

The Preparation for Interprofessional Practice (IPP) in Nursing Students at Mahidol University, Thailand: The Situation Analysis

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ABSTRACT

Objective: This study involved a situation analysis of nursing students' preparation and demand for interprofessional practice (IPP) with an aim to make improvements to the interprofessional education (IPE) curriculum.

Methods: This was a situation analysis involving 58 responses (75.32%) from the Faculty of Nursing, Mahidol University, Thailand, performed between August and December 2019. Personal information, closed-ended questionnaires, and descriptive questionnaires were utilized to assess the participants' perspectives regarding their approach to their preparation and demand for IPP. Reflection and interpretation methods were used to categorize the participants' descriptive answers. Additionally, data are reported as the mean, frequency, percentage, and p-value as appropriate.

Results: Overall, 45 (77.6%) participants had never taken the IPE course before. Of those who had taken the IPE course, 22.4% stated that having good communication skills was the main ability needed for multidisciplinary nursing practice in an open-ended question, participants indicated that their self-identity had the key effect on their confidence in multidisciplinary nursing practice (Non-IPE attendants, n = 19 (32.76%), IPE attendants, n = 6 (10.34%)). Furthermore, 77.78% of respondents said they prefer to perform nursing practice to prepare themselves to work with other healthcare professionals collaboratively.

Conclusion: IPE not only benefits healthcare students by preparing them to be able to work in their field but also prepares them to be able to collaboratively operate with different healthcare personnel. In particular, communication skills, self-confidence, and nursing practice skills are important attributes that need to be prepared.

Keywords: Interprofessional education; interprofessional practice; the nursing profession; healthcare personnel; situation analysis (Siriraj Med J 2021; 73: 128-140)

INTRODUCTION

Interprofessional education (IPE) is a key strategy for developing healthcare professional learners to prepare

them to be able to give patient care in a collaborative team environment. The basic tenet of IPE is that when healthcare professionals work together, patient care is

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Received 15 July 2020 Revised 7 September 2020 Accepted 13 September 2020

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<http://dx.doi.org/10.33192/Smj.2021.18>

improved.¹⁻⁴ Previous research has shown that IPE can enhance the quality of healthcare services, empower health systems, and lead to better health outcomes.⁵⁻⁹ Furthermore, IPE can bring students together with instructors from two or more health professions during their training practice. This situation allows all participants to learn from each other and to exchange ideas with each other. Consequently, this leads to the creation of shared knowledge and greater synergy among the various healthcare professions.⁹⁻¹⁰

In several countries, the perception of IPE has been improving and it is seen as a fundamental determinant for enhancing the effectiveness of health services.¹¹⁻¹² Besides, numerous institutions, such as the World Health Organization, National Academies Practice, and the American Public Health Association, have indicated their support for IPE.^{4,9,13} The previous literature reports how IPE, reviews of conferences, and regional IPE networks are becoming more common in many countries. A systematic review and meta-analysis of interprofessional education in healthcare revealed a statistically significant outcome of intervention by the IPE program in healthcare (the effect summary value of 1.37 with a confidence interval of 0.92 - 1.82). Nevertheless, the author recommended that additional investigation of clinical trials may help distinguish the effect of the IPE program on the students' clinical competence.¹⁴

Particularly in modern times, due to the complexity of health conditions and the ever-increasing number of patients, healthcare personnel need to be well trained and highly versatile to provide a high quality of care. Increasingly, working collaboratively with other healthcare professionals is needed. For nursing teaching staff, it is clear that they not only need to prepare students to be nurses but also need to prepare them to be competent interprofessional team members.¹⁵

In the Faculty of Nursing, Mahidol University, Thailand, after two years of delivering teaching courses for IPE in the classroom as a selective course, as known as NSID 332 Enhancing patient safety through inter-professional collaborative practice, which concerns about the science of safety, how it relates to problems with patient safety in health care system, role of individuals and inter-professional health care team in problem-solving, team work, and team communication, we are now looking to develop IPE education in the clinical field for interprofessional practice (IPP) in cooperation with two other faculties, namely the Faculty of Medicine and Faculty of Pharmacy. However, to develop a comprehensive IPE curriculum, we need to observe and understand how students prepare themselves for IPP. Previous research

has suggested that the interpretation of IPE could actually be a barrier to the implementation of IPE.⁴ Moreover, the result of a primer for implementing IPE within the pharmacy and health sciences curricula showed that it could provide tools, guidance, and lessons for educators to better know the process of improving practical IPE activities, performing successful IPE programs, and evaluating students' educational results. Furthermore, collaborative IPE programs can install a standard commission across professional programs, develop effective health care teams, form an assessment plan of students' competencies, and enhance patient care.¹⁶

