

Determinants of Interprofessional Collaboration in a University Medical Center in Beirut

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Abstract

Interprofessional collaboration (IPC) constitutes an essential element in improving the quality and safety of care. This study aimed to evaluate the facilitating and constraining factors of IPC within a university medical center (UMC) in Beirut.

An analytical cross-sectional study was conducted between July and October 2025 among healthcare professionals and administrative staff involved in patient care. Data were collected using a self-administered questionnaire inspired by validated tools from the international literature. The questionnaire evaluated seven dimensions of IPC: understanding of the collaboration concept, collaborative leadership, patient-centered care, teamwork, tasks and responsibilities, professional values, and autonomy at work.

A total of 347 participants were included in the study. The results show an overall positive perception of IPC, with a global mean score of 3.52/5. The highest-rated dimensions were patient-centered care, teamwork, and professional values, whereas professional autonomy and collaborative leadership presented the lowest scores. Multivariate analyses showed that collaborative leadership, clarification of tasks and responsibilities, and understanding of the collaboration concept were the main determinants of IPC. However, interprofessional communication difficulties, hierarchical tensions, and a lack of organizational support remained significant obstacles to the development of collaboration.

In conclusion, IPC within the participating healthcare institution is generally well perceived by healthcare professionals. Strengthening collaborative leadership, interprofessional communication, and organizational policies nonetheless appears essential to sustainably improve the quality of care and patient safety.

Introduction

Interprofessional collaboration (IPC) is defined as a "process by which professionals from different disciplines collaborate in a closely coordinated manner toward shared decision-making aimed at achieving optimal health outcomes"[1, 2].

Factors have been identified as facilitating or constraining IPC; they are divided into interactional, organizational, or structural categories[3, 4]. La Pierre et al. (2017)[5] consider that the same factors can be both facilitators and constraints simultaneously. To create a relationship conducive to IPC, it is essential to have a good understanding of the role and scope of practice of each discipline[6, 7]. A lack of knowledge regarding each person's roles and responsibilities constitutes, according to several authors, a major barrier to IPC[3, 5, 8]. Similarly, communication skills and professionals' values (mutual respect, sharing, trust, and listening) are all elements that positively influence interprofessional relationships[9, 10]. However, on a more personal level, several authors believe that for a professional who wants to collaborate, it is necessary to be prepared and willing to engage in such a process, notably through interprofessional education, individual maturity, and experiences[9]. Hierarchical relationships conveyed in clinical settings are also considered a barrier to IPC, such as physician dominance and overly marked hierarchies between professionals, affecting team spirit[8–11].

On an organizational level, IPC is also influenced by the support institutions provide for this practice. Therefore, Reeves et al. (2010)[9] note that emphasis is placed on organizational values promoting team development by creating a climate conducive to this practice and by giving professionals the opportunity to develop their skills through training or educational activities[3]. Wacheux and Kosremelli Asmar (2007)[8] highlight that an excessively high turnover rate as well as a lack of coordination within work teams, which can lead to workload overload and stress among workers, are obstacles to IPC. Furthermore, the structuring of care, particularly through clear standards, pre-established procedures, and a functional communication and information system[10, 12] would favor IPC. Conversely, a lack of attention given to this practice, a lack of clear description of organizational expectations[13], and imposed changes, including team size or increased workload, are all unfavorable organizational factors for IPC[3].

Materials and Methods

Study Design

This analytical cross-sectional study was conducted in a UMC in Beirut between July and October 2025 to assess IPC and its facilitating and constraining factors.

Population and Sampling

The target population included healthcare professionals and administrative staff involved in patient care at the hospital, including nurses, midwives, secretaries, nursing assistants, physiotherapists, dietitians, respiratory therapists, radiographers, pharmacists, physicians, interns, and residents. Professionals on extended leave during the study period and participants who had taken part in the questionnaire pre-test were excluded. After obtaining informed consent, the questionnaire was distributed electronically via institutional email. Data collection was conducted between July and October 2025.

