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Research Article

Interdisciplinary Communication in the Intensive Care Unit at Saint Peter Specialized Hospitals Addis Ababa, Ethiopia, 2023: A Mixed-method Study

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Abstract

Background Effective team communication and coordination are recognized as being crucial for improving quality and safety in the intensive care unit (ICU). The aim of this study was to Exploring Interdisciplinary communication and its determinants in health professionals. *Methods*: A quantitative cross-sectional study and an exploratory qualitative study were conducted among 333 health professionals working at Saint Peter Specialized Hospitals in Addis Ababa, Ethiopia. Descriptive summary statistics and binary and multivariable logistic regression analysis were used to explore the determinant factors of Interdisciplinary communication use, while qualitative data were thematically analyzed. *Result*: from quantitative study over all communication openness is 95(28.5%), communication accuracy is 180(54.1%), good perception 194(58.3)% and understand patient care goal 101 (30.3%). Multivariable logistic analyses showed that communication openness between General Practitioner To resident [AOR=2.9; 95%CI= (1.55-5.5)], communication openness between General Practitioner to Laboratories [AOR=1.847; 95%CI= (1.084-3.146)] educational levels, [AOR=3.2; 95%CI= (0.156-4.830)], work experience [AOR=2.84; 95%CI= (1.088-7.416)], From qualitative study, revealed from focused group discussion and in-depth interview three themes emerged, namely, no interdisciplinary communication guide/tool, ICU has no good communication with other departments and Shortage of equipment and medication on ICU. *Recommendation*: should be better to increase communication openness between health professionals. It is better to establish an interdisciplinary communication guide/tool, good communication with other departments, and bring adequate equipment and medication for the ICU.

Keywords

Interdisciplinary Communication, ICU, Quality, Addis Ababa, Ethiopia

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1. Introduction

Interdisciplinary communication is an important and complex issue. It is important as modern society increasingly demands application-oriented Knowledge, and the usability of scientific knowledge generally requires the combination and integration of knowledge from various scientific disciplines. [1, 2]. Effective team communication and coordination are recognized as being crucial for improving quality and safety in acute medical settings such as the intensive care unit [3].

Interdisciplinary communication in the Intensive Care Unit (ICU) is complicated by the dynamic workflow of clinicians, the instability of patients, and highly technological therapies, equipment, and information systems [4]. Inadequate communication of treatment goals and lack of collaboration among intensive care unit (ICU) staff have been shown to have a significant negative impact on administrative, social, clinical, and educational outcomes [5, 6].

Communication failures can emerge from junior team members being reluctant to communicate openly with senior team members because of a fear of either appearing incompetent, or being rejected, embarrassed, or reprimanded [7]. Inadequate interdisciplinary communication in the intensive care unit will increase problems in providing quality care, not only do such factors increase the likelihood of medical errors occurring, but also the extent to which communication in the ICU is open may influence the degree to which patient care duties are understood [8].

Fifteen percent (15%) of medical errors have been attributable to communication problems with error rates as high as 1.7 per patient per day in the ICU having been recorded [9]. poor collaborative communication between nurses and physicians has as much as a 1.8-fold increase in risk-adjusted mortality and significant increases in the length of ICU stay [10, 11].

The study is important in providing information about Interdisciplinary communication in ICU Saint Peter Specialized Hospital in Addis Ababa. Increasing effective Interdisciplinary communication in the ICU helps to increase awareness, response, and evaluate Quality services or practice, the government and other responsible bodies need to design strategies for Quality Improvement, Application, and control of Interdisciplinary communication. Also, the study may help other researchers and policymakers to build up on this research and thus could be used as a baseline study for anyone who wishes to conduct such kind of studies on ICU interdisciplinary communication.

2. Methods

2.1. Study Setting

The study was conducted at St. Peter Specialized Hospital from 01/01/2023 to 30/04/2023. St. Peter Specialized Hospital is located in Addis Ababa, Ethiopia. It was established in 1953 EC. It has six operation rooms and three ICU rooms with 12 beds. It provides surgical services for orthopedic, maxillofacial, neurologic, C/S, gynecologic, pediatric, plastic, and emergency procedures.

2.2. Study Design and Period

A quantitative cross-sectional study and an exploratory qualitative study were conducted among 333 health professionals working at Saint Peter Specialized Hospitals Addis Ababa, Ethiopia, from 01/01/2023 to 30/04/2023.

