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The FIND Model: A Needs-Based Faculty Development Model for Interprofessional Education Facilitators in Clinical Settings

Amelia Dwi Fitri[1], Ardi Findyartini[2,3], Diantha Soemantri[2,3], Rita Mustika[2,3], Sri Linuwih Menaldi[4,5], Mora Claramita[6], Raden Rara Diah Handayani[7], Andi Amalia Wildani[8]

[1]*Department of Medical Education, Faculty of Medicine and Health Sciences, Universitas Jambi, Jambi, INDONESIA*

[2]*Department of Medical Education, Faculty of Medicine, Universitas Indonesia, Jakarta, INDONESIA*

[3]*Medical Education Centre, Indonesian Medical Education and Research Institute (IMERI), Faculty of Medicine, Universitas Indonesia, Jakarta, INDONESIA*

[4]*Department of Dermatology and Venereology, Faculty of Medicine, Universitas Indonesia, Jakarta, INDONESIA*

[5]*Department of Dermatology-Venereology, Dr. Cipto Mangunkusumo Hospital, Jakarta, INDONESIA*

[6]*Department of Medical Education, Faculty of Medicine, The Skills Laboratory, Universitas Gadjah Mada, Yogyakarta, INDONESIA*

[7]*Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, Universitas Indonesia, Jakarta, INDONESIA*

[8]*Faculty of Nursing, Universitas Indonesia, Depok, West Java, INDONESIA*

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ABSTRACT

Faculty development (FD) is crucial for preparing clinical teachers from various health professions to become effective interprofessional education (IPE) facilitators, a prerequisite for successful IPE implementation. However, to date, no FD model is available for developing the capacities of IPE facilitators in hospital settings. This study aimed to develop an FD model to prepare clinical teachers to facilitate IPE in clinical settings. A descriptive, qualitative approach was employed, starting with a literature review and followed by a comprehensive needs analysis, including document analysis, interviews with institutional leaders, IPE champions, and IPE leads, and focus group discussions with clinical teachers from various health professions. Maximum variation sampling was used to include suitable participants. The qualitative data analysis suggested an FD model to prepare clinical teachers to effectively facilitate IPE in clinical settings. The model was validated through cognitive interviews and feedback from 10 medical education and IPE experts from various health professions. The study resulted in the FIND model, consisting of four aspects as the elements, which lead to four key principles as the processes: to foster system support from the institution including hospitals and other stakeholder; to involve IPE champions and IPE leads as initiators, innovators, communicators, and coordinators; to nurture faculty members' competencies through adequate needs analysis and FD; and to deliver FD with thorough preparation, targeted implementation, and measured evaluation. The FIND model can be utilised by institutions to prepare competent clinical IPE facilitators by applying the components of each principle according to institutional needs and contexts.

Keywords: *Clinical learning environment, Facilitator competencies, Faculty development, Interprofessional education, Interprofessional collaborative practice*

CORRESPONDING AUTHOR

Amelia Dwi Fitri, Department of Medical Education, Faculty of Medicine and Health Science, Letjen Soeprapto No. 33, Telanaipura Jambi, 36361 Jambi, Indonesia

Email: amelia_dwi@unja.ac.id

INTRODUCTION

Interprofessional collaborative practice (IPCP) aims to unite various healthcare professionals and facilitate effective collaboration to promote high-quality healthcare, reduce costs, and enhance the quality of care for patients (1). Interprofessional education (IPE) is a curricular approach that has been proven to produce graduates with strong IPCP skills (2). IPE is a collaborative learning approach involving students from two or more different health professions who learn from, with, and about each other to achieve team goals (3). The World Health Organization (WHO) framework for interprofessional education and collaborative practice highlights the curriculum and the facilitator as two factors that facilitate the success of IPE, as well as institutional support, the work culture, and environmental elements that drive collaborative practice (4).

One of the barriers to successful IPE implementation is the unpreparedness of teaching staff to deliver the role of an IPE facilitator (5, 6), including in the clinical setting. Thus, faculty development (FD) is needed to nurture competent and confident facilitators in IPE (1). Although most of the competencies of IPE facilitators at the academic and clinical stages are similar, the characteristics of the clinical learning environment must be considered (7). IPE in the clinical stage is influenced by the IPCP environment, which involves various health professionals and direct patient care. Institutions are responsible for facilitating FD programmes to support clinical teachers in their roles as clinical IPE facilitators (8). However, the ability of institutions to prepare IPE facilitators remains limited, and research on this topic, particularly in clinical learning environments, has received little attention (9, 10).

Institutions need a model or framework as a guide to develop an FD programme. Furthermore, an FD model can serve as a quality assurance instrument (11, 12) to evaluate and assist institutions in planning FD programmes based on their priorities, identifying factors influencing programme success, and considering the needs of clinical teachers that align with the capabilities and the institution's goals (13).

