Evaluating a three-year home-based interprofessional education program: Student, lecturer and community outcomes at a Thai university

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Background. Interprofessional education (IPE) promotes collaborative practice through transformative learning, yet evidence on the longitudinal outcomes of home-based IPE for students, educators, and communities remains limited.
Objective. This research aims to evaluate the outcomes of interprofessional education (IPE) by examining its impacts on students, lecturers, and communities.
Methods. The mixed methods study was conducted in three target samples: three cohorts of students (*n*=1 304) from the 2016, 2017, and 2018 academic years; lecturers (*n*=54), both groups were drawn from six faculties (Medicine, Pharmacy, Architecture, Nursing, Informatics, and Veterinary Sciences); and patients (*n*=150) and the representatives (*n*=18) from seven communities in the Muang municipality and its primary care units.
Results. Across the three cohorts of students, 868 students responded (response rate 66.63%). Students' attitudes towards IPE increased significantly after participation in the IPE programme. Students' team performance, assessed by lecturers after their second patient home visit, was higher than after their first visit, with both visits yielding scores above 70%. Participation also generated new knowledge and fostered innovative thinking. Patient satisfaction with IPE home visits exceeded 80%. Levels of approval of IPE among both lecturers and community members were also greater than 80%.
Conclusion. Both qualitative and quantitative findings showed improvements in students' attitudes towards IPE, benefits for lecturer's and high levels of patient satisfaction with home-based IPE. IPE at MSU achieved beneficial outcomes across all three perspectives: students, lecturers and communities.
Keywords: Interprofessional education, pharmacy, mixed method, outcomes, home visit.

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In 1973, the Centre for the Advancement of Interprofessional Education (CAIPE) in the UK and the World Health Organization[1] stated that IPE occurs when students from two or more professions learn about, from, and with each other in order to enable effective collaboration and improve patient health outcomes. The students learn to work as a team and apply knowledge from their own professions while focusing on patients, service users, their families, and the community, thereby maximising the effectiveness of the care they provide.[2] The aims of IPE are to provide students with the opportunities to train and gain experience before graduation, develop their skills, and learn how to work collaboratively with professionals from other disciplines. It also seeks to foster positive attitudes and an understanding of students' own roles and responsibilities. The expected benefits of IPE are students' self-development and their pursuit of interprofessional practice (IPP) in the future.[3] These collaborative competencies are particularly important in the context of the COVID-19 pandemic.[4]

In pharmaceutical education, the definition of interprofessional education (IPE) and the associated skill sets were established in 2005. The American Association of Colleges of Pharmacy (AACP) assigned its Council of Faculties Interprofessional Education Taskforce to expand the definition of IPE developed by CAIPE.[5] IPE was subsequently defined as cooperation between educators and students from at least two healthcare professions, or other basic professions in order to create and foster their learning environment together, with the aim of developing knowledge, skills, and attitudes that lead to behavior and skill sets suitable for inter-professional teamwork. In 2015, the International Pharmaceutical Federation further clarified the application of IPE within the context of pharmaceutical practice.[6]

IPE has since gained global recognition as a critical component of health professions training, aimed at fostering collaborative practice and improving patient outcomes. Traditionally, IPE is delivered through classroom instruction, case-based discussions or simulation exercises. While valuable, these approaches often lack the contextual depth and sustained engagement necessary to prepare students for real-world interprofessional collaboration. Despite growing interest in community-based learning, sustained, community-embedded IPE initiatives -particularly those involving pharmacy and multidisciplinary undergraduate education -remain rare globally. Most IPE programs are short-term and discipline-specific, which may limit their impact on students' long-term professional development and community health outcomes. This study addresses this gap by implementing a three-year home-based IPE model at Mahasarakham University, involving multidisciplinary students. By embedding interprofessional learning within real community settings, the programme provides a unique opportunity to explore how long-term, experiential education influences student competencies, lecturer engagement and community satisfaction. The inclusion of non-health disciplines further broadens the scope of collaboration, reflecting a transdisciplinary approach that aligns with emerging global health education frameworks.

