**Integrating Self-Regulated Learning and Interprofessional Collaboration: A Qualitative Study to Inform Healthcare Professional Education**

**ABSTRACT**
Background: Interprofessional collaboration (IPC) is important to coordinated healthcare, and is commonly discussed in relation to patient safety. Healthcare professionals may also draw on self-regulatory processes to prepare for tasks, coordinate work, reflect on team activity, and pursue continuing development. This study explored healthcare professionals' perceptions and reported practices of IPC through an SRL–IPC matrix framework. Methods: A descriptive qualitative study was conducted with ten healthcare professionals at Ulin Regional General Hospital, Banjarmasin, Indonesia, selected through purposive sampling. Data were collected through semi-structured in-depth interviews and analyzed using Braun and Clarke's thematic analysis, with NVivo supporting data organization and coding. The analysis was guided by four SRL dimensions and five IPC competency domains. Results: The analysis identified 46 significant statements, organized into 30 categories, 14 subthemes, and five overarching themes. The themes concerned the relationship between SRL and IPC; clinical task strategies and professional role clarification; clinical time management and team function synergy; management of disagreements and collaborative leadership; and learning and continuing professional development. Communication appeared in accounts across several SRL–IPC intersections. Participants also discussed feedback, reflection, shared learning, and digital communication in professional practice. Conclusion: These context-specific findings offer preliminary insights into how healthcare professionals describe self-regulation in interprofessional collaboration. The SRL–IPC matrix may be explored further as an analytical aid for educational design and competency assessment. Additional research is needed before drawing conclusions about its validity or effects on educational outcomes or patient safety.
**Keywords**: interprofessional collaboration, self-regulated learning, patient safety culture, qualitative research.

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## 1. INTRODUCTION

Patient safety is a global public health priority. The World Health Organization has highlighted the continuing burden of avoidable harm in healthcare and the need to strengthen patient-safety systems [1]. Broader analyses have also identified poor-quality care and barriers to accessing quality health services as important health-system concerns [2,3]. Within this context, interprofessional collaboration (IPC) is considered an important approach to coordinating healthcare activities across professional boundaries and addressing patients' complex needs.

IPC involves healthcare professionals from different disciplines working together to provide coordinated and comprehensive patient care [4–6]. Effective collaboration requires professionals to communicate relevant information, understand their respective roles and responsibilities, coordinate clinical activities, and contribute to shared patient-related goals. Interprofessional communication is particularly important for maintaining continuity and safety of care, including in healthcare settings with limited resources [7]. Interprofessional education and simulation-based approaches have also been used to strengthen team performance and address medication-error risks [8]. Qualitative research on digitally supported hospital discharge planning further illustrates the experiences and challenges associated with interprofessional collaboration in clinical practice [9]. Although these studies support the importance of IPC, the relationship between individual learning and self-regulatory processes and professionals' everyday collaborative practices remains an area that warrants further exploration in healthcare professional education.

Self-regulated learning (SRL) provides a perspective for understanding how individuals plan, monitor, manage, and evaluate their learning and activities. Previous research has examined SRL in medical education, particularly in relation to learning outcomes and instructional approaches [10,11]. Research on individual and socially shared regulation in collaborative learning also offers relevant concepts for understanding how planning, monitoring, and reflection may occur during group activities [12,13]. Meanwhile, IPC literature emphasizes competencies such as professional values and ethics, role clarification, interprofessional communication, teamwork, and collaborative leadership [14]. Although SRL and IPC address related aspects of professional activity, they represent distinct perspectives. SRL primarily concerns how individuals regulate their learning and actions, whereas IPC concerns how professionals coordinate and work together across disciplinary boundaries. Examining these perspectives together may therefore help describe how individual self-regulatory processes are reflected in participants' accounts of interprofessional practice. This study does not assume that SRL necessarily improves collaboration or produces better patient outcomes.

For this study, an SRL–IPC analytical matrix was constructed by cross-referencing four SRL dimensions with five IPC domains. The four SRL dimensions comprised planning and self-motivation, task strategies, time and learning-environment management, and evaluation of learning outcomes. The five IPC domains used in this study comprised professional values and ethics, role and responsibility clarification, interprofessional communication, teamwork, and collaborative leadership. These IPC domains represent the operational framework adopted for this study and should not be interpreted as five domains formally specified by the Interprofessional Education Collaborative (IPEC) Core Competencies Version 3, which was used as a related competency reference [14].

Cross-referencing the four SRL dimensions with the five IPC domains resulted in 20 possible analytical intersections. These intersections provided a structured perspective for exploring how individual self-regulatory processes were described in different aspects of collaborative practice. For example, planning and self-motivation could be considered in relation to preparation for interprofessional communication, while task strategies and time management could be examined in relation to role clarification and team coordination. Similarly, evaluation of learning outcomes could provide a perspective for interpreting participants' reflections on teamwork and collaborative activities. The matrix was used to organize the interview topics and support the initial mapping and interpretation of participants' accounts. However, it was not treated as a measurement instrument, a set of predetermined findings, or a validated theoretical model. The analysis remained open to additional meanings and patterns emerging from the interview data. The study did not systematically evaluate the matrix's validity, reliability, completeness, or superiority over other analytical frameworks.

