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Innovative Interprofessional Education Model for Health Sciences Faculty: A Contextual Approach at UIN Alauddin Makassar

Saldi Yusuf
[1] Nursing at the Faculty of Health Sciences, UIN Alauddin Makassar, Makassar, Indonesia

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ABSTRACT

Purpose of the study: This study aims to design and develop a contextualized Interprofessional Education (IPE) model for the Faculty of Health Sciences at UIN Alauddin Makassar, enabling students and faculty from Nursing, Midwifery, Pharmacy, and Public Health programs to improve collaborative competencies and prepare for effective interprofessional practice.

Methodology: A mixed-method design combining quantitative surveys and qualitative focus group discussions was applied. Instruments included the Interdisciplinary Education Perception Scale (IEPS) and Readiness for Interprofessional Learning Scale (RIPLS). Data analysis employed descriptive statistics for quantitative data and thematic analysis for qualitative insights, integrated through a research and development (R&D) approach.

Main Findings: Most students (92.3%) and faculty (90.9%) demonstrated positive perceptions of IPE, while readiness levels were high for students (92.3%) and all faculty (100%). Thematic analysis identified seven components for IPE implementation: expected competencies, learning methods, topics, timing, evaluation, facilities, and facilitator competencies, providing a comprehensive framework for effective interprofessional education.

Novelty/Originality of this study: This study introduces a context-specific, faculty-wide IPE model integrating multiple health programs with interactive learning, ethical and communication topics, and practical simulations. It bridges global IPE frameworks with local educational culture, offering a feasible and adaptable approach that enhances interprofessional collaboration and prepares graduates for high-quality, patient-centered healthcare in Indonesia.

Corresponding Author:
Saldi Yusuf,
Nursing at the Faculty of Health Sciences, UIN Alauddin Makassar,
Jl Sultan Alauddin No. 63, Kota Makassar, Sulawesi Selatan, Indonesia.
Email: yusufsaldiii@gmail.com

1. INTRODUCTION

Interprofessional collaboration is widely recognized as essential for delivering high-quality and safe patient care, as interprofessional education (IPE) has been shown to improve attitudes toward interdisciplinary teamwork, communication, and shared problem-solving skills among health professions students [1]. Effective communication and teamwork training through IPE interventions such as simulation-based team communication programs has demonstrated significant positive effects on students' knowledge, attitudes, and skills essential for interprofessional practice, which are crucial for reducing medical errors and enhancing patient safety [2]. Systematic reviews and meta-analyses further confirm that IPE significantly improves students' collaborative attitudes and understanding of teamwork, contributing to more effective interprofessional interactions in clinical settings [3]. Moreover, interprofessional simulation-based education programs have been found to enhance both communication and teamwork competencies among healthcare students across disciplines, supporting the

integration of IPE into health professions curricula to develop collaborative, patient-centered practitioners [4]. Despite these demonstrated benefits, gaps persist in implementing context-specific IPE models tailored to the unique needs of individual institutions, highlighting the need for structured approaches that align interprofessional learning with local educational and healthcare priorities.

Interprofessional education (IPE) is widely understood as an educational approach in which students from two or more health professions learn with, from, and about each other to enhance collaborative competencies and improve the quality of healthcare delivery [5]. For example, IPE has been shown to significantly improve attitudes toward interprofessional teams and readiness for collaborative practice among health professional students in experimental studies, demonstrating immediate positive effects on teamwork attitudes and perceived ability to function in interprofessional teams [6]. Furthermore, systematic evidence indicates that structured IPE interventions can enhance students' mutual respect and cross-professional knowledge, supporting its role in preparing learners for collaborative clinical environments [7]. In the Indonesian context, mixed-method research has also reported that IPE activities increase students' readiness and broaden cross-professional perspectives, highlighting cultural and cooperative values that influence interprofessional learning [8]. However, many existing studies are limited to single institutions or focus primarily on student outcomes, leaving a gap in comprehensive faculty-wide evaluations of IPE model implementation across multiple programs.