Pharmacy IPE at Mahasarakham University (MSU), Thailand, has been in operation since 2014. The programme aligns with MSU's underlying philosophy that "public devotion is a virtue of the learned," as well as the Faculty of Pharmacy's philosophy of producing "experts in medicines and health promotion." The emphasis of IPE is on learning together and broadening viewpoints regading the health, medication use, and well-being of people living in the community. This is implemented through a home-based, community-engaged model. Initially, the programme involved students from Medicine, Pharmacy, and Architecture, integrating real-world patient care with interdisciplinary collaboration. It has since expanded to include six faculties in total: Pharmacy, Medicine, Architecture, Nursing, Informatics, and Veterinary Science.[7] The theme of pharmacy IPE was 'Unused medicine in patient's home: How to manage it.' Three pharmacy courses were integrated into the real-life IPE practice, and the main questions from each course that students could use as a guide for observing patients at home; are presented in Supplementary Table 1.

Home-based IPE involving both health and non-health students is new. The programme focuses on 'unused medicines' in patients'homes,atopicintroduced by the primary care officers in the community as an important area requiring innovative solutions for medication management.We hypothesised that students' teamwork attitude scores would improve after participating in home visits involving both health and non-health students. Moreover, students' knowledge and creativity in addressing the problem of unused medicines were expected to be enhanced through the sharing of ideas and perspectives among students from different disciplines.

This research therefore aimed to evaluate the three-year home-based pharmacy IPE program at MSU as a whole, with outcomes assessed from three perspectives: students, lecturers, and the community, including patients.

Methods

Research design

This study used a mixed-methods approach, combining both quantitative and qualitative techniques to assess the outcomes of the pharmacy IPE programme after three years of implementation across three samples groups. The main integrated learning framework applied to students from six faculties was the INHOMESSS model, based on of family medicine principles for collecting and analysing patient data across nine domains, I=Immobility, N=Nutrition, H=Home environment, O=Other people or family relationship, M=Medication use, E=Examination (Physical+Mental), S=Safety, S=Services, S=Spiritual health. This holistic framework enables students to integrate their ideas from their different disciplines when assessing the same patient. For example, a veterinary science student may raise safety concerns regading the transmission of diseases from pets to humans, while the informatics student may show how patients can identify reliable sources of information about health services. A specific focus of the pharmacy IPE component is ths issue of unused medication and strategies for addressing this problem for individual patient. The IPE activities are shown in Supplementary Fig. 1.

Study samples

The samples were divided into three groups: students, lecturers, and patients or representatives from the communities.

1. Student samples

Three cohorts of students who participated in the IPE project were included. In total, of 1 308 students from six faculties participated, of whom 22.4% (n=293) were pharmacy students. The minimum required sample size were calculated to be 307 students using the Yamane formula and the specified criteria. The student samples were divided into two parts: quantitative assessment of IPE attitudes and qualitative focus group discussions. For the first part, the includsion criteria were; (*i*) MSU students who were enrolled in the IPE project activities during the 2016 – 2018 academic years; and *ii*) students who were willing to complete the IPE attitude evaluation form before and after participating in the IPE activities. The number of students in each discipline is shown in Supplementary Fig. 2. The qualitative student sample comprised students from the three cohorts who were willing to participate in focus group discussions as part of the IPE project. One representative from each faculty in each cohort was requested, resulting in a total of 17 students.

2. Lecturer samples

Lecturers from six faculties who were involved in the management of the IPE project for the participating students were included, totaling 53lecturers. For the quantitative component, four lecturers from each faculty were randomly selected, resulting in a total of 24 lecturers who met the following criteria: (*i*) lecturers who had participated in the IPE project at least once; and (*ii*) lecturers who were willing to complete the evaluation form.

The qualitative lecturer sample consisted of lecturers who were willing to participate in the focus group discussion about the IPE project. Two representatives from each faculty were selected on a voluntary basis, resulting in a total of 12 lecturers.