The IPE literature was reviewed to identify competencies for IPE facilitators and to determine the appropriate FD strategies that should be implemented to train them. Information related to the competencies needed by IPE facilitators was obtained. The facilitator competencies must reflect those that students must achieve, including the abilities to collaborate in teams, to communicate within the interprofessional team, to resolve conflicts, to provide feedback, to practice reflection skills, and to set common goals with team members. IPE facilitators must be able to maintain a balance between supporting interprofessional teamwork and providing opportunities for students to work in teams within their specialities. They must also have awareness of the boundaries between professions, issues related to stereotypes, the blurring of roles between professions, and an interprofessional identity (1, 14).

Kerry et al. (10) suggested 25 competencies of IPE facilitators, which are grouped into five components: four positive components (praxis relevancy, personal communalism, multi-professional technical competencies, and interprofessional reflection) and one negative

component (professional biases). This framework further completes the competencies that must be possessed by IPE facilitators and summarises behaviours that must be avoided by an IPE facilitator, including stereotypes and scepticism. However, no publication has explored the clinical IPE facilitator competencies. Learning in clinical situations is known to be complex and has its own challenges. These challenges are influenced by the characteristics of the clinical learning environment (7).

Clinical IPE facilitators have a critical role in encouraging the mastery of IPCP skills by applying learning principles in real-world environments (14). Activities to facilitate IPE in clinical settings in hospitals may also improve the IPCP abilities of clinical teaching staff themselves (15). Therefore, preparing clinical IPE facilitators to facilitate IPE in clinical settings can have a positive impact by increasing patient satisfaction and the quality of health services due to the potential improvement in IPCP (16).

The literature review also provided several recommendations for FD strategies to prepare teaching staff as clinical IPE facilitators. Workshops are the most common approach due to their flexibility in terms of time and location. However, single-session workshops should shift towards longitudinal programmes, featuring several interconnected workshops along with practical opportunities between FD sessions (8). FD programmes should train not only instructional skills but also IPE values, including the ability to appreciate diversity, being a good role model in an interprofessional environment, engaging in interprofessional reflection, and understanding interprofessional identity, which can prevent stereotypical behaviours (17).

A comprehensive needs analysis should be conducted to develop an FD programme to prepare teaching staff as clinical IPE facilitators. This analysis should involve various stakeholders, including institutional leaders, the team responsible for curriculum implementation, teaching staff, and students. The FD programme should adopt an experiential learning approach, provide feedback to participants, be designed based on collaborative learning principles, and employ a variety of methods (17). FD initiatives need to be available to all involved in the planning and delivery of the IPE curriculum, and the design of the initiatives needs to reflect the different roles for faculty members. This is a priority for those in roles that are essential to the success of an IPE curriculum, namely the IPE champion and the IPE professional leads. The IPE champion can be defined as the leader and ambassador for both the strategic and operational aspects of the curriculum and FD, with management and research responsibilities. Mostly, there is one IPE champion who is responsible for the early vision for IPE implementation. In addition, each profession may appoint an IPE professional lead, with in-depth understanding about their profession, to work alongside the champion (18).

FD for IPE programmes conducted over the past 10 years has been primarily designed to prepare for the implementation of the IPE curriculum at both the academic and clinical stages (19). However, information on preparing FD programmes for IPE facilitators in clinical settings remains lacking. To the best of our knowledge, there is no comprehensive FD model for preparing IPE facilitators in clinical settings that institutions can use as a reference for developing FD programmes in Indonesia and elsewhere. Thus, this study aimed to develop a comprehensive, need-based FD model for preparing IPE facilitators in clinical settings that applies to institutions in Indonesia, which we expect to be also relevant to other settings with comparable contexts. This study highlighted two research questions: (a) What is the role of the institution, IPE champions, and IPE leads in supporting curriculum implementation and FD programmes for IPE at the clinical stage? and (b) What are the competencies of IPE facilitators at the clinical stage, and how to nurture those competencies?

METHODS

This research used a descriptive qualitative approach. This approach can be employed for research aimed at elucidating factors that facilitate or impede a process or phenomenon, as well as the human resources that play a role in such a process (20). In this study, the process is FD for IPE facilitators at the clinical stage. This study began with the formulation of a theory and framework derived from a literature review, which then served as a point of reference for the development of a novel framework, further supported by document analysis and a needs analysis of respondents.

A needs analysis was conducted through in-depth interviews with seven institutional leaders, three IPE champions, and seven IPE leads. Six FGDs were conducted, involving clinical teachers from various health professions who had experience as IPE facilitators at the clinical stage. Seven interviews were conducted with clinical teachers who were unable to participate in the FGDs after scheduling two sessions.

The FD model was validated using cognitive interviews and written feedback from experts. The cognitive interviews involved four medical education experts and IPE experts with a medical background (three female and one male) and one dentist with experience in developing the IPE curriculum and IPE FD programme (female). Written feedback was provided by one medical education expert with a background in dentistry (female), two experts with a pharmacy background (one female and one male), and two experts with a nursing background (both female).