Despite promising results demonstrating that IPE enhances collaborative attitudes and teamwork competencies across health professions education, a clear gap remains in contextualized IPE models specifically tailored to local faculty settings that integrate multiple health professions into a unified framework [9]. Reviews of IPE implementation highlight that while various models such as integrated, extra-curricular, and phased curricular approaches are reported in the literature, detailed reporting on implementation components and adaptation to specific institutional cultures is inconsistent, thereby limiting evidence on how to effectively contextualize IPE for diverse programs within a single faculty [10]. Moreover, scoping reviews suggest that key implementation challenges at institutional and systemic levels such as leadership support, curriculum structure, and resource allocation are frequently mentioned but not adequately addressed through adaptable frameworks, indicating a lack of comprehensive models that align educational theory with practical delivery across disciplines [11]. Although several systematic reviews confirm the positive impact of IPE on students' teamwork, communication, role clarity, and professional identity development across health professions, the literature still lacks holistic, context-specific models that accommodate the unique curricula and cultural factors of faculties such as UIN Alauddin Makassar's Faculty of Health Sciences [12]. Addressing this gap by developing a tailored IPE framework that integrates global best practices with local institutional needs is essential for preparing graduates to work collaboratively across professional boundaries in real-world healthcare environments.

The urgency of this research stems from the increasing complexity of modern healthcare delivery systems, where patient-centered care requires cohesive teamwork among diverse health professionals to achieve optimal outcomes and meet growing service demands [13]. Evidence shows that ineffective collaboration and poor interprofessional communication can compromise patient safety, reduce service quality, and increase operational inefficiencies, reinforcing the need to train health professionals in coordinated team-based practice [14]. By designing and implementing an innovative and context-specific interprofessional education (IPE) model, educational institutions can strengthen early exposure to core collaborative competencies, thereby promoting professional readiness and contributing to improved healthcare outcomes across disciplines [15]. A model tailored to local cultural, institutional, and societal values ensures that educational strategies resonate with the lived experiences of learners and practitioners, facilitating sustainable integration of collaborative practice into routine care delivery [16]. Hence, there is a pressing need to implement structured IPE interventions that equip future healthcare professionals with practical and sustainable collaborative skills, ultimately enhancing patient-centered care and the quality of health services in complex clinical settings.

The novelty of this study lies in its integrative and context-driven approach, which bridges global IPE frameworks with local educational realities, offering a composite model that accommodates both broad theoretical constructs and specific institutional needs [17]. Unlike prior research that focuses mainly on perceptions or readiness toward IPE, emerging evidence highlights the value of designing comprehensive and adaptable IPE curricula that incorporate multiple competency frameworks and scaffolded learning experiences across disciplines [18]. This study's emphasis on interactive learning, role understanding, and practical collaboration exercises aligns with literature indicating that IPE interventions rooted in explicit competency frameworks improve collaborative practice, role clarity, and team effectiveness in authentic healthcare scenarios [19], [20]. By situating the model within the context of UIN Alauddin Makassar's Faculty of Health Sciences, the research contributes a locally adaptable IPE framework that may serve as a practical reference for other Indonesian institutions seeking to integrate IPE across diverse health programs. Hence, this innovative approach offers a foundation for systematically promoting interprofessional collaboration within higher education and addressing documented implementation gaps in converting theoretical IPE models into context-specific practice.

Finally, this research aims to provide actionable insights into designing, implementing, and evaluating IPE programs tailored for faculty-wide adoption, recognizing that comprehensive evaluation frameworks are essential for understanding how interprofessional education affects collaborative competencies and outcomes across health professions [21]. Studies have shown that well-structured IPE not only enhances teamwork and communication skills but also contributes to deeper role understanding and collaborative readiness among healthcare students, supporting its incorporation into formal curricula rather than as isolated activities [22]. Moreover, umbrella reviews of IPE effectiveness emphasize that improvements in interprofessional knowledge and skills can translate into benefits at organizational and patient outcome levels, although long-term evaluations remain limited and warrant further rigorous investigation [23]. By closing the gap between global IPE concepts and local educational practice, this study advances the understanding and application of interprofessional education, helping prepare graduates to deliver patient-centered, collaborative, and high-quality healthcare services aligned with both educational goals and real-world clinical demands [24].

