

**ĐÁNH GIÁ HIỆU QUẢ CỦA CHƯƠNG TRÌNH GIÁO DỤC LIÊN NGÀNH
CẢI THIỆN NĂNG LỰC HỢP TÁC LIÊN NGÀNH CỦA SINH VIÊN
ĐẠI HỌC Y DƯỢC THÀNH PHỐ HỒ CHÍ MINH**

Nguyễn Thị Thùy Linh¹, Nguyễn Anh Vũ², Trần Thụy Khánh Linh³, Trần Diệp Tuấn⁴

TÓM TẮT

Giới thiệu: Giáo dục liên ngành (IPE) là điều kiện tiên quyết cho sự hợp tác thành công giữa các chuyên gia chăm sóc sức khỏe tương lai. Ở Việt Nam, IPE đã đưa vào chương trình đào tạo sinh viên y tế, do đó cần đánh giá kỹ kết quả học tập liên quan đến sự thay đổi thái độ và kiến thức của sinh viên đối với sự hợp tác liên ngành.

Phương pháp: Cách tiếp cận đánh giá chương trình theo phương pháp hỗn hợp của chúng tôi sử dụng công cụ tự đánh giá về năng lực hợp tác trong giáo dục liên ngành 27 mục (IPECC-SET 27) phiên bản tiếng Việt thông qua khảo sát trực tuyến. IPECC-SET 27 phiên bản tiếng Việt có tiềm năng đánh giá năng lực bản thân sinh viên trong thực hành hợp tác liên ngành. Công cụ này được chuyển ngữ và đánh giá tính giá trị bởi những hội đồng chuyên gia. Sinh viên từ các chuyên ngành Y đa khoa, Dược, Điều dưỡng, Vật lý trị liệu được mời trước – sau khi học chương trình giáo dục liên ngành (IPE) năm học 2021-2022 để hoàn thành khảo sát này. Chúng tôi cũng thu thập dữ liệu về phản ứng của sinh viên (sự hài lòng), tiếp thu (thái độ, giá trị) từ Đơn vị đảm bảo chất lượng để kiểm tra sự tác động của chương trình IPE.

Kết quả: Điểm IPECC-SET27 của sinh viên tăng rõ rệt sau khi học chương trình IPE ($p < 0,001$). Sinh viên nhìn nhận chương trình IPE rất tích cực về cả nội dung, cách tổ chức và giảng viên hướng dẫn, 90% đến 95% sinh viên nhận thức được ý nghĩa của kết quả học tập đối với quá trình học tập của họ và 89% đến 96% sinh viên nhận thức cao về việc giảng viên quan tâm đến tầm quan trọng của kết quả học tập đối với việc giảng dạy.

Kết luận: Sự khác biệt về điểm IPECC-SET 27 giữa trước và sau khi học là do sự đóng góp chủ yếu của giảng viên và chương trình IPE.

Từ khóa: Giáo dục liên ngành, tự tin vào năng lực bản thân, IPECC-SET 27.

ABSTRACT:

*EVALUATE THE EFFECTIVENESS OF IPE PROGRAM IN IMPROVING
COMPETENCE IN INTERPROFESSIONAL COLLABORATION OF STUDENTS
AT UNIVERSITY OF MEDICINE AND PHARMACY AT HO CHI MINH CITY*

Nguyen Thi Thuy Linh¹, Nguyen Anh Vu², Tran Thuy Khanh Linh³, Tran Diep Tuan⁴

¹ Ngành Điều dưỡng, Khoa Y – Đại học Quốc gia TP. Hồ Chí Minh

² Khoa Khoa học Cơ bản, Đại học Y Dược TP. Hồ Chí Minh

³ Khoa Điều dưỡng – Kỹ thuật Y học, Đại học Y Dược TP. Hồ Chí Minh

⁴ Chủ tịch Hội đồng trường, Đại học Y Dược TP. Hồ Chí Minh

Thông tin liên hệ: Nguyễn Anh Vũ, ĐT: 0909 090 838 Email: vu.hcm1976@gmail.com

Introduction: Interprofessional education is an important precondition for successful collaboration among future healthcare professionals. In Vietnam, interprofessional education has been included in the training program for health students, and there is a need for a thorough assessment of learning outcomes related to changes in attitudes and knowledge of students for interprofessional collaboration.