Sample size determination and Sampling procedure

The sample size is determined by taking the following assumption; since there is no previous study in the area we.

Assume the incidence of Interdisciplinary Communication in Intensive Care is 50%, with a confidence interval of 95%, and a margin of error of to be tolerated 0.05.

Therefore, the sample size can be calculated by a single population proportion formula

$$n = \frac{z^2 p(1-p)}{d^2}$$

Where; n = sample size
z = confidence interval (1.96)
p = estimated prevalence (0.5)
d=margin of sampling error to be tolerated (0.05)
To get the sample size with a confidence interval of 95% and a margin of error of 5%

$$n = \frac{(1.96)^2 0.5(1-0.5)}{(0.05)^2} = 384$$

So calculated n will be = 384

The total number of total population was below 10,000 and we found only 1741 health workers in Saint Peter specialized hospitals. So we decided to apply a reduction formula to obtain an achievable sample size.

nf = n/ (1+n/N), N =1741…. correction formula for population less than 10,000.

So, nf =384/ (1+384/1741) =314 Correction formula for a population less than 10,000. We added 10% of nf for the non-response rate; (i.e., 314+31.4=345.4); after adding a 10% contingency rate the final sample size will be 345.

2.3. Sampling Technique

The participants for this study were all healthcare providers selected randomly.

2.4. Eligibility Criteria

Inclusion Criteria and Exclusion Criteria
All staff who were available in Saint Peter Specialized

Hospital at the time of data collection were Included and Staffs who were seriously ill was excluded from the study.

Data Collection Procedure

We used simple random sampling methods for quantitative data and purposive sampling techniques were applied for qualitative data 2 FGD held an in-depth interview done an interview guide was used to outline the open-ended topics in English and Amharic. Two days of training were given for three data collectors with an academic background of BSC degree in nursing and one coordinator concerning the data collection tool and data collection process before the actual data collection period. The data form was pretested on five percent of the sample size at ALERT hospital to ensure the questions were balanced, correctly constructed, and able to obtain crucial information. The adapted checklist was evaluated by experienced researchers. Data completeness and Consistency will be examined by the principal investigator through checks and review of the questionnaire. For the qualitative data pretest, one focused group discussion was held before the actual data collection at Ras Desta Dametew Hospital outside the study area.

Data quality Control

The questionnaire was developed from the interdisciplinary collaboration questionnaire developed by all colleagues. The questionnaire was pre-tested on 30 staff (5% of the total sample size) before conducting the actual data collection. A pre-tested result helps to see the accuracy of the tool to the required information from study participants. If the drafted tool was devoid of this capacity, the questionnaire was adjusted accordingly.

Training was given to data collectors and supervisors for one day by the principal investigator on the purpose of the study, methods of interviewing and keeping confidentiality of information, and other basic principles related to data collection. The data collection instrument was prepared in English translated into Amharic, and then back to English by a different person of language translators to check its consistency.

The completeness of the questionnaire was checked by supervisors at the end of each day and double-checked by the researcher /principal investigator.

Data entry, analysis, and interpretation

For qualitative data, the data gathered from different sources was analyzed using a mixed approach. Focused group discussion in-depth interview conducted, then FGD and in-depth interview tape recorded and fully transcribed. Interview data was translated and transcribed verbatim concurrently. The recorded focused group Discussions were transcribed verbatim. Open coding has been conducted for all FGDS. After line-by-line coding, axial coding was applied to distinguish the main and sub-categories of the data. Results from the observational checklist were summarized by tables and graphs.

Transcripts were coded categorized and analyzed using thematic analysis using Microsoft Excel and Data collection and analysis were conducted simultaneously. This research used back and forth type of data collection and analysis procedure. Data was collected until information saturation was obtained Data, environmental, and methodological triangulation was carried out throughout the research process. ATLAS TI software and Microsoft Excel were used whenever necessary.

For quantitative data the collected data was entered into and cleared using Epi- -info version 7.1 and will be analyzed by SPSS Version 26 statistical software that is used for all statistical analysis in these studies. An odd ratio with a 95% confidence interval was competing to assess the presence and degree of association between the dependent and independent variables.

