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Social representations of interdisciplinary work from the perspectives of students and clinical tutors on a cardiovascular rehabilitation program in Chile

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ABSTRACT

Background: Cardiac Rehabilitation (CR) is scientifically recommended for its effectiveness and depends on interprofessional collaboration. However, the lack of clarity regarding how professionals collaborate limits clinical and educational actions and affects social representations.
Objective: To understand and compare the social representations of students and clinical tutors regarding their interdisciplinary work in the CR program at Hospital Padre Hurtado.
Method: The study drew on Moscovici's theory of social representations and employed a grounded theory methodology. The sample consisted of six clinical tutors and twelve students who participated in two focus groups and four in-depth individual interviews. Data were analyzed using Atlas.ti V3.0.
Results: The study's central category was *Interdisciplinarity* which serves as a theoretical construct giving rise to the practical action of interdisciplinary work. This central category articulates three key social practices: solving health issues, interdisciplinary communication, and teamwork. The latter emerged as the anchoring mechanism that solidified their social representation. Both students and clinical tutors shared a positive view of interdisciplinary work, but their symbolic anchors for "teamwork" differed: tutors emphasized technical and ethical-professional aspects, while students viewed the concept from an emotional and formative standpoint. Communication was identified as a transversal axis of the interdisciplinary practice, with tutors emphasizing technical and organizational dimensions, and students highlighting emotional and relational elements.
Conclusions: The social representation of interdisciplinarity varies according to educational trajectories. This diversity presents an opportunity to intertwine the technical expertise of tutors with the emotionally situated experiences of students.

1. Introduction

Cardiovascular diseases (CVDs) remain the leading cause of mortality worldwide. In 2017, approximately 32 % of all deaths—equivalent to 17.9 million people—were attributed to CVDs. Among these, coronary heart disease and strokes accounted for the majority of deaths, with 4 million and 6.7 million (GBD 2017 DALYs & HALE Collaborators, 2018).

Beyond their clinical implications, CVDs represent a substantial social and economic burden, affecting individual and family well-being and posing significant challenges to both social and economic development (OPS, 2011). This burden is particularly high in low- and middle-income countries, where CVDs account for 80 % of all deaths, and 40 % of CVD-related deaths are considered premature (Anand et al., 2020).

The World Health Organization (WHO) identifies several risk factors for the development of CVDs, including unhealthy diet, physical inactivity, tobacco use, harmful alcohol consumption, hyperglycemia, and hypertension. Primary prevention efforts aim to reduce these risks through lifestyle modification, while secondary prevention focuses on managing these factors in individuals with established cardiovascular conditions to prevent recurrence (OMS, 2013).

Cardiac Rehabilitation (CR) is "the sum of activities required to favorably influence the underlying cause of the disease, as well as the

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physical, mental, and social conditions of patients, so that they may, by their own efforts, resume as normal a place in the community as possible" (WHO, 1993). The benefits of CR are well-documented, particularly following coronary events. CR programs have been shown to reduce hospital admissions and improve quality of life and are strongly recommended as a secondary prevention strategy (Class I, Level A) (Piepoli et al., 2016). A systematic review and meta-analysis of 63 studies involving more than 14,000 CR participants confirmed a significant reduction in cardiovascular mortality after one year (Anderson et al., 2016).

Current clinical guidelines outline the essential components of these programs, including evaluation and intervention strategies and expected outcomes. A core recommendation across guidelines is the active involvement of a multidisciplinary health team to ensure comprehensive care for patients with cardiovascular diseases (Heidenreich et al., 2022; Herdy et al., 2014; JCS Joint Working Group, 2014; Piepoli et al., 2016).

Despite this strong evidence, CR programs continue to face significant implementation challenges (Cano de la Cuerda et al., 2012). In low- and middle-income countries, the primary barriers include a lack of infrastructure and inadequate training for healthcare professionals. In high-income countries, limited referrals and insurance coverage pose additional obstacles (Taylor et al., 2023).

In Chile, the most recently published review (2012) identified only eight CR centers nationwide, most of which were self-financed. A key barrier to access was low referral rates (56 %). The core team typically included cardiologists, nurses, physical therapists, and nutritionists. However, the review did not detail how these professionals collaborated, suggesting a potential lack of integration and coherence in interdisciplinary efforts (Santibáñez et al., 2012). This lack of clarity reflects a critical gap in CR practice: the absence of a shared conceptual and operational understanding of interdisciplinary collaboration.

A systematic review of interdisciplinary work in CR spanning two decades revealed the interchangeable use of the terms *interprofessional* and *multidisciplinary*, indicating conceptual confusion in collaborative practices. Moreover, few studies offered precise definitions of interprofessional practice, limiting adherence to clinical guidelines and reducing teamwork effectiveness in this domain (Seneviratne et al. (2009). These findings highlight the urgent need to examine both the conceptual and social practice dimensions of interdisciplinary work in CR. The future of CR relies on interdisciplinary collaboration and recognizing the important role of family members and caregivers in supporting the patient's recovery (Lima & Ghisi, 2025).

Although *interdisciplinary* and *interprofessional* work are central to CR, the literature often conflates these terms, contributing to conceptual imprecision (Reeves, Pelone, Harrison, Goldman, & Zwarenstein, 2017). Interdisciplinary approaches integrate knowledge and methodologies across disciplines to address complex problems, fostering interdependence and the co-construction of intervention strategies (Choi & Pak, 2006). In contrast, interprofessional practice involves direct collaboration among health professionals to optimize patient care through effective interaction and mutual learning (World Health Organization, 2010). In CR settings, interdisciplinarity guides program design based on the complementarity of different disciplines, while interprofessionalism manifests in the collaborative actions of cardiologists, physical therapists, nurses, and nutritionists in delivering coordinated care (Gómez-González et al., 2006).

In educational settings, students engaged in CR clinical training can develop both interdisciplinary and interprofessional competencies. However, the lack of conceptual clarity complicates curriculum design and hinders the development of targeted educational strategies (Medina & Secchi, 2014). Universities recognize that interdisciplinary problem-solving and inquiry-based approaches are essential to strengthening these skills (UDD, 2020). Therefore, learning activities that enable students to reflect on prior knowledge, examine disciplinary approaches, integrate evidence, and formulate critical judgments when addressing clinical problems in CR are recommended (Boix Mansilla, 2017).

Given the ongoing lack of conceptual clarity and practical integration, several scholars emphasize the importance of understanding how representations of interdisciplinarity are constructed and shared within real-world contexts of care and education. Frenk et al. (2010) argue that health education systems must undergo profound transformation to meet the demands of an increasingly interdependent world, advocating for a shift toward collaboration-focused education (Frenk et al., 2010). Similarly, D'Amour and Oandasan (2005) propose the concept of *interprofessionality* as a framework for bridging education and practice (D'amour & Oandasan, 2005). They caution, however, that without meaningful cultural and structural changes, collaborative efforts will remain limited.

In Latin America, studies reveal that, despite widespread discourse promoting collaborative work, fragmented and hierarchical practices continue to prevail, undermining clinical coordination (Baquião et al., 2021; Peduzzi et al., 2013). In Chile, several initiatives in interprofessional education have been documented, including tutor training and collaborative programs implemented during the COVID-19 pandemic (Barrios & Torres, 2021; Lucero et al., 2021; Torres & Barrios, 2022). However, there remains a lack of in-depth investigation into how students and faculty construct their understanding of interdisciplinarity within clinical practice—an essential dimension for advancing both educational quality and collaborative healthcare delivery.

Furthermore, evidence suggests that ineffective collaboration within CR programs is linked to reduced patient adherence, duplicated efforts, and suboptimal clinical outcomes (Anderson et al., 2016; Kyung et al., 2024). Addressing these challenges requires a deeper understanding of the social representations that shape interdisciplinary collaboration. Such insight is essential for designing educational and organizational interventions that foster more effective interdisciplinary practices in CR settings.

