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Title

Peer Facilitators in Interprofessional Education: A Promising response to facilitation challenges

Authors

M. Guinat[1,2], M. Gasser[3], D. Waller[4], A. Didier[4], V. Santschi[5], C. Greppin-Bécherraz[4]

[1]Department of Intensive Care Medicine, Lausanne University Hospital (CHUV), Lausanne, Switzerland

[2]Medical Education Unit of the School of Medicine, Faculty of Biology and Medicine (FBM), University of Lausanne, Lausanne, Switzerland

[3]Training center, Lausanne University Hospital (CHUV), Lausanne, Switzerland

[4]HESAV School of Health Sciences - Vaud, HES-SO, University of Applied Sciences and Arts Western Switzerland, Lausanne, Switzerland

[5]La Source, School of Nursing Sciences, HES-SO, University of Applied Sciences and Arts Western Switzerland, Lausanne, Switzerland

Corresponding author: Marie Guinat

Contact: Marie.Guinat@chuv.ch

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Abstract

Background: Interprofessional education is an effective and well-recognized strategy to teach healthcare students to work together toward common goals. Still, course implementation faces challenges, as it requires a high demand for human resources to facilitate. While peer teaching is well described in the field of medical education, only a few studies have explored the role of student facilitators in interprofessional education facilitation. This study explored the impact of peer versus faculty facilitators on changes in students' attitudes toward collaborative learning and interprofessional relationships following participation in an interprofessional education program.

Methods: The authors conducted a pre-post study using a French translation of two subscales from the validated questionnaire "University of West of England Interprofessional Questionnaire" to measure students' attitudes towards interprofessional relationships and interprofessional learning before and after the course. In March 2023 and March 2024, 256 and 198 students, respectively, from five professions, completed two subscales of the questionnaire before and after the course, with a response rate of 34.1% and 29.2%.

Results: Across both 2023 and 2024, no significant differences were observed between facilitator groups (peer versus faculty facilitators) at either the pre-test or post-test. In 2023, after the course, students demonstrated a significant improvement in their attitudes towards interprofessional relationships, regardless of facilitator type. This improvement was also statistically significant within specific subgroups: students guided by (1) a faculty facilitator, (2) a combination of a professional and a peer facilitator, and (3) peer facilitators. In 2024, changes in students' attitudes toward IP relationships were not significant for all students, regardless of the type of facilitator. The results were not significant for the interprofessional learning scale in either 2023 or 2024, for all students as well as within subgroups of facilitators.

Conclusion: These findings suggest that peer facilitators can be effective as faculty facilitators in supporting interprofessional education. This study supports the engagement of peer facilitators in the context of interprofessional education to address implementation challenges and promote facilitation sustainability.

Background

Interprofessional education (IPE) is an effective and well-recognized strategy for teaching healthcare students to work together towards a common goal, enhance mutual understanding, and develop collaboration skills [1]. Robust evidence demonstrates the benefits of IPE in reducing stereotypes between professions, enhancing patient and healthcare worker satisfaction, and improving professional practice as well as students' attitudes [2, 3]. However, the implementation of IPE across various healthcare curricula may be hindered by the inherent complexity of the process. Indeed, IPE educators might face various challenges, such as high demand for human resources, especially facilitators, a barrier that should not be underestimated when implementing IPE [4]. The pool of facilitators traditionally comes from the faculty, such as educator staff involved in each healthcare school [5]. Protected allocated time to engage in IPE facilitation, and the number of faculty facilitators available is often limited [6-8]. Furthermore, the ongoing engagement of faculty facilitators in IPE may be compromised by the lack of institutional support within the academic healthcare system [9].

Engaging students in facilitation through peer teaching might help to address the shortage of facilitators in IPE. Peer teaching is widely developed and implemented in the education of healthcare professionals, and the literature supports the efficacy and acceptability of peer-assisted learning in medical education [10, 11]. Peer teaching offers several advantages for peer students, including developing leadership and teaching experience, enhancing communication skills, and improving the ability to provide constructive feedback to peers [12]. For students, being guided by a peer fosters intrinsic motivation, offers opportunities to receive detailed feedback, and creates a safe learning environment where students feel more comfortable asking questions [13]. Social and cognitive congruence theory helps explain the relationships between students and peer teachers through peer teaching [14]. According to this theory, social congruence emphasizes that peer teachers and students assume similar social roles with equal status and little power, which can facilitate learning, boost motivation, and encourage asking questions without fear [13]. Cognitive congruence suggests that peer teachers and students share similar knowledge, language, and understanding of a situation [15]. While peer teaching is well described in the field of medical education, only a few studies have explored the involvement of student facilitators in IPE facilitation. Recent research has revealed that peer