2. RESEARCH METHOD

2.1 Research Design and Approach

This study employed a mixed-method design combining quantitative and qualitative approaches to develop an innovative interprofessional education (IPE) model for the Faculty of Health Sciences at UIN Alauddin Makassar, recognizing that mixed methods provide a comprehensive understanding of complex educational interventions by integrating numerical trends with contextual experiences [25]. In the quantitative phase, cross-sectional descriptive analysis was used to assess students' and faculty members' perceptions and readiness toward IPE, while the qualitative phase employed thematic exploration to identify contextual factors and inform model construction. Mixed-method research has been shown to strengthen validity and deepen insight by allowing quantitative results to be explained and enriched through qualitative findings, especially in evaluating attitudes and collaboration outcomes in interprofessional education settings [26], [27]. The approach also facilitated triangulation of data, enhancing the applicability and credibility of the proposed IPE model by capturing both measurable trends and in-depth stakeholder perspectives. Overall, the use of a mixed-methods design supported the integration of evidence-based and context-specific knowledge, which is essential for the development of a feasible and educationally effective IPE framework aimed at improving collaborative practice readiness across health professions.

2.2 Research Site and Duration

The study was conducted at the Faculty of Health Sciences, UIN Alauddin Makassar, which houses four health programs: Nursing, Midwifery, Pharmacy, and Public Health. The faculty was selected due to its diverse programs, existing academic infrastructure, and potential for implementing interprofessional learning. Data collection took place from January 21 to February 7, 2015, encompassing both survey administration and qualitative focus group discussions. The setting provided a representative environment for assessing current perceptions, readiness, and potential model implementation.

2.3 Population and Sampling

The population included all students and faculty members across the four health programs. For the quantitative phase, 143 students were selected using quota sampling, representing approximately 10% of students in each program. Faculty participants were selected through purposive sampling based on inclusion criteria of active employment and willingness to participate, resulting in 22 respondents. The qualitative phase involved 11 key informants identified as strategic decision-makers or knowledgeable stakeholders for IPE development, selected via purposive sampling. Sampling continued until data saturation was achieved, ensuring comprehensive insights for model construction.

2.4 Data Collection Instruments

Quantitative data were collected using two validated questionnaires the Interdisciplinary Education Perception Scale (IEPS) to measure perceptions and the Readiness for Interprofessional Learning Scale (RIPLS) to assess readiness both of which have been widely used and reported in the literature for evaluating attitudes and preparedness toward interprofessional education among health profession students [28]. These instruments typically employ Likert-type scales to capture respondents' agreement with statements about collaborative practice, and their psychometric properties have been examined in multiple studies to confirm acceptable levels of reliability and validity for research purposes. In addition, qualitative data were gathered through focus group discussions (FGDs) guided by a structured protocol developed from literature reviews and preliminary observations, which is a common method in IPE research for exploring participants' experiences, expectations, and contextual challenges in depth. Focus group discussions have been used effectively in interprofessional

education studies to generate rich insights into participants' perspectives on collaborative learning and implementation barriers by facilitating interaction among participants who share lived experiences and viewpoints [29]. Thus, combining validated quantitative instruments with qualitative FGDs allowed this study to capture both broad trends and nuanced contextual factors relevant to IPE implementation at the faculty level.