Given the relevance of interdisciplinary practice in both healthcare delivery and professional training, understanding how students and clinical tutors in CR programs construct and share meanings about interdisciplinarity is essential. Moscovici's theory of social representations offers a valuable framework for exploring the knowledge structures and values that underpin understandings of interdisciplinary work. This approach enables a deeper examination of the factors that shape interprofessional collaboration and supports the development of strategies to foster its integration into both educational and clinical practice (Moscovici, 1979).

Social representations, as defined by Moscovici, are structured systems of knowledge that individuals use to interpret reality, form group identities, and establish social relationships (Moscovici, 1979). Understanding how tutors and students perceive and construct the meaning of interdisciplinary work in CR programs is fundamental to identifying facilitators and barriers to collaboration. Grounded theory provides an appropriate methodological complement, allowing for an inductive, in-depth analysis of the experiences and meanings associated with interdisciplinary practice (Strauss & Corbin, 2002).

This study therefore aimed to understand and compare the social representations held by students and clinical tutors regarding interdisciplinary work in a CR context. More specifically, it sought to explore points of convergence and divergence in their meanings and experiences. Through the combined theoretical and methodological frameworks, the study not only described emerging social representations but also examined how these shape interdisciplinary practices and contribute to the construction of a shared professional identity within the CR setting.

2. Method

2.1. Study design: methodological orientation and theoretical framework

This research was based on the principles of Grounded Theory as

proposed by Strauss and Corbin (2002), employing an inductive approach to generate categories and develop an emergent understanding of the data. This methodology enables a systematic analysis of participants' experiences and perceptions without relying on predefined hypotheses, facilitating the identification of patterns.

Moscovici's theory of social representations (1961; 1979) served as the theoretical framework for interpreting how participants construct and communicate meaning around interdisciplinary practice within the context of cardiac rehabilitation (CR). This framework enabled an exploration of how individuals and groups collectively develop knowledge, values, and beliefs around a given phenomenon—in this case, interdisciplinary work in the implementation of a CR program between 2022 and 2024.

2.2. Setting and participants

The unit of analysis comprised clinical tutors and their respective students from Nursing, Physical Therapy, Nutrition, and Psychology, who actively participated in the Cardiac Rehabilitation Lab at Hospital Padre Hurtado between 2022 and 2024. A purposive convenience sampling strategy was used to capture diverse roles and levels of experience within this interdisciplinary team.

These four professional groups work together in a shared, collaborative educational-clinical setting, fostering continuous interaction across disciplines. This structure reflects the program's commitment to interdisciplinary practice, in which professionals and students engage jointly in patient care and learning processes.

Although cardiologists also collaborate with the team, their role is limited to referring patients to the CR Lab and managing discharge decisions. They work from a separate department and are not involved in the daily interdisciplinary work within the Lab itself.

Participants were selected to reflect the actual composition and functioning of the CR Lab's interdisciplinary team. Sample size was determined by the criterion of theoretical saturation, with data collection concluding when no new themes or relevant patterns emerged. This context provided a valuable opportunity to examine how clinical tutors and students collectively construct social representations of interdisciplinarity through sustained, situated, and collaborative practices.

Since 2018, the "Cardiac Rehabilitation Lab" program has served as a pedagogical strategy and a practical implementation tool for interdisciplinary training at Universidad del Desarrollo. Through an innovative educational model, this program addresses complex health issues by integrating students from Physical Therapy, Nursing, Nutrition, and Psychology. These disciplines have incorporated an interdisciplinary CR Lab course into their curricula, enabling students to actively engage in rehabilitation services and practice interdisciplinary teamwork.

To date, the program has delivered comprehensive care to over 900 individuals with histories of cardiovascular events such as myocardial infarction, angioplasty, and cardiac surgery. Its intervention model combines supervised exercise, risk factor education, nutritional support, promotion of healthy habits, and psychological evaluation and intervention targeting both patients and their support networks. The program has also contributed to the training of over 100 healthcare professionals, consolidating an interdisciplinary model rooted in both clinical and educational collaboration. This setting has fostered a shared work culture, promoting the social construction of meaning around interdisciplinary practice in the field of cardiovascular rehabilitation.

2.3. Data collection

Participants were contacted via email and provided with an invitation letter outlining the study's objectives, naming the responsible researchers, and detailing the estimated time commitment required.

Data were collected through two primary techniques: focus groups and semi-structured individual interviews. These methods were chosen to enable a deep understanding of participants' social representations of interdisciplinary work. Focus groups facilitated the exploration of collective meaning-making and interactional dynamics, while individual interviews allowed for a deeper examination of personal experiences, challenges, and perceived benefits of participation in the CR Lab course. Both data collection strategies were conducted in person by an experienced researcher (psychologist) at the participants' respective workplaces, ensuring an environment of trust and openness. Ethical principles were strictly observed, and confidentiality was maintained throughout the process, with only the researchers and participants present during the sessions.

Structured guides were developed to steer the focus group and interview discussions, with questions designed to explore participants' understandings and experiences of interdisciplinary work in the CR context. These guides included questions on: definitions of interdisciplinarity, distinctions from multidisciplinary work, benefits and barriers to collaboration, interaction dynamics between professionals, roles and responsibilities of each discipline, problem-solving strategies, and decision-making processes. The focus groups lasted approximately 90 min, while the individual interviews lasted around 60 min.

All sessions were audio-recorded, fully transcribed, and reviewed by the lead researcher to ensure the accuracy and fidelity of the data.

2.4. Data analysis and ethical considerations

Data analysis was conducted using an inductive approach based on Grounded Theory (Strauss & Corbin, 2002), employing open, axial, and selective coding (*Fig. 1*). Each coding stage was conducted separately for the tutors and the students, ensuring that the analytical processes remained independent for each group. This sequential procedure allowed for the identification of both the particularities and the convergences in their social representations of interdisciplinary work.

First phase (open coding): The process began with the transcription and thorough reading of the focus group conversations, which served as the starting point for open analysis. Subsequently, semi-structured interviews—conducted after the focus groups—were incorporated into the analysis with the aim of deepening our understanding of the categories that emerged during the focus groups and advancing toward theoretical saturation, in line with the constant comparative method of Grounded Theory.

The open coding was carried out using Atlas.ti V3.0, beginning with the identification of units of meaning, understood as words, phrases, or sentences with conceptual relevance in the discourse. These units were assigned descriptive labels, which served as initial markers of the content. These labels were then grouped into analytical codes based on thematic or conceptual similarities observed in the data. Each code was supported by textual quotations (verbatims) and analyzed in terms of its grounding—that is, the frequency with which it appeared in the discourse—which allowed for the identification of recurring patterns within the analyzed corpus.

Second phase (axial coding): Once the codes were defined during open coding, they were grouped into hierarchical categories using a paradigmatic matrix (Strauss & Corbin, 2002), which enabled the identification of causal, conditional, and contextual relationships among the codes. The established relationships included links such as: "is part of," "conditions," "is a consequence of," or "is associated with," promoting conceptual integration.

During this phase, the categories were consolidated through the integration of data from the interviews, which helped to nuance and enrich the relationships established among the codes initially generated from the focus groups. These associations were examined using the network analysis tools in Atlas.ti, which facilitated the visualization of code co-occurrences and the construction of robust axial categories, differentiated for tutors and students.

