



Impact of Interprofessional Education Collaboration in Attitudes, Skills, and Behavior among Medical Students in Asia: A Narrative Review

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ABSTRACT

Keywords:

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Interprofessional education (IPE) involves collaboration among various fields within the healthcare system to achieve optimal health outcomes. IPE reduces gaps between health professionals from diverse backgrounds, fostering teamwork and effective collaboration. Early integration of IPE into medical curricula is essential to equip students with the knowledge, skills, and attitudes required for collaborative healthcare practices, ultimately improving patient care, reducing medical errors, and enhancing healthcare service quality. This review investigates the impact of early exposure to IPE on the skills, attitudes, and collaborative abilities of medical students in Asia. The goal is to assess whether early introduction fosters professionalism and effective interprofessional collaboration. Literature searches were conducted using Google Scholar and PubMed with appropriate keywords (interprofessional education, collaboration, medicine, and education). Articles were assessed for evidence-based relevance to the global health system, and those with cultural, racial, or religious biases were excluded. Review writing review based on 40 sources (journals, books, or WHO guidelines) that meet the criteria and keywords. Findings suggest that early engagement with IPE promotes positive attitudes, teamwork, and leadership skills among medical students. However, concerns remain regarding insufficient genuine interprofessional collaboration and potential declines in student attitudes without proper implementation. The early introduction of IPE has the potential to cultivate professionalism and collaborative skills among medical students in Asia. This review provides a foundation for encouraging the inclusion of IPE in medical curricula to improve interprofessional collaboration and healthcare outcomes.

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Introduction

A collaborative system comprising multiple areas that require one another with similar backgrounds is called interprofessional education (IPE). In order to facilitate efficient cooperation and achieve the shared objective of excellent health systems, collaboration happens when two or more experts learn about, from, and with one another (Diggele et al., 2020). The increasing complexity of health problems and the greater variety of diseases means that collaboration between all basic lines of the health system must be sought and intensified from an early age (Guraya & Barr, 2017). This is of course not easy and requires cooperation from all lines in the health sector (Haugland et al., 2019a). The World Health Organization has also launched IPE since 1988 and is always updating it following developments in the world health system situation. WHO's latest amendment regarding IPE was in 2010 regarding the Framework for action on inter professional education and collaborative practice which is the basis for the world health system in implementing IPE (Diggele et al., 2020); (World Health Organization (WHO), 2010). Early introduction of IPE in the Health Education system is very necessary to achieve maximum results in health services and patient care (Smith et al., 2013); (Shakhman et al., 2020). IPE may be especially difficult for students who lack confidence in their capacity for good teamwork and communication, in addition to problems with curricular system implementation. Based on the latest Higher Education Database (PDDIKTI) data for 2020, currently the number of health students in Indonesia is 532,935 people from 3,640 health study programs. This is of course a challenge for health system policy makers to introduce IPE to healthcare students. The role of lecturers is also highly expected in providing explanations about the IPE system both in theory and real examples of its application in daily life to students so that IPE can be applied in the health system and obtain optimal medical service results (Shrader et al., 2017a). The development of the IPE curriculum system at the tertiary level is expected to increase positive attitudes towards IPE covering various professions, which of course can be relevant to the future careers of participating students (Shrader et al., 2017)(Haugland et al., 2019).

Reeves, S., & Barr, H. (2016) outline twelve steps for evaluating the success of IPE, which are typically evaluated based on the development of research questions, the application of a suitable evaluation framework, the choice of a rigorous evaluation design, the use of validated evaluation tools, and the advantages to patients (Reeves & Barr, 2016). Besides that, the assessment of the success of IPE is not only based on the health service outcomes achieved but can be measured objectively through several measurements to provide reliable conclusions concerning the program's success such as ICCAS (The Interprofessional Collaborative Competency Attainment Survey), RIPLS (The Readiness for Interprofessional Learning Scale), IEPS (Interdisciplinary Education Perception Scale), CPAT (Collaborative Practice Assessment Tool), and ISVS (Interprofessional Socialization and Valuing Scale) (Tona et al., 2021); (Guitar & Connelly, 2021); (Grymonpre et al., 2021). Through this measurement, the success of IPE can be evaluated periodically more credibly and systematically. However, measuring the success of IPE can of course be different in each country or continent depending on the conditions and health systems in that area. Based on the description above, the aim of writing this review article is to understand the impact of early introduction on these aspects and to what extent it can contribute to developing professionalism and collaboration among students

in the Asian region. Expectedly, this research is hoped to serve as a foundation for readers to provide early introductions to Interprofessional Education (IPE) for medical students in Asia.