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facilitators highly value their role in IP peer teaching, as it strengthens their professional identity as educators and deepens their understanding of the distinct roles and responsibilities of various professions [16, 17]. Interprofessional peer facilitation engagement enhanced their teaching competence and confidence through active feedback while also providing a valuable opportunity to develop leadership [18, 19] and curriculum design skills [20-22]. Moreover, peer facilitation in IPE seems to improve group dynamics, knowledge acquisition, and learning experiences [17].

Most studies focus on the role of peer facilitators and the impact of peer teaching on this role. However, little research has been done on how peer facilitation influences students' attitudes and perceptions of IPE. To address these gaps, this study, conducted in Lausanne, Switzerland, examined the impact of peer facilitation on students' learning. The study aimed to compare the effects of peer versus faculty facilitators' engagement on students' attitudes toward collaborative learning and interprofessional relationships after participating in an IPE program.

Method

Research design

We designed a pre-post study using a French translation of two subscales from the validated questionnaire called the "University West of England Interprofessional Questionnaire" (UWE-IP) to explore changes in students' attitudes toward IPE before and after an IP course, considering whether they were supervised by peer facilitators or faculty facilitators [23, 24].

Research setting

The study context was five undergraduate healthcare curricula (medical, nursing, radiologic technology, physiotherapy, and occupational therapy students) in Lausanne, Switzerland. Five healthcare institutions (the Lausanne University Hospital (CHUV); the Faculty of Biology and Medicine (FBM) – University of Lausanne (FBM); La Source, School of Nursing Sciences, HES-SO University of Applied Sciences and Arts Western Switzerland; the School of Health Sciences (HESAV), HES-SO University of Applied Sciences and Arts Western Switzerland; the Faculty of

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Social Work and Occupational therapy department (HETSL)) were involved in the design and implementation of the IP training course. The study was conducted over two years, from 2023 to 2024.

Participants

We involved students from five disciplines from different schools and with various levels of training: - medical students from FBM (first-year of clinical phase), - nursing students from two schools: La Source and HESAV (first year Bachelor), - radiologic technology students from HESAV (first year Bachelor), - physiotherapy students from HESAV (first year Bachelor), and - occupational therapy students from HETSL (first year Bachelor).

IPE learning course

The previously described students were enrolled in an IPE course that aimed to enhance healthcare students' awareness of collaborative practice, theoretical knowledge, and teamwork skills while clarifying roles and responsibilities among healthcare professionals [3]. This course was designed following a flipped classroom approach [25, 26]. It consisted of a half-day of synchronous and asynchronous online activities and a half-day of collaborative learning with face-to-face courses in a subgroup of twelve to fourteen students. During face-to-face course, they work as an interprofessional group on clinical vignettes. Almost fifty faculty facilitators participated annually in this IPE course.

Peer facilitation initiative in the Lausanne context

Since March 2023, first-year midwifery students from HESAV have been enrolled as peer facilitators. The midwifery curriculum in Lausanne is a two-year secondary bachelor's degree for nursing graduates. In 2023, midwifery curriculum reform encouraged the teaching of interprofessional and leadership skills, making the participation of midwife students as facilitators mandatory, with protected time for faculty development and course participation. In 2023 and 2024, thirty and thirty-one midwifery students, respectively, participated as peer facilitators in the IPE course. The characteristics of the midwife students are available as Additional file 1.

Students' repartition and facilitation implementation in the IPE course

During face-to-face activities in the flipped classroom, students were first assigned to interprofessional groups based on the clinical vignettes, using a stratified approach to ensure that the professional roles required by each vignette were represented. Due to the large scale of the course, face-to-face sessions were conducted across three physically separate sites. Each site hosted both peer and faculty facilitators, and the interprofessional groups were assigned to sites and facilitator types based on logistical considerations.