3. Community representative samples

The community representative samples comprised patients and the village health volunteers (VHVs) living in the Maha Sarakham city district. There are seven communities where home visits under the IPE were conducted. For the quantitative component, 35 community representative samples were selected from a total population of 200. These included nine representatives from the municipality and PCUs, at least nine VHVs, and patients who were involved in the home visits by the three student cohorts, totalling 27 representatives. The selection process was based on nomination by the community**.** The qualitative community representative sample consisted of 11 community representatives who were willing to participate in the focus group discussions. These included were seven VHVs (one from each of the seven communities) and four representatives from PCUs, all selected on a voluntary basis.

Research tools

Two types of research tools were used: quantitative or qualitative instruments. These were developed based on the IPE outcome concept of WHO[1] and National Health Professional Education Foundation of Thailand,[8] and the desired student outcomes of the MSU desired.[9] All instruments were reviewed for the content validity by three experts in health education. The quantitative instruments such as the lecturers' satisfaction questionnaire were tested for internal consistency using Cronbach's alpha coefficients, with values >0.7. The research tools were provided in Supplementary file 1.

Table 1. IPE outcomes: students 'perspectives.

IPE outcomes on students	Mean (SD) Student Cohort 1 (2016)	Student Cohort 2 (2017)	Student Cohort3 (2018)
Students	324	493	491
Pharmacy students	95 (29.3%)	102 (20.7%)	96 (19.6%)
Student groups (Pharmacy students 1 - 3 persons/group)	50	50	50
1. IPE and teamwork attitude, %			
Year 2 pre-test	85.05 (9.31)	76.05 ± 18.14	73.04 ± 15.24
Year 2 post-test 1	84.58 (10.77)	82.39 ± 12.80	82.17 ± 12.87
Year 3 post-test 2	94.70 (3.53)	87.79 ± 12.80	90.98 ± 7.48
Multiple comparison*,b (*p<0.001*)	post 2 > post 1, post 2 > pre	post 2 > post 1 > pre	post 2 > post 1 > pre
2. Home visit skills as a group, *n*	50	50	50
Year 2 post-test 1	71.82 (10.15)	81.92 (16.33)	86.32 (8.72)
Year 3 post-test 2	81.44 (11.42)	86.74 (8.46)	89.41 (9.31)
*p value**	0.336	0.059	0.033
3. Total score of Knowledge applicability and Innovative creativity (Full score =100)	80.63 (3.88)	80.63 (3.88)	82.53 (5.48)
p-value (compared with standard score of 70%)†	<0.001‡	<0.001‡	<0.001‡
4. Total score of patient satisfactions with student home visit (Full score =100)	87.60 (6.99)	94.12 (7.11)	94.61 (5.66)
p-value (compared with a standard score of 80%)†	<0.001‡	<0.001‡	<0.001‡

*Wilcoxon signed ranks test used for two-related groups.
†One-sample t-test.
‡statistically significant at $p<0.05$.

Data analysis

Quantitative data - including students' attitudes, knowledge and creativity, lecturers' satisfaction and patients' satisfaction - were analysed using SPSS for Windows Version 16.0. Comparisons between paired assessments were conducted using the Friedman test with Wilcoxon Signed Ranks or paired *t*-tests. One-sample *t*-tests were used to compare scores against predefined benchmarks: 70% for knowledge and 80% for satisfaction, as established by IPE lecturers prior to implementation. Qualitative data from group discussions were analysed thematically to capture insights across the sample groups.

The research was approved by the Ethics Committee for Human Research of Mahasarakham University (ref. no. 210/2019).

Results

Students result

The results of the outcomes assessment for students consisted of five topics as follows.

Attitude towards interprofessional work

From the three cohorts of students (N=1 308) students, 868 (66.36%) students returned the evaluation forms. Among pharmacy students, the response rate was 75.76% (n=222/293). All three cohorts demonstrated statistically significant increases ($p<0.001$) in their attitudes toward interprofessional work after participating in the IPE project. In addition, students in all three cohorts showed significantly higher attitude scores ($p<0.001$) after their second IPE home visit in their third year of study compared with the scores after their first IPE home visit during in their second year (Table 1 and Fig. 2).