A logistic regression model with a p-value <0.05 was considered to identify predictors of ICU. Significant factors were determined using crude and adjusted odds ratios with 95% confidence intervals. To assess the association between the different predictor variables with the dependent variables, first bivariate relationships between each independent variable and outcome variables will be investigated using a binary logistic regression model. Those independent variables with p-value < 0.02 by Hosmers and Lemeshows rule at the bivariate level were included in a multivariate logistic regression model to control potential confounding factors. After adjusting their effect on the outcome variables, those variables p–value < 0.05 with a 95% confidence interval will be regarded as significant determinant factors, and for the normality test, Cronbach's alpha was 0.8.

2.5. Study Variables

2.5.1. Dependent Variable

Interdisciplinary communication in ICU

2.5.2. Independent Variables

a) Socio-demographic characteristics of Age in year marital status Educational level of women Occupational status, job title, and working experience
b) Patient status or medical condition
c) Multidisciplinary Round

Operational definition

Interdisciplinary means the combination of two or more academic disciplines into one activity. An interdisciplinary approach involves team members from different disciplines working collaboratively, with a common purpose to set goals, make decisions, and share resources and responsibilities.

Classification Cutoff points for interdisciplinary communication [12].

1) Favorable or good: interdisciplinary communication a score of 80-100%
2) Satisfactory: interdisciplinary communication a score of 60-70%
3) Poor or Unfavorable: interdisciplinary communication a score less than 60% of the correct response.

3. Results

3.1. Sociodemographic and Baseline Characteristics

A sample of 345 study participants was involved in this study, with a response rate of 333 (96.4%). according to this study over all interdisciplinary communication openness 238(28.5%), communication accuracy 180 (54.5%, good perception 198(58.3%) and understand patient care goal 101(30.3%).

The majority of participants in this study were male 186(55.9%). The mean age of the participants was 32 +7.2 SD years. Regarding marital status of participants, 133(39.9%) were married, 156(46.6%) single, 65(16.0%) divorced and 20(6.0%) widowed group (Table 1).

According to this study, 166 (49.8%) participants are nurses, 66(19.8%) are general practitioners, 32(9.6) pharmacy, 30(9.0%) were laboratories, 181(54.4%) participants received primary degrees, 104(31.2%) completed MSC and 46(13.8%) had above MSC. Of the total respondents enrolled in the study, 197 (59.2%) have working experience from 4-7 in government Hospitals. (Table 1).

Table 1. Shows-socio-demographic status of respondents on interdisciplinary communication in the ICU at Saint Peter Hospital Addis Ababa Ethiopia.

Variables	Variables categories	Frequency	Percentage (%)
Sex	Male	186	55.9
	female	147	44.1
Marital status	Single	156	46.8
	Married	133	39.9
	Widowed	20	6.0
	Divorced	24	7.2
age	20-29	148	44.4
	30-39	115	34.5
	40-49	51	15.3
	50-59	19	5.7

Variables	Variables categories	Frequency	Percentage (%)
WORK EXPERIENCE	1-3	60	18.0
	4-7	197	59.2
	7-10	31	9.3
	8-29	45	13.5
Occupation	General practitioner	66	19.8
	nurse	166	49.8
	pharmacy	32	9.6
	laboratory	30	9.0
	Anesthetist	20	6.0
	other	19	5.7
Level of education	degree	181	54.4
	MSC	104	31.2
	PHD	2	.6
	Above	46	13.8

3.2. Communication Openness of Respondents Towards Interdisciplinary Communication in ICU

The communication openness of respondents towards interdisciplinary communication in Intensive care unit assessed Out of the total participants 333, 148(44.4%) agree there is communication openness between nurse to General practitioner, 287 (86.2%) there is communication openness between senior to General practitioner, 145(43.5%) respondent agree there is communication openness between intern to General practitioner, 187(56.2%) respondents agree on there is communication openness between resident to General practitioner, 123(36.9%) respondent agree there is communication openness between laboratory teams with General practitioner, 116(34.8%) respondent agree there is communication openness between emergency department teams with ICU, 164(49.2%) respondent agree there is communication openness between Icu teams with Operating room theater teams as shown in in (Table 2).

Table 2. Communication openness of Respondents towards interdisciplinary communication in ICU.

