



Healthcare practitioners' perceptions of inter-professional collaborative practices in hospitals

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ABSTRACT

Background: It is believed that positive interactions and exchanges of information within a healthcare team contribute to good quality care in any context. In Indonesia, there may be limitations on interaction and information exchange because of the hierarchical structure of organizations. Culture, hierarchy, and perceived rank affect how individuals behave and interact among professions in healthcare teams. This study aimed to identify the perceptions of each profession on the practice of inter-professional collaboration in their respective work units.

Method: The study was conducted among health care practitioners involved in antibiotic use in hospitals. Data were collected using the Collaborative-Practice Assessment Tool (CPAT) questionnaire of eight domains (53 questions). The correlation coefficient value for the 53 questions was >0.3 , with a significance level of 5%. The reliability of the CPAT questionnaire was good, with Cronbach's alpha of 0.977.

Result: There were 261 respondents. The perception scores of each profession about inter-professional collaboration were 3.55–3.82. The domain that had the highest score was 'the relationship between members'; and the lowest scores was 'decision-making and conflict management'. A statistically significant difference was found in the perception towards the practice of inter-professional collaboration between pharmacists and other professions.

Conclusion: Perceptions of inter-professional collaboration of each profession in hospitals differ. Communication between professions in distributing tasks and roles when interacting is needed so that each profession can contribute optimally.

Key message

Inter-professional collaborative practice can improve health care services to the patient. Communication between professions in distributing tasks and roles when interacting is needed so that each profession can contribute optimally. Agreement on the therapy goals, how to review, and how to make decisions for therapy for the patient will improve the quality of service and patient therapy outcomes. Successful implementation of interventions is associated with an organisation's needs.

This study reported that pharmacists had a lower perception of inter-professional collaborative practice than those in other professions. In

inter-professional practice each profession can contribute their knowledge and skills and share in decision-making. Pharmacists have several possible roles and need to strengthen one or more of them to fit the tasks needed in a team. This study infer that different educational materials are needed for each profession, clinical pathways are necessary for collaborative care between professions, and organizational support enables all professions to participate.

This study's findings reflect the Theoretical Domains Framework, COM-B theory and the Behaviour Change Wheel. The Theoretical Domains Framework includes individual-level factors (eg., knowledge and skills), social factors (eg., social support), and environment and resource

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factors (eg., cost of treatment). Further studies are needed to clarify the role that each attribute contributes to the team to increase the quality of care.

1. Introduction

The implementation of effective inter-professional collaboration is a necessity because of the increasingly complex management of health services that involve multidisciplinary professions.^{1,2} Collaborative teamwork and its communication challenges are factors in preventable patient harm and influence whether a patient receives the highest standard of care. Managing complex work usually involves dividing it into separate tasks and delegating components of the work, requiring a mechanism of coordination and integration.

The hierarchy between professional roles is a barrier to assertive communication and risks violation of evidence-based treatment protocols. High-risk interactions involving critical information about the patient's status and care plan can feature communication failures that will delay treatment or lead to inappropriate therapies. Poor communication of medication name, dose, route of delivery, and timing of administration between physicians, pharmacists, nurses, and patients can lead to medication errors.² The objective of the antimicrobial stewardship program is to optimize the use of antibiotics and promote behavioral changes in the prescribing and dispensing of antibiotics. Unclear diagnosis, poor consideration of possible worsening of disease, patient expectations and demands, as well as lack of information on antibiotic guidelines and local antimicrobial resistance (AMR) data, affect the decision-making for antibiotic prescribing.³ A qualitative study reported that adherence to therapeutic guidelines in prescribing antibiotics was the most effective way to prevent the development of antibiotic resistance, but many surgeons prioritize surgical techniques and procedures more than rational consideration of the choice of antibiotics.⁴ Collaborative practice between doctors, pharmacists, and nurses can increase the use of appropriate antibiotics, according to evidence-based treatment guidelines, however, differing perceptions of therapy risk, absence of pharmacists from the ward, and limitations of the role of nurses in the hierarchy of antibiotic prescribing decisions are barriers to inter-professional collaboration.⁴ Integrated patient care provided by inter-professional collaboration can be implemented in an inpatient setting,⁵ primary care setting, and cross-sector collaborations,⁶ including for antibiotic stewardship programs that regulate the use of antibiotics.⁵

Inter-professional collaboration in integrated patient care can be used to achieve the objectives of the antibiotic stewardship (AMS) program and the implementation of the Global Action Plan on antimicrobial resistance (AMR) strategy.⁷ Inter-professional collaboration in antibiotic control programs can increase the acceptance of antibiotic use recommendations in accordance with guidelines and microbiological results.⁸ Inter-professional collaboration is expected to increase the effectiveness of the antibiotic stewardship program, as measured by the appropriate use of antibiotics (according to indication, dose, duration of administration) and reduced incidence of resistant bacteria.⁷ Effective collaboration requires several components, i.e. having the same goal, effective leadership, effective communication, good cohesion, and mutual respect.^{9,10} Inter-professional collaboration in hospitals is built by having clear roles between professions where doctors are team leaders, pharmacists conduct medication reviews,¹¹ and nurses provide information on the patient's condition.¹²