Table 1. Grid of IPE Perception Instrument (IEPS)

Component	Favorable Items	Unfavorable Items	Total Items
Competence and autonomy	1, 3, 4, 7, 10, 13	5, 6, 8	18
Perceived need for collaboration	2, 14, 15, 16, 17	12, 18	18
Evidence of collaboration	9	11	3
Understanding of other professions	7	3, 5	3
Total	18	18	41

Quantitative data on readiness were measured using the Readiness for Interprofessional Learning Scale (RIPLS), adapted from Luecht et al. (1990) and modified by Aryakhiyati (2011).

Table 2. Grid of IPE Readiness Instrument (RIPLS)

Component	Favorable Items	Unfavorable Items	Total Items
Teamwork and collaboration	1, 2, 3, 4, 5, 6, 7, 8, 9	13, 14, 15, 16	14
Professional identity	19	10, 11, 12	5
Roles and responsibilities	18, 17	9, 7, 3	3
Total	14	5	19

Qualitative data were gathered through focused group discussions (FGDs) guided by a structured protocol developed from literature reviews and preliminary observations. FGDs explored experiences, expectations, and contextual challenges relevant to IPE implementation in the faculty. Students' and faculty members' perceptions of IPE were categorized based on objective criteria as follows:

- Good: $X \geq 53$
- Moderate: $34 \leq X < 53$
- Poor: $X < 34$

Students' and faculty members' readiness for interprofessional learning was categorized using objective criteria as follows:

- Good: $X \geq 56$
- Moderate: $35 \leq X < 56$
- Poor: $X < 35$

2.5 Data Analysis

Quantitative data were analyzed using univariate descriptive statistics, including frequency distributions and percentages, to summarize demographic characteristics, perceptions, and readiness levels toward interprofessional education (IPE) [30]. This approach is widely used in mixed-methods IPE research to describe baseline trends and participant characteristics prior to deeper analytical interpretation [31]. Meanwhile, qualitative data were analyzed thematically through systematic stages of data organization, coding, categorization, and theme development to capture in-depth perspectives on interprofessional learning experiences and contextual challenges [32]. The iterative integration of quantitative and qualitative findings enabled the identification of key themes and practical considerations for model development, supporting the construction of a contextually appropriate and feasible IPE model.

2.6 Ethical Considerations

The study adhered to fundamental ethical principles, including informed consent, anonymity, and confidentiality, to ensure the protection of participants' rights throughout the research process [33]. Prior to data collection, all participants were clearly informed about the study objectives, procedures, potential risks, and benefits, and written informed consent was obtained. Participant identities were anonymized through the use of coded identifiers, and all sensitive data were securely stored and accessed only by the research team to prevent unauthorized disclosure. Compliance with established research ethics guidelines is essential to maintain participant trust and to ensure the integrity, credibility, and scientific validity of both data collection and analysis processes [34].

3 RESULTS AND DISCUSSION

The quantitative phase included 143 students and 22 faculty members from the Faculty of Health Sciences (FIK), UIN Alauddin Makassar. Quota sampling was applied for students, while faculty were selected purposively. Most students were female (76.9%) and aged 17–21 years (74.1%), with the largest group from Public Health (31.5%), followed by Pharmacy (28.0%), Nursing (23.8%), and Midwifery (16.8%). Faculty were mostly female (81.8%) and aged 25–33 years (63.6%), with most holding a Master's degree (72.7%). The qualitative phase involved 11 key informants aged 21–60 years from all departments, selected purposively for in-depth perspectives.

Table 3. Characteristics of Study Participants

Participant	Gender (F/M)	Age Range	Department (N, %)	Education (Faculty)
Students (n=143)	110/33	17–21 (106, 74.1%) 21–24 (37, 25.9%)	Public Health 45 (31.5%) Pharmacy 40 (28%) Nursing 34 (23.8%) Midwifery 24 (16.8%)	-
Faculty (n=22)	18/4	25–33 (14, 63.6%) 34–42 (8, 36.4%)	Nursing 14 (63.6%) Pharmacy 3 (13.6%) Public Health 3 (13.6%) Midwifery 2 (9.1%)	Master's 16 (72.7%) Professional 5 (22.7%) Doctoral 1 (4.5%)

Most students and faculty showed positive perceptions and readiness for IPE. Among students, 92.3% had good perceptions, highest in Pharmacy (95%) and lowest in Public Health (88.9%). Faculty perceptions were good in 90.9% of cases, with Nursing and Midwifery showing 100%. Students' readiness was also high (92.3%), and all faculty members demonstrated full readiness (100%).