In 2023, according to the group to which they were assigned, the students were supervised by one of the following: - a faculty facilitator; - a peer facilitator and a faculty facilitator; - one peer facilitator; - two peer facilitators. The faculty-peer pairing was implemented at their request to increase the confidence of certain students. In 2024, the same distribution was applied, without the faculty-peer pairing. Peer and faculty facilitators guided the students' learning process during the face-to-face teaching of the flipped classroom. They encouraged reflection within the group to perform exercises and case-based activities.

Faculty development program for faculty facilitators and peer facilitators

All IP facilitators participated in a four-hour faculty development program designed to acquire facilitation skills in the IPE context, thereby fostering reflection within the group [5, 27]. By the end of this training, facilitators had the opportunity to develop their competencies in facilitation by using specific teaching tools for team-based learning activities, support students in developing knowledge and skills for collaborative practice, and create a safe learning environment. Midwifery students participated in this faculty development program as peer facilitators, with a specific emphasis on the benefits of peer facilitation and the development of peer leadership skills.

Instruments development

The UWE-IP questionnaire, composed of four subscales, measures students' perceptions and attitudes towards interprofessionality [28]. We used a French translation of two subscales of the UWE IPQ subscales: 1) the Interprofessional Learning Scale (9 items), which investigates students' attitudes

towards IP learning; 2) the Interprofessional Relationship Scale (8 items), which evaluates students' perceptions of interactions between different health and social care professionals [3, 29]. These two subscales were selected for their direct relevance to the course outcomes. Statements are scored using a five-point Likert scale. The lower the score is, the more students have a positive attitude towards interprofessional education. The Interprofessional Learning Scale ranges from 9 (most positive attitudes) to 45 (most negative attitudes). The Interprofessional Relationship Scale ranges from 8 (most positive attitudes) to 40 (most negative attitudes).

Data collection and analysis

We collected quantitative data with an online questionnaire two weeks before the course (pre-test) and two weeks after the course (post-test), with a reminder sent after one week. We collected demographic data for the students and peer facilitators. All students who completed the pre-test also completed the post-test. No drop-out occurred that could have affected the results, and there was no attrition bias.

The data were analysed using IBM SPSS Statistics, Version 29.0.2.0 (20) (IBM, Armonk, New York). We collapsed the categories into a 3-point Likert scale to stabilise the distribution and simplify data analysis. For this purpose, we merged the five-point scale into a three-point scale. All reverse-coded items were recoded. We used a Kruskal-Wallis test to compare the total scores of both subscales across the types of facilitators at both the pre-test and post-test. We used a student t-test to compare the UWE-IP score by facilitator type between pre- and post-test. We used a Wilcoxon signed-rank test to compare the pre- and post-test scores of each subscale item, and for sample sizes under 30. Data were analysed using SPSS version 23. A p-value of $\alpha \le 0.05$ was considered statistically significant.

Ethical considerations

The Cantonal Ethics Committee Vaud waived the need for ethics approval because no personal-health data were collected (BASEC-No Req-2025-00027).

Results

Participants' demographics and response rate

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The study was conducted in March 2023 and March 2024. The response rate was 34% in 2023 and 29% in 2024. Table 1 shows the participants' demographic characteristics. Most students were female, aged between 21 and 25 years old.

Table 1

Demographic characteristics and response rate of students involved in the IPE course

		2023	2024
Number of students involved in the course		750	678
Number of students who answered the questionnaire (response rate %)		256 (34%)	198 (29%)
Gender			
	Female	198 (77%)	148 (75%)
	Male	49 (19%)	46 (23%)
	No response	9 (4%)	4 (2%)
Age			
	18 - 20 years	47 (18%)	27 (14%)
	21 - 25 years	149 (58%)	134 (68%)
	26 - 30 years	30 (12%)	20 (10%)
	31 - 35 years	7 (3%)	8 (4%)
	>35 years	20 (8%)	9 (4%)
	No response	3 (1%)	0 (0%)

Additional file 2 provides information on the number of students from each profession involved in the IP course per year and the response rate for each discipline to the two subscales of the UWE-IP questionnaire.

Table 2 presents the distribution of students who responded to the questionnaire across subgroups based on the type of facilitator (professional or peer) guiding them through the IPE course.

Table 2

Students responding to the questionnaire per type of facilitator and per year.