Method: Our mixed-methods program evaluation approach used the Vietnamese version of the Interprofessional Education Collaborative Competence Self-Efficacy Tool consisting of 27 items (IPECC-SET 27) in an online survey. The Vietnamese version of the IPECC-SET 27 assessed students' self-efficacy in interprofessional collaborative practice. This tool was translated and evaluated validation by expert's panels. We invited General Medicine, Pharmacy, Nursing, Physiotherapy students to complete this survey before – after they study the interprofessional education (IPE) program in the academic year 2021-2022. We also collected data about student's reactions (satisfaction), learning (attitudes, values) from a quality assurance Unit to examine the IPE program's impact.

Results: Students' IPECC-SET27 score increases significantly after studying the IPE program ($p < 0,001$). Students perceive the IPE program very positively in terms of both content, organization, and instructors, with 90% to 95% of students are aware of the significance of learning goals, 89% to 96% of students are highly aware of their instructors care that relate to the importance of learning goals.

Conclusion: The difference in IPECC-SET 27 scores between before and after learning is due to the influence of the lecturer and the IPE program.

Keywords: Interprofessional education, self-efficacy, IPECC-SET 27

1. INTRODUCTION

Canadian Interprofessional Health Collaborative Consortium defines the interprofessional collaboration as developing effectively interprofessional relationships to give the best outcomes to patients ¹. The World Health Organization also emphasizes teamwork in definition of the interprofessional collaboration practice, as an important component to deliver the highest quality of care across settings ². Besides, many higher education institutions worldwide are experimenting the innovative approaches to integrate IPE into the curriculum framework of health and social education ^{3,4}. When IPE is integrated into the curriculum, activities in IPE help the faculty to address barriers in the student-centered learning ⁵. One of the most critical parts of implementing training programs is accurately assessing their impact, to assess programs requires using a suitable method. One of the methods used to assess educational programs is Kirkpatrick's model. This model assesses the effectiveness of training programs at four levels: (1) response of the trainee to the training experience (student satisfaction, the quality of the activity, satisfaction with the faculty); (2) the learner's learning outcomes and increases in knowledge, skill, and attitude towards the attendance experience (how much attendees

learned the content after training); (3) the students' change in behavior and improvement (whether the learning transferred into practice in the workplace); and (4) results (the ultimate impact of training) ^{6,7}. Alternatively, Bandura's theory (1977) shows the hypothesized relationship between perceived self-efficacy and behavioral changes. It is hypothesized that expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences. As students work through experiences, they can reflect, form concepts, and practice in future experiences to improve outcomes and develop a personal knowledge ⁸.

In Vietnam, there are regulations on patient-centered care and collaboration in care. However, team management or collaboration of care is not structured, or evidence-based practice. Specialists also operate under multi-disciplines ⁹⁻¹¹. To meet social needs, the University of Medicine and Pharmacy at Ho Chi Minh City has organized IPE program for health students since 2019, within the framework of the renewal of the competency-based training. The current curriculum is the result of many trial-and-error cycles, many contributions from faculty who directly teach IPE and students who attended this program in the 2019-2020 school year ¹². Therefore, it is necessary to evaluate the effectiveness of the IPE program in improving students' interprofessional collaboration competence. Evaluation also helps to develop and improve the quality of education.

2. MATERIALS AND METHOD

2.1. Study settings and design

The university organizes five consecutive IPE courses each academic year. Each course takes place 8 days (10 lesson/day) for students. Each course enrolls approximately 200 students, who are divided into 24 groups with similar structure. Each group has seven to nine students including one third-year nursing student, one third-year physiotherapy student, three fourth-year general medicine students, three fourth-year pharmacy students. In this program, experiential learning is the dominant learning method, participants learned to teach and learn in small groups, role-playing, brainstorming, question and answer, interactive lecture, and team-based learning. The teachers of these sessions were the interprofessional education experts working at University of Medical and Pharmacy at Ho Chi Minh City. This program aims to improve participants' knowledge of the role of healthcare professions, developing interprofessional communication skills and gaining the interprofessional collaboration competencies. The educational content was developed based on the competency domains of interprofessional collaboration ¹.