Context

Indonesia is generally considered to have a hierarchical and high-power distance culture where the opinions or thoughts of seniors or experts are highly valued. Furthermore, it has a collectivist culture and low individualism, where relationships with other people and maintaining harmony within the group are considered crucial (21, 22). This culture is still reflected in daily practice, and the professional hierarchy is challenging for FD in clinical settings (23). Our study included four well-established institutions (three public institutions and one private institution) in the country that have been implementing IPE programme at the clinical stage.

All institutions have implemented an IPE curriculum at the clinical stage. The students involved in the clinical IPE module are medical doctors, dentists, nurses, nutritionists, and pharmacists. The learning methods include case discussion, observation in hospital service units, simulated case management and reflection. The teaching staff involved as facilitators in the clinical-stage IPE curriculum have received basic training as clinical educators. Some institutions have provided training in specific competencies for IPE facilitators at the clinical stage. These include an understanding of IPE/IPCP, the role of IPE facilitators, the ability to provide interprofessional feedback, and the ability to facilitate interprofessional reflection and socialisation of learning modules. The remaining institutions have provided training in general IPE facilitator competencies through workshops that invite academic and clinical-stage teaching staff. There is no information available regarding the needs analysis or the FD model used as a guide in planning and implementing FD programmes at these four institutions.

Data Collection

In-depth interviews and focus group discussions

In-depth interviews were conducted to obtain comprehensive data on the perceptions of institutional leaders, IPE champions, and IPE leads regarding their experiences in preparing and conducting FD programmes for IPE facilitators, including the positive aspects of the programmes and those requiring development and improvement. Deans or vice deans of academic affairs were included as representatives of institutional leaders. IPE champions were teaching staff members with medical education expertise who initiated clinical IPE in their institutions. IPE leads were teaching staff appointed by IPE champions to work as a team to plan and manage the clinical-stage IPE curriculum.

Focus group discussions (FGDs) were conducted to gather comprehensive data on the perceptions of clinical teaching staff regarding their experiences participating in FD programmes conducted by institutions, including the perceived benefits and obstacles of FD in facilitating IPE learning at the clinical stage. The inclusion criteria for clinical teaching staff were those who had experience facilitating a clinical-stage IPE programme. The FGDs were conducted based on the professional background of each group to create a conducive and comfortable atmosphere for members of each profession to convey their experiences.

The needs analysis also explored the perceptions of institutional leaders, IPE champions, IPE leads, and clinical teaching staff regarding the list of competencies that clinical IPE facilitators require to be trained in and FD strategies deemed suitable in the Indonesian context.

The sample size was determined with maximum variation sampling. This method was used to obtain comprehensive information from all potential groups or components involved in IPE in a clinical setting (24). The variation of the sample was achieved by considering factors such as gender, age, and experience in completing clinical teacher or clinical instructor training. At each institution, professional involvement varied according to availability and data saturation.

As the main researcher, the first author served as the interviewer and moderator for data collection. The research assistant facilitated technical tasks, such as scheduling and setting up the meeting media, and helped the researcher identify participants' nonverbal cues during the discussion. The data collection process was carried out with the respondents' permission and recorded.

Data Analysis

The data generated from the interviews and FGDs were transcribed verbatim for further thematic analysis using the Steps of Coding and Theorisation (SCAT) method (25). The verbatim transcripts were thoroughly analysed to determine codes based on the identification of meaningful phrases. The relevant concepts were formulated and then grouped into subthemes based on concepts with common characteristics. Each subtheme was then grouped into themes based on the similarity of the ideas of each subtheme. The data were considered to have reached saturation when no further subthemes or new themes emerged during data analysis.

Data credibility and trustworthiness were sought by providing verbatim transcripts prepared from the recordings by professionals. Additionally, each stage of the thematic analysis was conducted by the first author following a discussion with the co-authors to reach a mutual agreement. Triangulation was performed using data from the curriculum documents and institutional FD documents, and member checking was completed by seeking confirmation from representatives of some respondents on the themes and subthemes revealed in the study. Combining the findings from the literature review, document analysis, and SCAT, an initial FD model for clinical IPE facilitators was formulated.

Cognitive interviews and written feedback were collected to validate the initial model. Cognitive interviews were conducted using the immediate retrospective probing method. The initial model was delivered to four experts. After they read the model, the experts were asked specific questions about their thoughts regarding the model. This approach had the potential benefit of reducing recall bias and hindsight effects while limiting interviewer interruptions and decreasing the artificiality of the process (26). Concurrently, the initial model was submitted to six additional experts for written feedback. The research team qualitatively analysed the validation results and used them to determine whether the initial model needed to be revised, eliminated, or maintained.

RESULTS

FGDs and Interviews

The characteristics of the respondents are shown in Table 1. All of the data were analysed using SCAT by Otani (25) to obtain themes and subthemes that will contribute to the development of the FD model. The results of the SCAT analysis are shown in Table 2.