The contribution of this study is contextual and exploratory. Rather than proposing or validating a new theoretical model, the study uses the SRL–IPC matrix as a study-specific analytical aid to examine how healthcare professionals describe self-regulatory processes in interprofessional collaborative practice. Drawing on interviews with ten healthcare professionals from different professional backgrounds at a single tertiary referral hospital, the study provides context-specific insights into reported practices related

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to motivation, task strategies, role clarification, time management, coordination, reflection, and continuing professional learning.

These findings may inform further discussion about the integration of individual learning processes and interprofessional competencies in healthcare professional education. Nevertheless, the study does not establish the validity, generalizability, or practical effectiveness of the matrix. Its applicability in other healthcare settings and its potential use in educational design require further investigation.

This study aimed to explore how healthcare professionals perceive and describe self-regulatory processes in interprofessional collaborative practice at a tertiary referral hospital in Indonesia. Specifically, it examined participants' accounts of planning and self-motivation, task strategies, time and learning-environment management, and evaluation of learning outcomes across the five IPC domains. Using the SRL–IPC matrix as an analytical guide, the study sought to identify reported learning processes and collaborative practices that may inform future discussions on interprofessional education and healthcare professional development. This article presents a descriptive qualitative study and does not evaluate an educational intervention, test causal relationships, or assess effects on patient outcomes.

## 2. METHODS

### 2.1 Research Design

This study employed a descriptive qualitative design to explore healthcare professionals' experiences, perceptions, and self-regulatory processes in interprofessional collaborative practice. The study focused on how healthcare professionals described their involvement in collaborative activities and how individual learning processes were reflected in their accounts of professional interactions, communication, and teamwork. A descriptive qualitative approach was considered appropriate because the study aimed to obtain context-specific descriptions of professional experiences rather than to test causal relationships or evaluate the effectiveness of an educational intervention.

The analysis was informed by self-regulated learning (SRL) theory [15] and the Interprofessional Education Collaborative (IPEC) Core Competencies for Interprofessional Collaborative Practice [14]. These perspectives were brought together through a study-specific SRL–IPC analytical matrix. The matrix provided an organizing framework for exploring self-regulatory processes across the IPC domains. It was used as an analytical aid and was not treated as a validated measurement instrument or a quantitative model.

### 2.2 Setting and Participants

The study was conducted at Ulin Regional General Hospital, a Class A tertiary referral hospital in Banjarmasin, South Kalimantan, Indonesia. The hospital has been involved in the implementation of interprofessional education and interprofessional collaboration since 2017, providing a relevant setting for exploring collaborative practices among healthcare professionals. Ten healthcare professionals were recruited using purposive sampling. Recruitment and data collection took place between January and March 2026. The recruitment process began with the identification of relevant personnel through the hospital registration department. Permission was subsequently obtained from the Human Resources Department (HRD).

The Quality Service Department then reviewed relevant service information and recommended Primary Person in Charge (PPJA) staff from inpatient wards who met the study criteria. The researcher approached the recommended candidates, explained the study, and invited eligible professionals to participate.

The inclusion criteria were: (1) healthcare professionals directly involved in patient care and interprofessional teamwork in inpatient care units; (2) professionals with demonstrable experience in interprofessional collaborative practice, supported by documentation such as team meeting minutes or collaborative notes in integrated patient progress records (CPPT); and (3) willingness to participate in the study. The exclusion criteria were: (1) healthcare professionals who had worked for less than one year in their current unit; and (2) professionals who were on extended leave during the data collection period.

The participants represented four professional groups: nursing (n = 5), medicine (n = 2), pharmacy (n = 1), and dietetics (n = 2). Their ages ranged from 30 to 57 years, and their professional experience ranged from 5 to 37 years, with a mean of 15.3 years. Eight participants were women and two were men. These characteristics were reported descriptively and were not used to make comparisons between professional or sex groups.

Data collection continued until the tenth interview. The researchers considered thematic saturation to have been reached when the subsequent analysis did not identify new themes. This decision was based on the development of themes during the concurrent process of data collection and analysis. The researcher conducted the interviews and had no close personal relationship with the participants.

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Table 1. Participant Characteristics (n = 10)

| No. | Participant code | Profession | Age (years) | Sex | Work experience (years) |
|---|---|---|---|---|---|
| 1 | P1 | Pharmacist | 53 | Woman | 10 |
| 2 | P2 | Dietitian | 30 | Woman | 5 |
| 3 | P3 | Dietitian | 57 | Woman | 37 |
| 4 | P4 | Nurse | 46 | Man | 25 |
| 5 | P5 | Nurse | 45 | Woman | 22 |
| 6 | P6 | Physician | 45 | Woman | 9 |
| 7 | P7 | Nurse | 34 | Woman | 14 |
| 8 | P8 | Physician | 55 | Woman | 20 |
| 9 | P9 | Nurse | 50 | Woman | 6 |
| 10 | P10 | Nurse | 32 | Man | 5 |

Participants ranged in age from 30 to 57 years and had 5–37 years of work experience (mean, 15.3 years). The sample comprised eight women and two men. Participants represented four professional groups: nursing (n=5), medicine (n=2), pharmacy (n=1), and dietetics (n=2). Sex was reported descriptively; no gender-based comparison was conducted.

