ORIGINAL ARTICLE

READINESS FOR INTERPROFESSIONAL EDUCATION AND COLLABORATION AMONG NURSING STUDENTS

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ABSTRACT

Introduction: Effective healthcare delivery requires complex collaboration among all professionals involved, including nurses. Patient care in clinical settings relies heavily on teamwork between health workers across disciplines. One strategy to strengthen such collaboration is Interprofessional Education and Collaboration (IPE-C), which prepares students to work effectively in interprofessional teams. Assessing students' readiness for IPE-C is essential for integrating it into health education programs. This study aimed to assess nursing students' readiness to engage in IPE-C during their educational experience.
Methods: This mixed-method study involved 659 nursing students from levels I to IV of the undergraduate nursing program and the professional nursing program at ITEKES Bali. Data were collected between June and August 2023 using a modified version of the Readiness for Interprofessional Learning Scale (RIPLS). Quantitative data were analyzed using the Kruskal-Wallis test to compare readiness levels across groups. Qualitative data were analyzed thematically.
Results: Quantitative findings showed that students in Levels I and II had the highest overall competency scores (mean score = 4). There were statistically significant differences among the five student groups regarding competencies related to negative professional identity, positive professional identity, and roles and responsibilities ($p < 0.001$). However, no significant differences were found in the teamwork and collaboration domain ($p > 0.05$). Qualitative analysis identified three major themes: (1) uncertainty about the role and responsibilities of the nursing profession, (2) fear of making mistakes, and (3) eagerness to experience IPE-C in future clinical practice.
Conclusion: Nursing students demonstrate readiness to engage in IPE-C during their academic training, though variations exist in specific competencies. To support this readiness, nursing curricula should incorporate interprofessional education as a dedicated subject, offering both theoretical and practical exposure at the academic level.
Keyword: Collaboration, Interprofessional Education, Nursing

INTRODUCTION

Comprehensive health services are the goal of a health care facilities. Sustainable services can run well with the support of health care worker resources who can work together in harmony. Services that prioritize patient safety will also produce patient satisfaction as health service users (Widiasari, Handiyani and Novieastari, 2019). In several cases, there were nurses who were negligent, namely accidentally injuring a baby's finger in Palembang (Hardiyanto, 2022). This happens partly because nurse pay little attention to the communication that occurs with the patient's family. This is especially true for patients with high-risk conditions who access health facilities. On the other hand, study revealed that

the team and teamwork interprofessional has not been effective yet. The contribution of the health care team such as dietitian and pharmacist has not appropriate as needed (Wahyuni et al., 2021). Its important for the entire health care team to work together incollaboration for patient safety and satisfaction. This is because IPE is seen as having benefits in patient care practices so it must be implemented in education earlier (O'Leary, Salmon and Clifford, 2020). Collaborations was the health team can carry out is through interprofessional education-collaboration (IPE-C).

Interprofessional education-collaboration (IPE-C) for nursing students, this is certainly important and can be applied from the learning process. One of them is that nursing is described as an extension of the process of caring for acute and chronic patients inside (clinical setting) and outside (community) the health care service setting. Public health nursing services are defined as nursing practices that focus more on population conditions or more broadly target promotive and preventive efforts in the community (Harkness and DeMarco, 2012). Meanwhile, clinical setting as advanced care with inpatients facilities. Both have professional setting who works together for patient care and safety. One of the other skills that can be developed in the IPE process is the communication skills of health students (Carmela et al., 2022). Because misunderstood mostly come from the lack of communication skill among health care worker with the patient. The use of an educational approach with IPE is the basis for building collaboration between professions in the world of work. Research reveals that implementing IPE can increase communication readiness between professions (Firdausa et al., 2022).

Collaboration in practice with the application of IPE in learning process also supports the independent learning education program. Students are prepared to be able to develop their abilities optimally both as providers of services or products who are not tied to just being workers but also producing jobs (entrepreneurs). Professional abilities are also developed with a good understanding of IPE among students and practitioners (Falk, 2017). So, in implementing a connected curriculum and facilitating learning through IPE-C that student performance will improve and produce nurses who are competent and can compete positively in the health care services. Health education institutions need to integrate IPE-C into their curriculum. The need for implementing IPE-C needs to be carried out initial studies according to the target, namely the readiness of nursing students. The aim of this research was to determine students' readiness in implementing IPE-C during the education process

METHODS

Study Design

The research method used a mix-method study. Mix-method study is a combination of comprehensive approaches, namely quantitative & qualitative (Creswell, 2009; Mackiewicz, 2018). The quantitative method was carried out descriptively to determine the level of student readiness in implementing IPE. Meanwhile, the qualitative method was carried out through an exploratory interview approach to the components of IPE.