	2023	2024
Student responders classified by type of facilitator		
Faculty facilitator	132 (51%)	106 (54%)

One peer facilitator + one faculty facilitator	38 (15%)	0 (0%)
Peer facilitators		
2 peer facilitators	69 (27%)	80 (40%)
1 peer facilitator	17 (7%)	12 (6%)
Total number of student responders	256 (100%)	198 (100%)

In 2023, a dual-facilitator model, pairing a faculty facilitator with a peer facilitator, was used for some groups; however, this association was not implemented in 2024 because the peer facilitator did not express a preference for support from a faculty facilitator in their role as facilitator. In addition, among students guided by a peer facilitator, most were guided by a pair of peer facilitators working in collaboration.

Differences in the mean rank of UWE-IP two subscales between the groups of students based on the type of facilitator at the pre-test and post-test

Table 3 shows the differences in mean rank scores on the two subscales across student groups, according to the type of facilitator.

Table 3

Differences in mean rank scores of the two subscales at the pre-test and at the post-test

Group of students according to the type of facilitator	2023			2024		
	Number of students	Mean rank at pre-test (Md)	Mean rank at post-test (Md)	Number of students	Mean rank at pre-test (Md)	Mean rank at post-test (Md)
Faculty facilitator	132	123.62 (21)	124.20 (20)	106	102.63 (21)	102.65 (21)
Peer facilitator + Faculty facilitator group	38	134.49 (21)	127.59 (20)			
One peer facilitator	17	111.94 (20)	118.06 (20)	12	100.29 (22)	113.50 (21.5)
Two peer facilitators	69	138.62 (22)	139.80 (21)	80	95.23 (21)	93.23 (20)
H (df) p-value		2.99 (3) 0.39	2.422 (3) 0.49		0.770 (2) 0.68	2.018 (2) 0.37
Faculty facilitator	132	123.62 (21)	124.20 (20)	106	102.63 (21)	102.65 (21)
Peer facilitator + Faculty facilitator group	38	134.49 (21)	127.59 (20)			
Peer facilitators (one or two)	86	133.35 (22)	135.50 (21)	92	95.89 (21)	95.87 (20)
H (df) p-value		1.0202 (2) 0.55	1.233 (2) 0.54		0.688 (1) 0.41	0.697 (1) 0.41

Md = Median

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In 2023, no significant differences were found between groups (Professional facilitator group, Peer facilitator + professional facilitator group, one peer facilitator group, two peer facilitators group) at pre-test (H(3) = 2.99, p = 0.39) or post-test (H(3) = 2.42, p = 0.49). The same pattern was observed in 2024, with no significant differences between groups at pre-test (H(2) = 0.77, p = 0.68) or at the post-test in 2024 (H(2) = 2.02, p = 0.37). When the groups with one peer facilitator or with two peer facilitators were combined, the results remained consistent: no significant differences emerged in either year at the pre- or post-test.

Change in students' attitudes towards interprofessional learning and interprofessional relationships after the course, regardless of their type of facilitator, and based on the type of facilitator.

Additional file 3 shows the results of the pre-test and post-test questionnaires completed before and after the IP course for the two subscales by all the students, regardless of their type of facilitator, and based on the type of facilitator. For the IP learning subscale, changes in attitudes towards IP learning for all students were not statistically significant between the pre-test and post-test in 2023 (*M* = 11.08 to *M* = 11.03; *p* = .77), neither in 2024 (*M* = 10.93 to *M* = 10.55; *p* = .06), regardless of the type of facilitator. Through analysis based on the type of facilitator, the same trend was observed.

However, the score analysis for the IP relationship subscale demonstrated a significant decrease in the mean score between the pre-test and the post-test in 2023 (*M* = 11.18 to *M* = 10.38; *p* < .001) regardless of the type of facilitator, and also for students in faculty facilitator group (p < .001), in peer facilitator + faculty facilitator group (p = 0.01) and in peer facilitator group (p = 0.02). The change in score analysis for the relationship subscale was not statistically significant in 2024 for all groups, regardless of the type of facilitator (M = 11.18 to M = 11.64; p = .09), nor by type of facilitator.

Change in students' attitudes towards interprofessional learning and interprofessional relationships based on each item of the scale using the pre-post intervention method

Additional file 4 presents the items of each subscale for which there was a statistically significant improvement in scores between the pre-test and post-test in 2023 and 2024.