Variables	Variables categories	Frequency	Percentage (%)
CO between nurse to general practitioner	strongly disagree	28	8.4
	disagree	48	14.4
	neutral	34	10.2

Variables	Variables categories	Frequency	Percentage (%)
	Agree	148	44.4
	Strongly Agree	75	22.5
	strongly disagree		
	disagree	287	86.2
CO between Senior to general practitioner	neutral	8	2.4
	Agree	38	11.4
	Strongly Agree		
	strongly disagree	16	4.8
	disagree	60	18.0
CO between intern to general practitioner	neutral	52	15.6
	Agree	145	43.5
	Strongly Agree	60	18.0
	strongly disagree	9	2.7
	disagree	44	13.2
CO between resident to general practitioner	neutral	52	15.6
	Agree	187	56.2
	Strongly Agree	41	12.3
	strongly disagree	33	9.9
	disagree	63	18.9
CO between senior to resident	neutral	45	13.5
	Agree	137	41.1
	Strongly Agree	55	16.5
	strongly disagree	22	6.6
	disagree	54	16.2
CO between Nurses to students	neutral	39	11.7
	Agree	162	48.6
	Strongly Agree	56	16.8
	strongly disagree	35	10.5
	disagree	50	15.0
CO between laboratories to a general practitioner	neutral	73	21.9
	Agree	123	36.9
	Strongly Agree	52	15.6
	strongly disagree	9	2.7
	disagree	56	16.8
CO between anesthetist to general practitioner	neutral	46	13.8
	Agree	126	37.8
	Strongly Agree	96	28.8
	strongly disagree	10	3.0
CO between groups (ICU team and anesthetists)	disagree	40	12.0

Variables	Variables categories	Frequency	Percentage (%)
	neutral	53	15.9
	Agree	133	39.9
	Strongly Agree	97	29.1
	strongly disagree	25	7.5
	disagree	70	21.0
CO between groups (ICU team and laboratories)	neutral	42	12.6
	Agree	103	30.9
	Strongly Agree	93	27.9
	strongly disagree	10	3.0
	disagree	68	20.4
CO between groups (ICU team and emergency)	neutral	92	27.6
	Agree	116	34.8
	Strongly Agree	47	14.1
	strongly disagree	15	4.5
	disagree	57	17.1
CO between groups (ICU team and ORT)	neutral	46	13.8
	Agree	164	49.2
	Strongly Agree	51	15.3

Communication Accuracy of Respondents Towards Interdisciplinary Communication in ICU

The communication accuracy of Respondents related 119 (35.7%) of respondents agree there is a communication accuracy between GP and Nurse, 111(33.3%) agree there is a communication accuracy between senior and GP, 160(48%) respondents agree there is a communication accuracy between intern and GP, 179(53.8%) there is a communication accuracy between senior and GP, 101(24.9%) there is a communication accuracy between senior and resident, 65(19.5) strongly disagree there is Communication Accuracy between nurses and trainee students, 143(42.9%) respondents believed or agree there is Communication Accuracy between GP and laboratories, 44(13.2%) respondents strongly disagree there is Communication Accuracy between GP and anesthetist, 112(33.6%) respondents disagree there is good Communication Accuracy between ORT and ICU team, 31 (9.3%) has strongly disagree there is good Shift communication Accuracy between groups as shown below in (Table 3).

Table 3. Communication accuracy of Respondents towards interdisciplinary communication in ICU.

Variables	Variables categories	Frequency	Percentage (%)
	strongly disagree	12	3.6
	disagree	58	17.4
CA between GP and Nurse	neutral	59	17.7
	Agree	119	35.7
	Strongly Agree	85	25.5
CA between senior and GP	strongly disagree	20	6.0
	disagree	61	18.3