Table 1: Characteristics of interview and FGD informants

Data source	Participants	Number	Gender	Profession	Institution
In-depth interviews	Leader 1	1	Male	Medical doctor	Institution A
	Leader 2	1	Female	Dentist	Institution A
	Leader 3	1	Male	Pharmacy	Institution A
	Leader 4	1	Female	Nursing	Institution A
	Leader 5	1	Female	Medical doctor	Institution C
	Leader 6	1	Male	Medical doctor	Institution B
	Leader 7	1	Male	Medical doctor	Institution D
In-depth interviews	IPE champion 1	1	Male	Medical doctor	Institution B
	IPE lead 1	1	Male	Medical doctor	Institution B
	IPE lead 2	1	Female	Medical doctor	Institution B
	IPE champion 2	1	Female	Medical doctor	Institution C
	IPE lead 3	1	Male	Medical doctor	Institution C
	IPE champion 3	1	Male	Medical doctor	Institution D
	IPE lead 4	1	Female	Pharmacy	Institution D
	IPE lead 5	1	Female	Medical doctor	Institution D
	IPE lead 6	1	Female	Medical doctor	Institution A
	IPE lead 7	1	Female	Dentist	Institution A

(*Continued on next page*)

Table 1 (*Continued*)

Data source	Participants	Number	Gender	Profession	Institution
FGDs	Teaching staff 1	4	Male (1) Female (3)	Medical doctor	Institution C
	Teaching staff 2	4	Male (1) Female (3)	Pharmacist	Institution C
	Teaching staff 3	2	Male (1) Female (1)	Nursing	Institution B
	Teaching staff 4	2	Female	Nursing	Institution B
	Teaching staff 5	4	Female	Pharmacist	Institution D
	Teaching staff 6	3	Female	Medical doctor	Institution D
Interviews	Teaching staff 8	1	Female	Dentist	Institution A
	Teaching staff 9	1	Female	Dentist	Institution A
	Teaching staff 10	1	Female	Dentist	Institution A
	Teaching staff 11	1	Female	Dentist	Institution A
	Teaching staff 12	1	Male	Nursing	Institution B
	Teaching staff 15	1	Male	Nursing	Institution B
	Teaching staff 16	1	Female	Nursing	Institution A

Table 2: Themes, subthemes, and quotes from the SCAT analysis

Theme	Subtheme	Quotes
System aspects		
Institutional policy to support clinical IPE curriculum implementation	Curriculum team preparation	"We have a team to design the IPE curriculum for implementation." (WM_A01)
	Financing preparation	"Regarding financing, we need meetings as it involves three programmes, some funding comes from the faculty, some from the programmes." (WM_B01)
	Facility preparation	"Adequate facilities are needed, such as discussion rooms that can accommodate students." (FGD_C01DRR)
	Preparation of competent teaching staff	"When the curriculum is set, facilitators need to be prepared." (WM_A01)
Cooperation and coordination to support the clinical IPE curriculum	Preparation of clinical settings with effective IPCP Establishing collaboration networks with educational sites	"We need to select hospitals that are nearby and analyse their service patterns." (WM_A03)
Institutional context consideration	Curriculum needs analysis based on institutional vision and mission Selecting feasible curriculum themes for clinical settings	"The first step is a needs analysis to determine feasible fields of study, focusing on staff training and ensuring feasibility. For instance, starting with three professions." (WM_B05)
Curriculum aspects		
Clinical IPE curriculum model	Real-life case management practice with an individual, family, and community focus	"This module equips students to collaborate in addressing health issues, focusing on patients, families, and communities." (WM_B03)
	Simulated case management practice with an individual focus	"The IPE stage starts with controlled simulations while maintaining authenticity." (WM_B01)

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Table 2 (*Continued*)

Theme	Subtheme	Quotes
Roles of the IPE champion and IPE lead in curriculum development and continuity	Initiator	"We gathered stakeholders from nursing and nutrition to identify common topics for IPE." (WM_B05)
	Innovator	"Settings are hospital-like, with cases developed to include interprofessional components, emphasising initial development challenges." (WM_B04)
	Coordinator Communicator	"Effective communication and coordination with hospitals are crucial. We held several preparatory meetings." (WM_B03)
Teaching staff aspects		
Required competencies for clinical IPE facilitators	Generic competencies (unrelated to the curriculum)	
	Understanding of the IPE concept	"Facilitators need comprehensive knowledge of IPE/IPCP." (FGD_C01FKF)
	Understanding of and experience in IPCP	"...I have worked in hospitals for 2 years, collaborating with nurses and doctors, which qualifies me as an IPCP facilitator." (FGD_C01FV)
	Ability to manage interprofessional group dynamics	"Facilitators must have skills in facilitating, questioning, answering, and initiating discussion techniques." (WM_B01)
	Ability to utilise clinical situations as IPE teaching moments	"In my opinion, there needs to be awareness about patient encounters that can be used for IPE training. Not all doctors, nurses, and nutritionists recognise these learning opportunities. This is a crucial first step." (WM_B04)
	Ability to facilitate interprofessional reflection	"The strength lies in conducting reflections. Students from various professions reflect together in front of others from different professions." (WM_B07)
	Ability to facilitate interprofessional feedback	"We need to provide feedback. In clinical settings, this is a rare and valuable process that requires careful observation, dedicated time, and meaningful feedback." (WM_B05)
	Ability to understand interprofessional identity	"There must be an understanding that no single profession is 'the best'. Facilitators must help students recognise the importance of every profession's role." (WM_B04)
	Ability to avoid professional bias	"Negative stereotypes that are unhelpful or non-constructive must first be addressed and eliminated through training." (FGD_C01FKF)
	Ability to become a role model	"No matter how great the theoretical content is, role models remain the key to effective learning." (WM_B07)