In making decisions on integrated care for patients receiving antibiotic therapy, knowledge or skills are needed to identify resistant microbes, optimize the use of antibiotics, and avoid potential side effects. Additionally, there needs to be a willingness to share knowledge and skill; and respect the contributions of other professions. Professionals need to have the skills to communicate their opinions and knowledge so that they can work together according to their respective roles and tasks to produce new knowledge and skills that are more useful or cost-

effective.^{1,13,14} This study aimed to identify the perceptions of each profession regarding the practice of inter-professional collaboration in their respective work units.

2. Methods

The study population were health care practitioners who cared for patients in the surgical and obstetrics-gynecology (ob-gyn) unit, including doctors, pharmacists, nurses, and midwives, in three type B hospitals in East Java; Bangil Regional General Hospital (Pasuruan), Husada Utama Hospital (Surabaya), and Hajj General Hospital (Surabaya). Bangil Regional General Hospital, the government hospital, has 323 beds; Husada Utama Hospital, a private hospital, has 235 beds; and Hajj General Hospital, a government hospital, has 226 beds. Data were collected by speaking to respondents face to face. All staff working in these units were approached to take part and 99% did so (258/261).

Assessment of healthcare practitioners' perceptions of collaborative practices used a Collaborative-Practice Assessment Tool (CPAT) questionnaire validated in Indonesia.^{15,16} The Indonesian version of CPAT part I consists of eight components with a total of 53 questions (Appendix 1): i. relationships among team members (9 questions), ii. barriers to team collaboration (5 questions), iii. team relationships within the community (4 questions), iv. team coordination and organization (14 questions), v. decision making and conflict management (2 questions), vi. leadership (5 questions), vii. missions, goals and objectives (9 questions), and viii. patient involvement, responsibility and autonomy (5 questions); part II consist of three open questions: i. what is your team doing well with collaborative practices?, ii. in your practice, what are the most difficult challenges in collaborating?, iii. what help does your team need to improve collaboration practices? The questionnaire was validated using exploratory factor analysis (EFA) after language adaptation and trial. Exploratory factor analysis showed the adequacy of the sample with a measure of sampling adequacy of 0.728–0.965, the Kaiser–Meyer–Olkin test 0.923, and Bartlett's test of sphericity 0.000. The correlation coefficient value for 53 questions was >0.3 with a significance level of 5%. The process of questionnaire development was published previously.¹⁶ The reliability of the CPAT questionnaire was good, with Cronbach's alpha of 0.977. The CPAT questionnaire was formed using a 5-point Likert scale, analyzed with descriptive statistics, then further analyzed, using the Student's t-test and one-way analysis of variance (ANOVA) if the data were normally distributed, or Mann-Whitney and Kruskal-Wallis difference test if the data were not normally distributed.

The calculation of the minimum sample size for each profession used the following formula,¹⁷ where n is the minimum sample size, the Z value for $p < 0.05$ is 1.96, the P (population) value for the unknown population size is 0.5, and the 0.2 effect difference is 24 respondents.

$$n = \frac{Z^2 P (1 - P)}{d^2}$$

3. Ethical considerations

This study received research permissions from Husada Utama Hospital (Surabaya) Number 1338/RSHU/Dir./XI/2020 and 1339/RSHU/Dir./XI/2020; and ethical approval from the Health Research Ethics Team of the Bangil Regional General Hospital (Pasuruan) Number 445.1.22.424.072.01/2020, the University of Surabaya Institutional Ethical Committee Number 143/KE/XI/2020 and 144/KE/XII/2020 (Husada Utama Hospital, Surabaya), Health Research Ethics Committee Hajj General Hospital (Surabaya) Number 073/10/KOM.ETIK/2020.

4. Results

There were 261 respondents from the three hospitals (Table 1). The response rates in two hospitals were 100%; the third hospital had a 97%

Table 1
Respondents' demographic characteristics.