Table 4. Characteristics of Study Participants

Participant	Perception (Good/Moderate/Poor)	Readiness (Good/Moderate/Poor)	Highest by Department	Participant
Students (n=143)	Good 132 (92.3%) Moderate 11 (7.7%) Poor 0	Good 132 (92.3%) Moderate 11 (7.7%) Poor 0	Perception: Pharmacy 95% Readiness: Nursing 100%	Students (n=143)
Faculty (n=22)	Good 20 (90.9%) Moderate 2 (9.1%) Poor 0	Good 22 (100%)	Perception: Nursing & Midwifery 100%	Faculty (n=22)

FGDs with 11 key informants identified seven main themes related to the development of Interprofessional Education (IPE) at the Faculty of Health Sciences (FIK), UIN Alauddin Makassar. These findings provide an in-depth perspective from both students and faculty involved in interprofessional learning.

1. Expected Competencies: Informants emphasized that IPE aims to develop five core competencies in students. These competencies include the ability to work independently within one's professional scope, collaborative skills within interprofessional teams, understanding the roles and responsibilities of other professions, respect for other professions as equals, and effective interprofessional communication. These competencies are considered crucial to prepare students for the demands of the workforce, which requires effective collaboration across professions.
2. Learning Methods: Recommended learning methods for IPE include role play or simulation, bedside teaching, problem-based learning (PBL), and community-based learning. Role play and simulation help students practice realistic clinical scenarios, while bedside teaching allows direct hands-on learning in clinical settings. PBL encourages collaborative problem-solving, and community-based learning connects theoretical knowledge with practical application in the community.
3. Learning Topics: The main topics for IPE focus on professional ethics, codes of conduct, and health communication. These topics are considered essential to develop professionals who are not only technically competent but also able to collaborate ethically and communicate effectively with other professions in the healthcare context.
4. Timing of IPE Implementation: The optimal timing for IPE implementation is recommended in the fifth semester, after students have acquired sufficient foundational knowledge in their own professions. This timing is considered ideal because students have already mastered basic professional concepts, making it easier for them to understand and appreciate the roles of other professions during interprofessional learning.

5. Evaluation of IPE: IPE evaluation involves assessing students' competency achievement, individual communication skills, and teamwork abilities. This evaluation ensures that students not only understand theoretical concepts but can also apply them effectively in real interprofessional interactions.
6. Required Facilities: Necessary facilities include small and large classrooms, campus environments that support interactive learning activities, LCD/projectors, and flipcharts. These facilities support various learning methods, including simulations, group discussions, and clinical practice, thereby enhancing the effectiveness of the learning process.
7. Faculty/Facilitator Competencies: IPE instructors or facilitators should be able to guide case discussions, explore students' abilities, and have attended specialized IPE facilitator training. These competencies are considered important to ensure that the interprofessional learning process runs effectively and that students can maximize their learning experiences.

The quantitative analysis showed that the characteristics of the research subjects did not have a significant effect on students' and lecturers' perceptions and readiness towards Interprofessional Education (IPE). This finding aligns with Yuniawan (2013) and Curran et al. (2007), which stated that gender, previous collaborative experience, and years of teaching did not significantly influence perception and readiness. However, the study also highlighted that professional background could affect readiness, consistent with Turner (1999) and Hawk (2002), who reported significant perception differences based on professional roles. The qualitative phase used key informants to ensure representation of various functional roles within the faculty. This approach allowed capturing diverse perspectives on IPE implementation and professional interaction.