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Table 2 (*Continued*)

Theme	Subtheme	Quotes
	Competences related to the context of the curriculum and clinical IPE	
	Understanding of the fundamentals of clinical knowledge	"In my opinion, clinical competence is critical and must be maintained. Both students and facilitators need to understand the clinical competencies related to interprofessional collaboration." (WM_B04)
	Understanding of IPCP in the clinical environment	"Perhaps, basic IPCP understanding should be part of the training, with case discussions in hospital settings focusing on IPCP aspects. Facilitators should provide feedback on IPCP patterns observed there." (FGD_C01FKR)
	Understanding of the learning module and the ability to perform an assessment in accordance with the applied evaluation method	"Facilitators must also master the module content and receive proper training on it." (FGD_C01FKR) "For feedback, tutors should use clear rubrics to ensure assessments are based on criteria rather than subjective judgment." (WM_B03)
Strategies for teaching staff development as IPE facilitators in the clinical stage	Grouped formal approach (workshop)	"Training sessions should ideally be workshops that focus on hands-on practice, with minimal theory for refreshing knowledge about initiating and managing IPE." (WM_C02FK)
	Longitudinal/serial approach to train generic competences	"I believe serial training is necessary to cover basic IPE competencies that are universally relevant and essential for all facilitators." (WM_B04)
	Just-in-time strategy to train competences related to the context of the curriculum	"Pre-module training is crucial for success. It ensures aligned perceptions and promotes collaboration in problem-solving proposed by students." (WM_C02FKG)
	Thorough preparation	"Each training session should have clear objectives and address identified gaps. Needs analysis can determine whether a simple refresher is sufficient or if an intensive workshop, supported with videos, is required." (WM_B03)
	Targeted implementation	"The method is critical. Passive learning, such as just sitting and listening, is insufficient. Active engagement of participants is essential." (FGD_C01FKA) "At the very least, there should be videos showing the ideal facilitation process, including simulations and examples of how students behave in these settings." (WM_B01)
	Measured evaluation	"Training must always include two aspects, which are mentoring and assessment. For example, pre- and post-tests can be used to measure improvements in knowledge or perception." (WM_B01)

Cognitive Interviews and Written Feedback

Based on the results of the cognitive interviews and written feedback, improvements were made to the initial model, resulting in the final model shown in Figure 1.