Home visit and teamwork skills

Home visits and teamwork skills were assessed using a total score of 100. The results showed that students in all three cohorts achieved higher scores during their second home visit in their third year of study compared with their first home visit in their second year. However, only the third cohort of students demonstrated a statistically significant increase (p=0.033) scores for the second home visit compared with the first, although an increasing trend in these skills was observed across all cohorts (Table 1 and Fig. 2).

Table 1 and Fig. 2 show that the three-year home-based IPE program resulted in consistent improvements across key learning areas. Students in all three cohorts (2016 – 2018) demonstrated significant gains in teamwork attitudes, with Year 3 scores notably higher than earlier assessments (p<0.001). Cohort 1 achieved the highest score (94.70%), followed by Cohort 3 (90.98%) and Cohort 2 (87.79%). Group home visit skills improved across all cohorts, with Cohort 3 showing statistically significant progress (p=0.033). Scores for knowledge application and creativity exceeded 80%, well above the 70% benchmark (p<0.001). Patient satisfaction was consistently high, ranging from 87.60% to 94.61%, surpassing the 80% standard (p<0.001). These results affirm the effectiveness of home-based IPE in enhancing student competencies and community engagement (Table 1)

Knowledge, creativity, and innovation for promoting patients' health or quality of life

Students' presentations of knowledge, creavity, or innovation aimed at promoting patient's health or quality of life were evaluated in group appraisals. There were 50 group evaluations per cohort, totalling 150

