

Knowledge Sharing Practice and Associated Factors among Health Professionals in Ethiopia

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Abstract

Background: Numerous health data and information are generated in the routine activity of health facilities. These numerous health data and experiences are input for information, experience, and knowledge sharing, and learning. Therefore, this study aimed to assess knowledge-sharing practice and identify its associated factors among health professionals.

Methods: A stratified simple random sampling technique among 423 samples was conducted with an institutional-based cross-sectional study design. A pretested self-administered questionnaire and STATA version 15 software were used for data processing and analysis. Descriptive statistics and a multivariable logistic regression model were applied to assess the strength of the association between dependent and independent variables. A variable with a p-value <0.05 with 95% CI was considered as a cut point.

Results: 423 respondents participated in this study. Health professionals' knowledge-sharing practice was 65.01% (95% CI: 60.46-69.56). In multivariable logistic regression analysis, awareness AOR=2.44, 95% CI= [1.32-4.50], willingness AOR=1.96, 95% CI= [1.10-3.53], loss of knowledge power AOR=0.192, 95% CI= [.12-.32], availability of health information resource AOR=2.00, 95% CI= [1.56-5.38], and opportunity AOR=2.91, 95% CI= [1.71-4.95] were significantly associated with knowledge sharing practice.

Conclusions: Health professionals' knowledge-sharing practice was good, but not optimal. Stakeholders needed to work on knowledge-sharing opportunities and resource allocation to promote health professionals' knowledge-sharing practices, and professionals recommended being willing for sharing experience and information.

Keywords: Knowledge sharing; Practice; Health professionals; Ethiopia

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Introduction

In the healthcare industry, the routine practice of health professionals generates a vast amount of health data and information. Recording patients' socio-demographic characteristics, diagnosis and treatment, laboratory tests and medical imaging examinations and confirmation of the results, drug, medication and prescriptions, clinical notes, and practices are all part of a health professional's daily practice in a healthcare facility [1]. So, health professionals may have their own set of best experiences that they follow daily.

Identifying relevance, ethical soundness, effective and efficient experience, knowledge, and sharing are all steps for health professionals to learn from one another, resulting in success, duplication, and healthcare sustainability [2]. Therefore,

experience and knowledge are advancements in a particular process, approach, or technique sufficient to replace and update an existing practice [3], demonstrate individuals' ability to work well, and provide quality care [4]. Countries' experience with health program planning, implementation, and monitoring of health service delivery is an experience. As a result, daily-based practices and experiences are documented and disseminated to provide genuine opportunities for knowledge acquisition and continuous learning through feedback and reflection for more effective health interventions [5].

Since knowledge encompasses experience, daily-based practices, values, contextual information, and insights, knowledge should be well documented, organized, managed, and shared to create further insights among health professionals for better evaluation and interpretation of new health information [6]. Knowledge is

created and exists in the human mind and normal behaviors, procedures, and organizational standards [7]. So, health professionals can share relevant and accurate health information [8] from healthcare institutions' experiences and colleagues' skills [9, 10] to have a shared understanding of the recycling use of information [11-13].

In the healthcare process, there are challenges such as uncertainty in clinical decision-making [14], inaccessibility [15, 16], inconsistency [17] of credible evidence, an escalation of health professionals' information needs [18] and inaccessibility of accurate information [19]. When the pandemic arises [20], many rumours and false news stories circulated on social media [21]. During the emergence of new cases, experts might not have sufficient experience [21], and patients are not well served and don't receive attractive treatments. These make them lose their lives and develop adverse events due to knowledge-sharing delays. This is a sign of a marvellous amount of experience, medical resources, and knowledge wastage in healthcare origination. Therefore, knowledge sharing is an important mechanism to gain accurate knowledge and experience from credible sources to reduce the challenges.

There has been a lot of research done on health professionals' knowledge-sharing practices worldwide. In studies conducted in Ghana, health professionals' knowledge-sharing is not attractive. Furthermore, evidence showed that 56.3% of health professionals had encountered challenges in accessing health information and experience in Ireland and 61% of health professionals had limited expertise and knowledge-sharing practice in China.