Based on a systematic review by Reeves et al., 2016, the existence of IPE can affect the development and differences in health system results and increase the spirit of collaboration to achieve maximum results in health services (Reeves et al., 2016). There are many obstacles in implementing IPE in health services, not only problems with the system but also problems with recipients, namely health science students. Students' lack of understanding regarding health sciences towards their chosen profession is associated with a lack of attitude or response to interprofessional education (IPE). This obstacle is most often caused by a lack of introduction of the IPE system in the student curriculum. One real example of the effect of this is the lack of communication and teamwork skills among students in the same profession or between professions who prefer to act individually.

Research Method

This review uses relevant articles published with keywords of interprofessional education, collaboration, medicine, and education in the last 10 years and the latest update from the World Health Organization. The search was carried out on Google Scholar and Pubmed with appropriate keywords and time range. Before use, the journal is first reviewed regarding the content and evidence-based medicine based on the current world health system. The author eliminates biases such as race, culture, and religion and excludes articles that do not meet the criteria. There are 75 journals that we found that correlate with the keywords, then we sorted the journals based on the criteria into 40 sources originating from journals, books, or WHO guidelines that have a correlation with the topic that we will discuss further.

The formulation of the relevant research point of view of this review article is the medical problem that is still widespread today, namely the existence of health outcomes that do not meet WHO targets. The lack of collaboration and understanding between health workers, including doctors, nurses, and others, means that collaboration between health professionals does not work well. Therefore, an early approach to IPE is something that is of concern and is the key to implementing practical or theoretical concepts and issues.

Result and Discussion

Definition and Scope of Interprofessional Education (IPE)

IPE is a mechanism of collaboration between many disciplines that require people with similar backgrounds, in this example, health workers. In order to facilitate efficient cooperation and achieve the shared objective of excellent health systems, collaboration happens when two or more experts learn about, from, and with one another (Diggele et al., 2020). The objectives for which the idea of IPE was initiated and the learning objectives of IPE activities were adapted to the existing interprofessional competency framework or criteria. IPE core competencies can be summarized into five parts, namely roles and responsibilities, ethical practices, conflict resolution, communication, and collaboration and teamwork. These parts may not be able to be done simultaneously, of course, you have to pay attention to the problems, conditions, human resources, or workforce in the area (Diggele et al., 2020); (Karam et al., 2018). According to a systematic review by Vaseghi, Hossein, and Raeisi, 2022 on Interprofessional Collaboration Competencies in Health Systems, IPE is recommended into 6 parts namely: “patient-centered

care,” “interprofessional communication,” “participative leadership,” “conflict resolution,” “transparency of duties and responsibilities,” and “work team”. It is hoped that these 6 competencies will synergize with each other and become the basis for good collaboration between health workers to obtain an IPE that can prioritize the interests or desired health outcomes (Vaseghi et al., 2022).

There will be challenges in implementing IPE, of course, and they will vary from nation to nation. Therefore, this review article will explain several IPE achievement standards used in several countries. These benchmarks are usually adapted to the conditions of a country or continent with its health problems. Several things are of concern in the implementation of IPE, such as asymmetric developments in medical education, changes in disease patterns and lifestyles, lack of integration and less advanced thinking, as well as a lack of horizontal and vertical integration of the curriculum. Apart from that, the problem that is the main obstacle is communication, communication between health workers, communication between health workers and patients, inadequate interaction between institutions, lack of commitment in the education system towards social responsibility, and weak justice in meeting health service needs. Therefore, it is very necessary to have benchmarks for IPE achievements and regular evaluations to see developments in medical problems so that IPE goals can always be adjusted to medical problems and remain focused on the welfare of health workers and patients (Mafinejad et al., 2016); (Ahmady et al., 2020).