Age (years) ^a	RSUD Bangil (N=96)		RS Husada Utama (N=98)		RSU Haji (N=67)		Total (N=261)	
	N	%	N	%	N	%	N	%
20-<30	48	50.00	25	25.51	13	19.40	86	32.95
30-<40	36	37.50	56	57.14	21	31.34	113	43.30
40-<50	6	6.25	14	14.29	16	23.88	36	13.79
50-<60	6	6.25	3	3.06	15	22.39	24	9.20
60-70	0	0.00	0	0.00	2	2.99	2	0.77
Gender								
Male	15	15.63	9	9.18	22	32.84	46	17.62
Female	81	84.38	89	90.82	45	67.16	215	82.38
Profession								
Doctor	7	7.29	4	4.08	17	25.37	28	10.73
Pharmacist	10	10.42	15	15.31	2	2.99	27	10.34
Nurse	34	35.42	63	64.29	29	43.28	126	48.28
Midwife	45	46.88	16	16.33	19	28.36	80	30.65
Work length (years)								
<5	37	38.54	20	20.41	18	26.87	75	28.74
5-10	38	39.58	61	62.24	13	19.40	112	42.91
>10	21	21.88	17	17.35	36	53.73	74	28.35

^a Mean (SD) = 34.17 (8.36).

response rate (3 out of 98 respondents didn't return the questionnaire). The majority of the study participants were aged 30-40 years (43.30%) and female (82.38%) (Table 1). The respondents were nurses (48.28%), midwives (30.65%), doctors (specialists) (10.73%), and pharmacists (10.34%).

Scores reflected participants' agreement about the importance of trust and mutual respect/appreciation between team members who collaborate, with the mean score >4 for perceived relationship among members for all professions (mean score for doctors, nurses, and midwives = 4.3, while pharmacists = 4.1 (Table 2)).

The team scores showed that all professions agreed to partner/share information with the team to optimize the coordination of services for patients, with a mean score >3.5 for team relations (mean scores of nurses and midwives = 4.0; doctors = 3.9; and pharmacists = 3.6 (Table 2)).

The scores reflected participants' agreement that leaders function well in collaboration, whereas overall professions in surgical and obstetric gynaecology units disagreed if the presence of a leader did not pay attention to members' concerns/disagreements, with a mean score of team barriers in collaboration, which ranged from 3.0 to 3.6 (mean score of nurses = 3.0; pharmacists = 3.2; doctors = 3.5; and midwives = 3.6 (Table 2)).

The scores reflected participants' agreement that the team makes the decision together, whereas all professions in the surgical and obstetric unit disagreed if the decision was made by a doctor/someone who has a higher position, with a mean score of decision-making and conflict management, which ranged from 1.9 to 2.0 (mean score of the doctor,

pharmacist, nurse = 1.9; and midwives = 2.0) (Table 2).

The perceptions towards the practice of inter-professional collaboration reflected statistically significant differences between pharmacists and other professions (doctors, p = 0.042; nurses, p = 0.001; and midwives, p = 0.000) (Table 3). Some quotations from the participants described the collaboration situations (Table 4).

5. Discussion

Whenever there is an interaction between team members, there is an exchange of knowledge/information. Pharmacists having lower scores for perception of collaborative practice refers to the less frequent interaction and exchange of information/knowledge of pharmacists compared to doctors, nurses, and midwives.¹⁸

The interaction and exchange of information between the pharmacist profession and doctors or nurses varies, depending on the pharmacist's ability and role. Lack of consensus on professional identities and roles will lead to ambiguity or instability of those roles. Some studies report

Table 3
P-value *post-hoc* analysis of total score.

Domain	Profession	Doctors	Pharmacists	Nurses	Midwives
Total score	Doctors	-	0.042	0.947	0.893
	Pharmacists	-	-	0.001	0.000
	Nurses	-	-	-	0.001
Relationships among members	Doctors	-	0.116	0.990	1.000
	Pharmacists	-	-	0.026	0.001
	Nurses	-	-	-	0.712
Barriers in team collaboration	Doctors	-	0.802	0.036	0.985
	Pharmacists	-	-	0.720	0.219
	Nurses	-	-	-	0.000
Team relationships with the community	Doctors	-	0.318	0.887	0.838
	Pharmacists	-	-	0.000	0.000
	Nurses	-	-	-	1.000
Team coordination and organization	Doctors	-	.665	0.954	0.139
	Pharmacists	-	-	0.806	0.000
	Nurses	-	-	-	0.000
Decision making and conflict management	Doctors	-	0.975	0.634	0.369
	Pharmacists	-	-	0.610	0.355
	Nurses	-	-	-	0.493
Leadership	Doctors	-	0.008	1.000	0.989
	Pharmacists	-	-	0.000	0.000
	Nurses	-	-	-	0.790
Mission, goals and objectives	Doctors	-	0.029	0.988	1.000
	Pharmacists	-	-	0.001	0.000
	Nurses	-	-	-	0.871
Patient involvement, responsibility and autonomy	Doctors	-	0.386	0.991	0.999
	Pharmacists	-	-	0.000	0.044
	Nurses	-	-	-	0.286

*variant homogeneity

Table 2
ANOVA test results between professions and Mean score of Collaborative-Practice Assessment Tool (CPAT).