Accordingly, we adapted our questionnaire from a survey that we generally survey students before they attend their first practicum section in the medical unit therefore so our questionnaire related to IPE in terms of nursing profession and multidisciplinary nursing practice that could improve outcomes for the students with regard to the students' needs. Our objective in the present study was to conduct a situation analysis regarding nursing students' preparation and demand toward IPP in order to gain insights to guide the development of the IPE curriculum at Mahidol University.

MATERIALS AND METHODS

Study setting

Mahidol University has grown since its official foundation in 1943 into one of the most prestigious universities in Thailand, and is now globally recognized for its high-quality research and teaching and its many exceptional accomplishments in teaching, research, international academic collaboration, and professional co-operation. In the university's Faculty of Nursing, the study strategies in the practicum nursing course are clear, whereby students are closely supervised by professional mentors, which provides students with opportunities to learn from other healthcare professionals while learning and practicing their skills.

Also, practicing in a medical unit in the Faculty of Nursing facilitates the students gaining a clearer understanding of the various roles in interprofessional teams, aided by the curriculum design, and of the complexity of diseases. Conventionally, nursing students are split into four groups to ensure an optimal group size for team-based learning, especially third-year students. Practical sections, including in medical, surgical, pediatrics, and maternity units, are fundamental units that are mandatory for all nursing students to take. Third-year nursing students also gain collaboration experience by working with fourth-year nursing students, sixth-year medical students, and pharmacists while practicing in

medical units. These settings allow the learners to be a part of a healthcare team under the supervision of their mentors.

This provides a good setting to collect data and consequently, in this study, data were collected and analyzed at the Faculty of Nursing, Mahidol University, Thailand.

Study design

This study involved a situation analysis of interprofessional education (IPE) using a quantitative method that included a questionnaire with closed-ended and descriptive questions. The study was conducted before developing the IPE curriculum. It will guide us to identify the preference for the IPE curriculum; establishes a clear, detailed, practical view of the possibilities, resources, difficulties, and limitations concerning students' perspectives and the quality of the situation analysis may affect the success of the entire effort to develop further strategies.¹⁷

Population and sample

As the annual assessment of readiness and perception of students prior to starting the practical class performed by the Medical Nursing Department, this situation analysis of IPE was launched on August 9, 2019. The target population consisted of 77 third year undergraduate nursing students who had completed the fundamental nursing courses and will study their first practicum section in the medical unit. Sampling was not decided, since we wanted to reach all of the target population. The questionnaire was distributed online, and 58 questionnaires were returned (a response rate of 75.32%).

Study instruments

The participants were asked to fill out an online questionnaire which comprised three parts as follows.

Part 1: Personal Information Inquiries

This part gathered information on the participants' demographics, including age and gender (as "Men" or "Women"), and their background in IPE (i.e., whether participants had "ever studied an IPE course before" or "never studied an IPE course before").

Part 2

This part involved a single descriptive question to back up part 1: How does the inspiration from IPE study help students to apply their skills in multidisciplinary nursing practice? If the respondents had IPE class experience (i.e., they had answered "Yes" to the question "Have you ever studied an IPE course before?" in question 3

of part 1), then they needed to type the answer to this part. These qualitative answers would be interpreted by manual qualitative analysis using Microsoft words.

Part 3

This section consisted of 5 questions that essentially inquired about the participant's attitude toward IPE.

The first question asked about their personal confidence in applying IPE skills in nursing practice. This was answered on a visual analog scale: a score of 0 meant no confidence, whereas, 10 was the most confident. As shown in the study that self-confidence is the one of the factors that influence the success in IPP.¹⁸

This question asked about the circumstances that convinced them about the importance of multidisciplinary nursing practice (e.g. the activities that nursing students feel most confident performing). This was answered on an ordinal scale: participants needed to arrange 8 examples of situations from the highest confidence rating to the lowest.