Using Kirkpatrick's model for evaluation, we examined the IPE course's impact on students' reactions (satisfaction), learning (attitudes, values), and self-efficacy (of IP competencies); a mixed-methods program evaluation informed ongoing program

refinement. Program refinements included enhancing the sessions for which students provided constructive feedback.

2.2. Participants and sampling methods

The study invited students to answer an online survey one week before the start of the IPE course in November 2021. Students were included if they have not studied an IPE course before and if they agreed to participate in the study. Students were excluded if they had not filled in the questionnaire within the survey time and if they not completed activities in IPE course.

With no previous similar study in Vietnam, we used the reported differences between the pre- and post-intervention competence for interprofessional collaboration of student in an American study¹³. Therefore, the minimum sample size achieved in the study is $n_{\text{pair}} \geq 17$. However, University of Medicine and Pharmacy at Ho Chi Minh City organizes five consecutive training sessions for students, each batch number of students from 190 to 200 students every year. The study was carried out in phase 4 and phase 5, so the desired sample size in the study is $n_{\text{pair}} \geq 190$, we used convenient sampling to select participants.

2.3. Data collection and tools

We sent an invitation to students on online classroom (Microsoft Teams). Upon accessing Qualtrics survey link, students were prompted to indicate whether they agreed to complete the survey before reading the actual survey questions. If they chose the “Disagree” option, the survey would automatically end, and no data was collected. We collected demographic information including gender (male, female), age, major (General Medicine, Pharmacy, Nursing, Physiotherapy), religion (Kinh, other), Participate in clinical practice, Clinical practice time. In addition to, the researcher collected secondary data from the Quality Assurance Unit of the Interprofessional Education Module, screened respondents participating in the 4th and 5th IPE Modules, and recorded: students' evaluations of the subject. learning, teaching activities, student satisfaction and attitudes. Data collected included quantitative data measuring self-efficacy for competence in IP collaborative practice (IPECC-SET) and qualitative data (program evaluation survey) of students' IPE experience.

The Interprofessional Education Collaborative Competence Self-Efficacy Tool (IPECC-SET 27)

It was developed with the initial goal of assessing self-efficacy in collaboration among experts based on the competences set by IPEC¹⁴. The original IPECC-SET 27 consists of 27 competency standards presented in 4 sections (A-D), the letters and numbers after each represent the 4 competencies : Values/Ethics for Interprofessional Practice -VE: 5 items; Roles/Responsibilities -RR: 8 items; Interprofessional Communication -CC: 5 items; Teams and Teamwork -TT: 9 items. The scale is visually similar with “0 = not at all

confident” and “100 = at all confident”¹⁵. This tool is useful in assessing the effectiveness of an educational program, with a variety of assessment tools and formats used, helping respondents to properly assess the existing level. IPECC-SET 27 were translated to Vietnamese and validated according to WHO guideline by a researcher team. The validity and reliability of the questionnaire are proven with Item reliability was 0.99, Rasch person reliability was 0.98, The Wright Map shows the overall assessment items of the instrument forming a scale to achieve the goal of assessing the competence level¹⁶.

The Student Survey of the Interprofessional Education Program

It is designed by the Quality Assurance Unit of the University of Medicine and Pharmacy in Ho Chi Minh City, and applied to the student survey after each end of the IPE Module. This survey is based on internal quality assurance standards, curriculum design and review according to regulations¹⁷. The value of the questionnaire was determined by medical education experts from the Quality Assurance unit and published at the University of Medicine and Pharmacy in Ho Chi Minh City. The survey set includes 21 evaluation questions on a 5-point Likert scale, 04 open-ended questions, and is divided into five parts: student characteristics; content and organization; valuation method; instructors; Student self-assessment for Module.