At this stage, the density of each category was assessed, with "density" being understood as the number and diversity of connections each code maintained with other codes within the analytical network,

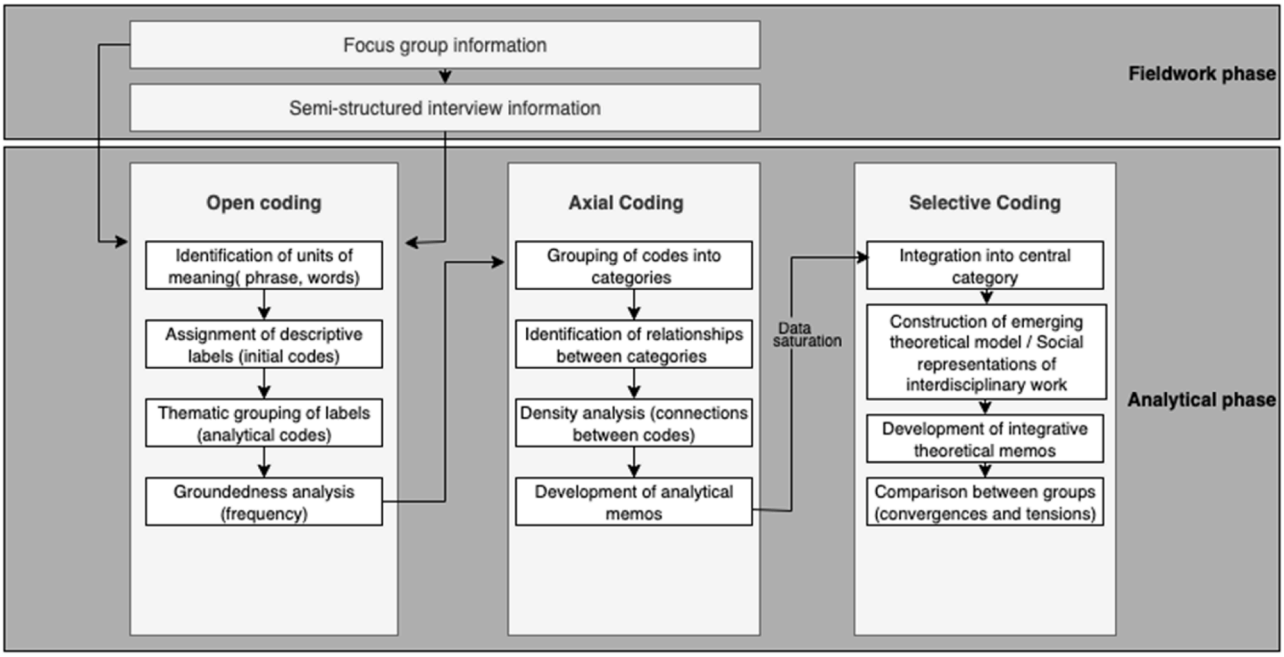

Fig. 1. Steps for data analysis.

reflecting its explanatory power within the emerging system. For each emerging axial category, analytical memos were developed, integrating reflections from the research team alongside selected illustrative quotes, which allowed for a deeper understanding of the meanings participants attributed to interdisciplinary work. These categories were organized by considering both structural and symbolic dimensions, enabling an understanding of how social representations are shaped according to formative experiences, roles, and shared imaginaries.

Third phase (selective coding): Once the axial coding stage was completed and theoretical saturation was reached, the previously developed axial categories were integrated around a central category, which articulated the core of the phenomenon under investigation. This category was selected based on its high relational density (i.e., its level of connection with multiple categories), its explanatory power, and its recurrence in the discourse of both tutors and students.

The process involved a systematic review of categories and subcategories, aimed at identifying a theoretical thread that would account for the social representation of interdisciplinary work in the context of the cardiac rehabilitation lab. This step was supported by the development of a narrative and conceptual diagram that allowed for the visualization of how the axial categories converge around this central category. Additionally, integrative theoretical memos were produced, in which the findings were articulated with the theory of social representations, facilitating the construction of an emerging explanatory model. This model was compared across groups (tutors and students), identifying areas of convergence and tension, which enriched the understanding of the phenomenon from a relational and contextualized perspective.

Throughout the analysis, the principle of constant comparison was maintained, allowing for the refinement of categories and the integration of emerging data from the interviews conducted after the focus groups. The analytical differentiation by group enabled the comparison of similarities and divergences in social representations, which was the central objective of the study. This progressive sequence in data incorporation (from collective to individual) supported an inductive and dynamic process, allowing for the contrast and refinement of categories until a dense and saturated understanding of the phenomenon was achieved.

Validation and rigor: Internal reflective sessions were held with the research team, as well as feedback meetings with participants (tutors and students), which allowed for the validation of interpretations and strengthened the legitimacy of the findings.

The study adhered to the ethical principles of autonomy, beneficence, non-maleficence, and justice. All participants gave written informed consent after receiving detailed information about the study's objectives, procedures, and their rights. Confidentiality was safeguarded through anonymized coding and secure data storage. Participation was entirely voluntary, and the study protocol was approved by the Scientific Ethics Committee of the Facultad de Medicina Clínica Alemana – Universidad del Desarrollo (protocol number 2024–38).

3. Results

Two focus groups and four individual interviews were conducted, involving a total of 18 participants. The tutor sample was formed entirely of professionals who had worked or were currently working in the CR Lab ($n = 6$): five women. The mean age was 30.2 years (SD ±1.5), including one physical therapist, one nurse, two psychologists, and two nutritionists. The 12 student participants were mostly female ($n = 7$, 58.3 %), with a mean age of 23.3 years (SD ±0.6), representing the following fields: three from physical therapy, three from nursing, four from psychology, and two from nutrition.

Open coding of the transcripts yielded a total of 538 citations: 313 from tutors and 225 from students. These were organized into 29 emergent codes for tutors and 22 for students. Subsequently, the codes were grouped into five axial categories based on their density and grounding: Communication, Interdisciplinarity, Health Problem-Solving, Teamwork, and Interdisciplinary Work.

Across both groups, Interdisciplinarity emerged as the central category, serving as the ideological concept that organized and integrated the remaining categories. From this central category, three core social practices observed in the CR Lab were derived: teamwork, communication, and problem-solving. Together, these practices constitute the enactment of interdisciplinary work. (Fig. 2).

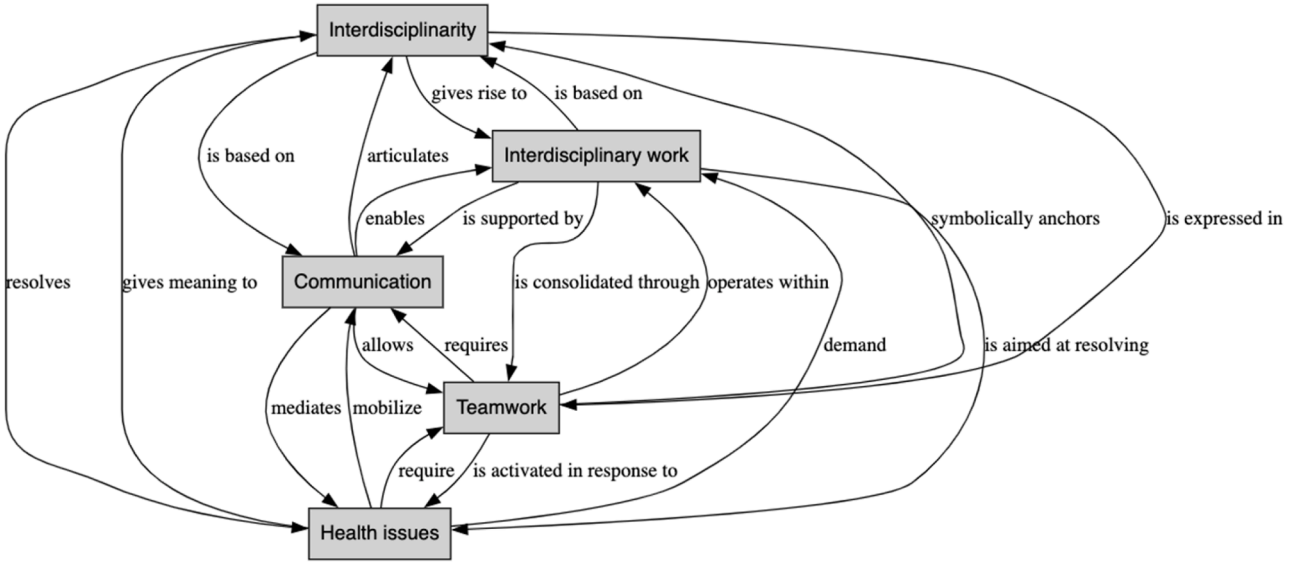

Fig. 2. Social Representations of Interdisciplinary Work from the Perspectives of Students and Clinical Tutors on a Cardiovascular Rehabilitation Program in Chile.