The third descriptive question asked about the reasons why students might lose confidence in multidisciplinary nursing practice. This is a qualitative question, and allows the students to provide detail about what causes them to lose confidence.

The fourth question required the students to provide a score for their comfort level with other professions in multidisciplinary nursing practice (scale from 0 to 10, with 0 the lowest score and 10 the highest score).

Finally, we asked the nursing students how they prepare themselves for practicing and learning with other healthcare professionals. This question is an open-ended question.

Data collection

After the information was provided, participants who had answered the questions online voluntarily (through Google forms) were invited to take part in the full study and then to submit to a questionnaire that would take approximately 15 to 20 minutes.

Data analysis

For the descriptive answers, we first reflected on the answers in order to interpret the student's thoughts and then categorized them in groups. For the quantitative data, the data were inputted into Excel software for the measurements and analysis. Data are reported here as the means, frequency, percentages, and p-value as appropriate.

RESULTS

Part 1: Personal Information Inquiries

Between August and December 2019, 58 out of the

77 participants (75.32%) had completed and returned the questionnaires, of whom 98.3% were female, 96.5% were in the age range 19-21 years old, and 22.4% had participated in the IPE elective course previously (Table 1).

Part 2

This part comprised the descriptive question related to part 1: How does the inspiration from IPE study help students to apply their skills in multidisciplinary nursing practice? If the respondents had prior IPE class experience, they must answer this part of the questionnaire. The result showed that 22.4% of the participants had taken the IPE course previously. Of these, 40.00%, 26.67%, 20.00%, and 13.33% of them thought that the IPE course would help them to apply communication skills, nursing practice skills, collaboration skills, and patient safety skills more effectively in working with other healthcare personnel, respectively (Table 2).

Part 3

This section consisted of 5 questions that essentially inquired about a participant's attitude toward IPE.

The first question asked about their confidence in IPE in preparing them for nursing practice. This was scored on a visual analog scale, where a score of 0 meant no confidence, while 10 was the most confident. The results revealed that their confidence scores in multidisciplinary nursing practice averaged 5.64 out of 10, with 37.9% of participants scoring their confidence as 7 or more out of 10. The confidence scores in multidisciplinary nursing practice for students who had participated in the IPE course averaged 7.07 out of 10 ($n = 13$), while students who had not taken that subject before scored this question 5.12 on average ($n = 45$) (p -value [P] = 0.000, 95% confidence interval [CI]: -2.969 to -0.918) (Fig 1).

This second question asked about the circumstances that students were confident about using their skills in multidisciplinary nursing practice. This was scored on an ordinal scale; whereby participants needed to arrange 8 examples of situations, ranking them from the highest confidence to the lowest. The result showed that 34.48% ($n = 20$) of respondents had the most confidence in taking a patient's vital signs, while 25.86% ($n = 15$) were confident doing fall prevention practice, and 24.14% ($n = 11$) felt they could confidently perform wound dressing for patients (Fig 2).

The third descriptive question asked about the reasons why students might lose confidence in multidisciplinary nursing practice. The results showed that almost half the

respondents (43.10%: 32.76% of non-IPE attendants, 10.34% of IPE attendants) stated that their self-identity had the most impact on their confidence in multidisciplinary nursing practice, while 18.97% (17.24 % of non-IPE attendants, 1.72% of IPE attendants) revealed that this impact was caused by relationship with healthcare workers, and 12.07% (5.17% of non-IPE attendants, 6.90% of IPE attendants) said that their communication and the patients were factors that contributed to their reduced confidence, respectively (Table 3).

The fourth question required the respondents to rank their comfort score with other professionals in multidisciplinary nursing practice (scale from 0, as the lowest score, to 10, as the highest score). The result showed that students felt the most comfortable performing multidisciplinary nursing practice with classmates, with the highest average score of 8.35 out of 10, followed by teachers and nurse preceptors, with average scores of 8.18 and 8, respectively (Fig 3).

Finally, we asked the nursing students how they prepare themselves for practicing and learning with other healthcare professionals. The results showed that almost 79.37% of the students preferred to prepare their nursing practice skills to work with other healthcare personnel. Moreover, 7.94%, 6.35%, 3.1%, and 3.17% stated that collaboration skills, communication skills, patient safety skills, and other skills need to be prepared, respectively (Table 4).

TABLE 1. Characteristics of the study participants.