Measurement Instrument

Data were collected using a questionnaire inspired by Watson et al. (2015), developed by the Queensland Centre in Australia, as well as the tool used by Lapierre et al. (2017). The first section collected participants sociodemographic and professional characteristics. The second section included 50 items assessing interprofessional collaboration (IPC) across seven domains: conceptual understanding of IPC, collaborative leadership, patient-centered care, teamwork, tasks and responsibilities, professional values and beliefs, and autonomy at work. Items were rated on a six-point Likert scale ranging from 0 (strongly disagree) to 5 (strongly agree). Mean scores were calculated for each domain and for the overall IPC scale, with higher scores indicating more favorable perceptions of interprofessional collaboration.

Questionnaire Pre-test

A pre-test was conducted in April 2025 among 14 healthcare professionals to evaluate the understanding of the questions, the clarity of the questionnaire, and the time required to complete it. A few minor modifications were made following this pilot phase.

Validity and Reliability of the Instrument

The internal consistency analysis showed excellent reliability of the overall IPC scale, with a Cronbach's alpha coefficient of 0.98.

The different domains also presented high levels of internal consistency: Conceptual understanding of collaboration: alpha = 0.99, Collaborative leadership: alpha = 0.97, Tasks and responsibilities: alpha = 0.95, Teamwork: alpha = 0.92, Patient-centered care: alpha = 0.92, Professional values and beliefs: alpha = 0.89.

The "autonomy" dimension presented an acceptable internal consistency with a Cronbach's alpha of alpha = 0.71, possibly related to the limited number of items composing this dimension.

The measurement scale used in this study demonstrated excellent internal consistency. The overall Cronbach's alpha was 0.98, indicating very strong internal consistency. The alpha coefficients of the different domains ranged from 0.71 to 0.99. These findings support the internal consistency and reliability of the instrument used to assess IPC.

Ethical Considerations

This study received approval from the hospital-affiliated Ethics Committee (CEHDF-2701), the Medical Director (N.DAM-2025/039), and the Nursing Directorate. Informed consent was obtained from all participants through the questionnaire preamble. Participation was voluntary, anonymous, and confidential. Participants were informed of their right to decline participation or withdraw from the study at any time without consequences.

Statistical Analysis

The collected data were coded and analyzed using the Statistical Package for Social Sciences (SPSS) software, version 22. Descriptive analyses were performed using means, standard deviations, medians, quartiles, minimums, and maximums for quantitative variables, as well as frequencies and percentages for qualitative variables.

Bivariate analyses were performed to study the associations between the different variables. A value of $p < 0.05$ was considered statistically significant. The Chi-square test was used to compare qualitative variables, while Fisher's exact test was applied when theoretical frequencies were less than 5. Student's t-test was used to compare means between quantitative and qualitative variables. Unadjusted Odds Ratios (OR) with their 95% confidence intervals were also calculated.

Multivariable analyses included binary logistic regression to identify factors independently associated with the binary IPC outcome, with results expressed as adjusted odds ratios (aORs) and 95% confidence intervals (CIs). In addition, multiple linear regression was performed to identify factors associated with the continuous overall IPC score, with standardized beta coefficients and variance inflation factors (VIFs) reported. Variables with $p < 0.05$ in the bivariate analyses were considered for inclusion in the initial multivariable models, and statistically significant variables were retained in the final models.

Results

This study, conducted among the staff between July and October 2025, aimed to evaluate the factors facilitating or constraining IPC. The studied factors were grouped into two main categories: relational factors and organizational factors. These factors were divided into seven main domains: understanding of the IPC concept, collaborative leadership, patient-centered care, teamwork, tasks and responsibilities, professional values and beliefs (ethics), and professional autonomy.

In total, the hospital had 294 physicians, 273 residents, 81 interns, 442 nurses, 382 nursing assistants, 50 laboratory technicians, 27 radiographers, 30 physiotherapists, 7 dietitians, and 24 secretaries. Following data collection, 347 usable questionnaires were recovered. The respondents included 216 nurses, 8 nursing assistants, 23 technicians and radiographers, 4 dietitians, 4 pharmacists, 34 physicians, 27 interns, and 9 secretaries.