Application and Benefit of IPE

A vital part of medical students' education is interprofessional education, which attempts to increase healthcare professionals' cooperation and communication in order to provide better patient care and results (Jonathan et al., 2019). Through interprofessional education, medical students have the opportunity to learn alongside students from other healthcare disciplines, such as nursing, pharmacy, and physiotherapy. This collaborative learning environment allows them to develop a more comprehensive understanding of the roles and responsibilities of different healthcare professionals, as well as learn effective communication strategies when working in a team-based healthcare setting (Griffiths et al., 2021). By engaging in interprofessional education, medical students can develop essential skills in collaboration, teamwork, and communication, which are vital for providing patient-centered care in today's complex healthcare system (Diggele et al., 2020).

Furthermore, interprofessional education in medical students also helps to break down professional silos and create a more cohesive healthcare workforce. This, in turn, leads to improved coordination and continuity of care for patients, as healthcare professionals from various disciplines collaborate more effectively. Interprofessional education also encourages a holistic approach to patient care, as medical students gain insight into the unique perspectives and expertise of other healthcare professionals. Overall, the application of interprofessional education in medical students prepares them to become competent, collaborative, and adaptable healthcare professionals who are capable of working effectively in multidisciplinary teams, ultimately benefiting the overall health and well-being of patients. In summary, interprofessional education in medical students has several applications and benefits, including enhancing collaboration and communication skills, facilitating a more comprehensive understanding of different healthcare professional roles, breaking down professional silos,

improving coordination and continuity of care, promoting a holistic approach to patient care, and preparing medical students to work effectively in multidisciplinary teams (Zechariah et al., 2019).

Success Indicators of The IPE Program

Indicators for the success of implementing IPE in the world of health will vary depending on the perspective taken or the region/country implementing IPE. Because IPE reflects the readiness and development of a country's health system, the benchmark for IPE success certainly has several standards. However, in certain regions or countries, there are standards based on similarities in development and the health system adopted. Below we will describe several indicators of IPE success based on several agreements or guidelines.

1. **The Interprofessional Collaborative Competency Attainment Survey (ICCAS)**

A technique called ICCAS was created to evaluate physicians' and students' self-reported interprofessional care competence (Archibald et al., 2014a). After taking interprofessional education courses, respondents rate their agreement with 20 retrospective pre- and post-questions about their self-assessed skills (Lunde et al., 2021a). Five domains are included in the survey: roles and duties, communication, teamwork, and conflict management. The efficiency of interprofessional education courses and the influence of interprofessional simulations on students' self-reported competences have both been assessed using the ICCAS in a number of research. The survey is a reliable instrument for assessing interprofessional collaboration competencies and has shown strong internal consistency (Archibald et al., 2014b)(Lunde et al., 2021b) (Kalabalik et al., 2017).

2. **The Readiness for Interprofessional Learning Scale (RIPLS)**

A method called RILS is used to evaluate how health professions students handle IPE. The scale was created to assess students' preparedness for collaborative healthcare practice and their capacity for productive teamwork with other medical specialists (Hassan et al., 2022). The four domains of RIPLS include duties and responsibilities, positive and negative professional identities, and cooperation and collaboration. The measure, which consists of 19 statements divided into these four domains, is used to evaluate health professional students' preparedness for interprofessional education. Numerous studies have used the scale to assess students' preparedness for interprofessional learning in a range of healthcare education settings, including programs in medicine, dentistry, nursing, and pharmacy (Jha et al., 2022)(Almazrou & Alaujan, 2022)(Yasin et al., 2023).

3. **Interdisciplinary Education Perception Scale (IEPS)**

IEPS is a tool used to assess the perceptions of collaboration and interdisciplinary education among healthcare professionals and students. It measures how well individuals understand and value the importance of teamwork and collaboration in their professional practice. The IEPS has been adapted and validated in various contexts, such as healthcare, social care, and paramedic education (Ganotice & Chan, 2019). Aspects like the value of interprofessional cooperation, self-evaluation of certain behavioural goals on the medical care team, and the perspective of interdisciplinary education are among the IEPS's domains (Ino et al., 2018).

4. Collaborative Practice Assessment Tool (CPAT)

CPAT assisted direct patient care professionals in determining their interprofessional collaborative team practices' strong points and potential areas for improvement. Mission, meaningful purpose, goals, general relationships, team leadership, general role responsibilities, autonomy, conversations and information sharing, community connections and care coordination, decision-making and dispute resolution, and patient involvement are all included in the CPAT domain (Fisher et al., 2017).