Domain	Doctor		Pharmacist		Nurse		Midwife	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
CPAT*	3.76	0.32	3.55	0.17	3.74	0.26	3.82	0.24
Relationships among members **	4.34	0.49	4.08	0.28	4.27	0.42	4.35	0.36
Barriers in team collaboration	3.30	1.00	3.21	0.75	3.00	0.90	3.56	0.68
Team relationships with the community *	3.89	0.64	3.63	0.34	4.03	0.46	4.04	0.34
Team coordination and organisation	4.12	0.47	4.01	0.13	4.15	0.38	4.25	0.41
Decision making and conflict management	1.88	0.38	1.87	0.55	1.93	0.55	1.98	0.56
Leadership *	4.17	0.54	3.76	0.35	4.17	0.43	4.09	0.35
Mission, goals and objectives *	4.23	0.47	3.93	0.25	4.16	0.39	4.23	0.43
Patient involvement, responsibility and autonomy *	4.14	0.53	3.94	0.19	4.20	0.39	4.10	0.38

*p < 0.001; **p < 0.05; Likert scale categories: Strongly agree: 5, Agree: 4, Neutral: 3, Disagree: 2, Strongly disagree: 1.

Table 4
Respondents' description of inter-professional collaborative practice in the hospital.

Domain Collaborative Practice Assessment Tool (CPAT)	n/N	Quotation
Relationships among members	56/ 87	Doctors (2/8), pharmacists (4/9), nurses (50/70) 30. <i>Communication, tolerance, trust, response time (doctor)</i> 59. <i>Performing duties according to responsibilities and authorities, fostering good relations with other related professions (pharmacist)</i> 37. <i>Coordination and effective communication regarding the treatment goals to be set (nurse)</i>
Barriers in team collaboration	86/ 87	Doctors (8), pharmacists (8), nurses (70) 92. <i>Harmonize health services administered by each profession and the social condition of the patient. (doctor)</i> 84. <i>Not all Specialist doctors value pharmacists' opinions/recommendations of therapy. In addition, there is a limited time for doctor-pharmacy ward visit together due to an uncertain doctor visit schedule. (pharmacist)</i> 69. <i>When communicating with other professionals, because not all nurses have good communication skills. (nurse)</i>
Team relationships with the community	0	There were no respondents' responses regarding the team's relationship with the community.
Team coordination and organisation	27/ 87	Doctors (1/8), pharmacists (2/9), nurses (24/70) 52. <i>Teamwork and task distribution (doctor)</i> 57. <i>The internal team has well collaborated if there are problems, they will discuss and make a consensus on it (pharmacist)</i> 37. <i>Coordination and communication effectively for setting the treatment goals (nurse)</i>
Decision making and conflict management	7/ 87	Doctors (1/8), pharmacists (3/9), nurses (3/70) 48. <i>Consistent discussing patient care cases, both related to follow-up care and financing (especially referral cases) (doctor)</i> 56. <i>Diagnosis and therapy by the doctor, pharmacist reconciles drug therapy, monitoring results reported to the doctor, pharmacist drug therapy continuity, nursing care by nurse, pharmacy officer prepares once-daily doses, pharmacist give information to patient when he/she discharge from hospital (pharmacist)</i> 64. <i>Report any drug changes to the pharmacist for immediate action (patient's side effects) (nurse)</i>
Leadership		There were no respondents' responses regarding leadership
Mission, goals and objectives		There were no respondents' responses regarding mission, goals and objectives
Patient involvement, responsibility and autonomy		There were no respondents' responses regarding patient involvement, responsibility and autonomy

that doctors and nurses rely heavily on pharmacists to provide information about optimal treatment.^{18,19} In Canada, a ward pharmacist has eight roles, namely reconciliation of drugs at admission, monitoring of drug therapy (pharmaceutical care plan), identification of drug-related problems, joint visits (inter-professional patient care rounds), patient education during hospitalization, patient education on discharge, drug reconciliation on discharge, and bundled patient care interventions.²⁰ In Indonesia, according to the Pharmaceutical Service Standards in Hospitals,²¹ there are eleven types of clinical pharmacy services, namely: assessment and prescription services, drug history tracing, drug reconciliation, drug information services, counseling, visits, drug therapy monitoring, monitoring of drug side effects, evaluation of drug use,

dispensing of sterile preparations, and monitoring drug levels in the blood. A study on the clinical pharmacy services in hospitals in Sintang Regency reported that 7 out of the 11 types of services had been provided. Implementation ranged from 33% to 100% with 100% implementation of review and prescription services, and drug reconciliation; 85% implementation of drug information services; 71% implementation of counseling; 66% implementation of the ward visit; and 33% of carrying out drug use history tracing and monitoring drug effects.