3.1. Interdisciplinarity as an analytical category: bridging theory and practice in cardiac rehabilitation

Tutors conceptualized interdisciplinarity in CR as a clinical care model wherein professionals from diverse disciplines work collaboratively with flexible boundaries to address the multifaceted needs of patients with cardiovascular conditions. This collaborative approach is implemented in a shared physical space, fostering coordinated and comprehensive care, as well as the development of a common interdisciplinary language: *"Interdisciplinarity in cardiac rehab, for me, is about working together with flexible boundaries toward a shared goal, mainly focused on reintegrating the patient into their life as normally as possible, using the resources they have."*(Participant 2, personal communication, 2024)

From the students' perspective, the concept of interdisciplinarity involved the connection between different disciplines, while they related interdisciplinary work to the direct interaction between professionals in the practical setting of the Cardiac Rehabilitation Lab. This praxis translates into the real-time coordination of decisions and strategies, based on a continuous exchange of ideas and observations. One student articulated this distinction by emphasizing the difference between a general relationship among disciplines and a situated, hands-on collaboration in the clinical space: *"The definition of interdisciplinarity and the definition of interdisciplinary work? I think it's about whether or not the disciplines are actually interacting in the moment. Because 'interdisciplinary'—in the clinic, the doctor asks, 'How did this happen?' I'm not sure if that's good or not… but in rehab, for example, I was [working] with physio because there are physios together, so we were always working together and interacting. I think it has to do with that direct relationship between us as professionals." (Participant 4, personal communication, 2024)* Tables 1–5.

When comparing both perspectives, we can see that they agree that interdisciplinarity enables the integration of diverse forms of knowledge to address the complexity of cardiovascular rehabilitation, with a central focus on patient well-being. However, tutors tend to conceive of it as a structured model of clinical care, grounded in the coordination of expertise and flexible professional boundaries. In contrast, students emphasize direct interaction in the practical setting, where collaborative work is experienced through everyday cooperation, professional relationships, and situated learning. *(See Appendix, Table No. 1).*

Table 1
Comparison of the category "Interdisciplinarity" between tutors and students.

Aspect	Similarities between tutors and students	Differences between tutors and students
Definition of interdisciplinarity	Both agree that interdisciplinarity involves integrating multiple disciplines to address complex problems and deliver patient-centered solutions.	Tutors describe it as a clinical care model with flexible boundaries, while students emphasize direct, active interaction as the core of interdisciplinary work.
Development settings	Both recognize that shared environments—such as the Cardiac Rehabilitation Lab—are key to fostering interdisciplinary practice.	Tutors highlight the Lab as a space where teaching and practice converge; students view it primarily as a site for coordination and exchange of ideas.
Patient-centered approach	Both tutors and students consider the patient the central focus of interdisciplinary actions, promoting comprehensive recovery through coordinated input from diverse disciplines.	Tutors emphasize flexible, collaborative solutions aimed at patient well-being. Students prioritize patient autonomy as a result of integrated interdisciplinary knowledge.
Role of communication	Both acknowledge communication as essential for knowledge-sharing, problem-solving, and strengthening interdisciplinary teamwork.	Tutors stress the creation of a shared professional language. Students highlight continuous dialogue to coordinate strategies and simplify complex problems.
Learning interdisciplinarity	Both recognize that teaching interdisciplinarity should be grounded in practical and reflective experiences that foster teamwork, communication, and empathy.	Tutors underscore guiding reflective moments and clinical case discussions. Students emphasize the value of mutual learning through collaborative teamwork.
Identified challenges	Both perceive challenges in interdisciplinary work, such as the complexity of health problems and barriers to effective collaboration.	Tutors identify resistance to change and lack of interprofessional understanding as key barriers. Students focus on the difficulty of achieving effective group coordination.
Associated practices	Both value collaborative work and the exchange of disciplinary contributions to achieve shared goals in healthcare.	Tutors integrate learning strategies for solving complex problems. Students emphasize clinical practice in decision-making and developing joint strategies.

Table 2
Comparison of the category "Interdisciplinary Work" between Tutors and students.

Aspect	Similarities between Tutors and students	Differences between Tutors and students
Definition of interdisciplinary work	Both view it as the practical application of interdisciplinarity, where multiple disciplines collaborate to address patient-centered health issues.	Tutors link it to values like respect, trust, and group cohesion. Students highlight real-time joint planning and interprofessional learning.
Main objective	They agree that the goal is to improve patient well-being and quality of life through a comprehensive and collaborative approach that includes physical, emotional, and social dimensions.	Tutors emphasize consensus building through analysis and problem prioritization. Students focus on promoting patient autonomy.
Relation to teamwork	Both recognize that interdisciplinary work depends on effective teamwork, which fosters the necessary dynamics for cross-disciplinary collaboration.	Tutors stress mutual respect and group identity formation. Students highlight collaborative learning, task delegation, and frustration management.
Role of communication	Communication is seen as essential for connecting the team, sharing perspectives, and coordinating actions toward a common goal.	Tutors prioritize developing a shared professional language. Students see communication as a bridge to align strategies and overcome challenges.
Working methodology	Both agree that problem analysis and resolution are central, requiring direct interaction between disciplines for integrated solutions.	Tutors describe a sequential process starting with problem identification and goal setting. Students value hands-on, real-time interaction within teams.
Effects of interdisciplinary work	Both identify positive effects such as improved patient care and more holistic approaches to health problems.	Tutors note additional outcomes like group identity and habit changes in patients. Students mention professional growth, emotional skills, and human connection.
Impact on learning	Both agree that interdisciplinary work fosters key skills such as communication, flexibility, and empathy in future healthcare professionals.	Tutors link learning to the integration of theoretical and practical knowledge. Students emphasize how cross-disciplinary interaction enhances their learning experience in patient care.

3.2. Interdisciplinary work: integrating communication, teamwork, and solving health issues

From the tutors' perspective, interdisciplinary work is closely tied to the practice of interdisciplinarity, insofar as it entails ongoing interaction among professionals that goes beyond the mere coexistence of different disciplines. This interaction is grounded in human and collective values—such as trust and respect—that are understood as essential conditions for building a team capable of making shared decisions and addressing health problems in a coordinated manner, always with patient well-being as the common goal. As one participant explains: *"Interdisciplinary work is ever present within the concept of interdisciplinarity, but it could also appear in other contexts; so I think interdisciplinary and interdisciplinary work always go hand in hand, unlike the concept of multidisciplinarity." (Participant 2, personal communication, 2024)*. Similarly, another participant emphasized that this mode of work cannot be sustained without relationships of trust among team members: *"[…] it's important for the team to trust one another, to have trust in their peers, so that when a decision is made, we're all in agreement and believe it's the best one." (Participant 2, personal communication, 2024)*.

Table 3
Comparison of the category "Health Issues" between Tutors and students.

