



## Original Article

# Developing and Validating Assessment Instruments for Community-Based Interprofessional Education

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### ABSTRACT

**Background:** Interprofessional Education (IPE) prepares health professional students to collaborate effectively and improve patient and community outcomes. Community-based IPE emphasizes authentic learning, cultural sensitivity, and social accountability. This study aimed to develop and validate assessment instruments for evaluating community-based IPE aligned with the Interprofessional Education Collaborative (IPEC) core competencies.

**Methods :** A mixed-methods design was implemented in two stages: instruments development and content validation. Guided by the four IPEC domains, values/ethics, roles and responsibilities, interprofessional communication, and teamwork, three instruments were developed: facilitator assessment, family/community assessment, and peer assessment. Ten experts from medicine, nursing, pharmacy, psychology, and public health evaluated item relevance using a four-point Likert scale. Content validity was analysed using the item-level (I-CVI) and scale-level (S-CVI/Ave) indices.

**Results:** All three instruments demonstrated excellent content validity (I-CVI = 1.00; S-CVI/Ave = 1.00), indicating high expert agreement on relevance and clarity. The multi-source assessment model allows comprehensive evaluation of IPE performance. Facilitator assessments maintain educational standards, family assessments provide patient-centred perspectives, and peer assessments foster reflection, accountability, and teamwork.

**Conclusion:** The validated instruments offer a reliable and context-sensitive framework for assessing IPE competencies in community-based learning. Incorporating multi-source perspectives enhances authenticity and educational alignment, supporting the development of collaborative, ethical, and community-responsive health professionals.

## INTRODUCTION

Interprofessional Education (IPE) has emerged as a critical component in preparing future health professionals to meet the increasingly complex needs of patients and populations. According to the World Health Organization (WHO), IPE occurs

when “students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes”.<sup>1</sup> Effective interprofessional collaboration has been shown to improve patient safety, increase

efficiency in health systems, and enhance the quality of care.<sup>2, 3</sup>

Globally, health systems face challenges related to fragmentation of care, rising prevalence of chronic diseases, and inequities in health outcomes. These challenges highlight the importance of collaborative practice and shared decision-making.<sup>4</sup> IPE addresses this by fostering mutual respect, understanding of professional roles, and skills in teamwork and communication.<sup>5, 6</sup>

Community-based interprofessional education (IPE) represents a pedagogical model that situates collaborative learning within authentic community settings, thereby expanding the scope of interprofessional training beyond traditional classroom and hospital environments. By embedding IPE into communities, students not only interact with one another but also engage with patients, families, and local stakeholders as active partners in care. This approach emphasizes social determinants of health, cultural sensitivity, and responsiveness to local needs.<sup>7, 8</sup> In doing so, community-based IPE cultivates values of empathy, accountability, and social responsibility that are essential for future professionals.<sup>9, 10</sup>

Accumulating evidence highlights that community-based IPE provides synergistic advantages by simultaneously strengthening students' learning outcomes and fostering meaningful contributions to community health promotion and development. Through community-based interprofessional engagement, students acquire authentic experiential learning opportunities that expose them to real-world public health issues, preventive care approaches, and the lived realities of diverse populations.<sup>11, 12</sup> Concurrently, communities derive tangible benefits through health education initiatives, preventive screenings, and collaboratively designed interventions developed in partnership with academic institutions.<sup>8, 13</sup>

In promoting effective IPE practices, the Interprofessional Education Collaborative

(IPEC) articulated four foundational competency domains: (1) values/ethics for interprofessional practice, (2) roles and responsibilities, (3) interprofessional communication, and (4) teams and teamwork.<sup>14</sup> These competencies are widely accepted as a framework for both curriculum development and evaluation. However, assessing student achievement of these competencies in community contexts presents unique challenges. Traditional assessment methods often reliant on written tests, simulations, or clinical observation may not fully capture the nuances of interprofessional learning in community engagement.<sup>15-17</sup>

Accordingly, the use of multi-source and contextually grounded assessment methods has been increasingly endorsed. Integrating insights from facilitators, peers, and community participants provides a more holistic evaluation framework, enabling assessment of students' abilities that extend beyond technical proficiency to include communication skills, collaborative teamwork, and responsiveness to community values and cultural contexts.<sup>18, 19</sup>