Responses	Total n = 58	%
Sex, no (%)		
Men	1	1.7
Women	57	98.3
Age, years		
19	2	3.4
20	43	74.1
21	11	19
24	1	1.7
27	1	1.7
Experience of IPE course		
Studied IPE course before	13	22.4
Never studied IPE course before	45	77.6

TABLE 2. Application of the IPE course skills with multidisciplinary nursing practice.

Code	Description	Responses	Frequency (n=15)
Communication skills	The students who studied the IPE course before responded that the IPE course improves their communication skills among the multidisciplinary team by learning how to communicate more efficiency	<i>"I have learned the differences and responsibilities of each professional field, and expect that this will be useful for our communication"</i> <i>"Obtain new knowledge that can be utilized to enhance patient safety, such as how to communicate with other professions more efficiently"</i> <i>"This course helps us clarify the multidisciplinary team's responsibilities, which improve team communication, and collaboration in the future"</i> <i>"To determine the experience of impermanence that has happened, being more careful and communicating well with other relevant professions"</i> <i>"There are guidelines for organizing for efficient communication with multidisciplinary groups"</i> <i>"Work more comfortably, communicate better"</i>	6 (40.00%)
Nursing practice skills	The IPE course emphasizes the nursing practice as a crucial skill for the practice in IPP to the students.	<i>"Have knowledge of operational skills needed in the ward"</i> <i>"Increase knowledge for applying in nursing practice"</i> <i>"It would benefit to be more prepared for the practicum nursing course"</i> <i>"I would like to develop innovation and implement it with patients"</i>	4 (26.67%)
Collaboration skills	The students apply for the IPE course in collaborating work by enhancing collaboration skills such as clarifying the roles of team members, and identifying and solving problems as a team.	<i>"I have learned the differences and responsibilities of each professional field, and expect that this will be useful for our communication"</i> <i>"I have learned that the mistakes that occurred may come from numerous individuals. So, working collaboratively would make us achieve the goal"</i> <i>"This course helps us clarify the multidisciplinary team's responsibilities, which improve team communication, and collaboration in the future"</i>	3 (20.00%)
Patient safety skills	The IPE course accentuates the importance of patient safety to the students.	<i>"Being conscious of the risks that encompass us would allow everyone to live in safety and reduce harm to themselves and patients"</i> <i>"Helping to be knowledgeable about patient safety"</i>	2 (13.33%)

TABLE 3. Causes of students losing confidence in multidisciplinary nursing practice.

Code	Description	Responses	Frequency (n=58)	
Self-identity	The aspect of one's self-perception which generate from the individual memories, belief, motivation, emotion, and self-attribution	From The students who studied IPE course before	6	25
		<i>"Lack of knowledge"</i> <i>"Fear"</i> <i>"Little knowledge or excitement"</i> <i>"Knowledge is not well-rounded"</i> <i>"Being blamed without being told what the mistake was"</i> <i>"Lack of the courage to speak up for oneself"</i>	(10.34%)	(43.10%)
		From The students who never studied IPE course before	19	
		<i>"Wrong nursing practice"</i> <i>"Not having enough knowledge and concerns"</i> <i>"Not having enough knowledge to provide nursing services to patients and incorrect operations that may cause harm to patients"</i> <i>"Knowledge and experience are not enough to conduct multidisciplinary practice"</i> <i>"Mistakes that occur due to insufficient knowledge"</i> <i>"The knowledge I have is not accurate"</i> <i>"Not having enough knowledge and confidence in nursing practice"</i> <i>"Not having enough knowledge, so may not understand the treatment order of other professions"</i> <i>"We are unprepared to perform"</i> <i>"Insecurity in nursing for patients and inexperience"</i> <i>"Concerns about lack of knowledge and fear"</i> <i>"Being rushed and receiving everyone's suggestion, which makes it hard to know whom I have to listen to"</i> <i>"Not confident in knowledge or fluent in procedures"</i> <i>"Not as fast as I should be"</i> <i>"Being unfamiliar, inaccurate, and afraid to make mistakes"</i> <i>"Not yet proficient"</i> <i>"When someone tells you to do what you do; it might cause uncertainty"</i> <i>"Too excited to do"</i> <i>"Excited and worried about not doing well"</i>	(32.76%)	