Aspect	Similarities	Differences
General view of the issue	Both perspectives recognize the multifactorial complexity of health problems, integrating physical, emotional, and social factors in treatment.	Tutors approach issues using an interdisciplinary methodology focused on therapeutic goal prioritization. Students view issues as challenges, emphasizing social, economic, and cultural barriers.
Social and economic factors	Both highlight the impact of social and economic conditions on the patient's health and recovery.	Tutors see social problems as emergent elements to be addressed through referrals or guidance. Students perceive these barriers as sources of frustration, reflecting structural inequality and a sense of helplessness.
Role of interdisciplinarity	Both stress that interdisciplinarity enables a comprehensive understanding and treatment of patient issues through diverse healthcare perspectives.	Tutors see interdisciplinarity as a practical framework that promotes immediate communication in shared physical spaces. Students see it as a tool to translate theory into action and organize team efforts.
Emotional and personal perspective	Empathy toward the patient is essential in both views, helping to mobilize resources for comprehensive care.	Tutors focus on fostering a collaborative environment that incorporates the patient's emotional context. Students use their own vulnerability to connect with the patient emotionally and frame difficulties as learning opportunities.
Communication and coordination	Effective communication is key to coordinating interprofessional actions and engaging the patient in their recovery process.	Tutors value immediate interdisciplinary communication as essential for therapeutic success. Students see communication as a way to prioritize issues and collaboratively develop specific patient-centered solutions.
Faced barriers	Both recognize practical and emotional obstacles as significant in addressing health problems.	Tutors face emerging issues (e.g., socioeconomic) requiring creative and flexible responses. Students struggle to apply what they've learned due to both patient needs and academic demands.
Strategy adaptation	Both stress the need for a dynamic approach that prioritizes patient needs and adapts to their context.	Tutors implement iterative strategies jointly with students, prioritizing therapeutic goals based on available resources. Students adjust their practices through interprofessional learning while confronting their limitations in delivering comprehensive solutions.

The experiences described by tutors suggest that the core of interdisciplinary work lies in the collective search for solutions to patients' health problems. This process unfolds through a sequential methodology that begins with the problematization of the clinical situation from multiple disciplinary perspectives and progresses toward a decision-making process characterized by effective communication, mutual respect, and trust among team members. This collaborative dynamic

Table 4
Comparison of the category "Teamwork" between Tutors and students.

Aspect	Similarities	Differences
Definition of teamwork	Both see teamwork as essential to an interdisciplinary and patient-centered approach, promoting collaboration across disciplines.	Tutors emphasize joint decision-making and strategic integration. Students highlight skill coordination and personal growth (e.g., trust, adaptability, frustration management).
Role of trust	Trust is viewed by both as foundational for teamwork, linked to effective communication and shared experiences.	Tutors build trust through direct observation of others' professional performance and a history of successful decisions. Students develop trust through mutual support, hands-on work, and team bonding.
Communication and interaction	Ongoing communication and effective interaction are key to achieving common goals, sharing responsibilities, and enriching perspectives.	Tutors believe communication enables therapeutic flexibility while respecting disciplinary boundaries. Students see interaction as a chance to build social and emotional skills, such as empathy and tolerance.
Physical space	Shared physical spaces in the Cardiac Rehab Lab (gym and offices) foster interaction, direct observation, and idea exchange, enhancing group dynamics.	Tutors value these spaces as places where professional validation and trust are reinforced. Students view them as learning environments that encourage collaboration and close relationships with peers and educators.
Decision-making processes	Joint decision-making is seen as crucial to coordinating efforts and aligning perspectives toward a shared goal.	Tutors emphasize respect for professional competencies and strategic coordination through direct observation. Students stress overcoming personal barriers and the educator's role as a decision-making facilitator.
Personal and professional impact	Both recognize that teamwork transforms professional perspectives and strengthens collaborative values focused on patient care.	Tutors incorporate this experience into normative frameworks that structure real interdisciplinary practices. Students emphasize emotional, social, and professional growth, seeing teamwork as essential for their future careers.
Role of the educator	The educator is perceived as key to fostering trust and collaborative learning within the team.	Tutors see themselves as facilitators of the interdisciplinary process, promoting values such as respect and cooperation. Students view Tutors as guides who create a supportive environment that helps them overcome fear and build confidence.

facilitates the shared prioritization of patient problems and the construction of a common goal that guides the team's actions. Within this framework, the willingness to loosen rigid disciplinary boundaries emerges as a key element of collaboration: *"Interdisciplinary work includes aspects that support this search for solutions because, little by little, personal ego fades and the patient becomes the priority. One becomes willing to yield, to be flexible with one's own boundaries, with one's discipline—to open up, to expand one's mind in the pursuit of solutions. If we have a shared goal, we're willing to collaborate beyond our own roles." (Participant 2, personal communication, 2024)*

Table 5
Comparison of the category "Communication" between Tutors and students.

Aspect	Similarities	Differences
Foundations and role	Both groups consider communication essential for interdisciplinary work, as it underpins understanding, trust, and team cohesion.	Tutors emphasize communication as a means to establish a shared technical-practical language. Students value its role in turning abstract concepts into visible, everyday interactions.
Building a shared language	Communication helps create a common language that facilitates collaboration and disciplinary integration.	Tutors highlight the ongoing negotiation of this language to integrate professional perspectives without dominance. Students see it as a tool linking human values (e.g., empathy, support) with interdisciplinary practice.
Enrichment of perspectives	Both groups note that communication enables the integration and enrichment of individual perspectives, creating more comprehensive knowledge.	Tutors apply this to complex clinical decisions. Students view it as formative, enabling mutual learning and personal growth in the Rehab Lab.
Physical space and its influence	Both agree that shared spaces (e.g., gym) support spontaneous interaction and interdisciplinary collaboration.	Tutors see the physical space as a symbol of interdisciplinary integration. Students emphasize it as an opportunity to enhance daily communication and therapeutic outcomes.
Holistic patient approach	Communication is key to achieving a holistic approach to patient care.	Tutors link this to an ethical and professional team vision. Students stress how communication transforms barriers into opportunities and personalized strategies.
Social representation of interdisciplinary work	Communication helps consolidate a shared social representation of interdisciplinary work.	For educators, it anchors interdisciplinary concepts in concrete practices through professional rituals and symbols. Students ground it in human values, integrating it into emotional experiences and learning.
Conflict management	Both groups view communication as essential for resolving differences and reaching team consensus.	Tutors focus on negotiation as a way to enhance flexibility and team adaptability. Students emphasize emotional exchange to build trust and camaraderie, facilitating conflict resolution and group cohesion.
Educational impact	Communication is recognized as a key tool for professional learning and development.	Tutors see it as a mechanism for transforming students into professionals with a holistic perspective. Students view it as a practical process that blends technical knowledge with interpersonal and value-based skills developed in the Rehab Lab.

From the students' perspective, interdisciplinary work is understood as the practical manifestation of interdisciplinarity. While the latter refers to a theoretical integration across fields of knowledge, interdisciplinary work is viewed as the concrete act of collaboration among professionals in clinical contexts where knowledge is shared, real-time interaction occurs, and joint solutions to health problems are

developed around a shared objective. One student summarized this conceptual relationship as follows: *"[…]Interdisciplinarity is the variety of professionals from different fields who can work together toward a shared goal, which is the patient. I think interdisciplinary work is when that idea is actually applied in our everyday practice." (Participant 17, personal communication, 2024)*

This representation also highlights interaction as a space for collective learning. In their comments, the students recognized that interdisciplinary work demands specific teamwork skills, such as continuous communication, joint planning, trust in others' capabilities, and tolerance for frustration in the face of individual limitations. As one participant explained: *"[…]Taking part in interdisciplinary work means working toward a goal, a purpose, a shared objective. It can be something small—a brief interaction—or something greater, something that belongs to the group. What I think matters most is that it happens collaboratively, that everyone can contribute, with their expertise—to the sum of all the parts."(Participant 17, personal communication, 2024)*

Likewise, another student emphasized the formative value of collaborative work, particularly in developing emotional skills for coping with clinical uncertainty: *"[…]You learn, during interdisciplinary work, to tolerate frustration. There are many things we can't do alone, and that can be frustrating—we can't always manage everything. But there's always someone else on the team who can." (Participant 6, personal communication, 2024)*

Tutors and students alike agree that interdisciplinary work is the execution of interdisciplinarity and that it is oriented toward effective collaboration with a shared aim: the patient's recovery. However, they differ in where their emphases lie. Tutors, for example, highlight the values that sustain this practice, such as respect, the willingness to yield, and the building of trust within the team. In contrast, students stress the operational dimension of interdisciplinary work, viewing it as a space for learning, joint planning, and emotional management in the face of individual limitations. That said, both groups see communication as the key element that aligns team actions and enables progress toward common goals—shaping a social practice where disciplines do not simply coexist but are mutually transformed through collaborative work. *(See Appendix, Table No. 2)*.