Having several identities (in relation to their profession) gives pharmacists adaptive advantages in an ever-changing healthcare environment, but will also lead to role confusion. Therefore, further exploration is needed to determine the way roles in a health care team may improve the quality of service and patient therapy outcomes.

One study at a private hospital in Yogyakarta on patient satisfaction with health services reported a high level of satisfaction with doctors (97%), pharmacists (89%), and nurses (92%). In that study, good inter-professional communication was achieved not only through medical records but also verbally.²² Research on inter-professional collaboration also reported that a lack of inter-professional interaction may be due to a hierarchical culture and lack of understanding of the professions' role.^{19,23-25}

Knowledge exchange in the team occurs when pharmacists contribute as drug experts to provide information about the use of drugs to be safe, effective, and prevent drug allergies. The results of the exploration of pharmacist perceptions in Elvey's research^{26,27} show that pharmacists perceive themselves as preparing drugs according to doctor's prescriptions (technical), providing advice on drug use (social), and managing pharmacy finances (business). Another result of Elvey's research exploration is that pharmacists perceive that health workers perceive pharmacists in different ways: positively, to provide recommendations for solving drug-related problems; negatively, as a medicines keeper (including counting the number of drugs and giving labels) or threatening the role of the doctor's profession (making-decisions on drug selection). Elvey's research identified pharmacists' identities that included scientists, medicines advisors (providing recommendations), clinical practitioners, social carers, medicines makers, medicines suppliers, managers, and business persons. Pharmacists build their identity depending on the context in which they work.²⁸ In carrying out their work, a pharmacist should be an expert in one or several identities required in the workplace²⁹⁻³² and be trained continuously (knowledge, skills, etc.)³³⁻³⁷ to contribute optimally to the team.

The perception score for inter-professional collaboration between pharmacists and doctors was statistically significant in the domains of 'leadership' ($p = 0.008$) and 'mission, goals, objectives' ($p = 0.029$). The diversity of pharmacist identities and the dominant type of identity in each pharmacist^{26,27} affect the interactions and contributions of pharmacists in the team. This can affect pharmacists' perception of inter-professional collaboration, especially the 'leadership' domain and the 'mission, goals, objectives' domain. Uncoordinated health services lead to duplication of tasks and overlapping interventions,³⁸ while agreement on the goals and objectives of inter-professional prescribing improves the suitability of patient treatment and avoids the occurrence of side effects.³⁹

The perceived score for inter-professional collaboration between pharmacists and nurses was statistically significant different in the domains of 'relationship between members' ($p = 0.026$), 'team relationship with the community' ($p < 0.001$), and 'patient involvement' ($p < 0.001$), with the pharmacist' CPAT scores lower than the nurse' scores.

Pharmacists can collaborate with nurses to resolve drug-related problems and be a reliable source of clinical drug information.⁴⁰ However, not all pharmacists interact regularly with nurses.⁴¹ Pharmacists and nurses can intervene to help patients comply with their medication; pharmacists may provide information about medication and related lifestyle advice, while nurses monitor clinical conditions and provide information about their illness. However, collaboration between pharmacists and nurses in patient medication adherence interventions is still

rare.^{42,43} The perception score for inter-professional collaboration between doctors and nurses was statistically significant in the domain of 'team barriers to collaboration' ($p = 0.036$), with the nurse's score lower than the doctor's score. Nurses feel they have more barriers when practising collaborative practice than doctors.^{15,43} In Indonesia, the existence of a hierarchical culture^{23,24} in organizations allows a profession to be more autonomous and tends to lead to difficulties in collaborating. The perception gap of a profession towards the role of other professions is also an obstacle in collaborating.^{29,44} For example, the expectation of nurses for doctors to explain the treatment decision-making process versus the doctor's perception that one of the nurse's duties is to verify prescriptions and treatment decisions made by doctors.²⁹

It is believed that positive interactions and exchanges of information within a healthcare team contribute to good quality care in any context. Culture, hierarchy, and perceived rank affect how individuals behave and interact among professions in healthcare teams. This study showed the necessity of evaluating perceptions of collaboration in order to design interventions that suit a healthcare service context.

This study was limited by the choice of one practice area for study; and cannot hinder a socially acceptable answer because of the data collected in the workplace. Relationships should be studied in other disciplines to broaden the conclusions.