In Ethiopia, most studies show low health information, knowledge, and experience-sharing levels among health professionals [18]. The results showed that knowledge sharing about infection prevention and adult cardiopulmonary resuscitation (CPR) in Ethiopia is low and not ideal, respectively [19]. There are factors associated with knowledge sharing among health professionals for such unremarkable knowledge-sharing practices. Some of them are lack of expertise, absence of formal knowledge-sharing mechanism, misunderstanding the importance and the best ways of knowledge-sharing mechanism, working experience, monthly salary, low educational status, level of motivation, job satisfaction and trust among colleagues, willingness and awareness, resource allocation, supportive leadership and opportunities [21] and rewarding and recognition system. Besides the low level of knowledge-sharing practice, there is limited evidence on the knowledge-sharing practice of health professionals working in a specialized teaching hospital in Ethiopia. Therefore, this study aimed to assess knowledge-sharing practices among health professionals and identify associated factors.

Methods

Study design and settings

An institutional-based cross-sectional study design was conducted to determine the knowledge-sharing level and identify associated factors at the University of Gondar referral hospital. University of Gondar Referral Hospital (UoGRH) is one of the hospitals among the medical schools in Ethiopia. UoGRH was established in 1954

as a public health college and training institute and is 738 km far from the capital city of Ethiopia, Addis Abeba. UoGRH provides a full range of healthcare services for all communities. According to the human resource information, the hospital has 1336 health professionals during the data collection period.

Study subject and inclusion criteria

All health professionals who are permanently working at the UoGRH were the study's target population. Health professionals available during the data collection period were included in the study population. However, health professionals who had less than six months of work experience and were not available during the data collection period were excluded.

Sampling and sample size calculation

The single population proportion formula determined the sample size. We were using 50.3% of health professionals' knowledge sharing from the previous similar study as prevalence. Standard deviation ($Z_{\alpha/2} = 1.96$), and margin of error ($d=5\%$) at a 95% confidence level. The total sample size with the adjustment of none response rate (10%) was 423. The 423 respondents were chosen using a stratified random sampling procedure, and the sample was stratified by the department of work. Then, based on the number of healthcare professionals in each service area, the selection was proportionally allocated to the service area to assess their knowledge-sharing practice. After proportionally distributing samples in each service area, each department's respondents were chosen using a random sampling procedure.

Variables of the study

The dependent variable studied was knowledge sharing. At the same time, the independent variables include various socio-demographic characteristics (age, sex, educational status, and experience), individual factors (willingness, openness, awareness, perceived loss of knowledge), organizational factors (supportive leadership, resource allocation, and opportunities), knowledge source (teamwork, health information resource availability of report and documentation), and ICT and communication channel.

Operational definitions

Knowledge-sharing practice was measured using twelve closed-ended questions with Likert scale response options ranging from strongly disagree to strongly agree. The score on the mean and above shows knowledge-sharing practice, and below the mean shows the absence of knowledge-sharing practice among health professionals.

Awareness of knowledge-sharing practices was measured by four closed-ended Likert scale questions with response options ranging from strongly disagree to strongly agree. The scores on the mean and above show the presence of awareness, and the value below the mean score indicates unawareness of knowledge-sharing practice.

Opportunity for knowledge sharing was measured with four closed-ended questions, and the response to each question was Likert scale ranging from strongly disagrees to strongly agree. The scores with the mean and above show the opportunity for knowledge sharing; otherwise, there is no opportunity.

Data collection procedure

Two-day intensive training on the study's objectives, data collection techniques, and respondents' rights were given to four data collectors and three supervisors before data collection. A clear, unambiguous, self-administered questionnaire was used to collect the required data. It was adopted from similar articles with some modifications in line with the study's objectives. The tool contains questions about knowledge sharing and associated factors such as socio-demographic characteristics, individual and organizational factors, communication channels, and sources of knowledge. A pretest was done on 5% of the total sample at the Koladiba district hospital to ensure the consistency and validity of the questionnaire. The knowledge-sharing practice's Cronbach alpha rating was 0.89, indicating that the questionnaire is extremely reliable.