3.3. Solving health issues: core activity of interdisciplinary work in cardiac rehabilitation

From the tutors' perspective, health problems in patients with cardiovascular disease are inherently complex. These conditions often coexist with multiple risk factors, including poor nutrition, physical inactivity, inadequate emotional regulation, and limited self-care. Addressing such complexity requires a solution-oriented methodology that enables the team to identify and prioritize issues in order to define a primary therapeutic goal, which can then be approached through coordinated interventions by various disciplines:

"Patients, like everyone else, face a range of problems. What matters is learning to prioritize these problems—ranking them based on their importance, on our ability to address them, and on the resources both we and the patient have. I call the top priority the 'mother intervention'—that's where we focus. It might change as we resolve issues or new ones emerge." (Participant 2, personal communication, 2024)

Establishing the primary goal in the rehabilitation process is a joint effort between tutors and students, developed through both formal—such as classes and case presentations—and informal settings, like day-to-day interactions within the CR gym. The open-plan layout of this space facilitates immediate communication, enabling real-time interdisciplinary collaboration. As one participant noted: *"We have both formal and informal moments (…) we share things we think might be relevant to the other discipline, and little by little, we start organizing and prioritizing the issues."(Participant 2, personal communication, 2024)*.This dynamic fosters comprehensive, personalized interventions tailored to each patient: *"The approach is holistic, but it's different for every person—and that's something we're able to do thanks to the communication made possible by the gym environment." (Participant 3, personal communication, 2024)*

The team also addresses non-clinical issues, such as social challenges and barriers to accessing healthcare. As one tutor explained: *"It's holistic because it includes everything (…) we don't limit ourselves to our own professional scope."(Participant 5, personal communication, 2024)*.This approach shifts the patient experience: *"At first, patients don't understand why they're being seen by a nutritionist or a psychologist—but later, they're thankful to have been treated by professionals from different fields." (Participant 1, personal communication, 2024)*

Students perceive the health problems faced by patients in cardiac rehabilitation as complex challenges that require a comprehensive approach. Interdisciplinarity provides them with a framework for understanding patients holistically—beyond their clinical diagnosis. As one student noted: *"We stop thinking of people just as someone with a condition, and we start seeing health from every angle—nutrition, psychology, physiology… That gives us a more complete picture of the patient." (Participant 5, personal communication, 2024)*. In this sense, interdisciplinary work becomes the means of translating that holistic understanding into concrete, context-sensitive interventions.

Communication is essential throughout this process: it allows the patient to become actively involved in their own recovery—especially in habit change—and supports team coordination by integrating diverse professional perspectives. This is reflected in practices such as informing patients that shared information will be used collaboratively: *"We tell patients that if we're going to talk about something that came up in the session, it will be solely for the purpose of addressing it as a team." (Participant 8, personal communication, 2024)*. Communication also helps resolve internal disagreements and re-center the team around a shared purpose: *"It's about remembering that this is for the patient's well-being—not about defending my profession or my own knowledge." (Participant 17, personal communication, 2024)*

The concept of "team" became a structuring principle for students, enabling them to coordinate efforts and define shared goals. One student explained: *"We have a patient with multiple factors—nutrition, psychology, nursing, physical therapy—so what's our goal? That's where the interdisciplinary team comes in: to intervene in order to help the patient achieve autonomy." (Participant 9, personal communication, 2024)*

However, patients' socioeconomic and cultural vulnerability poses challenges to applying the therapeutic model taught in the Cardiac Rehabilitation Lab. One student expressed frustration: *"I was giving everything I could, and he said to me: 'I can't even afford food.' How can I help when I'm just a student myself?" (Participant 6, personal communication, 2024)*. This reality has a strong emotional impact, but it also prompts students to reframe the context not as a barrier, but as a clinical and ethical challenge. Another student reflected: *"The patient's context is a challenge. How do I get someone to stop smoking or eating fried food when they walk in holding an meat pie after just having a heart attack?" (Participant 9, personal communication, 2024)*. A classmate reinforced this idea: *"There's no problem with the patients—it's about the challenges. It's about how we, as a team, decide to help them move forward." (Participant 18, personal communication, 2024)*

In the face of these difficulties, students draw on empathy and their own experiences of academic pressure to commit to a form of care that goes beyond clinical concerns and responds to patients' broader life conditions—even when these are not formally included in the Lab's curriculum.

Tutors and students agree that patients' health issues are complex and require an interdisciplinary, holistic, and context-sensitive approach. Both groups highlight communication, coordination, and empathy as central components. However, their perspectives diverge. Tutors tend to focus on therapeutic objectives using a methodological lens, whereas students interpret social barriers as both clinical and educational challenges—often marked by a deeper emotional involvement.

(See Appendix, Table No. 3).

3.4. Teamwork as an anchor in the social representation of interdisciplinary practice in health

For tutors, the representation of teamwork is closely tied to shared clinical decision-making grounded in trust, mutual respect, and effective communication. These elements underpin the interdisciplinary dynamic that enables comprehensive patient care and fosters collaborative professional relationships. Trust is cultivated through the day-to-day observation of each other's professional conduct within a shared space: *"Trust is built […] by observing how the other professional operates […] and that gives me confidence when it comes to making decisions alongside them." (Participant 3, personal communication, 2024)*. This relationship is shaped by clear role boundaries and a willingness to give ground without overstepping: *"I don't usually encroach on my colleague's professional domain, but I do know how she works […] I know where my limits are." (Participant 3, personal communication, 2024)*. Mutual respect allows each discipline to contribute without losing sight of a common goal: *"If we make a decision and we're all on board, then we all pull together to make it happen." (Participant 2, personal communication, 2024)*

Interdisciplinary work also requires institutional conditions that support a flexible and responsive practice: "It's not just about doing your job and leaving—it forces you to stay dynamic, to shift and adapt." (Participant 2, personal communication, 2024). Responsibility is thus shared: "The commitment is not only to the patient, but also to the team." (Participant 17, personal communication, 2024). Patients perceive this team cohesion: "Often, they don't come to rehab because they want to exercise—they're here because they had a health scare." (Participant 2, personal communication, 2024). The team becomes a source of emotional support: "We end up being a support network for them […] we care about what they're going through." (Participant 2, personal communication, 2024). This practice is not merely organizational; it's also ethical: "What drives us is the care we have for the patient, the love of doing the job well." (Participant 2, personal communication, 2024).

Students experience teamwork in a shared space that enables direct observation and everyday learning. Being "in each other's line of sight" encourages spontaneous interaction and a relational understanding of care. For students, collaboration means blending skills that go beyond disciplinary knowledge: *"We look for […] the best outcome by drawing on people's natural abilities […] supporting and enabling one another." (Participant 5, personal communication, 2024)*. This cooperation fosters a shared vision: *"We're on the same page—everyone knows what's going on […] there are no surprises." (Participant 9, personal communication, 2024)*.

Interdisciplinary work broadens students understanding of how to approach health: "I can do everything I can [for them] psychologically, but if the patient has a chronic underlying condition […], they're not always going to be okay." (Participant 5, personal communication, 2024). It also reshapes their professional actions: "You learn […] to say, okay, I need to hand this off to someone else—I can't do it all." (Participant 6, personal communication, 2024).

Joining the team involves emotional challenges. Fear, insecurity, and frustration are common; but when shared within a trusting environment, these experiences strengthen connections: *"Being able to share those frustrations creates […] empathy, care, support […] we all want to move forward together." (Participant 8, personal communication, 2024)*. Tutors play a key role in this process. Far from reinforcing hierarchies, they encourage horizontal relationships: *"With our tutor, it didn't really feel like a 'tutor-student' relationship—we'd use first names […] it helped everyone loosen up." (Participant 8, personal communication, 2024)*. This approach makes it easier to ask for help and gradually build autonomy: *"You come in on your own […] but as classes go on […] it stops being about you as a student and becomes about the patient." (Participant 3, personal communication, 2024)*.