2.4. Statistical analysis

Data were initially collected from participants with a 10-mm VAS continuous scale, and then re-coded into a 10-point Likert scale from 0 to 9, according to Linacre's guidelines¹⁸. Excel 2013 software is used for data management, R 4.3.1 and Bluesky Statistics 7.30 software for statistical analysis.

Qualitative variables: presented as frequencies and percentages (%). Quantitative variables: presented as mean and standard deviation. The data are presented in tables and graphs. Population characteristics of the study sample are described by Mean (SD) for quantitative variables or n (%) for nominal variables.

The difference in the results obtained on the outcome variable between before - after the program was assessed by Wilcoxon non-parametric test to test the scientific hypothesis of the study, with $p < 0.05$ considered to be statistically significant.

2.5. Ethical consideration

This study was approved by the Ethics Committee of UMP-HCMC (Approval No. 593/HĐĐĐ-ĐHYD). Students gave informed consent before data was collected. The data were de-identified before analysis by a non-instructor researcher. Whether the students participated did not affect their performance evaluation in the course.

3. RESULTS

The sample size before studying the IPE program was 156 students, the sample size after finishing the program was 133 students. There are 22 cases which did not participate

after studying and 1 case provided data not significant with maximum scores for all assessment criteria pre- and post- study. The response rate was 34.36%. The characteristics of participants were described in Table 1.

Table 1. Demographics and background characteristics of students in the IPE program, 2020-2021, N = 134

Characteristics		Total	General Medicine	Pharmacy	Nursing	Physiotherapy
Gender n (%)	Male	56 (41.79%)	29 (72.5%)	22 (40.74%)	2 (7.69%)	3 (21,43%)
	Female	78 (58.29%)	11 (27.5%)	32 (59.26%)	24 (92.31%)	11 (78,57%)
Age Mean (SD)		21,6 (0,12)	21.75 (0.61)	22.14 (0.27)	20.85 (0.09)	20.5 (0.14)
Religion n (%)	None	106 (79.1%)	34 (85%)	43 (79.63%)	18 (69.23%)	11 (78,57%)
	Buddhism	18 (13.43%)	5 (12.5%)	7 (12.96%)	5 (19.23%)	1 (7,14%)
	Roma Catholicism	9 (6.72%)	1 (2.5%)	4 (7.41%)	2 (7.69%)	2 (14,29%)
	Others	1 (0.75%)	0 (0)	0 (0)	1 (3.85%)	0 (0)
Participate in clinical practice n (%)	Yes	54 (40.3%)	28 (70%)	0 (0)	26 (100%)	0 (0)
	No	80 (59.7%)	12 (30%)	54 (100%)	0 (0)	14 (100%)
Time participating in clinical practice Mean (SD)		20,29 (2,67)	28.54 (4.6)	0 (0)	11.3 (0.29)	0 (0)

Compare Self-efficacy for the interprofessional collaboration of students before – after participating in the IPE program

Self-efficacy for the interprofessional collaboration of students before – after participating in the IPE program which was surveyed through the IPECC-SET 27. Self-assessment scores before learning are compared with scores after learning according to each criterion of the IPECC-SET 27. In which, the scores of each core competency group are described in Table 2.

Table 2. IPECC-SET 27 paired samples Wilcoxon test, 2020-2021, N = 134

Variables 4 IPEC Core Competencies	Pre-Mean (SD)	Post-Mean (SD)	Wilcoxon W	p- value <0.05
Work in cooperation with those who receive care, those who provide care, and others who contribute to or support the delivery of prevention and health services (1) VE5	63,2 (19,5)	75,5 (11,7)	1348 ^f	< 0.001