Descriptive Analysis

In total, 347 questionnaires were analyzed from the Google Forms application. The response rate was 27%, which is considered acceptable in surveys conducted in a hospital setting, where participation rates generally vary between 15% and 30%.

Sociodemographic characteristics. Participants were predominantly young and female, with 43.5% aged 20–29 years and 75.5% being women. Nursing staff represented the largest professional group (64.6%). Participants were distributed across various hospital sectors, with the highest representation from technical platforms (21.7%). Nearly half of the participants (45.6%) had less than five years of professional experience. Detailed sociodemographic characteristics are presented in Table 1.

Table 1
Sociodemographic characteristics of the staff
(n = 347)

Variables	n	%
Gender	262	24.5
Female	85	75.5
Male		
Age	151	43.5
20–29 years	59	17
30–39 years	61	17.6
40–49 years	76	21.9
≥ 50years		
Professional Category	224	64.6
Nursing staff	34	9.8
Physicians	27	7.8
Students (interns/residents)	23	6.6
Technicians/radiographers	16	4.6
Physiotherapists	9	2.6
Secretaries	8	2.3
Pharmacists/dietitians		
Years of experience	154	45.6
< 5 years	46	13.6
5–10 years	42	12.4
10–15 years	56	16.6
15–20 years	40	11.8
≥ 20years		

Table 1: Sociodemographic characteristics of the staff (n = 347)

IPC scores across the seven domains (n = 347) (Fig. 1). The results of this study show generally high IPC scores among participants. The dimensions presenting the highest scores were patient-centered care, teamwork, and professional values and beliefs. Conversely, professional autonomy presented the lowest mean score, suggesting that this dimension remains less developed within interprofessional teams.

Figure 1: Interprofessional collaboration scores across the seven domains (n = 347)

Bivariate Analysis

Association between gender and IPC The overall IPC score was significantly higher in women compared to men (3.61 ± 0.98 vs 3.25 ± 1.20 ; $p < 0.05$) (Table 2). Statistically significant differences were also observed for several collaboration dimensions, notably:

Table 2
Association between the overall IPC score and its domains and gender (n = 347)

Overall IPC score	Gender	n	Mean	Standard Deviation	p
	M	85	3.25	1.20	< 0.05
	F	262	3.61	0.98	
Collaborative leadership	M	85	2.94	1.52	0.003
	F	262	3.45	1.33	
Patient-centered care	M	85	3.48	1.47	0.006
	F	262	3.93	1.27	
Professional values and beliefs	M	85	3.29	1.55	0.002
	F	262	3.80	1.23	

- Collaborative leadership ($p = 0.003$)
- Patient-centered care ($p = 0.006$)
- Professional values and beliefs ($p = 0.002$)

Women consistently presented higher mean scores than men in these areas. In contrast, no statistically significant association was found between gender and understanding of the collaboration concept, teamwork, and professional autonomy ($p > 0.05$).

Table 2: Association between the overall IPC score and its domains and gender (n = 347)

Association between professional categories, experience, and IPC Significant differences were observed between professional categories and the overall IPC score ($p = 0.003$), collaborative leadership ($p = 0.002$), patient-centered care ($p = 0.01$), and professional values ($p = 0.021$) (Table 3). Secretaries (4.16 ± 0.39), pharmacists/dietitians (4.05 ± 0.22), and physicians (3.72 ± 0.64) presented the highest overall collaboration scores. Conversely, technicians reported the lowest score (2.42 ± 1.88). Students (interns/residents) presented a low collaborative leadership score (2.01 ± 0.22), despite a relatively high overall collaboration score (3.77 ± 0.32). Regarding professional experience, significant differences were observed for patient-centered care ($p = 0.03$) and professional autonomy ($p = 0.01$). Professionals with 10 to 15 years of experience presented the highest autonomy scores, while those with less than 5 years of experience reported the lowest scores. No significant association was found between age or department of assignment and the overall collaboration score ($p > 0.05$).