Ethical clearance and consent to participation

All methods were carried out by following the Helsinki declaration. Ethical approval was obtained from the ethical review board of the University of Gondar College of Medicine and Health Science, Institute of public health, with reference number Ref No /IPH/837/6/2012. The purpose and aim of the study were clearly explained to the study participants to avoid any confusion and to make sure that the study was only for the stated objectives. Then, informed verbal consent was obtained from the study participants before the data collection. Any information related to the study subject was kept in its confidential. Hence, there was no human participation issue.

Data analysis

The data were entered into Epi info software version 7 for data cleaning and coding, and Stata software version 15 was used for data processing and analysis. A descriptive analysis was done to describe the knowledge-sharing practice and socio-demographic characteristics. Variables in the Bivariable logistic regression analysis with p-value <0.02 were considered for further analysis. Multivariable logistic regression was done to know the relation between dependent and independent variables. Finally, variables with a p-value ≤ 0.05 were considered factors associated with knowledge sharing. Crude and adjusted odds ratios with 95%CI were calculated to measure the strength of association between the dependent and independent variables.

Results

Socio-demographic characteristics

Four hundred twenty-three (423) health professionals participated in this study. Of the total respondents, 222 of 423 (52.48%) respondents were male, and more than two-thirds (66.90%) of the respondents were degree and diploma holders. Nearly three-fourth (74.70%) of health professionals were under the age group of 21-30 years, and nearly one-third (29.08%) of health professionals were general practitioners and specialties next to nurse professionals (39.24%). The majority (83.92%) of health professionals had ten and less than years of experience (Table 1).

Table 1. Socio-demographic characteristics of health professionals.

Variable	Category	Frequency (n)	Percent (%)
Sex	Female	201	47.52
	Male	222	52.48
Educational level	Degree and below	283	66.9
	Master	17	4.02
	Gp and above	123	29.08
Age (in years)	21-30 Years	316	74.7
	31-40 Years	93	21.99
	>40 Years	14	3.31
Professions	Nurse	166	39.24
	Pharmacy	22	5.2
	Laboratory	39	9.22
	Doctors	123	29.08
	Midwifery	51	12.06
	Other	22	5.2
Experience	<=10 years	355	83.92
	>10 years	68	16.08

Knowledge sharing among health professionals

Of the total health professionals, 65.01% (95% CI: 60.46-69.56) of health professionals had health knowledge-sharing practices, whereas 34.99% of health professionals had no knowledge-sharing practice (Table 2).

Organizational and individual factors for knowledge sharing

From the perspective of organizational factors, only 261 of 423 (61.70%) respondents had extrinsic motivation for knowledge sharing. However, 226 of 423 (53.43%), 265 of 423 (62.65%), and 285 of 423 (67.38%) health professionals revealed that they had not the opportunity, supportive leadership, and resource allocation for knowledge-sharing practice, respectively. More than half of the 423 (52.25%) health professionals were satisfied according to individual factors. 388 of 423 (91.73%), 352 of 423 (83.22%), 334 of 423 (78.96%), 342 of 423 (80.85%), and 244 of 423 (57.68%) of the respondents had trust, awareness, willingness, intrinsic motivation and openness about the knowledge sharing practice respectively. However, 423 % of respondents perceive knowledge power-sharing loss (Table 2).

Information communication technology (ICT)

Regarding ICT, 53.67% of the respondents agreed/strongly agreed on the availability of ICT infrastructure in the hospital, 46.57% of the respondents agreed/strongly decided on the presence of technical support and maintenance of the ICT system and 15.37% of respondents were indifferent. 41.14% of the respondents agreed/strongly agreed that they use email for communication. Alternatively, 55.56% of health professionals disagreed/strongly disagreed with the presence of a knowledge repository system (database) to access knowledge. The remaining 23.17% of the respondents were neutral, and 40.19% of health professionals agreed/strongly agreed that there was training for ICT, whereas 18.44% were neutral (Figure 1).