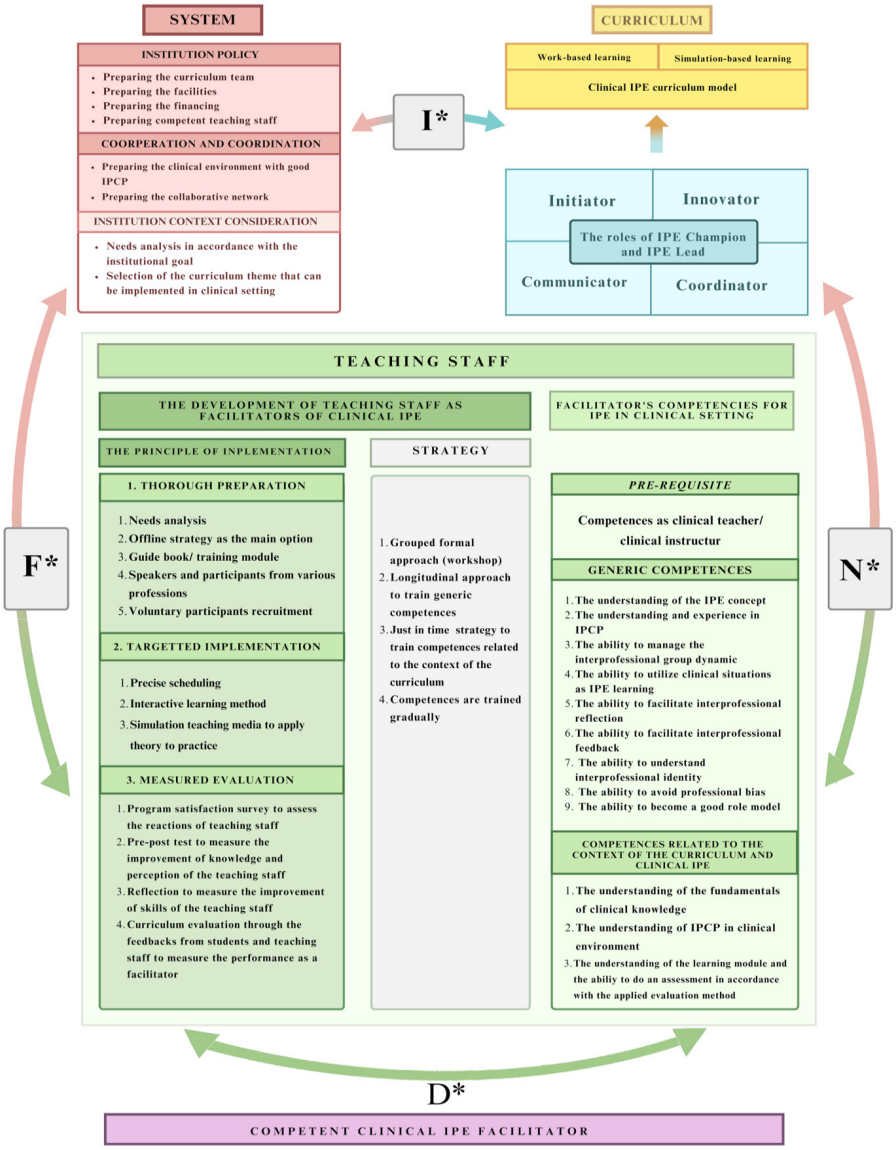

Figure 1: The FIND model for faculty development of IPE facilitators in the clinical setting.

Notes: **F*** = to Foster systems support from the institution including hospitals and other stakeholders; **I*** = to Involve IPE champions and IPE leads as initiators, innovators, communicators, and coordinators; **N*** = to Nurture faculty members' competencies through adequate needs analysis; and **D*** = to Deliver FD with thorough preparation, targeted implementation, and measured evaluation.

Figure 1 shows a conceptual framework considering four important aspects in developing competent clinical IPE facilitators, which include (a) system, (b) curriculum, (c) competencies of clinical IPE facilitators, and (d) strategies to nurture these competencies. All four aspects are inseparable and interrelated elements in efforts to develop a good clinical IPE curriculum, including the preparation of teaching staff who will become facilitators of the curriculum.

The system aspect indicates that the FD programme for clinical IPE facilitators operates in parallel with efforts to implement the clinical IPE programme. Thus, consideration of the institutional context will characterise the selection of IPE programme topics per institutional needs and the feasibility of the teaching hospital involved. This will determine the curriculum model and the FD programme to prepare the facilitator. This aspect also conveys that the institution plays a role in providing policies and support for efforts to prepare the curriculum and competent facilitators. Institutions also need to establish and maintain cooperation and coordination with teaching hospitals and other healthcare facilities in the context of IPE, such as primary care centres. Thus, in the FD programme for clinical IPE facilitators, optimal institutional support is needed. The researcher named this aspect of the system the "F" process of the model: to foster systems support from the institution, including hospitals and other stakeholders.

Regarding the curriculum aspect, the model highlights several roles for IPE champions and IPE leads, who will serve as the "executors" of the clinical IPE curriculum, along with the FD programmes for preparing facilitators. Hence, two-way arrows illustrate the relationship between IPE champions and IPE leaders, and their roles in curriculum and facilitator preparation. Teaching staff will play this role, and institutions need to consider their availability and competence as an extension of the institution in curriculum planning and preparing them as facilitators. Therefore, the authors named this aspect of the model to highlight the importance of IPE champions and IPE leads as the "I" process: to involve IPE champions and IPE leads as initiators, innovators, communicators, and coordinators.

The third aspect of the model involves the competencies of clinical IPE facilitators. The model provides robust data regarding the competencies of IPE facilitators at the clinical stage. Prior training as a clinical educator or clinical supervisor is considered a prerequisite and a valuable factor for clinical teachers who will serve as IPE facilitators. Moreover, the model delineates two broad categories of facilitator competencies: generic competencies and competencies specific to the curriculum context. The generic competencies encompass the nine fundamental competencies needed, regardless of the clinical IPE programme model implemented by the institution, while competencies related to the context are those influenced by the institution's clinical IPE curriculum model or theme. It should be noted that each competency shown in the model does not necessarily have to be trained sequentially. The selection of competency topics for training and the timing of this training should be based on an adequate needs analysis of curriculum needs, teaching staff needs, and institutional capabilities. Consequently, this aspect was named the "N" process of the model: to nurture faculty members' competencies through adequate needs analysis and FD.