Table 3
Correlation between the overall IPC score and its domains, professional categories, and years of experience (n = 347)

Professional Category	Overall IPC Score				Collaborative leadership				Patient-centered care				Professional values and beliefs			
	n	$\bar{x}$	SD	p	n	$\bar{x}$	SD	p	n	$\bar{x}$	SD	p	n	$\bar{x}$	SD	p
Nursing staff	224	3.50	0.98	0.003	224	4.77	1.93	0.002	224	4.43	0.23	0.01	224	4.25	0.43	0.021
Physicians	34	3.72	0.64		34	3.35	0.45		34	3.8	0.25		34	4.1	0.18	
Students	27	3.77	0.32		27	2.01	0.22		27	3.36	0.16		27	3.90	0.13	
Technician*	23	2.42	1.88		23	4.10	0.10		23	3.34	0.09		23	3.66	0.09	
Secretary	9	4.16	0.39		9	4.14	0.08		9	3.11	0.47		9	3.87	0.31	
Physiotherapist	16	3.04	1.70		16	4.08	0.02		16	4.37	0.16		16	3.15	0.48	
Pharmacist & Dietitian	8	4.05	0.22		8	3.68	0.55		8	3.11	0.47		8	4.55	0.17	
Years of experience	Patient-centered care				Autonomy											
> 5 years	154	4.1	0.2	0.03	154	3.06	1.32	0.01								
[5–10] years	46	3.4	0.3		46	3.13	0.32									
[10–15] years	42	3.84	0.9		42	3.64	0.27									
[15–20] years	56	3.33	1.36		56	3.60	0.33									
≥ 20 years	40	3.69	1.45		40	3.53	1									
*Technician = radiographers and laboratory technicians.																

Table 3: Correlation between the overall IPC score and its domains, professional categories, and years of experience (n = 347)

Table 4: Correlation between the overall IPC score and its domains among respondents (n = 347)

Table 4
Correlation between the overall IPC score and its domains among respondents (n = 347)

Overall score	Overall score	Understanding of collaboration concept	Collaborative leadership	Patient-centered care	Teamwork	Tasks and responsibilities	Professional values and beliefs	Autonomy
	r	1	0.847**	0.876**	0.900**	0.892**	0.800**	0.380**
	p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	n	347	347	347	347	347	347	347
Understanding of collaboration concept	r	1	0.876**	0.843**	0.675**	0.543**	0.716**	0.122**
	p	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	n	347	347	347	347	347	347	347
Collaborative leadership	r		1	0.843**	0.675**	0.696**	0.716**	0.122**
	p		0.00	0.00	0.00	0.00	0.00	0.00
	n		347	347	347	347	347	347
Patient-centered care	r			1	0.777**	0.692**	0.696**	0.348**
	p			0.00	0.00	0.00	0.00	0.00
	n			347	347	347	347	347
Teamwork	r				1	0.692**	0.696**	0.348**
	p				0.00	0.00	0.00	0.00
	n				347	347	347	347
Tasks and responsibilities	r					1	0.642**	0.696**
	p					0.00	0.00	0.00
	n					347	347	347
Professional values and beliefs	r						1	0.084**
	p						0.00	0.00
	n						347	347
Autonomy	r							1
	p							0.00
	n							347

r = Pearson correlation coefficient; *p* = significance level; *n* = sample size. ** Correlation is significant at the 0.01 level (2-tailed).

Correlations between IPC dimensions The overall IPC score was strongly correlated with all studied dimensions (Table 4). The strongest correlations were observed with: patient-centered care ($r = 0.900$; $p < 0.001$), teamwork ($r = 0.892$; $p < 0.001$), collaborative leadership ($r = 0.876$; $p < 0.001$), and understanding of the collaboration concept ($r = 0.847$; $p < 0.001$). Collaborative leadership was also strongly associated with patient-centered care ($r = 0.843$), teamwork ($r = 0.675$), and professional values ($r = 0.716$). Autonomy presented weaker correlations with other dimensions, notably with the overall score ($r = 0.380$; $p < 0.001$), suggesting a dimension more independent of IPC. These results indicate that collaborative leadership, teamwork, and patient-centered care constitute the core dimensions of IPC.