### 2.3 Data Collection

Data were collected through semi-structured, face-to-face, in-depth interviews lasting approximately 45–90 minutes. Interviews were conducted in a designated meeting room at the hospital to provide a suitable setting for participants to discuss their professional experiences. The researcher conducted the interviews using a semi-structured interview guide developed from relevant literature and organized around the SRL–IPC analytical matrix. The interview guide covered four SRL dimensions: (1) planning and self-motivation; (2) task strategies; (3) time and learning-environment management; and (4) evaluation of learning outcomes. These dimensions were explored in relation to five IPC domains: (1) professional values and ethics; (2) role and responsibility clarification; (3) interprofessional communication; (4) teamwork; and (5) collaborative leadership.

The interview guide was reviewed by three experts: one with expertise in psychology, one in medical education, and one hospital-based expert. Following the expert review, the guide was piloted with one member of the hospital service team to assess the clarity and comprehensibility of the questions. The pilot indicated that the questions were understandable. No repeat interviews were conducted. All interviews were audio-recorded, and field notes were prepared to document relevant contextual information.

The interviews were conducted in Indonesian. Audio recordings were transcribed in Indonesian, and participants were given the opportunity to review their interview transcripts to check the accuracy of the recorded accounts. Selected quotations used in the English-language manuscript were translated from Indonesian into English while retaining the intended meaning of the participants' statements.

### 2.4 Data Analysis

The interview data were analyzed using thematic analysis based on the six phases described by Braun and Clarke [30]: familiarization with the data, generating initial codes, searching for potential themes, reviewing themes, defining and naming themes, and producing the analytical report. NVivo software was used to support data organization and coding. The analytical process combined deductive and inductive elements. The SRL–IPC matrix provided an initial deductive structure for organizing relevant statements according to the four SRL dimensions and five IPC domains. At the same time, the analysis remained open to additional codes, categories, and patterns that emerged from participants' accounts and were not fully represented by the initial matrix. The matrix therefore guided the organization and interpretation of the data without restricting the analysis to its predefined intersections.

The lead researcher conducted the initial coding of all interview transcripts and developed the preliminary categories and themes. The research team discussed the developing interpretations. When differences in interpretation arose, the relevant transcripts and supporting extracts were revisited and compared to examine whether the interpretations were adequately grounded in participants' accounts. The developing themes were reviewed against the coded data and supporting interview extracts. Independent double-coding was not performed.

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Analysis was conducted alongside data collection, allowing emerging patterns to be considered during subsequent interviews. The absence of new themes in the later analysis informed the decision that thematic saturation had been reached after ten interviews.

The final analysis organized 46 significant statements into 30 categories, 14 subthemes, and five overarching themes. The SRL–IPC matrix was used to indicate conceptual relationships between the themes, SRL dimensions, and IPC domains. These analytical links were interpretive rather than statistical and did not represent measured relationships or evidence of causality. The findings were interpreted as participants' reported experiences and perceptions of collaborative practice, rather than as direct observations of team behavior or evidence of the effectiveness of an educational intervention.

### 2.5 Ethical Considerations

Ethical approval for this study was obtained from the Health Research Ethics Committee of the Faculty of Medicine and Health Sciences, Universitas Lambung Mangkurat (Approval No. 223/KEPK-FKIK ULM/EC/VI/2025). Participants were informed about the purpose and procedures of the study before participation. Participation was voluntary, and participants' identities were protected through the use of participant codes in reporting the findings.

## 3. RESULTS

Analysis of interviews with ten healthcare professionals yielded 46 significant statements. These statements were organized into 30 categories, 14 subthemes, and five overarching themes. The themes represented participants' accounts of motivation for collaboration, professional task strategies, role clarification, time management, disagreement management, collaborative leadership, and continuing professional learning. Table 2 presents the hierarchical organization of the findings and their interpretive links to the SRL dimensions and IPC domains. The analytical counts describe the organization of the qualitative data and should not be interpreted as measures of prevalence or frequency among participants.