Furthermore, regarding the fourth aspect, namely strategies for training competencies, the model provides the approach and key principles of the FD programme for competent clinical IPE facilitators. In terms of approach, the model recommends a group-based approach through workshops, which is particularly suitable for clinical teachers from various health professions in Indonesia. In terms of timing, a longitudinal approach is recommended for training generic competencies, which means that training activities can be organised and implemented within a flexible timeframe, regardless of the timing of implementation of a clinical IPE module. For curriculum context-related competencies, a "just in time" approach is recommended, that is, close to the time of implementation of the clinical IPE learning module. The model emphasises the need for serial training of all competencies based on the needs analysis. The model presents three fundamental principles, accompanied by detailed descriptions that provide guidance for each principle. The authors designated this aspect the "D" process of the model: to deliver FD with thorough preparation, targeted implementation,

and measured evaluation. Based on the letters used to denote each process derived from four aspects, the authors named this model the FIND model.

DISCUSSION

This study describes the development of the FIND model, consisting of four primary aspects as elements and four key principles as processes, delineated in brief yet comprehensive and readily comprehensible steps. The FIND model can be utilised by institutions by applying each principle, as illustrated in the model's visual representation. It should be noted that the various principle of the FIND model is not necessarily sequential; rather, they can be implemented flexibly, considering F, I, and N to achieve aspect D. The initial step in utilising the FIND model is to conduct a needs analysis, taking into account the context of the institution's clinical curriculum. A needs analysis in FD should not only consider the needs of teaching staff but also align with the current needs of institutional curriculum development (27). The FIND model emphasises the importance of triangulating both qualitative and quantitative data, to identify the FD programme that best aligns with the institution's diverse priorities and capabilities. Conducting a needs analysis can also provide information regarding the discrepancy between current and expected conditions, thereby facilitating reflection on the necessity of further institutional planning for the requisite FD programmes (28).

Given that the model is named FIND, it is reasonable to expect that the FIND model will serve as a frame of reference for institutions implementing IPE curricula at the clinical stage and those seeking to develop FD programmes to prepare competent clinical IPE facilitators. The FIND model is comprehensive, based on a needs analysis that allows for a detailed representation of the needs related to FD models suitable for clinical settings in Indonesia. A comprehensive needs analysis is an essential component of any effort to develop an FD model. It is recommended that this activity be conducted with the involvement of various elements within the education system, including institutional leaders, curriculum developers, and teaching staff (8). A variety of factors must be considered, including the context in which the model is utilised, the prevailing culture of the institution, the theoretical framework employed, the specific focus of FD, the integration of the learning process into the practice environment, and the expectations of the entire academic community within a single institution. These elements have been incorporated into the FIND model. The FIND model also incorporates other important aspects, including the role of the institution, the role of IPE champions and IPE leads, the role of teaching staff as clinical IPE facilitators, and the development strategy, all synergistically integrated into one model.

The FIND model emphasises the need for institutions to prepare teaching staff who can fulfil the roles of IPE champions and IPE leads. When institutions implement IPE in their curricula, it is imperative to ensure the availability of teaching staff who can act as IPE champions and IPE leads, taking on the responsibility of implementing a robust and sustainable IPE curriculum. Efforts to ensure the availability of skilled IPE champions and IPE leads include providing them with IPE management competencies through workshop activities, delivering training by experts from other institutions that already have good IPE practices at the clinical stage, or sending them to institutions with good IPE practices at the clinical stage.

Moreover, the FIND model has identified and enriched information about the competencies required by IPE facilitators in clinical settings. These include nine generic competencies and four competencies related to the curriculum context. While numerous other publications

have presented a variety of IPE facilitator competencies not specifically focused on the clinical setting (14, 29, 30), this study suggests three clinical competencies to be added as a result of FIND model to strengthen the clinical component of IPE, including an understanding of IPCP culture in educational institutions, the ability to identify various clinical situations as IPE teaching moments, and the capacity to internalise interprofessional identity in clinical practice. The formulation of all competencies in the FIND model was developed through careful analysis and the use of reliable data sources. Consequently, the FIND model has added new dimensions to the existing literature on IPE facilitator competencies at the clinical stage.

Clinical IPE facilitators have a critical role since they can encourage the mastery of IPCP skills by applying learning principles in real work environments (14). The activities to facilitate IPE in clinical settings may also improve the IPCP abilities of clinical teaching staff themselves (15) that will lead to improvements in the quality of health services and in public health, as well as reduced healthcare costs and increased patient satisfaction (1). The ability to identify IPE teaching moments will foster clinical staff to maintain a balance between supporting opportunities for students to work in teams and delivering collaborative practice for patients (29, 31).

Furthermore, cultivating interprofessional identity in clinical practice involves an effort to avoid professional bias (32), which have been mentioned in the FIND model as competencies of a clinical IPE facilitator. Interprofessional identity will help create effective interprofessional communication, eliminate stereotypical behaviours, and produce effective teamwork and collaboration (33). Interprofessional identity formation is supported in clinical settings; therefore, clinical IPE facilitators must also understand how to facilitate the process of forming both interprofessional and professional identities in clinical practice (32). This enables the facilitators to serve as effective role models for students and facilitates understanding of the roles and responsibilities of various professions. Based on the findings of our study, we can conclude that FD should focus not only on attaining IPE instructional skills as cognitive aspects, but also on preparing clinical teachers as IPE facilitators. It should also address the non-cognitive aspects, such as how to recognise biases, avoid stereotypical behaviours, be a good role model, and apply interprofessional reflection skills in order to encourage interprofessional identity formation (17).