Population, Samples, and Sampling

The population of this research was Institute of Technology and Health Bali (ITEKES Bali) students who have through studied in the 2021-2022 academic year. Overall population is 666 students but only 659 respondents took part. Seven students were excluding as they did not fill out the questionnaire. Determination of the sample used a total sampling of 486 people for the Bachelor of Nursing Study Program who were 133 respondents for level I, 120 respondents for level II, 108 respondents for level III and 125 respondents for level IV. Meanwhile, there are 173 nursing profession students. The data collection for quantitative used a cross-sectional study in the end of the practical program session. Data collection was carried out over 3 months, namely: June - August 2023, using online data collection. The qualitative section started right after the quantitative data collected.

Instruments

The instrument used was a modification of RIPLS (Readiness of Inter-Professional Learning Scale) (Parsell and Bligh, 1999; Firdausa et al., 2022). We conduct the original version of RIPLS by Parsell and Bligh (1999) and adapt to the respondent target by modification used the Indonesian version that have internal consistencies among 0,49 – 0,85 (Firdausa et al., 2022; Sulastien, Syahrul and Kadar, 2022). Based on The RIPLS consist of 19 question that identified into four competencies such as: Teamwork & Collaboration with range score 5- 45, Negative Professional Identity range score 3- 15, Positive Professional Identity range score 4 - 20, and Roles & Responsibilities range score 3-15. All using a

five- point Likert scale. The points range from 1 for “strongly disagree” and 5 for “strongly agree”.

Procedure

The study has obtained permission from Rector of ITEKES Bali and by ethical consideration during the process all student who involve was in break semester of academic year after clinical practices. Student gathering by online and offline meeting to explain the research information.

Data collection used online form after the respondent were given informed consent. Each level of respondent coordinated by one research team to make sure filling out the questionnaires completely. After the quantitative data were complete, we identified two participants to willing join into interview by identification of inclusion criteria such as: student who experienced clinical practice full agenda in clinical setting, willing to participate into deep interview with the research team and two of top five respondent in quantitative data collection. This inclusion to see initial interest in the research topic that has been explained at the beginning of the research explanation at each level.

Data Analysis

After the data was collected, the researcher rechecked the completeness of the data to avoid missing data. After that, the code was generated and entered into SPSS ver. 26.0. Data on the characteristics of respondents analysed descriptively. The RIPLS data have been checking the normality. The data were not normal distribution. Analysis determined the comparison for multiple group data used Kruskal- Wallis Test. The qualitative data were analysed by thematic analysis (Braun and Clarke, 2021).

Ethical Clearance

This study considered the ethical principles of research, as namely: anonymity, beneficience, confidentiality, justice and respect for human dignity (Wood and Haber, 2014). This study ethical approved by Research Ethics Commission of ITEKES Bali with No: 04.0346/KEPITEKES-BALI/VI/2023.

RESULTS

The result showed for the respondent`s characteristic in Table 1 and student’s perceptions for each competency of IPE in Table 2.

Table 1. Demographic Data Characteristics of respondents (n=659)

Characteristics	n	%
Age		
19- 24 Years	659	100
Mean	21,3	
Education		
Level I	133	20.2
Level II	120	18.1
Level III	109	16.5
Level IV	125	18.9
Nurse	173	26.3
Sex		
Female	544	91.3
Male	115	8.7
Complete the RIPLS before		
Yes	51	7.7
No	608	92.3
Last complete the RIPLS		
1-3 months	51	100

Table 1 presented that the characteristic of respondent the mean of age was 21.3 were I range among 19- 24 years old. Dominant group came from Nurse (professional program) group (26.3%) and most of the participants were female (91.3%). As many as 7.7% of the respondents had complete the RIPLS questionnaire before, mostly 1-3 months ago.

Table 2 shown the result of comparison from five groups for each component of IPE`s competencies. 1) Teamwork & Collaboration competency mean value for Level III, Level IV and Nurse were in same on 4.4 while the Level I and II at the 4.3 score. 2) Negative Professional ID competency mean value for Nurse level was the lowest (3.2) and the highest was in Level I (3.7). 3) Positive Professional ID competency mean value for Level II was the highest (4.4) and the lowest was Level I group (4.2). 4) Roles & Responsibilities competency mean value for Level I and II was the highest (3.7) when the lowest was Level III (3.3). The highest score was in Level I and II groups for overall competencies (4). The results showed that statistically significant differences between the five groups regarding IPE competencies item for negative professional identity, positive professional

identity, and roles & responsibilities (p < .001). Meanwhile, teamwork & collaboration competency shown no significant different among five groups (p> 0.05).

The qualitative result found three themes were emerged such as: 1) doubt about the role and duties of the nursing profession, 2) fear of false and 3) eager to experience IPE-C in future practice. Eight participants were joint into the interview as each level except nurse were represented by two students. Theme of `doubt about the role and duties of the nursing profession`, conclude because four from eight participant said `*I still have doubts when asked about the role of nurses. Because it`s too much task*`. Theme of `fear of false` highly found explicit in Level I and II of the participants. There statement explained clearly by said `*we are too junior to faced them (other professional of health care). We better report the result of examination to our senior level (nurse) than they will says to the doctor/ others*`. Eager to experience IPE-C in future practice, six of participant were excited for future experience by said ` Want to try and repeat again with various professions`.