Variables 4 IPEC Core Competencies	Pre-Mean (SD)	Post-Mean (SD)	Wilcoxon W	p- value <0.05
Develop a trusting relationship with patients, families, and other team members (CIHC, 2010). (32) VE6	62,4 (19,0)	78,1 (12,1)	774 ^c	< 0.001
Demonstrate high standards of ethical conduct and quality of care in one's contributions to team-based care. (20) VE7	67.3 (18.3)	79.5 (12.3)	1035 ^h	< 0.001
Manage ethical dilemmas specific to interprofessional patient/ population centered care situations. (3) VE8	58,7 (20,1)	72.7 (14.2)	1303 ^c	< 0.001
Maintain competence in one's own profession appropriate to scope of practice (35) VE10	63.9 (18.7)	76.5 (14.1)	1201 ^d	< 0.001
Communicate one's roles and responsibilities clearly to patients, families, and other professionals. (24) RR1	61,8 (19.4)	77,1 (13.2)	731 ^f	< 0.001
Recognize one's limitations in skills, knowledge, and abilities. (21) RR2	68,4 (16.6)	80,1 (12.0)	1232 ^d	< 0.001
Engage diverse healthcare professionals who complement one's own professional expertise, as well as associated resources, to develop strategies to meet specific patient care needs. (38) RR3	55,8 (21.0)	71,1 (16.0)	791 ^d	< 0.001
Explain the roles and responsibilities of other care providers and how the team works together to provide care. (34) RR4	61,2 (19.2)	77,6 (13.4)	667 ^e	< 0.001
Use the full scope of knowledge, skills, and abilities of available health professionals and healthcare workers to provide care that is safe, timely, efficient, effective, and equitable. (27) RR5	58,9 (19.5)	74,5 (14.9)	736 ^g	< 0.001
Communicate with team members to clarify each member's responsibility in executing components of a treatment plan or public health intervention. (30) RR6	60,3 (19.3)	78,5 (12.6)	434 ^e	< 0.001
Forge interdependent relationships with other professions to improve care and advance learning. (14) RR7	57,9 (20.4)	77,6 (12.3)	434 ^e	< 0.001
Engage in continuous professional and interprofessional development to enhance team performance. (18) RR8	60,2 (19.3)	77,3 (12.2)	698 ^d	< 0.001
Organize and communicate information with patients, families, and healthcare team members in a form that is understandable, avoiding discipline-specific terminology when possible. (28) CC2	59,1 (20.1)	75,6 (14.1)	605 ^d	< 0.001
Express one's knowledge and opinions to team members involved in patient care with confidence, clarity, and respect, working to ensure common understanding of information and treatment and care decisions. (8) CC3	59,2 (20.6)	76,2 (12.7)	660 ^f	< 0.001
Give timely, sensitive, instructive feedback to others about their performance on the team, responding respectfully as a team member to feedback from others. (9) CC5	62,1 (19.8)	75,8 (12.6)	1161 ^f	< 0.001
Recognize how one's own uniqueness, including experience level, expertise, culture, power, and hierarchy within the healthcare team, contributes to effective communication, conflict resolution, and positive interprofessional working relationships. (7) CC7	60,5 (19.4)	76,2 (12.3)	921 ^b	< 0.001

Variables 4 IPEC Core Competencies	Pre-Mean (SD)	Post-Mean (SD)	Wilcoxon W	p- value <0.05
Communicate consistently the importance of teamwork in patient-centered and community focused care. (2) CC8	61,9 (20.1)	76,8 (13.3)	921 ^b	< 0.001
Describe the process of team development and the roles and practices of effective teams. (12) TT1	55,9 (18.9)	76,4 (11.9)	283 ^b	< 0.001
Develop consensus on the ethical principles to guide all aspects of patient care and team work. (31) TT2	60,5 (19.6)	76,8 (12.8)	542 ^e	< 0.001
Engage other health professionals—appropriate to the specific care situation—in shared patient-centered problem-solving. (6) TT3	58,6 (21.7)	74,9 (15.5)	1058 ^e	< 0.001
Integrate the knowledge and experience of other professions— appropriate to the specific care situation—to inform care decisions, while respecting patient and community values and priorities/ preferences for care. (33) TT4	61,1 (18.3)	76,3 (12.6)	751 ^c	< 0.001
Apply leadership practices that support collaborative practice and team effectiveness. (26) TT5	53,8 (20.3)	71,5 (15.8)	751 ^c	< 0.001
Share accountability with other professions, patients, and communities for outcomes relevant to prevention and health care. (29) TT7	60,2 (19.5)	76,7 (13.3)	705 ^a	< 0.001
Reflect on individual and team performance for individual, as well as team, performance improvement. (10) TT8	60,1 (19.0)	75,1 (13.2)	873 ^h	< 0.001
Use available evidence to inform effective teamwork and team-based practices. (36) TT10	59,7 (19.6)	74,4 (14.3)	994 ^a	< 0.001
Perform effectively on teams and in different team roles in a variety of settings (5) TT11	60,9 (19.6)	77,2 (13.4)	721 ^b	< 0.001
^a 2 pair(s) of values were tied ^b 3 pair(s) of values were tied ^c 4 pair(s) of values were tied ^d 5 pair(s) of values were tied ^e 6 pair(s) of values were tied ^f 7 pair(s) of values were tied ^g 8 pair(s) of values were tied ^h 9 pair(s) of values were tied				