Variables	Variables categories	Frequency	Percentage (%)
	neutral	111	33.3
	Agree	105	31.5
	Strongly Agree	36	10.8
	strongly disagree	10	3.0
	disagree	51	15.3
CA between GP and interns	neutral	59	17.7
	Agree	160	48.0
	Strongly Agree	53	15.9
	strongly disagree	14	4.2
	disagree	49	14.7
CA between GP and residents	neutral	46	13.8
	Agree	179	53.8
	Strongly Agree	45	13.5
	strongly disagree	27	8.1
	disagree	38	11.4
CA between senior and resident	neutral	69	20.7
	Agree	139	41.7
	Strongly Agree	60	18.0
	strongly disagree	53	15.9
	disagree	65	19.5
CA between nurses and trainee students	neutral	52	15.6
	Agree	131	39.3
	Strongly Agree	32	9.6%
	strongly disagree	11	3.3%
	disagree	54	16.2%
CA between GP and laboratories	neutral	75	22.5%
	Agree	143	42.9%
	Strongly Agree	50	15.0%
	strongly disagree	44	13.2%
	disagree	52	15.6%
CA between GP and anesthetist	neutral	46	13.8%
	Agree	154	46.2
	Strongly Agree	37	11.1
	strongly disagree	30	9.0%
	disagree	112	33.6
CA between ORT and ICU team	neutral	36	10.8
	Agree	107	32.1
	Strongly Agree	48	14.4
Shift communication between groups	strongly disagree	48	14.4

Variables	Variables categories	Frequency	Percentage (%)
	disagree	117	35.1
	neutral	46	13.8
	Agree	83	24.9
	Strongly Agree	39	11.7
	strongly disagree	31	9.3
	disagree	126	37.8
Shift communication within groups	neutral	56	16.8
	Agree	74	22.2
	Strongly Agree	46	13.8

3.3. Multivariable-variable Analysis of Communication Accuracy of Respondents and Interpretation

In the multivariable logistic regression model; respondent educational levels and work experience were significantly associated with communication accuracy (< 0.05). the result of the multivariable analysis revealed that the odds of health professionals on educational levels were 3.196 times more likely to have communication accuracy than who as compared to those who do not have [AOR=3.196 (0.156-4.830)]. the odds of health professionals who have less working experience being 2.841 times more likely to have communication accuracy than those who have high working experience ([AOR=2.841 (1.088-7.416)] (Table 4).

Table 4. Multi variable analysis of communication accuracy of respondents.

Variables	Variables categories	Crude OR (95%CI)	p-value	Adjusted OR (95%CI)	P-Value
education	Degree			0.427(0.193-945)	0.046
	Masters	0.756(0.605-0.945)	0.014*	3.196 (0.156-4.830) **	0.016
	above no			0.307(0.016-5.870)	0.433
	1-3			2.841(1.088-7.416)**	0.033
	4-7			0.885(.412-1.898)	0.753
Work experience	7-10	1.303(1.018-1.668) *	0.036		
	8 and above			1.752(0.641-4.791)	0.274

Note: *means p-value<0.05 CI; means confidence interval

3.4. Qualitative Part

Qualitative result
18 males and 12 females participated in the FDG and 10 participants participated in the in-depth interview. The majority of the participant's ages were between 32-40 most of the respondents (n=23) had at least a degree. Only twelve were nurses from the study participants. (Table 5)

Table 5. Socio-demographic characteristics of participants for qualitative study (N=40).

Number of respondents	In-depth interview 10	FDG 30
Age		
20-30	4	10
32-40	3	13
41 and older	3	7
Gender		
Male	6	18
Female	4	12
Marital status		
Unmarried	5	12
Married	3	10
Other	2	8
Education		
Degree	5	18
MSC	3	7
Above	2	5
Religion		
Muslim	3	7
Orthodox	3	9
Protestant	2	6
others °	2	8
Profession		
Nurses	3	12
General practitioner	3	4

Number of respondents	In-depth interview 10	FDG 30
Senior	2	6
Other [a]	2	8

[a]Anesthetists, laboratories, and pharmacists
°catholic, wake feta, and atheist.

3.5. Themes

Three themes emerged from the analysis of in-depth interviews and focused group discussion data. These themes were identified as rich and detailed accounts of the perspective of interdisciplinary communication, what the services provided based on interdisciplinary communication standards, and which do not provide quality effective service in Saint Peter Specialized Hospital Intensive Care Unit in Saint Peter Specialized hospitals Addis Ababa, Ethiopia

Theme I: no interdisciplinary communication guide/tool

The first theme that emerged from data analysis was there is no interdisciplinary communication guide/tool. Within the theme, four categories: no clear hierarchy that leads the intensive care unit, no multidisciplinary/interdisciplinary round, no electronic medical recording system, and for consultation, and decision making no CRC team emerged. The subcategories were as shown in (Table 6) no documented policy or strategy, no intensivist, no Electronic medical recording system, and no CRC senior's collaborated team for decision making. The findings revealed that no interdisciplinary communication guide/tool was one of the reasons that led to what do, what criteria they followed to implement interdisciplinary communication. Some of the participants indicated that the presence no clear hierarchy that leads the intensive care unit, no multidisciplinary/interdisciplinary round, no electronic medical recording system, and for consultation, and decision making no CRC team. Sample responses included.