6. Conclusion

Inter-professional interaction in Indonesia is not optimal.²³ There is a hierarchical communication structure.⁴⁵ Pharmacists had lower perceptions of their role in inter-professional collaboration than other professions. The profession's perceptions of their role in the team, how they perceived other professions' views of pharmacists, and other professions' perceptions of their professional role, influenced health care practitioners' perceptions about inter-professional collaboration practice. A low CPAT score for pharmacists regarding relationships among members, team relationships with the community, and leadership, may be due to the relatively recent introduction of an extended pharmaceutical role in patient care in Indonesia compared to doctors and nurses. The health care practitioners' unmet expectations can be resolved by agreeing the contribution and behavior of each profession in the team. There should be agreement about three main target areas: 1. treatment goals and patient therapy outcomes, 2. how to select the type of therapy, and 3. decision-making concerning problems related to patient treatment. Further research is needed to identify the contribution of each profession in the patient treatment process, especially for the pharmacist who currently has many identities.⁴⁶

Appendix 1. (Yusra, 2019; Schroder, 2011)

Statement

Relationships among members

1. Anggota tim memiliki kepercayaan terhadap pekerjaan dan kontribusi setiap anggota dalam hubungannya dengan pelayanan pasien/klien.
Team members have confidence in the work and contribution of each member concerning patient/client care.
2. Anggota tim menghormati peran dan keahlian masing-masing.
Team members respect each other's roles and skills.
3. Tingkat saling menghormati dalam tim kami dapat meningkatkan kemampuan kami untuk bekerja sama.
The mutual respect level in our team can enhance our ability to work together.
4. Anggota tim peduli terhadap kesejahteraan satu sama lain.
Team members care about each other's well-being.
5. Bekerja dengan anggota tim lainnya merupakan hal yang menyenangkan.
Working with other team members is lively.
6. Kegiatan kebersamaan dapat meningkatkan efektivitas kerja tim.
Doing daily activities together can increase the effectiveness of teamwork.
7. Saling menghormati antara anggota tim meningkatkan kemampuan kami untuk bekerja sama.
Mutual respect between team members enhances our ability to work together.

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Ethical approval

This study received research permissions from Husada Utama Hospital (Surabaya) Number 1338/RSHU/Dir./XI/2020 and 1339/RSHU/Dir./XI/2020; and ethical approval by the Health Research Ethics Team of the Bangil Regional General Hospital (Pasuruan) Number 445.1.22.424.072.01/2020, the University of Surabaya Institutional Ethical Committee Number 143/KE/XI/2020 and 144/KE/XII/2020 (Husada Utama Hospital, Surabaya), Health Research Ethics Committee Hajj General Hospital (Surabaya) Number 073/10/KOM.ETIK/2020.

CRedit authorship contribution statement

Rika Yulia: Data curation, Funding acquisition, Project administration, Resources, Roles/Writing – original draft, Writing – review & editing. **Fauna Herawati:** Conceptualization, Data curation, Investigation, Project administration, Resources, Visualization, Roles/Writing – original draft, Writing – review & editing. **Setiasih:** Formal analysis, Software, Validation, Writing – review & editing. **Astrid Pratidina Susilo:** Methodology, Validation, Writing – review & editing. **Retnosari Andrajati:** Project administration, Supervision, Writing – review & editing. **Diantha Soemantri:** Conceptualization, Methodology, Supervision, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no conflict of interest.

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(continued)