Discussion

Overall, these findings suggest that students' attitudes changed similarly whether sessions were facilitated by faculty, peers, or mixed facilitation teams. These results support the idea that peer facilitation can be as effective as faculty-led facilitation in an interprofessional education program, showing the feasibility of a peer-led facilitation model as a sustainable approach to developing IPE initiatives. In 2023, we observed a significant improvement in students' attitudes toward IP relationships among all students who participated in the IP course, regardless of the type of facilitator. This improvement was also significant within specific subgroups of students according to the type of facilitator: students guided by (1) a faculty facilitator, (2) a combination of a faculty and a peer facilitator, and (3) peer facilitators. In 2024, we observed positive changes in students' attitudes toward IP relationships; however, the results were not significant for all students or within a specific subgroup of students based on the facilitator type. Conversely, the results were not significant for the IP learning scale in 2023 and 2024 for all students, no matter the facilitator type, and through analysis by subgroups of students based on facilitator type. However, despite the lack of measurable improvement in attitudes between before and after the course, students started the course with strong positive attitudes toward IP learning, as they presented low scores for the two subscales before the course. This suggests a potential ceiling effect where students' baseline scores were already quite high, leaving little room for noticeable improvement. Additionally, course fatigue, possibly caused by closely scheduled assessments before and after the IPE course, may have led to decreased attention or motivation, which could reduce measurable differences in questionnaire scores.

Our results align with the existing literature, which demonstrates that peer teaching in IPE is feasible, valued by students, and contributes to creating a supportive and productive learning environment [20,

30]. Other literature highlights that learning outcomes are reached when students are taught by both peers and faculty [31, 32]. Although these results are encouraging regarding peer facilitators' involvement, the mechanisms by which their participation may have influenced these outcomes are not yet fully understood. Several confounding factors, such as group dynamics, the learning climate, institutional culture, or facilitator training, could also influence the evolution of students' attitudes. The design of this study does not allow us to distinguish or fully examine these influences. In addition, even if our findings support the feasibility and value of peer facilitation in IPE, our model investigates only midwifery students as facilitators, which may influence the generalizability of the design. Applying this model in other health systems, peer groups, or professions may require careful consideration. Based on our experience in our context, the composition and experience of peer facilitators should be aligned with the learning objectives, and appropriate training should be provided to prepare them to ensure effective facilitation. The model should also be tailored to the professional and institutional context, taking into account local curricula, professional roles, and educational culture. Collecting feedback from both students and facilitators is essential to refine the approach, enhance engagement, and optimize learning outcomes in a predefined context. Finally, pairing peer facilitators and offering ongoing support may strengthen co-leadership, manage cognitive load, and foster a positive learning environment. By applying these principles, programs in diverse settings can adapt the peer facilitation model while maintaining its core educational principles.

The concept of social congruence suggests that involving peer facilitators in IPE can reduce hierarchy barriers among students, thereby creating an environment that supports optimal learning [33]. In our results, students guided by peer facilitators displayed more positive attitudes on item 13 after the course, referring to relationships with individuals from other health and social care disciplines. Nevertheless, these quantitative results do not allow for exploring the power hierarchy among students. Furthermore, in our study, the peer facilitators relationships and dynamics with students may have influenced the effectiveness of peer teaching. Specifically, midwifery students were enrolled at the same undergraduate institutions as the students and had previously completed a nursing degree in Lausanne. Exploring how such background characteristics shape social and hierarchical barriers and,

in turn, affect outcomes of peer facilitation would be valuable for future research. In addition, improving the learning climate in this IP blended course is a crucial element of the faculty development programs in this study, which might have contributed to the success of peer facilitator supervision in our IP program. In an IPE setting, establishing a comfortable, relaxed, and safe educational environment promotes social congruence [17, 34]. Co-teaching in IPE, involving facilitators from different professions, has been examined, with such interaction encouraging constructive discussion and supporting role modeling [35]. Our quantitative results do not provide evidence regarding the influence of peer facilitation on learning climate nor do they clarify how pairing peer facilitators may have shaped this model. Although they come from the same profession, paired peer facilitators may differ in personality, bring complementary debriefing styles, and share the cognitive load of facilitation [34, 36]. Qualitative feedback would be valuable for exploring how peer facilitation may be shaped by social congruence.