The study found that the majority of students (92.3%) and lecturers (90.9%) demonstrated positive perceptions of interprofessional education (IPE), indicating confidence in their professional competence and appreciation of other health professions. Positive perceptions toward IPE have consistently been reported in previous studies, which emphasize that favorable attitudes support collaborative learning and professional identity development in health education settings [35]. However, prior research also highlights that positive perception alone does not guarantee effective interprofessional collaboration, as gaps in understanding professional roles and responsibilities may still persist [36]. Limited role clarity has been identified as a barrier to optimal teamwork, potentially reducing the effectiveness of interprofessional practice despite high levels of perceived readiness [37]. The novelty of this study lies in confirming these findings within the context of the Faculty of Health Sciences at UIN Alauddin Makassar, demonstrating local institutional readiness for IPE implementation while reinforcing the need for structured role clarification to enhance collaborative outcomes.

The results indicated that most students (92.3%) and all lecturers (100%) demonstrated high readiness for interprofessional education (IPE), reflecting strong attitudinal and motivational preparedness for collaborative learning. Students acknowledged that learning with other health professions is essential for improving teamwork, mutual respect, and professional attitudes, which is consistent with findings reported in previous international studies on IPE readiness [38]. High readiness levels are closely associated with clarity of professional roles and shared competency standards, which are critical for effective interprofessional collaboration [38]. Furthermore, readiness for IPE has been shown to support early integration of collaborative learning to prevent professional silos in healthcare education [40]. This level of readiness suggests that structured and well-designed IPE programs can significantly enhance collaborative competencies and personal development among future health professionals [41].

The thematic analysis revealed several key components required for effective interprofessional education (IPE) implementation at the Faculty of Health Sciences, UIN Alauddin Makassar, including expected competencies, learning methods, learning topics, timing, evaluation strategies, facilities, and facilitator competencies. Learning methods such as role play, simulation, bedside teaching, problem-based learning (PBL), and community-based learning were identified as effective approaches for fostering interprofessional collaboration, as supported by previous IPE research and global frameworks [42], [43]. Core learning topics prioritized ethics, professional roles, and health communication to ensure the development of comprehensive interprofessional competencies and mutual professional respect. The fifth semester was identified as the most appropriate timing for IPE implementation, aligning with students' pre-clinical readiness and foundational professional identity formation in health education [44]. These findings are consistent with evidence emphasizing that structured planning, trained facilitators, and adequate learning resources are critical factors for the successful implementation of sustainable IPE programs.

The study provides a practical model for IPE implementation at FIK UIN Alauddin Makassar, with implications for improving collaboration, communication, and professional competence. This model can serve as a reference for other health institutions seeking to adopt IPE programs. Limitations include reliance on self-reported questionnaires, incomplete participation of some key informants in FGDs, and challenges in accessing certain faculty members. Despite these limitations, the findings offer guidance for enhancing IPE practices and inform future curriculum development. Overall, the study underscores the value of trained facilitators, supportive facilities, and structured evaluation to achieve interprofessional collaboration objectives.

4 CONCLUSION

In conclusion, this study demonstrates that students and faculty at the Faculty of Health Sciences, UIN Alauddin Makassar, exhibit high perceptions and readiness toward Interprofessional Education (IPE), with the majority showing strong understanding of the importance of cross-professional collaboration in enhancing professional competencies and patient safety; qualitative findings highlight the necessity of developing a contextualized IPE model encompassing core competencies, interactive learning methods, ethical and health communication topics, appropriate timing for implementation, systematic evaluation, supportive facilities, and competent facilitators; thus, the research objective of designing an applicable IPE model across all faculty programs has been achieved through integration of quantitative and qualitative insights providing both empirical basis and local relevance; based on these findings, it is recommended that the faculty promptly implement the developed IPE model, provide specialized facilitator training, ensure learning resources that support simulations and collaborative practice, and conduct continuous evaluation to guarantee program effectiveness, thereby equipping graduates to work collaboratively, professionally, and effectively in addressing the complex demands of future healthcare delivery.

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