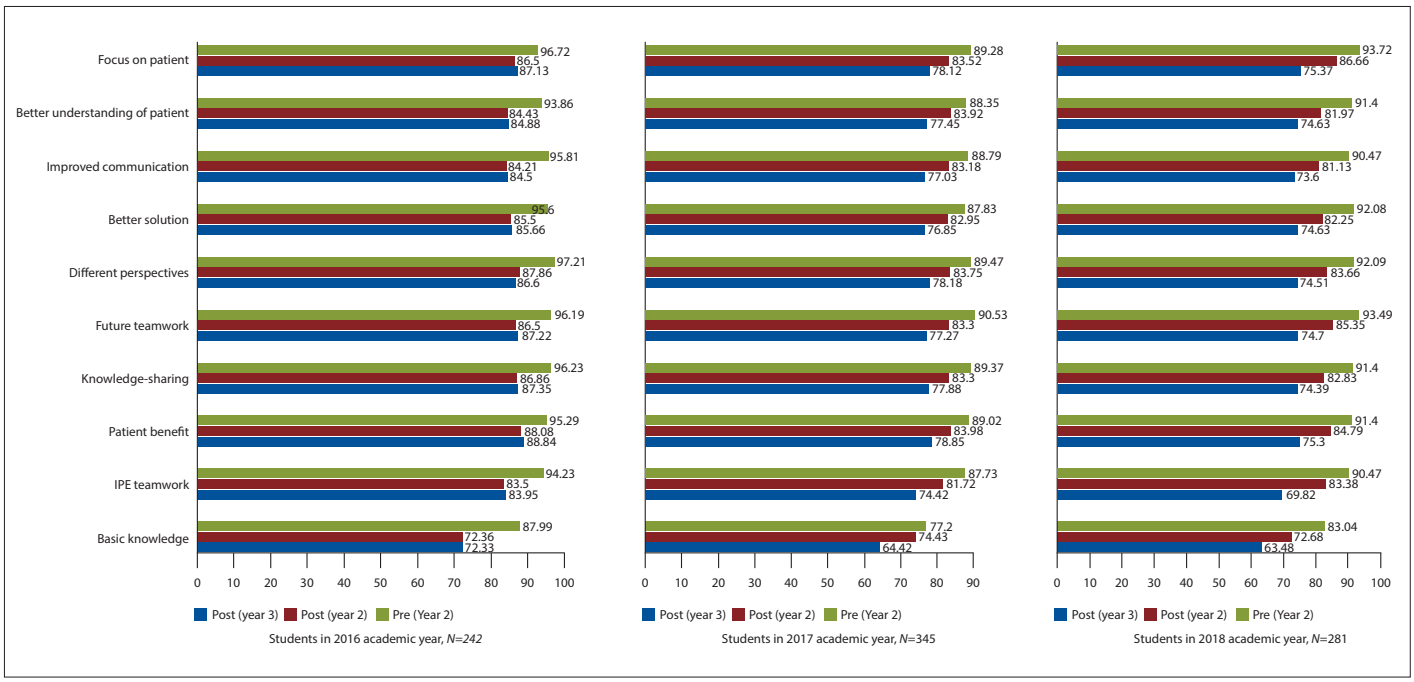

Fig. 1. Student attitude towards IPE, by academic year.

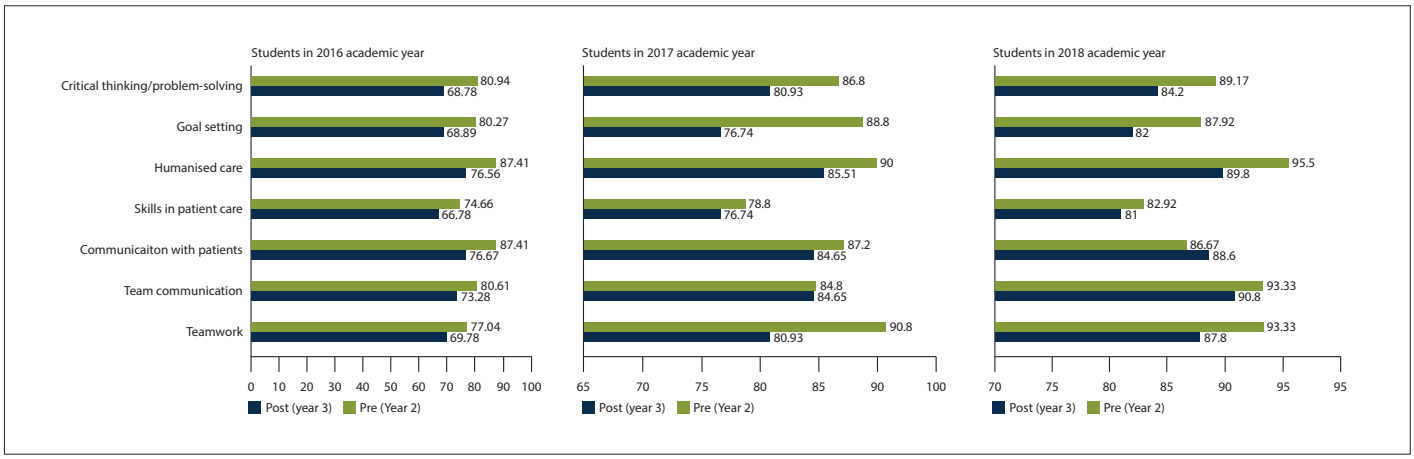

Fig. 2. Student homevisit and teamwork skills, by academic year.

across the three cohorts. On average, all 150 groups achieved higher than the standard benchmark of 70%. *t*-tests showed that scores in all three cohorts were statistically significantly higher ($p<0.001$) than the benhcmark (Table 1).

Patient satisfaction regarding the students' home visits and innovations during IPE

Patients and family responses following the student's second home visit in their students' third year of study showed that satisfaction scores for all three cohorts were higher than the standard benchmark of 80%, with statistical significance ($p<0.001$).

Student outcomes from focus group discussions

The themes of student outcomes from three group discussion were summarised as follows:

Gaining new knowledge: A pharmacy lecturer (L1) said '*…usually pharmacy students don't take blood pressure on the leg, but when they can see their nursing friends taking blood pressure on the leg during a home visit, they get very excited and interested. They gain new experience and knowledge that they wouldn't otherwise have…*.'