Impact of the IPE program on student responses and learning

The results show that 93,98% of students actively participate in the module, but students are satisfied with the IPE Module at 90,23%. On the other hand, 90% to 95% of students are aware of the significance of learning outcomes for their learning process (module information questions); and 89% to 96% of students are highly aware of whether their instructors care about the importance of learning outcomes for their teaching (lecturer related questions). Student perspectives regarding benefits of program in Table 3

Table 3. Student perspectives regarding benefits of program

<i>“The IPE module is a very useful subject for future practice and work”</i>
<i>“The subject is very interesting, very useful for students. Students are comfortable, open and</i>

<i>confident to show their competence”</i>
<i>“Try to give your own opinions, give yourself the opportunity to learn things when working with an interprofessional team”</i>
<i>“The class is organized is very suitable to promote students' autonomy and collaboration ability. The teachers are very enthusiastic and help in integrating with the class.”</i>
<i>“Study with a relaxed mind, IPE is a subject that helps you both entertain and connect with friends of other majors, building a preliminary foundation for communication in health care for people”</i>
<i>“I want this Module to have more sessions and last longer because I really enjoy studying this part. In this course, it was really fun when we were able to share and answer a lot of unknown knowledge without fear of being judged as weak.”</i>
<i>“The course helps me understand myself and the people around me better, especially as a medical staff”</i>
<i>“This Module is very useful to help students from other faculties get to know each other and work together, work well in groups, and coordinate majors before students can practice well”</i>
<i>“A practical and necessary Module”</i>
<i>“Lecturers in the Module are dedicated and care about students. Regarding the content of the Module, it is recommended to edit the difficulty of clinical cases with many problems to intervene more and match the study program of the participating students. And the Module should organize offline learning to create more excitement and interaction between lecturers and students, and students with students”.</i>

4. DISCUSSION

The participant age, gender and religion characteristics were typical for mid-training healthcare students in urban Vietnam. The students were younger compared to western studies since they went directly to health professions training directly from high school in Vietnam^{19,20}. the percentage of females was 60,9%, higher than that of males. This result has no difference compared with the research results of Valerie Gruss and Memoona Hasnain (2020)¹³ and similar to the survey results of Nguyen Thi Kim Tuong (2020) at UMP HCMC²¹. The result also shows that Buddhism more than other religions (12,82%), similar to the statistics of the Government Committee for Religious Affairs²². Our population was generalizable to other mid-training healthcare students in Vietnam, especially at urban health sciences universities.

We used the Kirkpatrick’s model to evaluate the student’s overall reaction to the program for new teaching and learning methods and its effects on their learning and behavior.

The results of the module assessment through student responses (first level) show that students perceive the IPE Module very positively in terms of both content, organization, and instructors. Specifically, the results indicate that the IPE Module provides an opportunity for students to provide positive feedback when engaging in discussions with students from other healthcare majors. At the same time, the Module is very helpful in raising awareness about the importance of teamwork, and understanding the roles and responsibilities of other majors. Most of the participants are satisfied with the Module. This result is similar to the study of Tran Thuy Khanh Linh (2021) on

interprofessional education during the Covid-19 epidemic ²³, and Valerie Gruss and Memoona Hasnain (2021) also show that students agree to recommend the program to their peers ¹³. Interaction in interprofessional education is effective because of the positive feedback from students in role-playing and small-group activities. In addition, there was some negative feedback regarding the interaction in the game activity, role-play. This limitation is due to the Covid-19 epidemic leading to the implementation of an online IPE Module, making interaction difficult. This also explains the fact that some items in the quantitative feedback have 2,22% of students rated disagree.