TABLE 3. Causes of students losing confidence in multidisciplinary nursing practice. (Continue)

Code	Description	Responses	Frequency (n=58)	
Relationship with healthcare workers	The way in which two or more people between nursing students and healthcare workers including nursing teacher and nurse preceptor feel and behave towards each other	From The students who studied IPE course before	1	11
		<i>"Working with people with more experience"</i>	(1.72%)	(18.97%)
		From The students who never studied IPE course before	10	
		<i>"Being accused of being wrong and not listening. For example, if I did a mistake and the teacher would give suggestions for improving, such as telling me how to perform in better ways, I would be ready to understand, but if there are sentences such as "Why can't I just do this?, Don't you have any intellect to do this? etc., it would cause me to lose my confidence and I do not want to do that"</i>	(17.24%)	
		<i>"Being scolded by a teacher with harsh words and psychological abuse leads to a loss of confidence and feelings of discouragement, and a lack of energy in nursing"</i>		
		<i>"Fear of being scolded by the teacher despite sometimes being prepared to learn, but the form of each person's teaching is different"</i>		
		<i>"Teachers and senior nurses put too much pressure on while practicing"</i>		
		<i>"Preceptors"</i>		
		<i>"Being rigorously blamed by seniors or others until I'm afraid to do anything"</i>		
		<i>"The interdisciplinary members can do better nursing than nurses"</i>		
		<i>"Mentors"</i>		
		<i>"Being scolded"</i>		
		<i>"Being stared at"</i>		
Communication	Verbal speech or other methods of expressing information	From The students who studied IPE course before	4	7
		<i>"Worried about communication because of misunderstanding medical terminologies"</i>	(6.90%)	(12.07%)
		<i>"Unclear communication such as doctor's handwriting"</i>		
		<i>"Being with a large group of people"</i>		
		<i>"Teacher speech"</i>		
		From The students who never studied IPE course before	3	
		<i>"Communication"</i>	(5.17%)	
		<i>"The excitement that may cause communication errors"</i>		
		<i>"Do not understand when talking with colleagues"</i>		

TABLE 3. Causes of students losing confidence in multidisciplinary nursing practice. (Continue)

Code	Description	Responses	Frequency (n=58)	
Patients	To worry or feeling nervous from patients' condition or about practicing nursing procedure that could affect patient	From The students who studied IPE course before	2	5
		<i>"Unsuccessful or successful procedures that affect the patient's body"</i>	(3.45%)	(8.62%)
		<i>"Patients feel pain while receiving care"</i>		
		From The students who never studied IPE course before	3	
		<i>"Patients have abnormal symptoms from what we do"</i>	(5.17%)	
Others		<i>"Dangerous to patients"</i>		
		<i>"Fear of hurting patients"</i>		
		<i>"Insecurity in nursing for patients and inexperience"</i>		
		From The students who never studied IPE course before	10	10
		<i>"The pressure from the environment"</i>	(17.24%)	(17.24%)
		<i>"Errors"</i>		
		<i>"When making a mistake"</i>		
		<i>"Nursing operations are unsuccessful or errors occur"</i>		
		<i>"Making a mistake and getting cursed at"</i>		
		<i>"Pressure"</i>		
		<i>"Loud noise"</i>		
		<i>"Activities that must be sterile"</i>		
		<i>"Environment"</i>		
		<i>"Contaminated, errors that may occur while operating"</i>		

TABLE 4. The preparation of students toward a multidisciplinary nursing practice.