Soft skills and planning: An informatics lecturer (L3) said '*…the students have the opportunity to practice problem-solving skills and analyse problems in real-life situations, as well as solve immediate problems. They learn to adapt and to listen to others' opinions, which is what we want as skills in the 21st century…*"

Making relationships: A pharmacy student from the first cohort said '…I get to know new friends from different faculties. Now I have quite a few new friends…'. A patient commented, '*…the kids paid real attention, they are focused and they do their follow-ups and see the results of their work…*'.

Understanding their own profession: A pharmacy student from the second cohort stated, said '…I *get to meet a real patient for the first time with*

my friends. This makes me realise what kind of knowledge we are lacking. It motivates us to learn more in the coming years. I feel it really affects my attitude towards paying attention while learning about pharmacology since I now understand the real objectives of studying these subjects …'.

A medical student stated '*…it makes us become more aware of the scope of responsibilities of a doctor and understand the roles that other professions take on. It helps us to focus on our own responsibilities in a clearer manner…*'.

An informatics student commented, '*…a media student usually is expected to be able to communicate well but after having done the IPE project, I can now see that to really get to the patient, there are so many factors in the communication. For example, I saw my nursing friends talk so well to the patients about their health. It's like my points of view have been broadened when it comes to different aspects of communication, especially when it comes to health…*'

An architecture student stated '*…usually architecture students like me live in their own worlds. When we conducted a home visit, we just wanted to have a look around the house while other students from different faculties went and talked to the patients. So, we learned more from our friends in the health business to actually talk to the patients, so we can understand them better and will be able to help them more…*'. Pharmacy students reported feeling proud of their profession when sharing their medication knowledge with other professionals. They gained an understanding of other professional roles and recognised the importance of each discipline. In addition, they became familiar with the culture and learned how to communicate with community members from the perspectives of other professions. They anticipated being to apply these experiences in the future careers.

Lecturer results

The outcomes for lecturers are presented under three topics:

Lecturers' satisfaction with the IPE project

Of the 24 lecturers from the six participating faculties, 23 responded to the questionnaire (95.38%) (Supplementary file 1). The mean satisfaction score for the IPE project was 81.03 (8.64). Compared with the standard benchmark of 80%, lecturers' satisfaction was as expected (Supplementary Table 2).

Lecturers' expectation of benefits from the IPE project

From the lecturers' perspective, eight areas of benefit were evaluated: professional confidence, communication skills, ethical conduct, holistic care, health outcome focus, networking, innovative teaching methods, and community partnership. The mean scores for these eight areas were 82.07 (11.04), which aligned with the project's expected outcomes.

Qualitative outcomes perceived by lecturers

Focus group discussions revealed two key areas of benefits from the IPE project:

Working aspect: Lecturers found that the project broadened their networks across interprofessional disciplines and strengthened connections with community partners. They noted that their work planning became more systematic and that teamwork improved.

Teaching aspects: Lecturers reported that the IPE project encouraged the development of new teaching approached based on real problems and situations in the community. This experience enhanced their teaching methods, facilitated collaboration with other lecturers and fostered more positive attitudes towards teaching.

Patients and community representatives' results

The outcomes for patients and the community representatives are presented under three topics:

Satisfaction with the IPE project

Community representatives from seven communities were divided into three groups: patients, VHVs, and officials from PCUs. The mean satisfaction scores of the community representatives across all three groups was 87.48 (7.89) out of 100, which was significantly higher than the standard benchmark of 80% ($p<0.001$) (Supplementary Table 2).

Expectations of benefits from the IPE project

From the community representatives' perspective, the mean score for expected benefits score was 89.26 (11.19) out of 100, which was significantly higher than the 80% benchmark. Commmunity representatives indicated that the IPE project was useful.

Positive perceptions of IPE experience among community representatives

Three themes emerged from the group discussions.

Knowledge aspects: Community representatives noted that the IPE project helped disseminate health information to the community and enabled the patients to learn from the students.