The second level assessment of the Kirkpatrick model showed that students responded to the level of the Module performance quite well, they found the Module to be effective in enhancing participants' learning. During the learning process, peer feedback and lecturer feedback help students improve their teamwork skills and professional knowledge, this result is similar to Valerie Gruss ¹³. Although the IPE Module adopts a learner-centered learning method, creating an environment for students to collaboratively solve problems and reflect on their experiences, about 2% of the students disagreed with the question of affirmations related to peer feedback in the learning process. Lecturers need to consider students' opinions and realistically estimate what students have to do at the end of the Module. Therefore, we should focus more on planning and developing a system of aligning expected learning outcomes with appropriate instructional measures and activities as students learn online.

The third level of the Kirkpatrick model shows that the IPE Module enhances the ability of medical students to provide patient-centered and family-centered care in interprofessional collaborative teams and to become leaders, advocates, and change agents to optimize patient health and well-being. The result also shows that students' self-efficacy in interprofessional collaboration practice increases significantly after studying the IPE Module, with the difference being statistically significant ($p < 0,001$). It is similar to Valerie Gruss (2020), Fatemeh Keshmiri (2020), and Colm Watters (2015) ^{24,13,25}. From this result, it can be predicted that students' ability to show coping behavior and prolonged effort in the face of group-related obstacles has significant improvement after participating in the IPE Module. It is important that the skills and abilities that students learn in a variety of situations can be applied in collaborative practice among experts according to interprofessional collaboration competencies. In the study, simulation situations and educational games were used to teach and evaluate communication between students of different disciplines. Simulation sessions are organized in a planned and structured with the participation of students from disciplines towards interprofessional practice in real-life situations.

Limitations

The important research is the population sample which was collected from 4 majors to reinforce the validity of the results and conclusions. Because interprofessional collaborative practice is the coordination between experts. The research also includes the

results of a survey about the IPE Module from the Quality Assurance Unit of UMP HCMC. So avoiding the situation that students do not pay attention to answering questions when there are too many surveys. Objective data and research results are highly applicable and focus on evaluating many angles in the IPE Module from learners.

The lecturer staff is constantly improving the training program. This year, the IPE Module has been significantly altered to face the educational and clinical challenges posed by the Covid-19 pandemic. However, limited in time and sample size, the study could not compare the results of learners between the program before and after the change.

The sample size is relatively small and unbalanced across majors, so it is prudent to generalize to samples and student populations both inside and outside Vietnam. However, 156 students are larger than the minimum sample size achieved in the study (≥ 17) and the study conducted on students from four majors has ensured that the small groups have all the majors, helping students have the opportunity to learn from each other.

The effectiveness of the IPE Module has not been determined because the study design does not have a control group, leading to the presence of confounding factors such as some students improving their results without learning. However, in the study, the use of many data sources and evaluations from different sources contributes to reducing confounding factors.

The long study period makes the sample loss rate quite high, so it is necessary to pay attention to sample management. However, in the comparative analysis of before-after studies, students who did not participate in the post-study survey were excluded to reinforce the representativeness and validity of the conclusions.

CONCLUSION

The present course included the educational situation in interprofessional small groups and activities provided opportunities that healthcare students learn and prepare to communicate and work together effectively. The present results showed the educational effect of program on interprofessional performance and self-efficacy of participants increased significantly, with the difference being statistically significant ($p < 0,001$). From this result, it can be predicted that the ability to show coping behavior and prolonged effort in the face of group-related obstacles has a significant improvement after participating in the IPE Module. It is important that the skills and abilities that students learn in a variety of situations can be applied in collaborative practice among professionals according to interprofessional collaborative competencies.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest

AUTHORS' CONTRIBUTION

NTTL, TTKL and TDT designed the study. NTTL collected data. NTTL, NAV analyzed data and drafted the manuscript. All authors contributed to data interpretation, revised, and approved the final manuscript.

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