Multivariate Analysis

The logistic regression model is statistically significant ($\chi^2 = 38.6$, $p < 0.001$), indicating that the included variables significantly explain the variation in the level of IPC. Collaborative leadership is the factor most strongly associated with collaboration. An increase in the leadership score is associated with a significant increase in the odds of high collaboration (OR = 1.98; 95% CI [1.28–3.06]; $p = 0.002$), which corresponds to a 98% increase in the chances of high collaboration. Patient-centered care is also a significant factor, increasing the odds of collaboration by 73% (OR = 1.73; 95% CI [1.16–2.58]; $p = 0.006$). Nursing staff present significantly higher odds of collaboration than other professions (OR = 1.86; 95% CI [1.18–2.92]; $p = 0.007$). Finally, professional experience greater than 10 years is also associated with a significant increase in the odds of collaboration (OR = 1.77; 95% CI [1.10–2.86]; $p = 0.018$). (Table 5).

Table 5
Binary logistic regression of factors associated with IPC (n = 347)

Variable	B	SE	p	OR (Exp(B))	95% CI
Leadership score	0.68	0.22	0.002	1.98	[1.28–3.06]
Patient-centered care	0.55	0.20	0.006	1.73	[1.16–2.58]
Nursing staff	0.62	0.23	0.007	1.86	[1.18–2.92]
Experience > 10 years	0.57	0.24	0.018	1.77	[1.10–2.86]
<i>B = regression coefficient; SE = standard error; OR = odds ratio; CI = confidence interval; p = significance level. Statistical significance was set at p < 0.05.</i>					

Table 5: Binary logistic regression of factors associated with IPC (n = 347)

The multiple linear regression model is statistically significant ($F(5, 341) = 112, p < 0.001$), indicating that the included variables significantly explain the variance in the overall IPC score. Collaborative leadership appears as the main determinant of the overall score ($\beta = 0.310$), followed by tasks and responsibilities (Standardized $\beta = 0.280$) and understanding of the collaboration concept (Standardized $\beta = 0.227$). These results indicate that organizational and relational dimensions play a central role in structuring IPC. Professional values (Standardized $\beta = 0.124$) and autonomy at work (Standardized $\beta = 0.170$) also significantly contribute to the model, although their impact is more moderate. The VIF values (1.29 to 3.63) indicate the absence of problematic multicollinearity, confirming the stability of the model. (Table 6).

Table 6
Multiple linear regression of IPC determinants (n = 347)

Variable	B	SE	Standardized β	t	p	VIF
Concept understanding	0.15	0.004	0.227	35.86	< 0.001	3.12
Collaborative leadership	0.23	0.005	0.310	42.37	< 0.001	3.12
Tasks and responsibilities	0.307	0.007	0.280	41.08	< 0.001	3.63
Professional values	0.094	0.005	0.124	20.33	< 0.001	2.87
Autonomy	0.14	0.003	0.170	41.94	< 0.001	1.29
<i>B = unstandardized regression coefficient; SE = standard error; β = standardized regression coefficient; t = t-statistic; p = significance level; VIF = variance inflation factor. Statistical significance was set at p < 0.05.</i>						

Table 6: Multiple linear regression of IPC determinants (n = 347)

Discussion

The paradox between conceptual competence and clinical operationalization

The results of this study highlight a significant divergence within our institution between the conceptual mastery of IPC and its practical implementation in the care environment. The sample of professionals displays high theoretical adherence and a clear understanding of teamwork principles, characterized by a mean score of 4.14/5. This conceptual appropriation aligns with John H.V. Gilbert (2010), D'Amour & Oandasan (2005), San Martín-Rodríguez et al.(2005) frameworks[1, 13, 14], which posit that recognizing the interdependence of roles constitutes the initial cognitive foundation of collaborative practice. However, this theoretical clarity contrasts sharply with the substantially lower scores recorded for collaborative leadership (3.33/5) and the effectiveness of interprofessional communication. This dissonance indicates that the main obstacle to IPC within this university hospital setting does not stem from a lack of individual interest or commitment to collaborative values, but rather from a structural insufficiency of the organizational frameworks necessary for their operationalization[3, 15].