Innovations to addresss health problems: One community representative said '*… the innovations that the students bring really help solve problems for patients and improve their quality of life (Fig. 5). Some of them still use these to this day. For example, we have canes, pillboxes, and alarm clocks so that we don't forget to take our meds, and we have home re-conditioning by the students. They also do follow-up work on the innovations they created as well…*'

Mental health: One VHV commented '*…some groups of students are very good at building relationships. They listened to the elderly's problems. Some have little souvenirs for the elderly. They are naturally charming from their youth. They can make an impression…*'

Overall assessment of the IPE project implementation in MSU

As IPE is a relatively new strategy of teaching for MSU students, an overall assessment of the project was needed. All three participant groups reported that the IPE project was beneficial.

One community representative commented, '*…Thank you to the project coordinator for such a wonderful project. The students work as a team and conduct field trips to really find ways to solve problems in the community continuously. I hope this project keeps going in the future…*'

A patient also said '*…It's a great project. Both sides gain more knowledge and there are exchanges of information and learning from each other. I really agree with the project and would love for students to visit my home again…*'

Lecturers and community stakeholders expressed strong support for the home-based IPE initiative. Lecturer satisfaction averaged 81.03%, just above the 80% benchmark, while community representatives rated it higher at 87.48%, with patients scoring the highest (89.28%). Expectations regarding the benefits of IPE benefits were also high: lecturers reported a mean score of 82.07%, while community representatives averaged 89.26%, with VHVs

reaching 90.14%. All scores significantly exceeded standard benchmarks ($p<0.001$), confirming the program's value and relevance across academic and community settings.

Discussion

The discussion of the study results are organised according to the different target groups. Regarding students' attitude, seven studies were found to be consistent with the findings of this research. The first study[10] evaluated the satisfaction of fourth-year students from medicine, physical therapy, occupational therapy, and nursing. The researchers measured (*i*) readiness for IPE, (ii) increased understanding of roles in interprofessional work, and (iii) enhanced knowledge of students' own profession. Another study[11] conducted in 2019 assessed the effectiveness of IPE on third-year students from medicine, dentistry, public health, computer engineering, and electronic and telecommunications engineering. The findings indicated that after studying together, students demonstrated higher average attitude scores towards interprofessional work. A study conducted in the Netherlands[12] reported that student-led interprofessional teams involving medical, nursing, and allied health students working with real-life cases contributed to the positive learning outcomes. Similarly, a study in the UK[13] evaluated the effectiveness of IPE for medical and nursing students at the clinical stage. The results showed that students: (*i*) were more confident in higher-order thinking skills and (*ii*) gained a better understanding of the roles and responsibilities of other professions.

A study in Australia[14] involving medical , nursing, physical therapy, and pharmacy students reported improved learners satisfaction, enhanced competencies, more positive attitudes towards other professions, greater confidence in working together, and increased intention to work in rural settings. Similarly, a study in Denmark[15] demonstrated several benefits for final-year students in medicine, nursing, occupational health therapy, and physical therapy. These benefits included; (*i*) improved interprofessional teamwork, (*ii*) clearer understanding of professional roles*; (iii*) working closely together in patient rehabilitation; and (*iv*) integration of clinical and theoretical knowledge. Overall, these studies consistently demonstrate that the main outcomes of IPE include improved teamwork attitudes, clearer understanding of professional roles and responsibilities and enhanced knowledge-sharing among disciplines.

A study in Japan[16] involving second year medical and other health science students used team-based learning to prepare students for IPE. Additonally, a study in Australia[17] involving final year students from medicine, pharmacy, physical therapy, occupational therapy, nursing, speech anatomy, social services, and nutrition, demonstrated that participation in IPE improved student's attitude towards the elderly. Most previous studies evaluated IPE interventions over one year or one semester. In contrast, the present study adds value by implementing a continuous IPE programme at MSU, allowing students to engage with the same patients deeply from their second to third year. This sustained, longitudinal approach may have contributed to student outcomes as well as benefits for patients. Lecturers were satisfied with the overall project. Qualitative data indicate that lecturers developed more positive attitudes toward teaching, acquired new and innovative methods of teaching, and improved their teaching methods.