Table 2. Hierarchical Structure of Themes, Subthemes, Categories, and SRL–IPC Domains

| Final theme | SRL dimension / phase | Related IPC domain(s) | Subthemes | Illustrative categories |
|---|---|---|---|---|
| 1. Relationship between SRL and IPC | Forethought: motivation and planning | Values and ethics; roles and responsibilities; teamwork | Patient-centred motivation and care planning | Recovery motivation; patient advocacy; patient mapping; monitoring; care planning |
| 2. Clinical Task Strategies and Professional Role Clarification | Performance: implementing strategies | Roles and responsibilities; communication; teamwork | Professional discipline and competency development; documentation and technology use; work scheduling; problem-solving in service delivery; team coordination and communication strategies | Professional standards; consistent learning; digital documentation; task delegation; task prioritization; shared terminology; trust-building communication |
| 3. Clinical Time Management and Team Function Synergy | Performance: time and task management | Roles and responsibilities; communication; teamwork | Professional role clarity; interprofessional communication; clinical data clarification and decision-making | Professional boundaries; schedule coordination; data clarification; team discussion; information validation; team evaluation |
| 4. Management of Disagreements and Collaborative Leadership | Self-reflection: evaluation and adaptation | Values and ethics; communication; teamwork; collaborative leadership | Collaborative achievements and success indicators; communication barriers and conflict resolution; shared values and principles; situational collaborative leadership | Patient safety; patient outcomes; patient satisfaction; dialogue to resolve disagreement; mutual accountability; role-based leadership; collective review |

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| Final theme | SRL dimension / phase | Related IPC domain(s) | Subthemes | Illustrative categories |
|---|---|---|---|---|
| 5. Learning and Continuing Professional Development | Self-reflection: learning from experience and feedback | Communication; teamwork; roles and responsibilities | Continuing professional learning and development | Knowledge development; new perspectives; self-awareness; feedback and criticism; reflection on learning |

Note: The SRL dimensions represent interpretive links to the analytical framework and are not separate measured variables. IPC domains indicate the principal collaboration competencies reflected in each theme. A theme may be associated with more than one IPC domain. The categories and subthemes represent the organization of qualitative data rather than the prevalence of specific experiences among participants.

### *3.1 Theme 1: Relationship between SRL and IPC*

Participants described patient-centred values and professional responsibilities as reasons for engaging in interprofessional collaboration. A nurse emphasized the advocacy component of nursing practice:

> "Nurses not only provide services to patients, but also act as advocates. We are patient advocates." (P4, Nurse)

The pharmacist described collaboration in relation to the responsibilities of clinical pharmacy, particularly monitoring medication effectiveness and preventing adverse effects:

> "...yes, I returned it according to the job description as a clinical pharmacist in the room, so usually related to that, what we do in clinical pharmacy is monitoring effectiveness, preventing unwanted side effects." (P1, Pharmacist)

Similarly, a dietitian emphasized the importance of collaboration for addressing patients' needs:

> "Of course, it's for the common good, especially for the patients. Collaboration is necessary, because there are certain conditions that require us to collaborate." (P2, Dietitian)

Participants also described preparation for collaborative work through identifying patients who required particular attention. One nurse explained this process as follows:

> "We can start by mapping out the patients I encounter and identifying which ones need more attention." (P9, Nurse)

These accounts illustrate how participants associated motivation and preparation with patient needs, professional responsibilities, and the identification of patients requiring collaborative attention.

### *3.2 Theme 2: Clinical Task Strategies and Professional Role Clarification*

Participants described several strategies used in clinical work, including adherence to professional standards, continuous learning, documentation, use of technology, problem-solving, and communication across professional boundaries.

The pharmacist described the use of professional standards and clinical assessment to identify medication-related problems:

> "The strategy is because, for example, if we start by reading the existing standards, it's usually like this: this year we encountered side effects, and I encountered side effects, so it's clear that the pharmacy has found a drug-related problem." (P1, Pharmacist)

Professional discipline and continuous learning were also described as responsibilities associated with maintaining professional competence. A dietitian explained:

> "What we do to maintain discipline, Ma'am, shouldn't be considered a burden; it's the responsibility of those responsible. After all, it's our profession, Ma'am, we get paid for it, so we just have to do it." (P2, Dietitian)

Participants also identified differences in professional terminology as an issue that required mutual understanding. One dietitian described the importance of explaining profession-specific terminology to colleagues:

> "The same perception, so perhaps by aligning the terminology used by Nutritionists, we explain it to other PPAs so they understand, and then from them there are also terms that we may not be familiar with." (P2, Dietitian)

Digital tools, including electronic medical records (simGOS), collaborative spreadsheets, WhatsApp, and mobile-phone notes, were also mentioned in relation to routine coordination and documentation. A nurse described communication as a strategy for addressing distrust among colleagues:

> "So far, the strategy used when there is an element of distrust is to first build communication and understand the individual's attitude." (P10, Nurse)

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Overall, participants' accounts described clinical task strategies as involving professional standards, continuous learning, shared understanding of terminology, documentation, and communication to address interpersonal challenges.

