questions on the respondents' characteristics were then made into an online survey, with an informed consent form and an explanation of how the study would be conducted. Researchers at each university then selected coordinators. They are the head of the class in order to make gathering data easier. Each university's coordinator was given the URL to this online survey, which she or he then distributed to registered co-assistant nursing students. The researcher took account of the incoming data each week and verified its correctness and whether the respondent met the inclusion criteria. The researcher ceased completing the respondents' online questionnaires once the final deadline had passed.

After collection, the data was downloaded and sent to the SPSS version 23.0 for analysis. In this study, quantitative data analysis was carried out by 1) univariate analysis, which served to describe the data on the characteristics of respondents and normality test for student competency data; 2) Bivariate analysis using a Chi-Square test with a 95% confidence interval while multivariate analysis using Logistic Regression. The level of significance for all data analyses was 5%. The UNRIYO (Universitas Respati Yogyakarta) health research ethics commission has given the clearance to this study with number 087.3/FIKES/PL/VI/2021.

FINDINGS AND DISCUSSION

1. **Characteristic of Respondents**
   Most of the respondents in this study were female (80.5%), with an average age of 23.21 years. This is understandable because the respondents are taken from nursing students who are generally in demand by women compared to men. Respondents' satisfaction with learning methods during the pandemic and the quality of their learning facilities were also measured in this study. Most respondents stated they were unsatisfied with the existing learning methods (72.73%) and facilities (65.7%).

   During the final semester of 2021, because the number of Covid-19 cases was still fluctuating, universities were modifying their learning methods at the co-assistance phase into blended learning. The respondent's statement evidence that the number of their practice to patients is below the standard 7 hours/day (73.73%). The perception of how competent the respondents are based on this research is that most respondents perceive that they are less competent in learning during this pandemic (71.4%).

Table 1. Characteristic of respondents (n=297)

Characteristic	n	%
Gender		
Male	58	19.5
Female	239	80.5
Satisfaction with learning methods		
Not satisfied	216	72.73
Satisfied	81	27.27
Satisfaction with learning facilities		
Not satisfied	195	65.7

Table 1. Characteristic of respondents (n=297)

Characteristic	n	%
Satisfied	102	43.3
Practice hours per day		
Less than 7 hours/day	219	73.73
7 hours/day or more	78	26.27
Perception of competence		
Less competence	212	71.4
Competence	85	28.6
	Mean (Min-max)	**SD**
Age	23.21 (20-25)	0.916

2. Relationship Between Respondents' Characteristics and Perception of Competence

Table 2. Relationship Between Respondents' Characteristics and Perception of Competence

	Perception of competence		Total	Sig.	OR	CI 95%
	Less competence (%)	Competence (%)				
Gender						
Male	41 (13.8)	17 (5.7)	58 (19.5)	.897	.959	.51-1.803
Female	171 (57.6)	68 (22.9)	239 (80.5)			
Satisfaction with learning methods						
Not satisfied	161 (54.2)	55 (18.5)	216 (72.7)	.049*	1.722	.998-2.970
Satisfied	51 (17.2)	30 (10.1)	81 (27.3)			
Satisfaction with learning facilities						
Not satisfied	149 (50.2)	46 (15.5)	195 (65.7)	.012*	2.005	1.194-3.367
Satisfied	63 (21.2)	39 (13.1)	102 (43.3)			
Practice hours per day						
Less than 7 hours/day	158 (53.2)	61 (20.5)	219 (73.7)	.625	1.151	.655-2.024
7 hours/day or more	54 (18.2)	24 (8.1)	78 (26.3)			

Based on statistical analysis with a 95% confidence level, it can be concluded that respondents' satisfaction with learning methods and facilities has a significant relationship with students' perceptions of competence (<0.05). Based on the value of OR, respondents who are satisfied with the learning method during the pandemic will be 1.7 times the opportunity to be competent compared to those who do not. Likewise,

respondents who are satisfied with learning facilities during the pandemic have the opportunity to be twice as competent as those who are dissatisfied.

Table 3. Multivariate analysis of clinical competencies of respondents

Variable	B	Sig.	Exp (B)	CI 95%
Satisfaction with learning facilities	.696	0.009*	2.005	1.194-3.367
Constant	-1.871	0.000	.154	

*=significant (CI 95%)

From the results of the logistic regression, it was concluded that of the two factors that had a significant relationship with perceived competence, only the respondents' satisfaction with learning facilities during the pandemic significantly affected their perceptions of their competence (<0.05).

Discussion

The pandemic-induced lockdown forced colleges and schools to shut down their campuses, and amid this new reality, online teaching has emerged as a potent tool to support students' learning remotely. To continue the wheels of learning, institutions worldwide are switching to online modes of teaching and learning (Hasan & Khan, 2020; Ilankoon et al., 2020). The transition of the learning process to online learning makes nursing students have difficulty adapting. This is because they require training in both the lab and the hospital of practice to increase their confidence in providing nursing care (Aristovnik et al., 2020; Dewart et al., 2020). This study's findings support the statement that most students feel less competent while studying during the pandemic.