Despite the teams' declared orientation toward patient-centered care, the absence of structuring institutional policies and formalized conflict management mechanisms acts as a limiting factor. As highlighted by San Martín-Rodríguez et al. (2005), Wei et al. (2022), Gleeson et al. (2023) [3, 10, 13], healthcare professionals' willingness to collaborate remains unproductive if the organization fails to provide the required support structures, such as clear interprofessional protocols and protected communication spaces.

Power dynamics, hierarchical asymmetries, and patient safety

Building upon this structural observation, an in-depth examination of the scores relating to professional autonomy and teamwork reveals major systemic disparities. Although participants positively evaluate the surface relational dimension of teamwork, the index of effective collaboration

remains limited. The data suggest that the persistence of traditional hierarchical structures—both medical and nursing—negatively modulates communication processes and potentially interferes with patient safety[9, 10].

Several intertwined systemic factors explain the perpetuation of these hierarchical barriers:

- **Historical and sociocultural asymmetries:** Medical culture has historically structured itself around models of decisional dominance. According to several socio-historical analyses of healthcare professions, these models are frequently reinforced by gender variables, characterized by a historical male preponderance within the medical profession against a predominantly female nursing profession. This sociocultural construction contributes to maintaining an asymmetrical distribution of decision-making power at the expense of shared governance[9, 13].
- **Soloing of training curricula (Training):** The initial training programs for different disciplines remain mono-professional and segmented. This siloing limits the early acquisition of collaborative skills and delays mutual understanding of respective fields of competence[14, 16].
- **Perceived deficit of autonomy:** The low autonomy scores measured among non-medical professionals indicate that the centralization of clinical discussions and choices by a single professional category restricts the contribution and expression of skills from other team members[10, 13].

In terms of patient safety, the scientific literature demonstrates that excessive and unidirectional hierarchization of professional relationships inhibits bidirectional communication[9, 10, 12]. When non-medical professionals perceive an intimidating hierarchical barrier, reporting anomalies, questioning prescriptions, or sharing critical real-time information decreases, thereby increasing the risk of adverse events associated with care.

Conceptual Modeling: Context-Dependent Collaboration

Based on all these converging observations—the theory/practice paradox and the hierarchical asymmetries described above—it appears relevant to formalize a conceptual framework described as "Context-Dependent Collaboration"(Table 7). The results indicate that IPC is not a static or uniform attribute within the institution, but a dynamic variable that transversally oscillates according to the nature of the clinical activity and patient flow[3, 13, 15].

Table 7
Interprofessional collaboration according to clinical context

Clinical Context	Observed Collaborative Dynamic	Operational Impact
Crisis Care / Emergencies	Organic collaboration and transient reduction of hierarchical barriers in the face of imminent vital risk	Streamlining of communication, focused on short-term responsiveness
Chronic Care / Long-stay	Recurrence of siloed structures and traditional corporatist barriers	Decisional rigidity and limitation of shared autonomy

Table 7: Interprofessional collaboration according to clinical context

This transversal model demonstrates that the development of IPC requires differentiated implementation strategies, adapted to the specific constraints and timelines of each clinical environment[3].

Leadership determinants and institutional support

Beyond this contextual modeling, the multivariate linear regression models provide crucial methodological clarifications concerning the explanatory factors for the deficit in collaborative leadership. Front-line managers or clinicians to collaborate should not interpret the low score attributed to this dimension (3.33/5) as a lack of will or an individual reluctance[17, 18].

After adjustment, multivariate analyses significantly demonstrate that this deficit is statistically associated with a decrease in the logistical and organizational support of the system. The main identified predictors include:

- Dedicated time structures for interprofessional exchanges;
- Protocols and guidelines promoting shared decision-making;
- Institutional conflict management mechanisms [3, 17, 18].