Regarding the communication channels, 76.36% and 71.87% of

Table 2. Organizational and individual factors for knowledge sharing.

Variable	Category	Frequency (#)	Percent (%)
Knowledge sharing practice	Yes	275	65.01
	No	148	34.99
Extrinsic motivation	Yes	261	61.7
	No	162	38.3
Opportunity	Yes	197	46.57
	No	226	53.43
Supportive leadership	Yes	158	37.35
	No	265	62.65
Resource allocation	Yes	138	32.62
	No	285	67.38
Job satisfaction	Yes	221	52.25
	No	202	47.75
Trust	Yes	388	91.73
	No	35	8.27
Awareness	Yes	352	83.22
	No	71	16.78
Willingness	Yes	334	78.96
	No	89	21.04
Perceived loss of knowledge power	Yes	186	43.97
	No	237	56.03
Intrinsic motivation	Yes	342	80.85
	No	81	19.15
Openness	Yes	251	59.34
	No	172	40.66

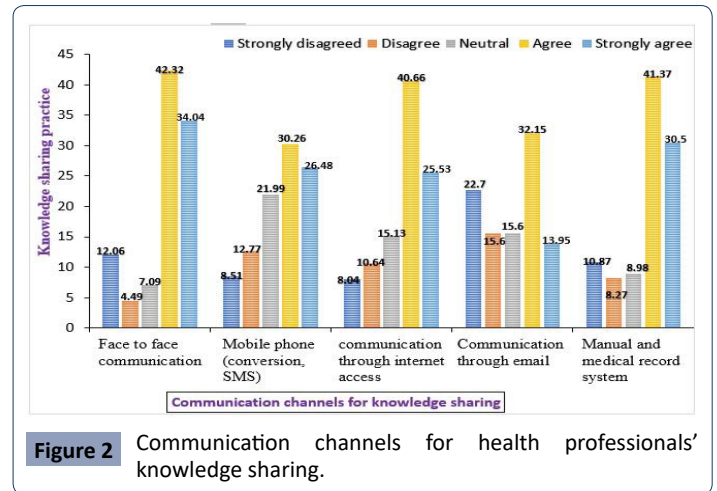


Figure 2 Communication channels for health professionals' knowledge sharing.

Table 3. Major source of knowledge at the University of Gondar referral hospital.

Source of knowledge sharing	Response	Frequency	Percent
Teamwork	Yes	298	70.45
	No	125	29.55
Reported file	Yes	209	49.41
	No	214	50.59
Documented file	Yes	218	51.54
	No	205	48.46
Health information resources	Yes	341	80.61
	No	82	19.39

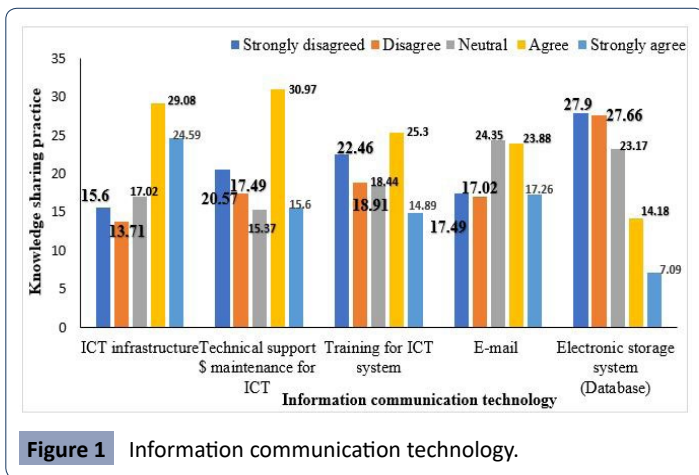


Figure 1 Information communication technology.

respondents indicated that face-to-face communication, manual, and medical record system was the major communication channels for knowledge-sharing practice in the hospital, respectively. 56.74% of health professionals stated that using mobile phones for conversion and SMS text messages serves as communication channels for knowledge-sharing practice purposes. 66.19% of health professionals indicate that accessing the internet is another communication channel to share knowledge. Still, only 46.1% of health professionals confirmed that using email is one of the channels for knowledge-sharing practice in the hospital (Figure 2).