Code	Description	Examples	Frequency (n=63)
Prepare knowledge and practice skills	The students think that preparing nursing knowledge by reading a book, watching the related video, and practicing skills before the class is the crucial method for practicing with a multidisciplinary team	<p><i>"Prepare accurate knowledge to be ready to face various problems"</i></p> <p><i>"Summarize the lessons learning about nursing practice skills"</i></p> <p><i>"Regularly review the knowledge learned from practice, remember the name of the drug, and the mechanism of action of the drug"</i></p> <p><i>"Watch video clips of nursing activities and read the pathology of diseases that are likely to be found in most patients, such as diabetes, in advance and prepare for what may be encountered"</i></p> <p><i>"Study the necessary knowledge for practicing. However, would also like the teacher to help"</i></p> <p><i>"Apply the knowledge gained from the IPE subject"</i></p>	50 (79.37%)
Collaboration	The students think that preparing themselves by learning the roles and responsibilities of the healthcare team will help them work together effectively	<p><i>"Learn the duties and work that need to be done together"</i></p> <p><i>"Study and understand the work of each profession"</i></p> <p><i>"Try to understand as much as possible other professions and find enough knowledge to understand instructions for the treatments given to patients"</i></p>	5 (7.94%)
Communication	The students think that practicing clear and concise communication will be useful	<i>"Practice clear and concise communication and plan for what can occur with patients together to come up with a solution to the problem in our responsible role"</i>	4 (6.35%)
Patient Safety	The students think that patient safety will be helpful	<p><i>"Learn and practice to prevent mistakes"</i></p> <p><i>"Seek additional knowledge to gain accuracy in work"</i></p>	2 (3.17%)
Others		<p><i>"Be mindful and concentrate, relax a lot, seek more knowledge and diligently practice as a person who notices the diversity of ourselves and others"</i></p> <p><i>"Review the content learned and get enough sleep"</i></p>	2 (3.17%)

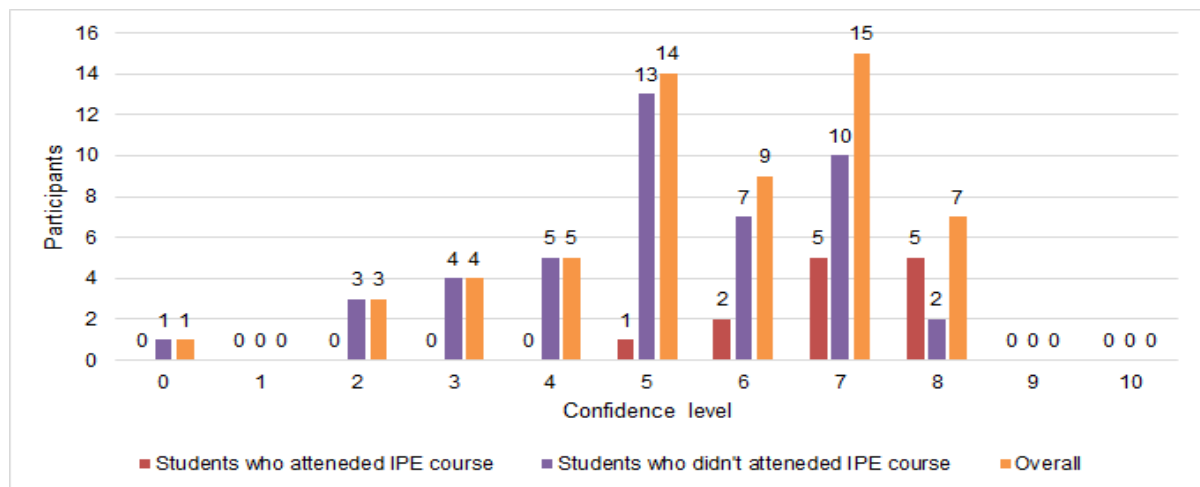


Fig 1. Confidence level of the students in multidisciplinary nursing practice.