Three previous studies reported findings consistent with some of the topics in the present study. A 2017 study[18] implemented IPE an extra-curricular activity for students from health, and non-health science disciplines. Home visits and brainstorming sessions were conducted, and it was found that the lecturers had more opportunities to learn and gain a better understanding of interprofessional work. A 2015 study[10] showed that conducting IPE helped lecturers identify the strengths and weaknesses of individual students. Lecturers also reported that IPE could be as a teaching method without adding to the burden of their existing workload. In addition, a study in England[13] found that the lecturers involved in IPE projects benefitted from the learning methods, which contributed to improvements in teaching standards.

When examining the results for patients, as well as the community representatives, some consistent themes were observed. in a previous study,[18] an extra-curricular IPE found that patients - particularly bedridden patients - were highly satisfied with the care that they received during the activities. A strength of the present study was its integration into the bachelor's programme, ensuring that all of registered students participated in the IPE activities and gained practical experience. Furthermore, the IPE theme of unused medications in patients' homes was proposed by the community representatives, which facilitated smoother cooperation and engagement with the community.

This study had several limitations. First, the student response rate for the attitude self-assessment was relatively low (66.36%), even though all students participated in every activity and the other assessment showed 100% completion. Second, the student-reported IPE outcomes may be subject to bias because there was no comparison group of students who did not participate in the IPE. Furthermore, there is a s potential for co-intervention effects on patient satisfaction, as communities in Mueang District, Maha Sarakham Province, may have received home visits from other organisations besides the IPE project. This could have influenced the opinions of both patient and VHVs. However, interviews with community leaders indicated that during the three-year study period, very few home-visiting activities were conducted by other agencies.

Implications for LMIC and African health professions education

This study presents a scalable model of home-based IPE that aligns with ongoing health professions education reform in LMICs, including many African contexts. By integrating community-identified challenges, such as the management of unused medications, into interprofessional learning activities, the model supports both educational objectives and community service mandates. Its emphasis on teamwork, innovation, and responsiveness to local needs equips students for primary care roles in underserved settings, which are common deployment areas for new graduates in rural African districts. The approach leverages existing community health infrastructure, such as community health workers and primary health care clinics, while engaging multiple disciplines to foster socially accountable, community-embedded education. Although developed in Thailand, the model offers transferable lessons in curriculum design, stakeholder engagement, and integrated assessment that are highly relevant to LMIC institutions seeking to strengthen the social accountability and contextual relevance of their health education programs.

Conclusion

The outcomes of the home-based IPE can be summarised as follows:

Students demonstrated the ability to: *i*) improve attitudes towards interprofessional collaboration; *ii*) work effectively as a team, *ii*) communicate comprehensively, *iv*) understand their own professional roles, *v*) gain a better understanding of other professions, *vi*) solve patients' problems.

Lecturers reported that they (*i*) were satisfied with IPE programme; (*ii*) gained opportunities to understand different disciplines and expand their professional networks; (*iii*) learned about students' strengths and weaknesses; *iv*) acquired new teaching approaches and improved assessment methods; (*v*) were able to help students develop additional skills in patient care. Patients reported that they: (*i*) were satisfied with the care they received; *ii*) gained additional health-related knowledge.

We recommend that home-based IPE be integrated into university curricula to promote experiential, community-centered learning that enhances students' collaborative competencies and real-world problem-solving skills. Institutions are encouraged to foster cross-disciplinary partnerships - including non-health fields like architecture - to address broader determinants of health. Sustainable community engagement, faculty development, and policy-level support are essential for long-term success. Given the global scarcity of sustained, community-embedded IPE programs, particularly in pharmacy and multidisciplinary undergraduate education, this model offers a valuable framework for replication and international collaboration.

Data availability. Data are available from the corresponding author on reasonable request, subject to ethical restrictions.

Declaration. None.

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Conflict of interest. None.

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