Nevertheless, the interpretation of these regression coefficients requires a dual analytical reading. While the lack of structural support reflects an objective logistical shortcoming of the institution, it can also conceal or exacerbate centralized managerial practices or excessive bureaucratic power. These administrative rigidities tend to stifle front-line collaborative initiatives by limiting the decision-making power delegated to field teams[3, 15].

These results align with the work of San Martín-Rodríguez et al. (2005), Wei et al. (2022), Bornman & Louw (2023)[3, 13, 17], who emphasize that IPC requires a favorable institutional environment characterized by organizational support, effective communication mechanisms, and

recognition of complementary skills.

Strengths of the study

This study presents several methodological strengths. It constitutes one of the few research works exploring IPC in a Lebanese university hospital context. The inclusion of multiple professional categories (physicians, nurses, residents, nursing assistants, pharmacists, physiotherapists, technicians, dietitians, and administrative staff) enables a multidimensional view of IPC within the institution.

The use of a questionnaire inspired by existing tools in the literature, coupled with a prior pre-test and satisfactory internal consistency, reinforces the methodological quality of the evaluation. Furthermore, the use of descriptive, bivariate, and multivariate analyses allowed for the identification not only of the overall perceived level of collaboration but also of the factors associated with its various dimensions.

This analytical approach constitutes an important contribution, as it goes beyond a simple description of the perception of IPC to explore certain organizational determinants likely to influence its implementation.

Limitations of the study

The scope of the conclusions of this research must be evaluated in light of several methodological limitations: On the one hand, due to a cross-sectional and single-center methodological design, the results obtained cannot be directly extrapolated to all Lebanese or regional healthcare institutions, whose organizational cultures and resources may differ. On the other hand, the standardized data collection carried out in July 2025 provides a point-in-time and static measurement, failing to capture the longitudinal variations in team dynamics.

Recommendations

The results of this study suggest several avenues of intervention to strengthen IPC in university hospital establishments.

The development of participatory collaborative leadership appears to be a priority. Training aimed at executives, unit managers, and department heads could promote managerial practices based on listening, mutual recognition of skills, and shared decision-making. However, these actions must be accompanied by organizational changes enabling their concrete application, notably through the creation of spaces dedicated to interdisciplinary exchanges and the establishment of formal conflict resolution mechanisms.

Improving interprofessional communication requires structured tools, such as interdisciplinary meetings, briefings, debriefings, and standardized methods of information transfer.

The development of a sustainable collaborative culture necessitates the integration of interprofessional education into training curricula and continuous professional development. Interdisciplinary clinical simulations and mentoring programs could particularly support young professionals in acquiring collaborative skills.

These interventions should nevertheless be adapted to the specificities of each clinical context, as the needs and obstacles to collaboration can vary depending on the units and the populations cared for.

Conclusion

This study shows that is generally perceived favorably by healthcare professionals, particularly concerning the understanding of the collaborative concept and the importance given to patient-centered care.

However, a gap persists between adherence to IPC principles and their effective implementation in daily practices. The results suggest that the main challenges relate less to the individual willingness to collaborate than to the organizational conditions that support this collaboration, notably leadership, communication, and institutional coordination mechanisms.

Strengthening participatory leadership, improving interprofessional communication structures, and developing continuous collaborative training appear as essential levers to sustainably improve the quality and safety of care.

Multicenter and longitudinal studies will be necessary to confirm these results, explore the evolution of IPC over time, and evaluate the effectiveness of organizational interventions aimed at strengthening collaborative practices.

Abbreviations

IPC, interprofessional collaboration; UMC, university medical center; OR, odds ratio; aOR, adjusted odds ratio; CI, confidence interval; SD, standard deviation; VIF, variance inflation factor; SPSS, Statistical Package for the Social Sciences.