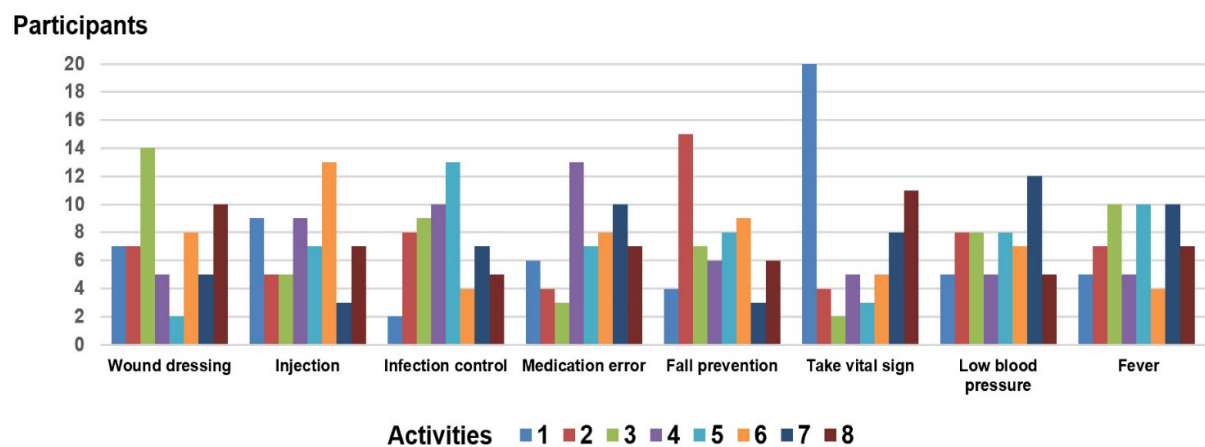


Fig 2. The circumstances that students are confident about using their skills in multidisciplinary nursing practice. This was scored on an ordinal scale; whereby participants needed to arrange 8 examples of situations, ranking them from the highest confidence (1) to the lowest (8).

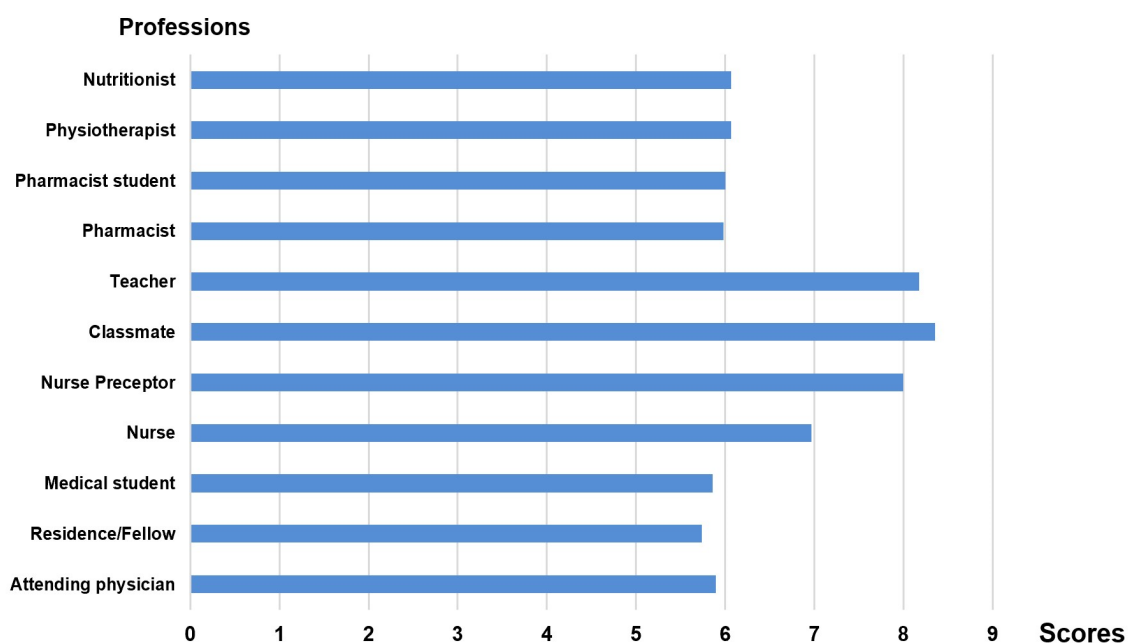


Fig 3. The average scores of how comfortable students are working with other professionals in multidisciplinary nursing practice.

DISCUSSION

IPE has been attracting lots of interest internationally.¹⁹ Some institutions offer an IPE course as an elective course or even solely for undergraduate students, such as the universities in Germany.²⁰ In Thailand, numerous universities are currently seeking to make changes to their courses from the traditional method of students or faculty members doing an activity, taking courses, or performing clinical practice individually to a model of doing such things collaboratively.¹⁵ Previous research has shown that working collaboratively can result in more effective outcomes, and, moreover, have suggested that working collaboratively should even be defined as a core competency.²⁰ In this study, we found that having good communication skills is an important factor to facilitating students to be able to work effectively with other healthcare professionals.

According to the results from Table 2, IPE helps students to be able to work in multidisciplinary teams through developing their communication, nursing practice, collaboration, and patient safety skills. The majority of students in the present study who had completed the IPE course previously mentioned that IPE improved their communication skills, which they felt were necessary for working in multidisciplinary teams. Correspondingly, previous studies have reported similar results, namely that IPE facilitates teaching students how to communicate, collaborate, and learn from other healthcare professionals.²¹ In particular, skills in interprofessional communication are a precondition to improving IPP and can be facilitators or barriers to IPP.²²⁻²³ Therefore, IPE, which strengthens and promotes cooperation within multidisciplinary teams, can play a pivotal role in preparing students for IPP through helping the students to develop several key skills they will need in clinical practice, especially communication skills.