Additionally, the FIND model has provided guidance on FD strategies that can be used to train the various competencies needed. These include the longitudinal approach for training generic competencies and the "just in time" approach for training competencies related to the context of IPE programme. The literature presents the longitudinal approach as a significant investment and optimal FD strategy for institutions seeking to develop the competencies of their teaching staff (34). The FIND model proposes a group approach in the form of workshops as the optimal method for clinical teaching staff in Indonesia, which aligns with the collectivist culture prevalent in Indonesia as an Asian country. A collectivist culture is one in which the collective needs of a group or community are accorded greater importance than the individual needs of its members, placing a high value on kinship, family, and community. People are inclined to collaborate to foster harmony and group cohesion, with an emphasis on collective action (22). Workshops are one of the most popular training formats because of the flexibility in terms of time and location. They can also provide opportunities for active and collaborative learning. The incorporation of reflective discussion activities into workshop settings can facilitate the sharing of experiences among clinical teaching staff in the context of IPCP and foster opportunities to learn based on clinical experience (35).

The FIND model highlights the significance of establishing institutional partnerships between health profession education schools and healthcare institutions. Partnerships are essential to guarantee that the learning process is contextualised and relevant to clinical practice. Clinical environment provides a setting wherein teaching staff may apply IPE in real clinical scenarios, including access to patients, facilities, and exemplary interprofessional collaboration patterns in patient care. Hospitals must ensure that clinical staff are adequately trained and able to serve as role models for interprofessional collaboration if they have to facilitate IPE groups (36, 37). Teaching hospitals also play a role in providing evaluation and constructive feedback to institutions on IPE implementation. This ensures that IPE learning outcomes are achieved and that interprofessional learning continues to grow. An effective combination of the roles of educational institutions and hospitals can result in competent clinical IPE facilitators who can promote interdisciplinary learning to improve the quality of healthcare (37).

Therefore, FD in the clinical IPE curriculum is a dynamic process aimed at producing competent clinical IPE facilitators. It requires synergy between the institutions, IPE champions, IPE leads, and clinical teaching staff from various health professions. Each aspect has specific interrelated roles to ensure effective IPE implementation. Institutional commitment and support play a critical role in providing the foundation for IPE champions and IPE leads to prepare the IPE curriculum and teaching staff who will be its facilitators (8). FD for nurturing competent facilitators requires strategic intervention from the institution, and proper execution by IPE champions and IPE leads to ensure that teaching staff have the necessary skills and knowledge to facilitate interprofessional learning (18). The FIND model has successfully accommodated all these aspects to become a guide for institutions in preparing competent facilitators for clinical IPE curricula.

This study has several implications. The FIND model contributes new information to the field of IPE on institutional guidance for developing competent IPE facilitators, providing systematic steps and explanations that are concise yet specific. For institutions, the FIND model can be a "map" that directs the flow of processes and needs to produce competent clinical IPE facilitators. For IPE champions and IPE leads, the FIND model can serve as a "compass" that guides steps to set priorities for FD programmes, based on the curriculum's needs analysis, institutional goals, and the feasibility of implementation within the institution. For teaching staff, the FIND model can be part of their self-reflection on the abilities required to facilitate clinical IPE activities and self-reflection to improve their IPCP abilities in clinical practice. The systematic and sustained application of the FIND model is expected to produce competent IPE facilitators, which can further encourage students' achievement of competencies to become health professionals with good interprofessional collaboration skills. Graduates with good collaborative skills are then expected to be able to cooperate in implementing optimal health services and improving the health status of individuals, families, and communities, which is the ultimate goal of IPE/IPCP, as stated by the WHO.

This study has some limitations. It was completed in one country; hence, its transferability to other contexts might be limited. However, the comprehensiveness of the study process and analysis provide adequate details to understand and use this model in different contexts. Understanding the contexts of the education and healthcare institutions as well as their IPE and IPCP approaches is embedded in the FIND model itself.

CONCLUSION

This research led to the creation of the FIND model, which consists of four main principles: to foster systems support from the institution including hospitals and other stakeholder; to involve IPE champions and IPE leads as initiators, innovators, communicators, and coordinators; to nurture faculty members' competencies through adequate needs analysis and FD; and to deliver FD with thorough preparation, targeted implementation, and measured evaluation. The FIND model comprises practical, complete, strategic, and easy-to-understand steps. It can serve as a guide for institutions to plan and implement FD programmes, preparing clinical IPE facilitators by applying each of the principles described in the model's visualisation.

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ETHICAL APPROVAL

The study was approved by the Research Ethics Committee of the Faculty of Medicine, University of Indonesia (1251/UN2.F1/ETIK/PPM.00.02/2022). We ensured the confidentiality of the collected data.

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