They have trouble adjusting, which makes them question their skills. This is because, at the co-assistant stage, nursing students are required to have good psychomotor skills so that when they graduate, they become professional health workers. On the one hand, they know the value of getting experience in medical settings to develop the skills needed to care for patients. On the other hand, because there are no antecedents or comparable experiences in this area, there is dread brought on by the intricacy of the current circumstance. Nevertheless, their confidence in their abilities may diminish due to online learning, which might impact their academic performance (Bolatov et al., 2021; Bonilla-Asalde et al., 2020; Oducado & Estoque, 2021).

By mastering various skills, including creating a professional identity in clinical settings, serving as role models, and forming patient-nurse interactions, students are prepared for the working world. They also grow socially and personally through activities on campus, fieldwork, and optional courses. In order to successfully satisfy the learning objectives of nursing practices that are moving to an online format, nurse academics must work to ensure that appropriate learning activities are implemented (Cengiz et al., 2021; Carolan et al., 2020).

Nursing students hope to obtain direct experience with patients when they enter the co-assistant phase. However, due to the pandemic, universities and hospitals did not want to take risks that could cause students to be infected by the virus, so they adjusted blended learning (a combination of face-to-face and online learning) in this phase. This can be seen from the finding that most respondents reduced their practice hours in the hospital.

The reduced hours of practice are exacerbated by online learning methods that tend to be monotonous, reducing the knowledge gained by professional students. Adequate facilities and the ability of qualified lecturers and clinical supervisors must support online learning. These two

components are, however, less met because not all universities are prepared for the pandemic. This may cause co-assistance nursing students to become dissatisfied and lose confidence in their abilities (Bolatov et al., 2021; Oducado & Estoque, 2021). The findings of this study support this where based on bivariate analysis, it is concluded that of the four factors analysed, the student satisfaction factor with learning methods and facilities at the co-assistance phase during the pandemic has a significant relationship to their perception of competence.

CONCLUSIONS

The clinical competence of co-assistance nursing students is strongly influenced by the learning facilities they get. Pandemic conditions cause students not to be facilitated optimally while at a hospital or other clinical settings, which ultimately reduces their confidence in the competencies experienced. Universities need to provide learning facilities modifications to adjust student needs and pandemic conditions. Further research can analyze the impact of the competence of nursing students on their performance after getting a job in the hospital.

REFERENCES

Aristovnik, A., Keržič, D., Ravšelj, D., Tomaževič, N., & Umek, L. (2020). Impacts of the COVID-19 pandemic on life of higher education students: A global perspective. *Sustainability (Switzerland)*, *12*(20), 1–34. https://doi.org/10.3390/su12208438

Bolatov, A. K., Seisembekov, T. Z., Askarova, A. Z., Baikanova, R. K., Smailova, D. S., & Fabbro, E. (2021). Online-Learning due to COVID-19 Improved Mental Health Among Medical Students. *Medical Science Educator*, *31*(1), 183–192. https://doi.org/10.1007/s40670-020-01165-y

Bonilla-Asalde, C. A., Rivera-Lozada, I. C., Bonilla-Pizarro, D. N., Castro-Alzate, E. S., & Rivera-Lozada, O. (2020). Health sciences students' competencies in addressing COVID 19: The challenge of returning to clinical practice. *Pakistan Journal of Medical and Health Sciences*, *14*(3), 1005–1012.

Carolan, C., Davies, C. L., Crookes, P., McGhee, S., & Roxburgh, M. (2020). COVID 19: Disruptive impacts and transformative opportunities in undergraduate nurse education. Nurse education in practice, 46, 102807. https://doi.org/10.1016/j.nepr.2020.102807

Cengiz, Z., Gurdap, Z., & Işik, K. (2021). Challenges experienced by nursing students during the COVID-19 pandemic. *Perspectives in Psychiatric Care*, *December 2020*, 1–7. https://doi.org/10.1111/ppc.12923

Clabaugh, A., Duque, J. F., & Fields, L. J. (2021). Academic Stress and Emotional Well-Being in United States College Students Following Onset of the COVID-19 Pandemic. *Frontiers in Psychology*, *12*(March). https://doi.org/10.3389/fpsyg.2021.628787

Dewart, G., Corcoran, L., Thirsk, L., & Petrovic, K. (2020). Nursing education in a pandemic: Academic challenges in response to COVID-19. *Nurse Education Today*, *92*(January). https://doi.org/10.1016/j.nedt.2020.104471

Geng, Y., Huang, P. Sen, & Huang, Y. M. (2021). Crowdsourcing in nursing education: A possibility of creating a personalized online learning environment for student nurses in the post-COVID era. *Sustainability (Switzerland)*, *13*(6). https://doi.org/10.3390/su13063413

Hasan, N., & Khan, N. H. (2020). Online Teaching-Learning During Covid-19 Pandemic : Students' Perspective. *The Online Journal of Distance Education and E-Learning*, *8*(4), 202–213.