The concept of cognitive congruence may offer a supplementary perspective for understanding positive impact of peer facilitation. Cognitive congruence suggests that the prior knowledge and experiences of peer facilitators can boost students' learning by enhancing their understanding of the content and increasing their openness to specific topics [18]. Shared knowledge or practical experience between peer facilitator and learners in collaborative practice may further promote cognitive congruence [34]. However, the design of our study does not allow us to explore how the background of midwifery students may influence the peer facilitation process. Additionally, mandatory faculty development programs that prepare facilitators to assume their roles as IPE leaders and promote collaborative skills among healthcare students may also improve group dynamics and communication between students and peer facilitators [19, 22, 37]. However, no qualitative data were collected to clarify how faculty development may have influenced the peer facilitation process.

Finally, the literature suggests examining how students are recruited into peer teaching programs. While some programs involve only volunteers or students with minimum grades in the relevant topics they will teach to peers, others incorporate peer teaching as a core part of their healthcare curriculum [19]. In this study, participation was not optional but an integral component of the midwifery

curriculum, intended to alleviate pressure on faculty and resources rather than solely focus on developing leadership skills among peer facilitators. This planned role of midwifery students as facilitators may have shaped their engagement in teaching, thereby influencing students' attitudes. However, it remains challenging to determine the extent and nature of this influence.

Limitations

Our study has several limitations. We employed a pre-post design, but did not randomly assign students to groups guided by faculty and peer facilitators. Only two subscales of the UWE-IP questionnaire have been used, which could limit the breadth of attitudinal change measured. Our findings are limited by the single profession of peer facilitator and in a single center. Peer facilitators were midwifery students from the same institution, and their participation was mandatory as part of the curriculum. Consequently, the generalisability of these findings to other professional groups or educational settings is limited. Non-voluntary participation of students as facilitators may have introduced bias, and we did not evaluate how the backgrounds of peer facilitators affected outcomes. Gender differences may also have influenced the results, as most student facilitators were female, which could affect group dynamics and warrants further study. Finally, the low response rate limits the sample's representativeness and reduces the generalizability of the results. Some professions, such as medicine and nursing, were overrepresented due to higher enrolment numbers in each professional curriculum, while others were underrepresented. This uneven participation may introduce bias and should be considered when interpreting the findings.

Implications for practice and future research

These results highlight the important role of peer facilitators' engagement in IPE and underscore the need for faculty development to equip peer facilitators with essential skills in communication, collaboration, and teaching. The successful development, implementation, and sustainability of peer facilitation in IPE depend on strong institutional support and peer students' adherence to the approach. Future research should investigate how peer facilitation can be applied across other disciplines and examine the impact of peer involvement in different educational contexts. Longitudinal designs can

determine whether the effects of peer facilitation persist over time, while qualitative designs explore students' and peer facilitators' experiences or other validated observational tools help better assess students' behaviors and attitudes. Such mixed-method approaches would improve understanding of how peer facilitation works and could provide evidence to guide its implementation across various educational settings. Further investigations should focus on identifying the most effective strategies for involving students in peer facilitation and assessing the impact of co-facilitation on IP learning outcomes. In addition, subsequent studies should include randomized controlled trials comparing the engagement of peer facilitators with faculty facilitators in IPE and their effects on students' attitudes toward IPE. Future studies should consider using the four subscales of the UWE-IP questionnaire to provide a more comprehensive assessment of attitudinal change.

Conclusion

The involvement of students, especially midwifery students, as peer facilitators in IPE appears just as effective as faculty facilitators in teaching IP competence and actively supporting the sustainability of IPE. The active participation of peer facilitators helps develop student-led programs and provides valuable leadership opportunities.

Declarations

List of abbreviations

IP Interprofessional

IPE Interprofessional Education

UWE-IP University West of England Interprofessional Questionnaire

M Mean

Md Median

Ethics approval and consent to participate

The need for written informed consent was waived by the Cantonal Ethics Committee Vaud

(Commission cantonale d'éthique de la recherche sur l'être humain, CER-VD) since we did not collect

personal data related to health (BASEC-No Req-2025-00027). The questionnaires reported were anonymous and conducted voluntarily. Participants were informed that completing and returning the online survey was taken as informed consent. So, there was no need for a formal collection of informed consent.

Consent for publication

Not applicable.

Availability of data and materials

The datasets generated during the current study are available from the corresponding author upon reasonable request.

Competing interests

The authors reported no potential conflict of interest.

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Authors' contributions

All authors contributed to the design of the project.

All authors were involved in the development of the intervention.

MG wrote the first draft of the manuscript.

CGB performed the statistical analysis.

All authors read and approved the final manuscript.

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