Source of knowledge sharing

Of the total respondents, 298 of 423 (70.45%) and 341 of 423

(80.61%) health professionals indicated that teamwork and health information resources were the major sources of knowledge in the study area. 49.41% and 48.46% of respondents revealed that reviewing the reported and documented files is also a knowledge source at the University of Gondar hospital (Table 3).

Factors associated with the knowledge-sharing practice

A total of 23 variables were entered into the binary logistic regression model. From these variables, extrinsic motivation, openness awareness, supportive leadership, willingness, resource allocation, information, communication technology (ICT), perceived loss of knowledge power, job satisfaction, communication channels, opportunity, and the available health information were turned out to be significant factors associated with knowledge sharing practice from the Bivariable analysis. However, in multivariable logistic regression analysis, awareness, willingness, perceived loss of knowledge, power, opportunity, and availability of health information resources were identified as significant factors.

Respondents aware of the knowledge-sharing practice were 2.4 [AOR=2.44, 95%CI (1.32-4.50)] times more likely to share knowledge than their encounter parts. Health professionals willing to share knowledge were 2.00 [AOR=1.96, 95%CI (1.10-3.53)] times more likely to share knowledge than those who weren't willing. Respondents with a perceived loss of knowledge power were 81% [AOR=0.19, 95%CI (.12-.32)] less likely to share knowledge than those who had not a perceived loss of knowledge power. Respondents who have availability of health

information resources (HIRs) and the opportunity for knowledge-sharing practice were 3 [AOR=2.00, 95%CI (1.56-5.38)] and 2.9 [AOR=2.91, 95%CI (1.71-4.95)] times higher to share knowledge than their encounter parts respectively (Table 4).

Discussion

In this study, the knowledge-sharing practice among health professionals was 65.01% (95% CI: 60.46-69.56). This finding aligns with a study done in Public Hospitals in North Showa But, this finding is higher than the study done in different parts of Ethiopia the possible reasons might be the difference in awareness, willingness, ICT access, and presence of communication channels.

The odds of health professionals who have awareness about knowledge sharing are 2.4 times higher to share knowledge than those who don't have an understanding. This finding is supported by the report from St. Peter's and Felege Hiwot's hospitals. This could be due to the presence of teamwork (70.45%), availability of ICTs infrastructure (53.67%), and the presence of different knowledge dissemination channels such as face-to-face communication (76.36%), presence of manual or electronic medical record systems (71.87%) for reviewing and sharing experience in the study area. The odds of respondents who are willing to share knowledge are 2.00 times higher to share knowledge than those who are unwilling to knowledge-sharing. This result is supported by studies done in Felege Hiwot referral hospital and Malaysia; this might be due to the presence of trust among staff (91.73), the presence of internet access (66.19%)

in the hospital, their intrinsic motivation (80.85%), and extrinsic motivation (61.70%) in the study area. In addition, using their mobile phone (56.74%) for knowledge-sharing purposes lets them get a consultation from their colleagues about how they treat and diagnose the patients through SMS text messaging and phone conversations.

This study reveals that health professionals who perceive they lose power while sharing knowledge are 80.8% times less than those who don't sense they lose control while sharing knowledge. This finding is consistent with the study done at Jordan Hospital this may be due to misunderstandings about the significance and benefits of knowledge sharing. Some health professionals are also afraid that they will lose their position in the organization due to sharing their knowledge with their colleagues. Since knowledge is the most valuable property of the organization to deliver excellent and better healthcare services to achieve organizational objectives. But, the organization's absence of resource allocation (67.38%) and poor supportive leadership (62.65%) don't create positive competition.