Fig 1 shows that the students in the present study who had previously participated in the IPE course tended to have a higher self-perceived confidence level due to their better understanding of the complexities of care and the purposes of interprofessional teamwork. Longitudinal studies of the impact of IPE learning have also found that the participants show continuous improvements in confidence related to their improving communication skills and positive attitudes toward interprofessional relationships.²⁴ Both findings demonstrate that encouraging students who have participated in IPE courses to become leaders in practical sections would be useful.

We also gathered data regarding some situations where students would be confident in utilizing their skills in multidisciplinary nursing practice, as shown

in Fig 2. The results demonstrated that the majority of respondents selected taking vital signs, which is a fundamental and important activity for nursing practice as it can aid the early detection of many consequences. Even though this part of the questionnaire is a survey that we generally survey students before they practice in clinical settings, this part of data allows us to know what students' interest is, which leads to designing the course or scenario based on student centered learning. Also, simulation would help students practice working collaboratively as suggested in a previous research, which stated that nursing students should be able to obtain ample opportunities to engage in teamwork learning experiences with other healthcare professionals to practice collaborative working.²⁵ Thereby, simulating fundamental practices, like taking vital signs, would engage students to practice teamwork, communication skills, and clinical decision-making more effectively.

Furthermore, according to Fig 3, their classmates are the people that most of the students felt the most comfortable working with. This is in line with previous research that reported that the strategy of enlisting students as interprofessional leaders or facilitators could be considered a successful strategy that has been applied in the past few years.²⁶ Given this, utilizing students who have experience in IPE as an educational resource in our setting needs to be explored in the future.

The students who had previously participated in the IPE course reported higher self-confidence levels. However, all the participants, including the IPE students, perceived that having low self-confidence, which is the main part of self-identity can also be a barrier to working in multidisciplinary teams, as shown in Table 3. In other words, someone who has weak self-identity, which is an individual's belief in his/her ability that he/she cannot complete the task, will result in poor readiness, and discourage cooperation with team members.²⁷ They realized that preparing themselves by practicing procedures and reviewing nursing information would be an essential method to increase their confidence. As we mentioned, we designed the questionnaire from our general survey, which normally surveys students before they practice in clinical settings. This information also benefits designing IPE curriculum, although building nursing-specific clinical knowledge and skills should be taught in profession-specific settings. For IPE courses, we would focus on integrating and strengthening nursing knowledge and skills, and in the meantime, interprofessional skills would be developed. Thereby, IPE would be a catalyst for facilitating students to integrate and strengthen nursing skills in practice. Recent research revealed that IPE is key

to effective interprofessional teaching and learning, with deep implications for preparing students for practice.²⁸ Additionally, with the complexity of modern healthcare environments, students are increasingly required to obtain some learning in IPE, which would provide the foundation for them to develop systems thinking and critical thinking in complex healthcare systems.²⁹

CONCLUSION

To reach the most desirable outcomes for patients, the students recognized that preparing themselves by improving their skills is imperative, and low self-confidence is their weakness. In this regard IPE has many benefits in that it not only could help them to prepare themselves but would also increase their self-confidence by improving their communication and collaboration skills. Additionally, IPE would be a bridge between healthcare professions, which would facilitate multidisciplinary teams to be able to work and learn together effectively. This situation analysis would help us to improve IPE curriculum focused on preparing nursing students for IPP by based on the student centered learning. Nevertheless, for our future studies, we need to further study the impact of IPE in terms of its application to improve the IPE course and to ensure it fits our students' needs.

Author contributions

Wimolrat Puwarawuttipanit designed and conceived the whole study. Chitchanok Benjasirisan, Lalipat Phianhasin, and Suebsarn Ruksakulpiwat performed the survey, data analysis, drafting, and revising the article, these authors equally contributed to this work. Others help to prepare students for interprofessional education classes and suggest the design of the curriculum. All authors gave final approval of the version to be published, and agreed to be accountable for all aspects of the work.

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