Statement
8. Bekerja secara kolaboratif membuat sebagian besar anggota tim antusias dan tertarik terhadap pekerjaan mereka. Working collaboratively makes most team members enthusiastic and interested in their work.
9. Pemimpin tim kami mendorong setiap anggota untuk berpraktik dalam seluruh lingkup profesional mereka. Our team leaders encourage each member to practice within their entire professional scope.
Barriers in team collaboration
10. Kepemimpinan dalam tim menghambat para profesional untuk mengambil inisiatif dalam usaha mencapai tujuan pelayanan pasien/klien. Team leadership hinders professionals from taking the initiative to achieve patient/client service goals.
11. Pemimpin tim kami tidak memperhatikan kekhawatiran dan persepsi anggota tim. Our team leader unconcerns and inattentive the perceptions of team members.
12. Anggota tim merasa otonomi mereka terbatas dalam perawatan pasien/klien yang dapat mereka berikan. Team members feel their autonomy is limited in the patient/client care they can provide.
13. Ketidaksetujuan antar anggota tim diabaikan atau dihindari. Disagreements between team members are ignored or avoided.
14. Tim kami memiliki proses yang baku dalam manajemen konflik. Our team has a standard procedure in conflict management.
Team relationships with the community
15. Tim kami telah membentuk kemitraan dengan organisasi masyarakat untuk mewujudkan luaran pasien/klien yang lebih baik. Our team has formed partnerships with community organizations to achieve better patient/client outcomes.
16. Tim kami memiliki cara untuk mengoptimalkan koordinasi pelayanan pasien/klien dengan lembaga pelayanan masyarakat. Our team has a way of optimizing the coordination of patient/client care with community service agencies.
17. Anggota tim kami berbagi informasi yang berhubungan dengan sumber daya komunitas. Our team members share information related to community resources.
18. Janji temu pasien/klien dikoordinasikan sehingga mereka dapat bertemu beberapa pemberi layanan kesehatan dalam satu kunjungan. Patient/client appointments are coordinated so they can meet multiple healthcare providers in one visit.
Team coordination and organization
19. Catatan kesehatan pasien/klien digunakan secara efektif oleh semua anggota tim sebagai alat komunikasi. Patient/client health records are used effectively by all team members as a communication tool.
20. Saya percaya keakuratan informasi yang dilaporkan diantara anggota tim. I trust the accuracy of the information reported among team members.
21. Ketika ada anggota tim yang tidak setuju, semua pandangan dipertimbangkan sebelum keputusan diambil. When a team member disagrees, a decision is made by considering all member's views.
22. Informasi yang relevan berkaitan dengan perubahan status atau rencana perawatan pasien/klien dilaporkan kepada anggota tim yang sesuai dengan waktu yang tepat. Relevant information related to patient/client status or treatment plans changes is reported to appropriate team members on time.
23. Kekhawatiran pasien/klien ditangani secara efektif melalui pertemuan rutin dan diskusi tim. Patient/client concerns are handled effectively through regular meetings and team discussions.
24. Anggota tim memiliki tanggung jawab untuk berkomunikasi dan menyediakan keahlian mereka dengan cara yang asertif. Team members have a responsibility to communicate and assertively provide their expertise.
25. Terdapat kejelasan mengenai siapa yang bertanggung jawab untuk aspek-aspek dalam rencana perawatan pasien/klien. There is clarity on who is responsible for aspects of the patient/client care plan.
26. Informasi yang relevan dengan rencana pelayanan kesehatan pasien diberikan kepada pasien/klien. Information relevant to the patient's health care plan is provided to the patient/client.
27. Tim kami sudah mengembangkan strategi komunikasi yang efektif untuk saling berbagi tujuan dan hasil tatalaksana pasien/klien. Our team has developed effective communication strategies to share patient/client treatment goals and outcomes.
28. Setiap anggota tim bertanggung jawab terhadap keputusan dan hasil tim. Each team member is responsible for team decisions and results.
29. Anggota tim merasa nyaman dalam memberikan advokasi terkait pasien/klien. Team members feel comfortable advocating for patients/clients.
30. Pertemuan tim kami memberikan kesempatan yang terbuka, nyaman dan aman untuk membahas kekhawatiran. Our team meetings provide an open, convenient and safe opportunity to discuss concerns.
31. Anggota tim bertanggung jawab terhadap pekerjaan mereka. Team members are responsible for their work.
32. Anggota tim bertemu tatap muka dengan pasien yang dirawat oleh tim. Team members meet face-to-face with patients treated by the team.
Decision making and conflict management
33. Dalam tim kami, penetapan keputusan akhir terkait pelayanan pasien/klien berada di tangan dokter. In our team, the final decision regarding patient/client care is decided by the doctor.
34. Dalam tim kami, ada masalah yang secara teratur perlu dipecahkan oleh seseorang dengan posisi yang lebih tinggi. Within our team, some problems regularly need to be solved by someone in a higher position.
Leadership
35. Pemimpin tim kami mencontohkan, menunjukkan dan mengadvokasi praktik baik yang berpusat pada pasien/klien. Our team leaders exhibit and advocate for patient/client-centered good practice.
36. Kepemimpinan dalam tim menjamin bahwa peran dan tanggung jawab dalam pelayanan pasien/klien didefinisikan dengan jelas. Team leadership ensures that roles and responsibilities in inpatient/client care are clearly defined.
37. Kepemimpinan dalam tim mendukung adanya peluang pengembangan interprofesional. Team leadership supports inter-professional development opportunities.