Table 6. Theme I: no interdisciplinary communication guide/tool.

Theme	categories	subcategories
no interdisciplinary communication guide/tool	no clear hierarchy that leads the ICU no multidisciplinary/interdisciplinary round no EMR system for consultation, decision making no CRC team	no documented policy or strategy no intensivist no EMR System no CRC seniors collaborated team for decision-making

There is no clear hierarchy that leads, to making decisions on intensive care unit patient care safety quality no documented strategy or policy. The finding revealed that there is no interdisciplinary communication guide which is set or prepared by the hospital or Ministry of Health (as perceived by the participants)

were one of the reason. There is no multidisciplinary round and no written document on who leads the team and no intensivist, some respondents say the intensive care unit must be led by an intensivist currently no intensivist and pulmonologist which brings a high interdisciplinary communication gap.

When I was in the intensive care unit as a health care provider we did rounds with seniors even though the hospital ordered as a principal to do rounds two times a day with seniors the teams involved in routine rounds were seniors, nurses, and General practitioners, most of the time rounding team is not from the whole departments (Participant 04).

I did rounds only with seniors, nurses, and general practitioners. (Participant 09).

There is no multidisciplinary/interdisciplinary round most time we do rounds with senior anesthesiologists yet anesthetists, nutritionists, and pharmacists are not avail during rounds (Participant 05).

There is no written documented interdisciplinary / multidisciplinary communication guide in the intensive care unit it is difficult for us to deliver (Participant 08).

When I was working in the intensive care unit there was no means of electronic medical recording system, which helped us to create a conducive environment to make easy communication within the group and with other departments, to see, send investigations clearly, to communicate easily with seniors, to do a clinical audit every decisions orders regarding patient care will be seen at any time by the responsible body and to save our time yet not implemented Electronic medical recording system. (Participant 01).

When I worked in the intensive care unit there was no Clinical Review Committee team, which is a team of seniors interdisciplinary team decided on each case, though no Clinical Review Committee team when we faced difficulties in decision-making for serious cases and needed consultation that time every senior decided their will and perspective they did not communicate each other and they did not reach agreement (Participant 03).

I did not receive or get any information about interdisciplinary communication. The intensive care unit coordinator told me to consult seniors and to do rounds …I guess it is because they are at a time with no interdisciplinary communication guide (Participant 06).

3.6. Theme II: The ICU Has No Good Communication with Other Departments

The second theme that emerged from data analysis there was no good communication with other departments. Within the theme, three categories from the operating room or surgery side did not give adequate information to attendees, Intensive care unit consultation and communication to other departments not posted on board and increased workload and time wasted emerged. The subcategories are shown in (Table 7).

Table 7. Theme II ICU has no good communication with other departments.

Theme	Categories	subcategories
ICU has no good communication with other departments	from ORT or surgery side, they Did not give adequate information to patient attendees ICU consultation and communication with other departments are not posted on the board Increased workload and time wasted.	Patient attendees of ICU have no adequate information about their family Surgery outcome from ORT Bring quarrel with ICU Team and patient family no boarded information on consulted cases No clear way of communication which leads to increased workload and time waste

ICU has no good communication or communication gap with other departments which brings difficulties by increasing workload and time wasted due to communication gap or problems with other departments they did not easily transfer patients to the ward, from ORT or surgery side they Did not give adequate information to patient attendees. The finding revealed that there was no good communication which is from the operating room side they did not tell the patient surgery outcome when they finished the procedure they said it was fine and they transferred to the intensive care unit (as perceived by the participant) were one of the reason. There is no intensive care unit consultation and communication with other departments is not posted, some respondents say intensive care units must gate clear and prćised methods of interdisciplinary communication with other departments to decrease the communication gap.

When I worked in the intensive care unit we faced difficulties in transferring patients from the intensive care unit to the wards which caused us a high workload and wasted our time I guess this comes from no good communication with wards (Participant 04).