### *3.3 Theme 3: Clinical Time Management and Team Function Synergy*

Participants described the coordination of professional schedules and clarification of responsibilities as important considerations in collaborative clinical practice. They explained that identifying the appropriate professional to address a particular patient need was part of coordinating care. A dietitian described this process:

> "Usually, I'd say this isn't from nutrition, it's from pharmacy. You should ask for this from the pharmacy." (P3, Dietitian)

Coordination of clinical schedules was also discussed, particularly in relation to the timing of physician visits. One physician emphasized the importance of synchronizing schedules:

> "Time synchronization is important...if possible, the DPJP, it's best to visit in the morning, a morning visit is the most optimal." (P8, Physician)

Participants also described the use of digital documentation as part of managing information and clinical activities. A pharmacist explained the transition from manual to digital documentation:

> "For me, as I said, I'm starting to document things digitally. Previously, it was like a service, where if someone asked for information, it was all done manually, but now it's digital." (P1, Pharmacist)

In addition to planned coordination, participants described team discussions that occurred in response to complex patient situations. One nurse explained:

> "Actually, it's not scheduled, there's no scheduling, but when there's a patient who has a difficult case or one that needs to be solved together, it happens automatically." (P10, Nurse)

These accounts illustrate participants' descriptions of professional boundaries, schedule coordination, digital documentation, and discussions initiated when patient care required input from more than one profession.

### *3.4 Theme 4: Management of Disagreements and Collaborative Leadership*

Participants described several considerations when evaluating collaborative practice, including patient health, patient safety, financing, and patient satisfaction. A physician associated healthcare improvement with these considerations:

> "Healthcare improvements mean improving the quality of patient health, patient safety, and financing." (P8, Physician)

Another physician described patient safety as an important consideration in professional reflection and competency development:

> "I always keep in mind the main goal, patient safety, and regularly study from journals and discussions with colleagues to improve my competency." (P6, Physician)

Participants also described interpersonal differences and professional dominance as potential sources of disagreement, particularly during handovers. A nurse recounted an approach involving dialogue to address such situations:

> "We sat together because there is one profession that is dominant, for example, we prevent blaming each other, for example, if there is an incident, there is one who is dominant, they may feel they are right, but thank God by sitting together, it is clear." (P9, Nurse)

In addition, participants described professional accountability, discipline, and clarity of responsibilities as principles underlying collaborative work. Leadership was described in relation to the responsibilities and expertise of different professions. Physicians were associated with clinical decision-making, nurses with care coordination, and pharmacists with medication-safety activities. Participants also referred to formal review activities through monthly meetings and annual forums involving clinical and non-clinical representatives.

These accounts describe how participants understood disagreement management, professional accountability, and leadership in their collaborative work.

### *3.5 Theme 5: Learning and Continuing Professional Development*

Participants described interprofessional collaboration as an opportunity to gain knowledge and perspectives beyond their own professional disciplines. A dietitian explained how collaboration contributed to learning beyond the scope of nutrition:

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"I've had a lot of experience, Ma'am. Although my knowledge is limited to nutrition, I've gained a lot of new knowledge through collaboration." (P2, Dietitian)

A nurse described continuous learning as an ongoing professional responsibility:

"With self-awareness, after that, as humans, we must always learn, so we must be consistent, so besides communication, our learning must be continuous, in other words, until the end of our lives." (P10, Nurse)

Feedback and criticism from colleagues were also described as prompts for identifying further learning needs. One nurse explained:

"What I feel is that I want to continue learning, Ma'am, because with the input earlier, it turns out that there are many things I need to learn again." (P9, Nurse)

Participants also described reflecting on new information by comparing it with their previous understanding and experiences. One nurse stated:

"We need to evaluate, ma'am, based on what we learned earlier. So, does this align with my initial understanding, or does it align with what happened?" (P10, Nurse)

These accounts illustrate how participants described continuing professional learning through collaboration, exposure to other professional perspectives, feedback, and individual reflection.

### *3.6 Summary of the SRL–IPC Analytical Mapping*

Table 3 presents representative quotations from participants across the five themes and illustrates how the accounts were interpreted in relation to the SRL dimensions and IPC domains. The mapping indicates conceptual connections between participants' descriptions and the analytical framework. Communication appeared in accounts related to professional preparation, role clarification, coordination, disagreement management, and continuing learning.

The quotations provide illustrative evidence of participants' reported experiences and are not intended to represent the views of all participants or the frequency of particular practices. The analytical mapping is an interpretive representation of the interview data and does not establish causal relationships, validate the SRL–IPC matrix, or demonstrate the effectiveness of collaborative practices.

Table 3. Evidence Matrix Linking the Five Themes, SRL Dimensions, IPC Domains, and Representative Participant Quotations

The matrix presents illustrative quotations from participants in different professional groups for each final theme. The contextual interpretation indicates how each excerpt was mapped to the SRL–IPC analytical framework; it is an analytic reading of the account, not proof of causality, prevalence, or framework validity.