The Faculty of Medicine and Health Sciences, Universitas Jambi (FKIK UNJA), comprises five health study programs: Medicine, Pharmacy, Public Health, Nursing, and Psychology. Since 2024, FKIK UNJA has introduced a community-based IPE initiative as part of its undergraduate curriculum. In this program, students are organized into interprofessional groups composed of representatives from each study program. The learning activities are conducted within the service areas of community health centres, where students collaboratively engage in community health projects. Patients and their families are actively involved as community partners or *adopted families*, allowing students to apply interprofessional collaboration skills in authentic community settings while addressing real health needs.<sup>20</sup>

In response to the implementation of community-based IPE within the undergraduate curriculum of FKIK Universitas Jambi, this study aims to establish a structured and contextually relevant assessment framework for evaluating interprofessional learning in community settings. The research specifically focuses on the design, development, and validation of three complementary assessment instruments namely, facilitator assessment, community or family assessment, and peer assessment, each aligned with the four core competency domains of the Interprofessional Education Collaborative (IPEC). The ultimate goal is to ensure a reliable and comprehensive mechanism to assess students' interprofessional competencies as demonstrated through real engagement with communities.

**METHODS**

This study employed a mixed-methods design consisting of qualitative item development followed by quantitative content validation. In the first stage, three assessment instruments were developed. The process of item generation was guided by the four IPEC competencies. Four experts in medical education and interprofessional

learning were involved in iterative reviews and discussions.

The second stage consisted of quantitative content validation with ten experts representing diverse health professions, including medicine, nursing, psychology, pharmacy, and public health. Each expert independently evaluated the relevance of every item using a four-point Likert scale, where 1 indicated "not relevant" and 4 indicated "highly relevant.". Items with I-CVI values equal to or greater than 0.78 were considered acceptable. To evaluate the overall validity of each instrument, the Scale Content Validity Index (S-CVI/Ave) was computed as the mean of the I-CVI scores, with values equal to or greater than 0.90 regarded as evidence of excellent scale validity.<sup>21, 22</sup>

**RESULTS AND DISCUSSION**

This study produced three assessment instruments tailored for community-based IPE: (1) facilitator/field instructor assessment, (2) family assessment, and (3) peer assessment. Each instrument was mapped to the four IPEC competencies namely values/ethics, roles and responsibilities, interprofessional communication, and teamwork.

**Table 1.** Facilitator/Field Instructor Assessment Instrument

IPEC Competency	Item	Response Scale
Values/Ethics	All group members are able to apply appropriate ethics and professional conduct toward fellow group members, facilitators, instructors, and community/family members involved	1 = Strongly Disagree, 4 = Strongly Agree
Roles/Responsibilities	All group members are able to carry out their roles and responsibilities in accordance with the boundaries of their respective professions	1 = Strongly Disagree, 4 = Strongly Agree
Interprofessional Communication	The group is able to establish effective communication, both among group members and with the community	1 = Strongly Disagree, 4 = Strongly Agree
Teams and Teamwork	Able to collaborate effectively throughout all community-based IPE activities Able to manage internal group conflicts effectively	1 = Strongly Disagree, 4 = Strongly Agree

Content validation involving 10 experts yielded I-CVI = 1.00 for all items and S-CVI/Ave = 1.00, indicating excellent content validity across all instruments. Such high content validity suggests the instruments comprehensively capture the intended interprofessional competencies with clarity and appropriateness. In practical terms, the strong consensus among experts reinforces that each instrument's content is well-aligned with the competencies and context it aims to measure, lending credibility to their use. This is particularly important because existing IPE assessments are often limited to classroom or simulation-based environments.<sup>15</sup>

A notable strength of this study lies in its utilization of a multi-source, contextually grounded assessment framework, which holds particular significance for evaluating learning outcomes in community-based interprofessional education. Each student team was evaluated by facilitators /field instructors, peers, and family/community members, embodying a 360-degree feedback model. Multi-source assessment is recognized in health professions education as a way to obtain richer and more reliable information on learners' collaborative performance.<sup>23, 24</sup>