Both tutors and students described teamwork as a collaborative practice centered on the patient's well-being. However, their emphases differ: tutors highlight professional trust, shared decision-making, and respect for disciplinary boundaries, while students emphasize co-presence, emotional learning, and the tutor's role in fostering meaningful connections. Where tutors prioritize ethical-technical frameworks, students recognize an affective transformation that emerges from working together in a safe environment with a horizontal power structure. *(See Appendix, Table No. 4)*.

3.5. Communication as a key mechanism in constructing the social representation of interdisciplinary work

Among tutors, communication emerged as a central axis in the development of social representations of interdisciplinarity. Rather than a simple channel for transferring information, communication is framed as a relational practice that enables the creation of a shared language, the integration of diverse perspectives, and the coordination of effective, patient-centered care. Daily interactions in shared spaces—such as offices, clinical gyms, or treatment rooms—provide ongoing opportunities for dialogue, facilitating a continuous and spontaneous flow of information. This fluidity allows for real-time problem-solving: *"Effective communication is fast—the professional steps out of their exam room or wherever they are with the patient, communicates what's happening, and we come up with a solution on the spot." (Participant 3, personal communication, 2024)*. Physical proximity enhances agile communication, which in turn results in timely and coherent responses across disciplines: *"Being in the same physical space allows us to reach a solution faster, and communication becomes much more effective." (Participant 4, personal communication, 2024)*.

The recorded narratives highlight that communication goes beyond technical matters to include personal perceptions, emotions, and values: *"It's about communicating my experiences, what I feel, my emotions and thoughts about the patient. The focus here is the patient!" (Participant 3, personal communication, 2024)*. This emotional dimension fosters empathy and mutual understanding among professionals and enables more horizontal forms of collaboration: *"Assertive communication is important […] being open and respectful, and also listening to each other […] that's when giving way matters—you can't change someone else's perspective, so we yield and find a balance." (Participant 3, personal communication, 2024)*.

In this context, communication functions as a mechanism of team cohesion, allowing professionals to move beyond their disciplinary boundaries and build a shared understanding of the patient: *"When you work with other disciplines, you can build the whole foundation." (Participant 2, personal communication, 2024)*. This leads to an integrated vision, constructed through the articulation of multiple bodies of knowledge: *"I incorporate key knowledge from other disciplines—we bring it together through conversation; I mean, we're a really tight team." (Participant 5, personal communication, 2024)*.

Communication is also conveyed as a formative value for students, from day one: "One of the first things we try to convey to students from day one is 'how they feel with the patient and with the team.'"(-Participant 4, personal communication, 2024).This practice reinforces the ethical dimension of interdisciplinary work, based on respect, commitment, and collective learning.

Finally, it is acknowledged that interdisciplinarity does not arise spontaneously; it requires intentionality, meeting spaces, and constant communication: *"When those two things come together, interdisciplinarity is born […] because it allows you to listen, to grasp, and to understand the different aspects of each discipline." (Participant 4, personal communication, 2024)*.

For students, communication is also a central practice—not only enabling information exchange among professionals but also allowing for a shared understanding of patients' needs. Far from being a purely technical task, communication becomes a situated form of collaboration, where each discipline contributes its specific expertise while also being enriched by interaction with others. *"Communication makes it possible for each professional to talk about what's going on in their work, which is mostly*

individual, but at the end of the day it still gets shared with other professionals." (Participant 8, personal communication, 2024). This ongoing dialogue facilitates the integration of different viewpoints and promotes a more holistic understanding of the patient, transcending disciplinary limits. As one student recalled: *"We would share information we couldn't fully grasp from our own discipline… it really helped to build a more global context for the patient." (Participant 10, personal communication, 2024)*. In this sense, communication not only enables the flow of information—it also structures the team's everyday dynamics. Shared spaces like the gym offer spontaneous opportunities for dialogue: *"We were all sitting close together, looking out toward the gym… and we'd start talking about the patient we had right in front of us." (Participant 5, personal communication, 2024)*

Students emphasized that this communication goes beyond the clinical—it includes emotions, doubts, and affective dimensions that strengthen human connections within the team: *"It's not just about work; we also have feelings… even just saying good morning opens a door for communication." (Participant 9, personal communication, 2024)*. Thus, interdisciplinary work is also grounded in trust, openness to discussion, and the willingness to yield: *"You talk… you propose, you debate, and you give way if needed." (Participant 5, personal communication, 2024)*. Communication is experienced as formative, as dialogue with tutors helps students understand the rationale behind clinical decisions: *"They explained the why… we never walked away with doubts." (Participant 9, personal communication, 2024)*. Moreover, interprofessional dialogue enables students to reframe the role of other disciplines: *"Talking with the nutrition interns helped me see there was a very important factor… one I hadn't considered until then." (Participant 17, personal communication, 2024)*

Taken together, these narratives reveal that communication is the mechanism that makes interdisciplinarity possible: "Interdisciplinarity helps make this kind of communication between different disciplines—who are seeing the same patient—actually happen." (Participant 10, personal communication, 2024). This process facilitates the joint identification of clinical problems and the development of collaborative strategies to address them: "Talking about it as a team and coming up with strategies helped turn that difficulty into something manageable." (Participant 10, personal communication, 2024).

Both students and tutors agreed that communication is the cornerstone of interdisciplinary work, allowing for the integration of knowledge, the construction of shared understandings of patients, and the coordination of timely interventions. Both groups emphasized its affective, relational, and ethical dimensions beyond technical exchange. However, tutors highlight their role in student formation and their responsibility in sustaining meeting spaces, while students view communication as a formative experience that reshapes their understanding of other disciplines. Tutors tend to underscore its intentional and sustained character, while students value its spontaneity in everyday interactions. *(See Appendix, Table No. 5)*.

In summary, the symbolic representations of interdisciplinarity reveal a generational difference in how professional practice in healthcare is understood. For tutors, it represents an orderly clinical model, guided by expert coordination and ethical commitment. For students, it embodies a transformative experience that challenges personal boundaries, activates empathy, and shapes professional identity through everyday collaboration. Thus, interdisciplinarity is, for some, a technical framework for clinical excellence; for others, an emotionally charged practice where one learns to 'become a professional' within a community. Rather than causing fragmentation, this difference enriches the educational experience and illustrates how diverse trajectories generate distinct meanings around healthcare work.

4. Discussion

This study aimed to understand and compare the social representations of interdisciplinary work constructed by students and clinical tutors involved in a Chilean cardiac rehabilitation program between 2022 and 2024. Drawing on the theoretical framework of social representations, the study explored how students and clinical tutors generate shared meanings around complex phenomena—such as interdisciplinary collaboration—based on their lived experiences and professional practices. As proposed by Moscovici (1979), social representations constitute socially constructed knowledge that orients action in specific contexts. As Jodelet (1986) further argues, this knowledge is grounded in common sense and connects individual and collective dimensions, as well as cognitive and symbolic structures, shaping a "thought reality" that informs behavior (Jodelet, 1986). This framework is particularly relevant in healthcare education, where participants not only reproduce technical knowledge but also actively construct situated meanings around collaborative work (Martikainen et al., 2024).

The findings revealed that both students and tutors anchored their social representation of interdisciplinarity in the notion of teamwork—a concrete expression of an otherwise abstract concept. However, this anchoring was shaped by different roles and positions. For tutors, teamwork was associated with professional trust, strategic decision-making, and mutual validation, forming a consolidated representation grounded in technical and ethical-professional frameworks. For students, teamwork was linked to personal growth, mutual learning, and overcoming emotional challenges—an anchoring informed by the affective dimension of their formative experiences.

These differences align with prior research. A study involving medical students and tutors in Mexico found shared perspectives on the structural aspects of clinical education but also highlighted discrepancies in role clarity and supervision, demonstrating how the teaching role significantly shapes learners' perceptions and experiences (Heshiki-Nakandakari et al., 2013). Similarly, a Chilean study on interprofessional education during the COVID-19 pandemic found variations in students' willingness to collaborate across disciplines, particularly among nutrition students, even though they shared core values such as teamwork and patient-centered care (Lucero-González et al., 2024).