5. Interprofessional Socialization and Valuing Scale (ISVS)

Self-perceived experiences with interprofessional collaborative cooperation, such as the capacity, worth, and ease of collaborating with others, can be measured using the ISVS. Students in interprofessional education programs, like Wayne State University's Interprofessional Team Visit (IPTV) program, which exposes medical, nursing, occupational therapy, pharmacy, physical therapy, physician assistant, dental, and social work students to working in a collaborative team during an older adult home visit assessment, had their educational experiences evaluated using the ISVS tool (Mendez et al., 2020).

Impact of IPE on Medical Students

Interprofessional education has a significant impact on medical students by promoting collaborative practice, improving communication skills, enhancing understanding of different healthcare roles, and ultimately improving patient care outcomes (Dyess et al., 2019). Medical students have the chance to study and work together with healthcare professionals from different disciplines through interprofessional education (Ambwani & RK, 2017). They become more aware of how crucial teamwork is to delivering comprehensive patient care. They get good communication skills from this interdisciplinary approach, which teaches students how to work and interact with professionals from various background. (Vanderwielen et al., 2014). Furthermore, interprofessional education fosters a deeper appreciation and understanding of the unique roles and expertise of different healthcare professionals. This can lead to more efficient and effective healthcare delivery as medical students learn to work together with other professionals in a coordinated manner (Bressler & Persico, 2016). Overall, interprofessional education plays a vital role in shaping well-rounded and competent healthcare professionals who are prepared to provide holistic and patient-centered care in today's complex healthcare landscape (Israbiyah & Dewi, 2016).

In Indonesia, IPE also has a significant impact on the health development system. One example is the implementation of IPE at the Faculty of Medicine and Faculty of Pharmacy Muhammadiyah University of Surakarta, the results of perception measurements show that 87.1% of students have a good perception of IPE and only 11.4% have a moderate perception (Israbiyah et al., 2016). The study's findings demonstrated that general medicine and pharmacy students have a positive opinion of the IPE in relation to the value of interprofessional collaboration. This demonstrates how the IPE learning approach will help students become more proficient in interprofessional collaboration. In order to conduct research on all students' health education at Universitas Muhammadiyah Surakarta, it is therefore expected that health education institutions, including physicians, pharmacies, nurses, nutritionists, physiotherapists, etc., will perform and more consistently use IPE. Additionally, student health education can

collaborate with one profession while also incorporating care services for patients from each field (Manuaba IBAP & MVW, 2023). According to nursing research conducted in Surakarta, Indonesia, IPE in Indonesia plays a role in 2 important things, IPE is useful in increasing caring attitudes towards patients and colleagues and IPE provides real experience about how professional practice processes in clinical and community settings. These two things play an important role in the success of the health system in Indonesia because Indonesia has high human values and looking at the whole collaboration between Health workers makes the Indonesian Health system more valuable and upholds humanitarian goals for patients (Amelia Ze Chua et al., 2015).

Some of the studies conducted in Asia have shown that interprofessional education has a positive impact on medical students (Lateef, 2019). For instance, medical students who took part in interprofessional education programs reported better teamwork abilities and a greater comprehension of the duties and obligations of other healthcare providers, according to a Singaporean study (Roslan et al., 2016). Another Malaysian study found that medical students who took part in interprofessional education had a greater understanding of the value of communication and teamwork in the healthcare industry (Chan et al., 2017a). Interprofessional education has a generally positive effect on medical students in Asia; research indicates that it can improve cooperation, teamwork abilities, and comprehension of other medical experts, which will ultimately result in better patient care and results (Chan et al., 2017b). Furthermore, it has been acknowledged that interprofessional education can assist in addressing the difficulties and intricacies of the Asian healthcare system, such as the rising incidence of chronic illnesses, shifting patient demographics, and rising healthcare demands.

Conclusion

The increasing complexity of health problems and the greater variety of diseases means that collaboration between all basic lines of the health system must be sought and intensified from an early age. IPE has a positive impact on medical students by promoting collaborative practice. Early introduction of IPE in the Health Education system is very necessary to achieve maximum results in Health services and patient care.

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