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| Final theme | SRL–IPC connection | Representative quotation and participant code | Contextual interpretation |
|---|---|---|---|
| 1. Relationship between SRL and IPC | Forethought: motivation and planning; patient-centred values, role awareness, teamwork | "Nurses not only provide services to patients, but also act as advocates. We are patient advocates." (P4, Nurse)<br><br>"Of course, it's for the common good, especially for the patients. Collaboration is necessary, because there are certain conditions that require us to collaborate." (P2, Dietitian)<br><br>"…what we do in clinical pharmacy is monitoring effectiveness, preventing unwanted side effects." (P1, Pharmacist) | The excerpts show that motivation for collaboration is described through patient advocacy, shared patient benefit, and profession-specific responsibility. These are examples of planning-oriented motivation, linked to values and ethics and role awareness. |
| 2. Clinical Task Strategies and Professional Role Clarification | Performance: implementing strategies; role clarification, communication, teamwork | "The strategy is because, for example, if we start by reading the existing standards… it's clear that the pharmacy has found a drug-related problem." (P1, Pharmacist)<br><br>"The same perception, so perhaps by aligning the terminology used by Nutritionists, we explain it to other PPAs so they understand…" (P2, Dietitian)<br><br>"So far, the strategy used when there is an element of distrust is to first build communication and understand the individual's attitude." (P10, Nurse) | The quotations illustrate evidence-informed task strategies, shared terminology across professions, and trust-building communication. They connect individual preparation and task execution with role clarification and interprofessional communication. |

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| Final theme | SRL–IPC connection | Representative quotation and participant code | Contextual interpretation |
|---|---|---|---|
| 3. Clinical Time Management and Team Function Synergy | Performance: time and task management; roles and responsibilities, communication, teamwork | "Usually, I'd say this isn't from nutrition, it's from pharmacy. You should ask for this from the pharmacy." (P3, Dietitian)<br><br>"Time synchronization is important… if possible, the DPJP, it's best to visit in the morning, a morning visit is the most optimal." (P8, Physician)<br><br>"Actually, it's not scheduled… when there's a patient who has a difficult case or one that needs to be solved together, it happens automatically." (P10, Nurse) | These accounts illustrate how participants described professional boundaries, timing of clinical input, and the emergence of joint discussion when a case required shared problem-solving. They link task and time management with role clarification and coordination, but do not establish that these practices consistently occur or improve clinical outcomes. |
| 4. Management of Disagreements and Collaborative Leadership | Self-reflection: evaluation and adaptation; values and ethics, communication, teamwork, situational leadership | "Healthcare improvements mean improving the quality of patient health, patient safety, and financing." (P8, Physician)<br><br>"We sat together… we prevent blaming each other… by sitting together, it is clear." (P9, Nurse) | The physician's account identifies patient outcomes and safety as criteria for evaluating collaborative work. The nurse's account describes dialogue as a way to address dominance and reduce blame. Together, the excerpts link evaluation with communication and shared accountability. |
| 5. Learning and Continuing Professional Development | Self-reflection: learning from experience and feedback; communication, teamwork, role awareness | "I've had a lot of experience… I've gained a lot of new knowledge through collaboration." (P2, Dietitian)<br><br>"With self-awareness… we must always learn… our learning must be continuous, in other words, until the end of our lives." (P10, Nurse)<br><br>"What I feel is that I want to continue learning… with the input earlier, it turns out that there are many things I need to learn again." (P9, Nurse) | These excerpts portray collaboration as a source of cross-disciplinary learning and feedback as a prompt for continued self-assessment. The accounts support an interpretation of professional learning as ongoing and socially informed. |

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Note: Participant codes and professional labels correspond to Table 1. Quotations are selected illustrative excerpts from the interview data and are not exhaustive. The contextual interpretations indicate how the excerpts were mapped to the SRL–IPC analytical framework; they do not demonstrate causality, prevalence, or framework validity. DPJP is retained as used in the interview quotation and refers to the attending physician in the local clinical context.

## 4. DISCUSSION

This study explored how healthcare professionals described self-regulatory processes in interprofessional collaborative practice through an SRL–IPC analytical matrix. Five themes were identified: the relationship between SRL and IPC, clinical task strategies and professional role clarification, clinical time management and team function synergy, management of disagreements and collaborative leadership, and learning and continuing professional development. Overall, the findings illustrate how participants described individual preparation, professional responsibilities, coordination, communication, reflection, and learning within their collaborative work. These findings provide context-specific insights into reported professional experiences rather than evidence of causal relationships or objectively observed team performance.

### *4.1 Patient-Centred Motivation and Preparation for Collaboration*

The first theme highlights patient-centred values and professional responsibilities as reasons for engaging in collaborative practice. Participants described collaboration as necessary when patient conditions required contributions from different professional groups. They also referred to patient advocacy, monitoring, and identifying patients who needed additional attention. These accounts can be interpreted in relation to the planning and motivation dimensions of SRL, particularly the role of goals and perceived responsibilities in guiding professional activities [17].

The findings are also consistent with the broader IPC literature, which emphasizes coordination across professional boundaries to address patient needs. Patient-centred motivation may provide an important reason for professionals to seek input from colleagues, although the present study did not examine whether motivation directly influences the quality or frequency of collaboration [18]. Rather, participants' accounts illustrate how patient needs and professional responsibilities were understood as considerations when preparing for collaborative activities.