Thus, the symbolic differences observed in this study do not reflect a contradiction of but rather underscore the diversity inherent to social representations. As Abric (2001) points out, social representations are composed of a central core and a peripheral system, allowing for flexibility and contextual adaptation (Abric, 2001). In this case, while tutors and students shared a positive view of interdisciplinarity as essential for patient-centered care, their lived experiences of this practice varied depending on their roles and trajectories within the team.

The social practices associated with interdisciplinarity—communication, health problem-solving, teamwork, and interdisciplinary collaboration—revealed a complex web of meanings that illustrate how interdisciplinarity is both represented and enacted in the CR Lab. Communication, in particular, emerged as a foundational condition for collaboration across both groups. This finding is consistent with the literature, which identifies clear and sustained communication as a facilitator of perspective integration, collective decision-making, and improved clinical outcomes (Simons et al., 2022). However, the groups emphasized different dimensions: tutors viewed communication as a structuring tool tied to technical precision and role clarity, while students attributed emotional value to it, associating it with empathy, support, and mutual respect.

This divergence echoes earlier research in health education. Studies on social representations of pedagogical communication have found that teachers often describe interaction as relational and democratic—focusing on dialogue and professional development—while students perceive it as more hierarchical, centered on control and rule enforcement, which can limit their sense of emotional support (Casado & Martínez de Taboada, 1998). This gap between teacher intentions and student experiences reinforces the idea that communication in interdisciplinary contexts is not just structural but also emotionally and symbolically charged, shaped by the participants' roles and positions

within the team.

Another significant finding concerns how trust within the interdisciplinary team is constructed. For tutors, trust stemmed from shared experience, technical expertise, and observation of their colleagues' performance—factors previously identified as fundamental for effective collaboration in healthcare settings (D'Amour et al., 2005). In contrast, students developed trust progressively through mutual support, feedback, and recognition from clinical instructors. This suggests that social representations also reflect formative trajectories and inclusion processes in clinical environments.

In addressing patient health problems, tutors adopted a resolutive, integral, and clinically focused approach. Students, however, demonstrated heightened sensitivity to the social barriers of the hospital setting, often expressing their own vulnerability in response to systemic complexity. This contrast underscores how social representations convey not only knowledge but also emotions, tensions, and learning processes that define the healthcare education experience. These findings are supported by studies that describe teachers' representations as focused on the development of competences, while students prioritize autonomy, experiential learning, and emotional processing in clinical environments (Gómez & Osorio, 2015).

Finally, although both groups valued interdisciplinary work as a practice centered on the patient, their associated meanings diverged: tutors related it to the consolidation of a shared professional identity and therapeutic efficiency, whereas students experienced it as an opportunity to develop clinical, communicative, and emotional competencies for future practice. This aligns with literature showing that teachers tend to emphasize role clarity and the preservation of professional identity, while students prioritize knowledge integration and interprofessional learning—highlighting different approaches to patient care (Lucero-González et al., 2024).

In short, both groups shared the understanding of interdisciplinarity as a complex, coordinated process essential for addressing patient health comprehensively. This view is consistent with definitions in the specialized literature that describe interdisciplinarity as a process that analyzes, synthesizes, and harmonizes links between disciplines to create a coherent and unified whole—essential for solving complex health problems (Choi & Pak, 2006). However, when viewed through the lens of social representations, these shared understandings take on differentiated tones: tutors grounded their representation in professional practice and reflection, while students constructed theirs through emotionally charged, relational, and transformative experiences.

4.1. Limitations and future directions

This study has some limitations that should be considered when interpreting the results. First, the analysis focused on a single cardiac rehabilitation program in a public hospital in Chile. While this allowed for a deep and context-sensitive understanding of the social representations held by students and tutors, it also means the findings cannot be generalized to other clinical, institutional, or cultural settings. Second, the qualitative nature of the study—based on focus groups and interviews—means that the results reflect subjective and contextualized perspectives, which may vary depending on factors such as professional trajectory, stage of training, or the specific dynamics of the healthcare team. Nevertheless, these limitations do not invalidate the findings; rather, they open up new avenues for research on how social representations of interdisciplinarity are constructed in other healthcare settings and among different stakeholders.

The findings of this study may offer valuable insights for the design and implementation of educational strategies aimed at strengthening interdisciplinary work in clinical contexts. To begin with, the results invite the development of pedagogical approaches that explicitly recognize and address the differences in social representations held by students and tutors, with a view to fostering a shared understanding of collaborative work and the specific roles played by each professional within a health team. Furthermore, the results highlight opportunities to create emotionally meaningful learning environments that integrate technical and affective dimensions, thereby promoting the development of communication, empathy, and reflective skills from early stages of professional training.

Given that social representations are shaped by individual trajectories, context, and the relationships built within clinical practice, it is recommended that this type of research be extended to other clinical services and health-related disciplines. Such expansion would allow for the identification of similarities and differences in how interdisciplinarity is conceptualized across institutional settings. Finally, the use of participatory and longitudinal methodologies is encouraged, as they can support training processes in healthcare through a contextualized lens (one that includes the voices of patients and other key participants) enriching our understanding of interdisciplinarity as a complex social practice.

5. Conclusions

This study demonstrates that students and tutors participating in the Cardiac Rehabilitation Program constructed a shared social representation of interdisciplinarity grounded in a commitment to patient well-being. However, they anchored their meanings in different symbolic and experiential dimensions: while tutors emphasized technical and ethical-professional aspects of teamwork, students highlighted emotional and formative experiences shaped by their own learning processes.

Interdisciplinarity emerged not only as a conceptual framework but also as a lived, dynamic practice enacted through key social actions: teamwork, communication, problem-solving, and collaborative intervention. These practices were experienced and signified differently by each group, shaped by their individual positions within the team and their stage in the professional training trajectory.

Of course, this diversity of meanings does not fragment the representation—it enriches it. Interdisciplinary teams are not homogeneous; they are composed of individuals with diverse perspectives, backgrounds, and roles, which contributes to their effectiveness and innovation (Boix Mansilla, 2017). In this context, the educational setting becomes a powerful space for constructing shared meanings and professional identities, in which both teachers and students co-create knowledge and practices that transcend disciplinary boundaries.

The findings suggest that health education programs should pay greater attention to the emotional and relational dimensions of interdisciplinary work, recognizing that communication, trust, and shared experience are not merely tools for clinical effectiveness, but also foundational components of learning and identity development. Training environments such as the CR Lab offer unique opportunities to integrate these dimensions, positioning interdisciplinary practice not just as a curricular objective, but as a transformative experience for all involved.

From a research standpoint, this study contributes to the field by demonstrating that interdisciplinarity can be effectively analyzed through the lens of social representations. This approach enables a comprehensive understanding of how healthcare professionals and students construct meanings that inform not only their clinical decisions but also their educational trajectories, their emotional responses, and their professional commitments.

In conclusion, social representations of interdisciplinarity are co-constructed in everyday practice and take on different forms depending on the participants' roles and experiences. Recognizing and valuing these diverse meanings is essential for building truly collaborative, ethically grounded, and patient-centered health teams.

Take-home message: This study identified that integrating tutors' and students' perspectives on interdisciplinarity is key to turning collaborative work into a transformative learning experience.

CRediT authorship contribution statement

Raúl Ahumada: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Marcela Aravena-Winkler:** Writing – review & editing, Visualization, Validation, Methodology, Investigation, Funding acquisition, Data curation, Conceptualization. **Cinara Sacomori:** Writing – review & editing, Visualization, Validation, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors used the chat GPT for translation. After using this tool/service, a native English speaker revised the entire document. AI Atlas Ti was also used to synthesize the results of the study. The authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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Data availability

Data might be requested by email to the corresponding author.

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