Ilankoon, I. M. P. S., Kisokanth, G., & Warnakulasuriya, S. S. P. (2020). COVID-19: Impact on undergraduate nursing education in Sri Lanka. *Journal of Public Health Research*, *9*(s1), 1–3. https://doi.org/10.4081/jphr.2020.1916

Ivanišević, K., Kosić, R., Bošković, S., & Bukvić, M. (2022). Implementation of the Nurse Professional Competence Scale in the Republic of Croatia. *SAGE Open*, *12*(3).

https://doi.org/10.1177/21582440221118544

Kavanagh, J., & Sharpnack, P. (2021). Crisis in Competency: A Defining Moment in Nursing Education. *OJIN: The Online Journal of Issues in Nursing*, *26*(1). https://doi.org/10.3912/ojin.vol26no01man02

Kim, M. J., Kang, H. S., & Gagne, J. C. D. (2021). Nursing Students' Perceptions and Experiences of Using Virtual Simulation During the COVID-19 Pandemic. *Clinical Simulation in Nursing*, *60*, 11–17.

Krisdianto, M. A., & Kusumawati, W. (2019). Faktor-Faktor Yang Mempengaruhi Kelulusan Uji Kompetensi Ners Indonesia (Ukni). *The Indonesian Journal of Health Science*, *11*(1), 1. https://doi.org/10.32528/ijhs.v11i1.2232

Lira, A. L. B. de C., Adamy, E. K., Teixeira, E., & Silva, F. V. da. (2020). Nursing education: challenges and perspectives in times of the COVID-19 pandemic. *Revista Brasileira de Enfermagem*, *73*(Suppl 2), e20200683. https://doi.org/10.1590/0034-7167-2020-0683

Naafi'a, N., Efendi, F., & Wahyuni, S. D. (2019). Prediktor Kelulusan Mahasiswa Keperawatan dalam Uji Kompetensi Ners Indonesia (UKNI). *Jurnal Penelitian Kesehatan Suara Forikes*, *10*(1), 1–8.

Nabolsi, M., Abu-Moghli, F., Khalaf, I., Zumot, A., & Suliman, W. (2021). Nursing Faculty Experience With Online Distance Education During COVID-19 Crisis: A Qualitative Study. *Journal of Professional Nursing*, *37*(5), 828–835. https://doi.org/10.1016/j.profnurs.2021.06.002

Nilsson, J., Engström, M., Florin, J., Gardulf, A., & Carlsson, M. (2018). A short version of the nurse professional competence scale for measuring nurses' self-reported competence. *Nurse Education Today*, *71*(September), 233–239. https://doi.org/10.1016/j.nedt.2018.09.028

Nilsson, J., Johansson, E., Egmar, A. C., Florin, J., Leksell, J., Lepp, M., Lindholm, C., Nordström, G., Theander, K., Wilde-Larsson, B., Carlsson, M., & Gardulf, A. (2014). Development and validation of a new tool measuring nurses self-reported professional competence-The nurse professional competence (NPC) Scale. *Nurse Education Today*, *34*(4), 574–580. https://doi.org/10.1016/j.nedt.2013.07.016

Oducado, R. M. F., & V.Estoque, H. (2021). Online Learning in Nursing Education during the COVID-19 Pandemic: Stress, Satisfaction, and Academic Performance. *Journal of Nursing Practice*, *4*(2), 143–153.

Prendi, E., Stievano, A., Caruso, R., Duka, B., Spada, F., Rocco, G., & Notarnicola, I. (2022). Measuring professional competencies of registered nurses and nursing students. A cross-sectional comparative study. *Acta Biomedica*, *93*(4). https://doi.org/10.23750/abm.v93i4.13332

Prosen, M., Kvas, A., Bošković, S., & Ličen, S. (2021). Cross-cultural adaptation and psychometric evaluation of the Slovenian version of the nurse professional competence scale. *BMC Nursing*, *20*(1), 1–11. https://doi.org/10.1186/s12912-021-00664-6

Rahadian, D. Z. (2018). Faktor-Faktor Yang Mempengaruhi Kelulusan Uji Kompetensi Mahasiswa Profesi Ners Stikes Jenderal Achmad Yani Yogyakarta. *Jurnal Wacana Kesehatan*, *2*(2). https://doi.org/10.52822/jwk.v2i2.48

Smith, S. M., Buckner, M., Jessee, M. A., Robbins, V., Horst, T., & Ivory, C. H. (2021). Impact of COVID-19 on New Graduate Nurses' Transition to Practice: Loss or Gain? *Nurse Educator*, *46*(4), 209–214. https://doi.org/10.1097/NNE.0000000000001042

Xu, L., Nilsson, J., Zhang, J., & Engström, M. (2021). Psychometric evaluation of Nurse Professional Competence Scale—Short-form Chinese language version among nursing graduate students. *Nursing Open*, *8*(6), 3232–3241. https://doi.org/10.1002/nop2.1036