### 4.2 Clinical Task Strategies and Professional Role Clarification

The second theme describes how participants used professional standards, clinical knowledge, documentation, digital tools, and communication to manage their responsibilities. Participants also highlighted the importance of understanding professional terminology and recognizing the boundaries of each discipline. These accounts suggest that collaborative practice involves both the management of individual professional tasks and the coordination of those tasks with the contributions of other professionals.

From an SRL perspective, the use of professional standards, identification of clinical problems, and continued acquisition of knowledge can be interpreted as task strategies used to guide professional activity [19]. In the IPC context, clarification of roles and responsibilities and the exchange of profession-specific information are relevant to coordinated teamwork [20,21]. The findings therefore illustrate how individual task management may be reflected in participants' descriptions of interprofessional work.

The use of electronic records, collaborative spreadsheets, and digital communication platforms was also mentioned by participants. These tools were described as part of routine documentation and information exchange. However, the findings do not establish whether digital tools improved communication or reduced clinical errors. Their contribution to collaboration would require further investigation using additional data sources, including direct observation of clinical practice.

### 4.3 Clinical Time Management and Team Coordination

The third theme concerns the coordination of professional schedules, clarification of responsibilities, and communication when patient situations require joint discussion. Participants described the importance of knowing which professional should address a particular clinical issue and coordinating the timing of clinical activities. They also reported that some team discussions occurred informally when complex patient situations required shared problem-solving.

These accounts can be considered in relation to the SRL dimensions of task management and time management. At the same time, IPC requires professionals to coordinate their activities and understand

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how their respective responsibilities contribute to patient care [22]. The findings indicate that participants perceived time coordination and role clarification as relevant aspects of collaborative practice. Nevertheless, the interviews did not establish how consistently these processes occurred across clinical units or whether they resulted in more efficient care.

The distinction between planned and situation-driven discussions is also noteworthy. Participants described both scheduled coordination activities and discussions initiated in response to complex cases. This suggests that collaborative communication may occur through formal and informal interactions [23,24]. However, because the study relied on interview accounts rather than direct observation, these descriptions should not be interpreted as a comprehensive assessment of actual team coordination.

### *4.4 Management of Disagreements and Collaborative Leadership*

The fourth theme highlights participants' accounts of professional differences, communication barriers, accountability, and leadership in collaborative practice. Some participants described professional dominance and the possibility of blame during clinical handovers. Dialogue and discussion were identified as ways of addressing differences and clarifying issues. Participants also associated collaborative leadership with professional responsibilities and expertise, including clinical decision-making, care coordination, and medication-related activities.

These findings can be interpreted through the self-reflection dimension of SRL, particularly the consideration of professional performance and the identification of areas requiring improvement. They also relate to IPC competencies involving professional values, communication, teamwork, and collaborative leadership [25,26]. Research on individual and socially shared regulation in collaborative learning provides an additional perspective for considering how reflection and discussion may occur in group activities [27,28,7].

However, the participants' descriptions of dialogue and leadership do not establish that conflict was consistently resolved or that leadership arrangements were equally effective across professional groups. Similarly, the study did not directly observe collective self-regulation or evaluate its effects on patient outcomes. The findings should therefore be understood as participants' accounts of how they perceived disagreement management and leadership within their collaborative work.

### *4.5 Learning and Continuing Professional Development*

The fifth theme describes collaboration as an opportunity to encounter knowledge and perspectives beyond one's own professional discipline. Participants discussed learning from colleagues, receiving feedback, reflecting on previous understanding, and identifying further learning needs. These accounts indicate that participants perceived interprofessional interaction as one context in which professional learning could take place.

This finding is consistent with SRL perspectives that emphasize reflection, evaluation, and the adjustment of learning strategies [30]. Research on collaborative learning also highlights the relevance of individual and shared regulation during learning activities [26,27]. In the present study, participants' accounts suggest that interactions with colleagues may provide opportunities to reconsider existing knowledge and recognize areas for further professional development.

Nevertheless, the study did not measure changes in professional knowledge, competence, or clinical performance. It also did not evaluate a formal interprofessional education programme. Therefore, the findings identify continuing learning and feedback as relevant experiences described by participants, rather than demonstrating the effectiveness of collaboration as an educational intervention.

### *4.6 Communication Across the SRL–IPC Analytical Matrix*

Communication appeared in participants' accounts across several themes, including preparation for collaboration, role clarification, task coordination, disagreement management, and continuing professional learning. This pattern is consistent with IPC literature that identifies communication as an important component of collaborative practice and patient-safety processes.

The recurrence of communication across several themes may indicate that participants discussed it in different contexts of their professional activities. However, this pattern should be interpreted cautiously. It may partly reflect the structure of the interview guide and the predefined SRL–IPC analytical matrix, which directed attention to communication within several intersections. The findings therefore do not validate communication as a distinct cross-dimensional competency or establish that it independently determines the quality of collaboration.