Declarations

Ethics approval and consent to participate

This study involving human participants was conducted in accordance with relevant ethical guidelines and regulations, including the ethical principles of the Declaration of Helsinki. The study received approval from the Ethics Committee of Hôtel-Dieu de France (Comité d'éthique de l'Hôtel-Dieu de France, CEHDF; approval no. CEHDF-2701), as well as approval from the Medical Director (N.DAM-2025/039) and the Nursing Directorate. Informed consent was obtained from all participants through the questionnaire preamble. Participation was voluntary, anonymous, and confidential. Participants were informed of their right to decline participation or withdraw from the study at any time without consequences.

Consent for publication

Not Applicable.

Competing Interests

The authors declare that they have no competing interests.

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Author Contribution

OL: Formal Analysis, Data Curation, Methodology, Writing – original Draft, VisualizationBH: Formal Analysis, Supervision, Validation, Writing – Review and editing EH: Supervision, ValidationMA, SA, MD: InvestigationNH: Conceptualization, Methodology, Validation, Supervision

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Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available because of the ethical and confidentiality conditions under which the data were collected. De-identified data may be available from the corresponding author on reasonable request, subject to institutional and ethical restrictions.

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Figures

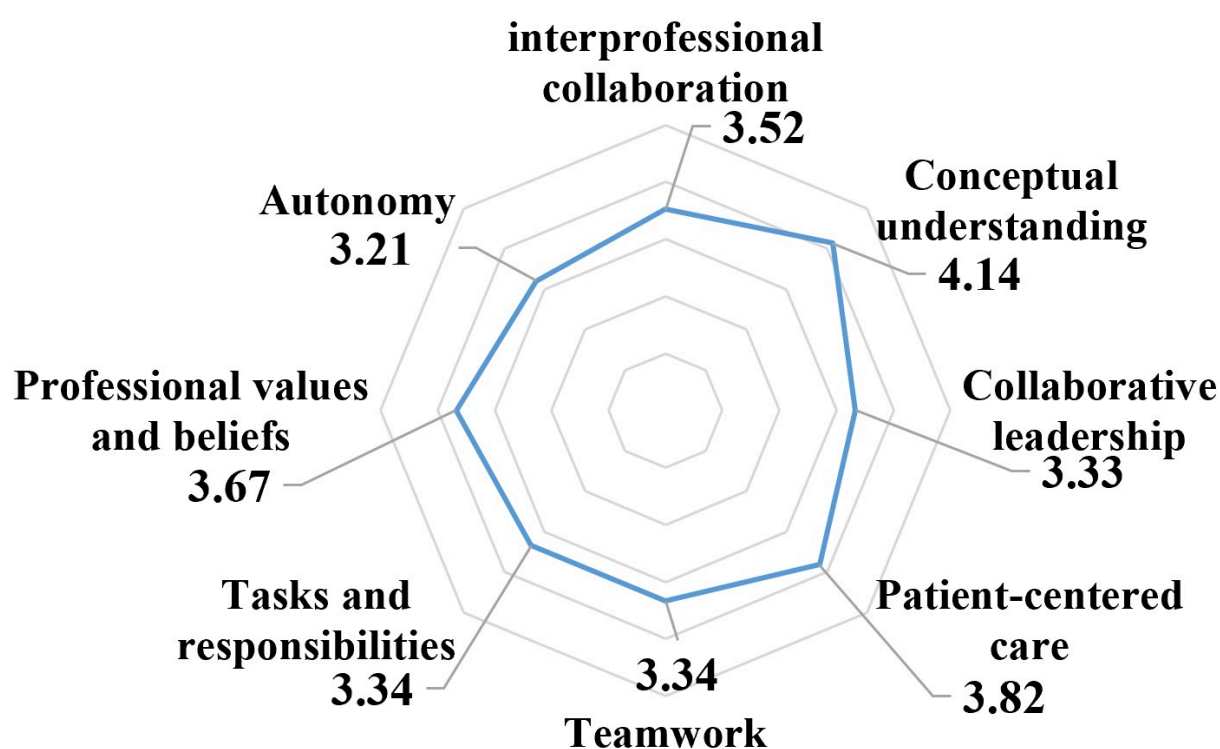


Figure 1

Interprofessional collaboration scores across the seven domains (n = 347)

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