**Table 2.** Family Assessment Instrument

IPEC Competency	Item	Response Scale
Values/Ethics	<ul style="list-style-type: none"> <li>Respecting our beliefs regarding health issues within our family</li> <li>Acting politely and showing respect toward others.</li> </ul>	1 = Strongly Disagree, 4 = Strongly Agree
Roles/Responsibilities	<ul style="list-style-type: none"> <li>The student group is able to convince us to jointly address our family's health problems</li> </ul>	1 = Strongly Disagree, 4 = Strongly Agree
Interprofessional Communication	<ul style="list-style-type: none"> <li>The explanation of health problems is easily understood by all members of our family</li> </ul>	1 = Strongly Disagree, 4 = Strongly Agree
Teams and Teamwork	<ul style="list-style-type: none"> <li>The student group is able to collaborate effectively with our family</li> <li>We feel comfortable with the overall activities conducted by the student group in relation to our family's health issues</li> </ul>	1 = Strongly Disagree, 4 = Strongly Agree

Assessment by facilitator is essential for maintaining educational quality and ensuring that IPE aligns with curriculum standards. By employing systematic observation and standardized tools, facilitators are able to evaluate students' competencies.<sup>25, 26</sup>

Including family and community members in the assessment process adds significant educational value, it brings the patient/family's voice into evaluation of interprofessional behaviours. Research has shown that patient and family views of teamwork can differ from health providers' perspectives, and that these views are often underrepresented. By soliciting feedback from families, our instruments capture

dimensions of teamwork and communication such as empathy, respect for beliefs, and clarity of explanations, that are directly relevant to patient-centred care.<sup>27</sup>

Peer assessment within community-based interprofessional education serves as an effective approach to strengthening students' collaborative competencies and fostering the development of essential interprofessional skills. Studies show that the integration of peer evaluation within interprofessional learning contexts enhances communication across disciplines and promotes active engagement in teamwork. Furthermore, it enriches the educational experience by fostering critical self-awareness and encouraging reflective

learning among students.<sup>18, 28</sup> In addition, peer assessment reinforces personal accountability within interprofessional teams, promoting shared responsibility and fostering a greater sense of interdependence among learners.<sup>29</sup> These findings emphasize the pedagogical importance of peer assessment

within community-based interprofessional education, as it promotes essential competencies such as effective communication, collaborative teamwork, critical reflection, and shared accountability among students.

**Table 3.** Peer Assessment Instrument

IPEC Competency	Item	Response Scale
<b>Values/Ethics</b>	<ul style="list-style-type: none"> <li>Acting ethically toward all stakeholders</li> <li>Attending group activities on time</li> <li>Demonstrating politeness toward peers, across and within professions</li> <li>Showing respect to community members (families, local leaders, etc.)</li> </ul>	1 = Strongly Disagree, 4 = Strongly Agree
<b>Roles/Responsibilities</b>	<ul style="list-style-type: none"> <li>Understanding and fulfilling tasks and responsibilities according to agreed group roles</li> </ul>	1 = Strongly Disagree, 4 = Strongly Agree
<b>Interprofessional Communication</b>	<ul style="list-style-type: none"> <li>Ability to communicate effectively with the team and foster families</li> <li>Communicating clearly and understandably</li> <li>Respecting others' opinions during communication</li> </ul>	1 = Strongly Disagree, 4 = Strongly Agree
<b>Teams and Teamwork</b>	<ul style="list-style-type: none"> <li>Ability to work together with peers</li> <li>Managing conflicts during teamwork</li> <li>Engaging actively in group activities (from situational analysis to final reporting)</li> </ul>	1 = Strongly Disagree, 4 = Strongly Agree

## CONCLUSION

This study established and validated three reliable instruments namely facilitator, family, and peer assessments for evaluating community-based interprofessional education. Each demonstrated excellent content validity offering a contextually grounded and comprehensive framework aligned with IPEC competencies to assess collaboration, communication,

professionalism, and ethical performance in real community settings.

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