The matrix was useful for organizing participants' accounts according to individual learning processes and collaborative domains. At the same time, the analysis remained open to additional categories

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and patterns emerging from the interviews. The matrix should consequently be regarded as a study-specific analytical aid rather than a validated theoretical model. Further research is needed to examine its conceptual completeness and usefulness in different professional and healthcare settings.

### *4.7 Strengths and Limitations*

One strength of this study is its use of an explicit SRL–IPC analytical matrix to organize qualitative exploration of individual learning processes within interprofessional collaborative practice. The inclusion of healthcare professionals from four professional groups also provided different professional perspectives on collaboration. In addition, the use of audio-recorded interviews, field notes, NVivo-supported data organization, and participant review of interview transcripts contributed to a transparent account of the data collection and analysis process.

Several limitations should be considered when interpreting the findings. First, purposive sampling was used to recruit ten professionals from a single hospital. Although this approach enabled the inclusion of participants with direct experience of interprofessional collaboration, the sample was not statistically representative and may have favoured professionals who were accessible to or recommended by institutional departments. Second, the professional composition was uneven, comprising five nurses, two physicians, two dietitians, and one pharmacist. The pharmacy perspective was therefore represented by only one participant, and the findings do not support robust comparisons between professional groups or claims that particular experiences were shared by all professions.

Third, the reliance on interview accounts may have introduced recall and social-desirability bias, particularly because participants were discussing their own professional practices within their institutional setting. Fourth, the study was conducted at one tertiary referral hospital with an established interprofessional collaboration context. Differences in resources, staffing arrangements, organizational culture, and collaboration structures may limit the applicability of these findings to other healthcare settings.

Fifth, the study relied on interviews and did not include direct observation of team meetings, clinical handovers, or ward-based collaboration. Consequently, participants' reported experiences could not be compared with observed professional behaviour. Sixth, although participants were given the opportunity to review their interview transcripts, transcript review should not be interpreted as independent verification of the researchers' thematic interpretations. Seventh, the interview guide and analysis were informed by a predefined matrix comprising 20 possible intersections between four SRL dimensions and five IPC domains. While this structure provided an organized approach to the analysis, it may also have directed attention towards anticipated relationships and limited the recognition of experiences outside the initial framework. The inductive component of the analysis allowed additional patterns to emerge, but it could not completely eliminate the potential influence of the predefined matrix.

Finally, the cross-sectional qualitative design provides a description of participants' accounts at a particular period and cannot establish how collaborative practices change over time. Nor can the findings demonstrate that the reported self-regulatory processes improve collaborative competence, educational outcomes, or patient safety. These limitations should be considered when interpreting the findings and planning further research.

### *4.8 Implications and Research Agenda*

The findings identify patient-centred motivation, preparation for collaborative tasks, professional role clarification, time coordination, communication, management of disagreement, and continuing professional learning as topics that may warrant attention in future interprofessional education and healthcare professional development. The SRL–IPC matrix may provide an initial structure for discussing how individual learning processes are represented in collaborative professional activities.

However, these implications are preliminary and are based on participants' interview accounts. The study did not evaluate an educational intervention, test the matrix as an assessment instrument, or demonstrate improvements in collaborative competence or patient safety. Further research involving more diverse professional groups and healthcare settings is needed to explore experiences that may not be represented by the predefined matrix. Direct observation and other complementary data sources may also help examine whether reported collaborative practices correspond with actual professional interactions. Before the matrix is considered for formal educational or assessment purposes, its conceptual structure and practical usefulness should be examined in subsequent studies.

## 5. CONCLUSION

This study explored how self-regulated learning (SRL) and interprofessional collaboration (IPC) were experienced and understood by healthcare professionals in a hospital setting. The findings were

organized into five themes: the relationship between SRL and IPC; clinical task strategies and professional role clarification; clinical time management and team function synergy; management of disagreements and collaborative leadership; and learning and continuing professional development.

Across these themes, participants described how personal motivation, preparation, professional knowledge, task management, communication, reflection, and ongoing learning were perceived to contribute to their involvement in collaborative clinical work. The findings also indicate that SRL-related activities and IPC practices may intersect in everyday professional interactions, particularly when healthcare professionals coordinate responsibilities, exchange information, address disagreements, and reflect on clinical experiences.

The four SRL dimensions and five IPC domains provided an analytical framework for examining these experiences. However, the resulting SRL–IPC matrix should be understood as a study-specific analytical aid rather than a validated model or measurement instrument. Given the descriptive qualitative design, purposive sample of ten healthcare professionals, and single-hospital setting, the findings offer contextual insights and should not be generalized beyond similar settings without further investigation.

Further research involving multiple healthcare institutions, a broader range of professional groups, and direct observation of interprofessional practice is recommended. Future studies may also examine how educational interventions informed by the relationship between SRL and IPC can be developed and evaluated. Such research would help determine the applicability of these findings to healthcare professional education and interprofessional practice.

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