From the surgery or operating room theater side, they did not give adequate information to attendees of patient families about the procedure outcome they simply Transferred to the ICU the patient's family considered their patient status to be fine when the death happened the attendees complained to us they also say what did you do he was fine, they were thought he was fine no problem after surgery completed (Participant 08).

When I was ICU for rounds the communication and consultation form was not posted on the intensive care unit board, for easy communication it is better posted on the ICU board (Participant 02).

Due to no good communication with other departments, we

increased our workload and time wasted due to unnecessary arguments with other department staff (Participant 07).

3.7. Theme III: A Shortage of Equipment and Medication

The third theme that emerged from data analysis there was a shortage of equipment and medication. Within the theme, three categories of lack of pediatrics machine in the Intensive care unit, lack of Arterial blood gas analysis machine and dialysis machine in the Intensive care unit, and lack of anesthesia medication emerged. The subcategories are shown in (Table 8).

Table 8. Theme III: a shortage of equipment and medication.

Theme	Categories	subcategories
Shortage of equipment and medication in the ICU	Lack of pediatric machine Lack of ABG and dialysis machine Lack of Anesthesia medication	Pediatrics perfusezer shortage CPAP Machine not pediatric size The suction machine does not have a patient-ratio No Arterial blood gas analysis machine no dialysis machine No anesthesia drug box Shortage of anesthesia drugs Pt can't afford (Cost Issue)

ICU has a Shortage of equipment and medication which brings difficulties by increasing working load and time wasted due to equipment shortages or problems they did not easily give effective treatments, especially in life-threatening conditions from the anesthesia side they face in intensive care unit shortage of ETT, Ambubag. The finding revealed that there is no dialysis machine yet the accepted AKI patient to the intensive care unit (as perceived by the participant) was one of the reasons. There is no intensive care unit arterial blood gas analysis machine, some respondents say intensive care unit must gate clear and précised method of medication supply chain management because some patients cannot afford, they do not bring medications which decrease favorable outcomes of patients and lead to high gap.

In the intensive care unit, it is difficult to deliver or to get pediatrics CPAP as fast as you need (Participant 01). When I was in ICU Sometimes we faced Difficulties when we faced an emergency lack of perfumer, not enough Ambubag and we have not enough suction machines on the patient ratio (Participant 06).

There is limited access to perfumers in the intensive care unit when an emergency happens (Participant 08). When I was in the Intensive care unit they accepted AKI patients yet we had no dialysis machine (Participant 10). We have no arterial blood gas analysis machine so it is difficult to treat hematologic patients accordingly (Participant 13). We face difficulties when we come for intubation because we face a shortage or lack of anesthesia equipment like an ETT tube (Participant 01). We did not get enough anesthesia medication in the ICU I guess there is no intensive care unit medication Box and patients cannot afford medication due to cost issues they did not bring medication (Participant 10).

4. Discussion

This study revealed that there is a communication Gap between the ICU team and other Departments. This leads to decreased work efficiency and effectiveness and decreases high quality of care. Effective interdisciplinary communication improves the quality of care, and safety in the medical setting in the ICU. Effective communication among health care providers in the ICU is a particular imperative, with accurate and efficient interdisciplinary communication being a critical prerequisite for high-quality care.

Nurses reported less communication openness between the two groups, while senior doctors had particularly positive perceptions. Senior doctors and trainee doctors also show a distinction in their perceptions of communication openness between doctors, with senior doctors reporting more positive perceptions. However, senior doctors reported less favorable responses than trainee staff in terms of their perceptions of communication accuracy in the ICU.

Patient safety research has shown communication failures to be the main determinant factors in most ICU critical incidents. Effective collaborative care requires minimization of variation to reduce error rates, as well as a system of rules, checks, and balances that evolves [13].

This study shows that there is no multidisciplinary round in the intensive care unit which leads to increased patient length of stay medical errors, decreased staff satisfaction, and adverse effects on patient outcomes. In contrast to this finding a study conducted shows following the implementation of multidisciplinary rounds, patients in ICU were found to have a

3.5-day decrease in Inpatient length of stay (LOS (8.3 Vs 4.8 days after MDR)), the central venous or arterial line was placed in fewer patients (17 Vs20) and average time of placement decreased by 1.8 days (6 Vs 4.2 days after MDR) and staff satisfaction, in general, the implementation of MDR was found to have a positive effect on both patient care outcome [12].