DISCUSSION

The study aimed to determine students' readiness in implementing IPE-C during the education process. We separated each competencies discussion in each group in paragraph below.

The teamwork and collaboration competency result that no significant different between five group. Level III, IV and Nurse had 4.4 mean each group while the minimum score for Level I, II, III and IV were the same at 34. That was indicate overall group have a similar level of perception on teamwork and collaboration competency. Most students were ready to experience the IPE program and eager to participate in collaboration method in the future. The readiness level up with the previous experience in the collaboration practice with other health care student or professional (Huebner et al., 2021; Sulastien, Syahrul and Kadar, 2022).

The negative professional identity means that students have negative statements regarding the value of working with other health care professional students. The high score of this competency indicated the low appreciation cooperative learning with other professions. While

Table 2. Student's Perceptions for Each Competency of IPE, Sept 2023 (n=659)

IPE competencies	Teamwork & Collaboration	Negative Professional ID	Positive Professional ID	Roles & Responsibility	Mean
Level I					
Min.	34	3	15	7	4
Max.	45	15	20	15	
Mean	4.3	3.7	4.2	3.7	
Level II					
Min.	34	3	15	7	4
Max.	45	15	20	15	
Mean	4.3	3.5	4.4	3.7	
Level III					
Min	34	3	15	7	3.9
Max	45	14	20	13	
Mean	44	3.6	4.3	3.3	
Level IV					
Min	34	3	12	6	3.9
Max	45	15	20	15	
Mean	4.4	3.3	4.3	3.4	
Nurse	28	3	10	7	
Max	45	15	20	15	3.9
Mean	4.4	3.2	4.3	3.6	
*p-value	0.370	0.001	0.007	0.001	

*Kruskal wall test

in this study found the highest score were in student who were at Level I (3.7). They were experience by laboratories practice so long. The lowest mean score where in Nurse group (3.2). The nurse group have a lots experience compare to the other group whose have performed skill and interaction with other health students or profession. The other side negative of IPE-C might grew up in the nursing program interaction where proven negative professional identity based on interaction phenomena of professional arrogance and stereotype in their interaction with other student or profession in field. The other hand the medical student did not agree to joint IPE cause do not trust other profession that they usually take in charge the role of medical in their private practice (Lestari et al., 2017). In this study the student also mentions about `fear to false` (Level II student) when do interaction with other profession, especially doctor.

Positive professional identity means that students have positive statements regarding the value of working with other health professional students and shared learning experiences with them. In this study, the lowest mean score was in Level I group (4.2) when the highest was Level II group. While the rest of group in the same mean (4.3). Early exposure to IPE will optimize understanding and achievement of learning targets for better collaborative practices (Kahila et al., 2023). Especially at the age of students at college level they have good self-determination and build the academic resilience (Ramadhani, Wahyuni and Woferst, 2022).

Roles & Responsibilities mean the clear understanding about the role that they have and be able to joint role with other health care team. The high score indicate student who unclear with their role in the care team. In this study result shown the highest score were Level I and II (3.7). Both of the group had a limited experience in contact with other student or profession before. Both group were in early stage and already got based nursing subject while might be still abstract to understand the role & responsibility of nurse in nursing program. Related to the result, who have experienced in interprofessional education has a positive impact on raising awareness about the role of other professions and on improving patient care planning (Soubra et al., 2018).

The results showed significant differences between the five level groups of nursing student of ITEKES Bali regarding readiness in implementing IPE-C during the education process. The competencies component such as: negative professional identity, positive professional identity, and roles & responsibilities. Meanwhile, teamwork & collaboration competency in IPE show no significant different among five groups. All level of student were felt ready to do teamwork and collaboration with the other student or profession in health care. Although the IPE-C were not implemented clearly but mostly the students of ITEKES Bali were satisfaction with the clinical learning process (Wulandari and Nuryanto, 2023).

The limitation of this study was the study had focus on nursing student in ITEKES Bali only which there were two curriculums were running as well as the study occur. The newest one has an interprofessional education as subject that announced in the early 2023/2024 academic year (June 2023). We have limited time to prevent the change and does not record the side effect to the study.

CONCLUSIONS

The students overall ready to implementing IPE-C during the education process as if the practice one. Therefore, as the curriculum made the interprofessional education as a subject to learn and practicing at academic level, the chance to level up the skill and collaboration of the student will arise. Future study about the experience with other profession of student or professional in several unit of health care facilities is needed.

DECLARATION OF CONFLICTING INTEREST

none

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AUTHORS' CONTRIBUTIONS

All authors contributed equally to the conception, design, data collection, analysis, and writing of this manuscript.

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