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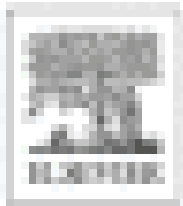
Statement
38. Tim kami memiliki proses penilaian antara sejawat. Our team has a peer-to-peer assessment process.
39. Langkah-langkah tersedia untuk mengidentifikasi dan merespon masalah secara cepat. There are some steps to identify and respond to problems fast.
Mission, goals and objectives
40. Misi tim kami mewujudkan pendekatan kolaboratif interprofesional dalam pelayanan pasien/klien. Our team's mission is to embody an inter-professional collaborative approach to patient/client care.
41. Tujuan tim kami jelas, bermanfaat dan sejalan dengan praktik saya. Our team goals are clear, beneficial, and related to my practice
42. Tujuan utama tim kami adalah membantu pasien/klien dalam mencapai tujuan pengobatan. Our team's foremost goal is to help patients/clients achieve their treatment goals.
43. Rencana pelayanan dan tujuan pengobatan pasien/klien memasukan paduan praktik baik dari berbagai profesi. Service plans and patient/client treatment goals incorporate the integration of good practices from various professions.
44. Misi dan tujuan tim kami didukung oleh sumber daya yang cukup (keterampilan, dana, waktu, ruangan). Our team's mission and goals are supported by sufficient resources (skills, funds, time, space).
45. Semua anggota tim memiliki komitmen terhadap praktik kolaboratif. All team members are committed to collaborative practice.
46. Anggota tim kami memiliki pemahaman yang baik mengenai rencana pelayanan dan tujuan pengobatan pasien/klien. Our team members have a good understanding of the service plan and patient/client treatment goals.
47. Ada keinginan nyata diantara anggota tim untuk bekerja secara kolaboratif. There is a real solicit among team members to work collaboratively.
48. Kepemimpinan dalam tim memastikan bahwa semua profesi yang dibutuhkan memiliki peran dalam tim. Team leadership ensures that all required professions have a role in the team.
Patient involvement, responsibility and autonomy
49. Jika pasien meminta, maka keluarga dan dukungan lain dimasukkan dalam rencana pelayanan. If the patient requests, then family and other support are included in the service plan.
50. Pasien/klien dianggap sebagai bagian dari tim pelayanan kesehatan. Patients/clients are considered part of the health care team.
51. Anggota tim mendorong partisipan aktif dari pasien/klien dalam membuat keputusan pelayanan. Team members encourage active patient/client participation in the decision-making process.
52. Dokter mengambil peran sebagai penanggung jawab utama untuk keputusan dan luaran dari tim. Doctors have the role of primary responsibility for the decision-making and outcomes fulfillment of the team.
53. Para anggota tim mengakui aspek pelayanan dimana anggota profesi saya memiliki lebih banyak keterampilan dan keahlian. Team members recognize aspects of service where members of my profession have more skills and expertise.

Likert scale categories: Strongly agree: 5, Agree: 4, Neutral: 3, Disagree: 2, Strongly disagree: 1.

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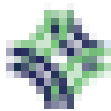


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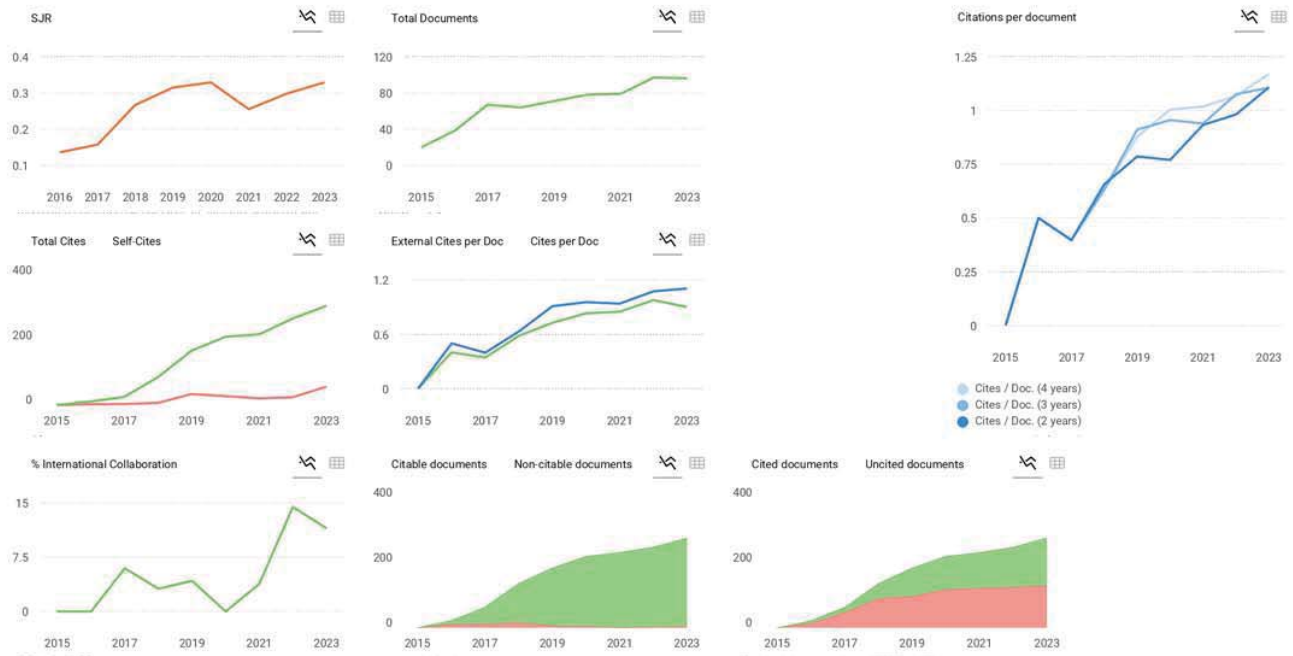
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