This study revealed that different professional groups of ICU Team members have divergent perceptions of communication in the ICU. Communication openness, communication accuracy, perception, and patient care goals were also found to be associated with the degree to which team members understand and communicate with one another. To ensure team members in the ICU feel that they can communicate openly, it is necessary to create a conducive environment between departments, very crucial to creating communication accuracy because Effective communication among healthcare professionals in the intensive care unit (ICU) is a particular imperative, with accurate and efficient interdisciplinary communication being a critical prerequisite for high-quality care. It is necessary to create a safe atmosphere where team members feel they can speak up openly without fear of reprisal or embarrassment if they have any safety concerns or issues with the quality of care provided to patients.

This study concludes that the communication openness of respondents on general practitioners to residents, laboratories, and physicians are highly important parts of the healthcare system workforce. Thus, identifying strategies that would improve communication between these two groups can provide evidence for practical improvement in the ICU, which will ultimately improve patient outcomes and increase high quality of care.

This study revealed that 148(44.4%) agree there is communication openness between nurses to General practitioners they are highly important parts of the health system workforce., 287 (86..2%) there is communication openness between senior to General practitioners, 145(43.5%) respondents agree there is communication openness between intern to General practitioners, 187(56.2%) respondents agree there is communication openness between residents to General practitioner, 123(36.9%) respondent agree there is communication openness between laboratory teams with General practitioner, 116(34.8%) respondent agree there is communication openness between emergency department teams with ICU, 164(49.2%) respondent agree there is communication openness between Icu teams with Operating room theater teams [9].

this study concludes that the Barriers to successful interdisciplinary communication implementation less communication openness, no interdisciplinary communication tool/guide in ICU, No multidisciplinary round, no Electronic medical recording system, No clinical review committee that gives direction and decision, equipment and medication shortage, increased workload and time wasted due to communication gap.

This integrative review uniquely contributes to current knowledge of the strategies used to improve health professional communication in the ICU within groups and other departments, which includes communication tools (daily goal sheet or form, bedside whiteboard, and door communication card), team training, multidisciplinary structured work shift evaluation, and electronic medical recording and documentation.

Interdisciplinary communication in the intensive care unit is very vital in ensuring appropriate care and treatment of critically ill patients as well as an important component of establishing and meeting patient care goals. Interdisciplinary communication must be implemented and promoted on the ICU team as an essential component of high performance and helps to promote the best patient outcome.

5. Conclusion and Recommendation

Improving quality and safety has become a priority for hospitals worldwide in recent decades. Effective communication among healthcare team members is one of the hallmarks of safe and highly reliable patient care this study offers original insights to further the ongoing debate about interdisciplinary communication in intensive care units of hospitals, with a focus on interdisciplinary communication.

Abbreviations

CA	Communication Accuracy
CO	Communication Openness
CRC	Clinical Review Committee
AAHB	Addis Ababa Health Bureau
ACCR	Addis Ababa Cancer Registry
CCM	Critical Care Medicine
GDP	Gross Domestic Products
GP	General Practitioner
HAIs	Hospital-acquired Infections
ICU	Intensive Care Unit (ICU)
KPI	Key Performance Indicators
MDR	Multidisciplinary Round
OH	Ministry of Health
ORT	Operating Room Theater
SPSS	Statically Package for Social Science
U.S.A	United States of America
WHO	World Health Organization

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Consent for Publication

Not relevant.

Author Contributions

The study was developed and designed by Abdurehman Seid Mohammed, who also wrote a review and edited the first draft, created the study design, checked the quality of the data, conducted the statistical analysis, and authored the first draft of the article. Chekole sileshi menbere and Yared Nigussie helped with the paper revision, statistical analysis, conceptualization, and literature review. The original document was examined and edited, and the text was rewritten by Dr. Mustofa Hassen Yesuf, Chekole Sileshi Menbere, and Getachew Mekete Diress, who also helped with the conception and research design. Dr. Mustofa Hassen Yesuf, Getachew Mekete and Abdurehman Seid helped with the idea, updated the data extraction sheet, gathered patient information, examined and analyzed the information, and made revisions to the text.

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Data Availability Statement

The corresponding author can provide the datasets used and analyzed in this study upon reasonable request.

Conflicts of Interest

The authors declare no conflicts of Interest.

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