The number of respondents who have knowledge-sharing opportunities is 2.91 times higher to share knowledge than those who didn't have a chance. This finding is supported by the report from Gonji, Kolella, Felege Hiwot, and Mekelle hospitals, This might be due to teamwork (70.45%) because teamwork is the locus of both interaction patterns and intragroup communication. The presence of informal knowledge-sharing opportunities (60.52%) in this study area and the existence of motivation help

Table 4. Bivariable and multivariable analysis of selected variables associated with the knowledge-sharing practice.

Variables		Knowledge sharing practice		COR-95%CI	AOR-95%CI
		No	Yes		
Awareness	Yes	109 (25.77%)	243(57.45%)	2.72(1.62-4.57)*	2.44 (1.32-4.50) **
	No	39(9.22%)	32(7.57%)	1	1
Willingness	Yes	104(24.59%)	230(54.37%)	2.16 (1.34-3.48)*	1.96 (1.10-3.53) **
	No	44(10.40%)	45(10.64%)	1	1
PLKP	Yes	101(23.88%)	85(20.09%)	.21(.14-.32)*	.19 (.12-.32) **
	No	47(11.11%)	190(44.92%)	1	1
Job satisfaction	Yes	63(14.89%)	158(37.35%)	1.82(1.22-2.73)	1.53 (.91-2.55)
	No	85(20.09%)	117(27.66%)	1	1
Extrinsic motivation	Yes	73(17.26%)	188(44.44%)	2.22(1.47-3.35)	1.51 (.89-2.56)
	No	75(17.73%)	87(20.57%)	1	1
Openness	Yes	67(15.84%)	184(43.50%)	2.44(1.62-3.68)	1.52 (.91-2.56)
	No	81(19.15%)	91(21.51%)	1	1
Opportunity	Yes	41(9.69%)	156(36.88%)	3.42(2.22-5.27)*	2.91 (1.71-4.95) **
	No	107(25.30%)	119(28.13%)	1	1
Supportive leadership	Yes	44(10.40%)	114(26.95%)	1.67(1.10-2.56)	1.21(.70-2.10)
	No	104(24.59%)	161(38.06%)	1	1
Resource allocation	Yes	29(6.86%)	109(25.77%)	2.69(1.68-4.32)	.96 (.52-1.78)
	No	119(28.13%)	166(39.24%)	1	1
ICT available	Yes	62(14.66%)	160(37.83%)	1.93(1.29-2.89)	1.61(.98-2.65)
	No	86(20.33%)	115(27.19%)	1	1
HIRs Availability	Yes	95(22.46%)	246(58.16%)	4.73(2.84-7.89)*	3.00(1.56-5.38) **
	No	53(12.53%)	29(6.86%)	1	1
Communication channels	Yes	109(25.77%)	231(54.61%)	1.88(1.15-3.06)	1.00(.51-1.92)
	No	39(9.22%)	44(10.40%)	1	1

* Significant in COR at 95% CI, ** Significant in AOR at 95% CI, 1: Reference category

health professionals to share knowledge.

Concerning health information resources, 80.61% of the respondents confirmed that they have the availability of health information resources for knowledge sharing. This finding is higher than the studies done at North Showa and Addisabeba. This may be due to the inadequate absence of health information resources for knowledge-sharing activities and the availability of books, workshops, guidelines, and the internet as a source for knowledge-sharing in this study. Furthermore, the variation might be due to sampling size differences.

Limitations and strengths of this study

Since the study was conducted cross-sectionally, the temporal relationship in the multivariable logistic regression might occur. The study would serve as input for policymakers and stakeholders

to address health professional knowledge-sharing inquiries and would serve as a baseline for future studies.

Conclusion

The level of knowledge-sharing practice among health professionals was more than but not optimal. Awareness, willingness, health information resources, perceived loss of knowledge, power, and opportunity were significantly associated with the knowledge-sharing practice. Sharing opportunities, allocation of resources, and loss of knowledge power were not adequate for knowledge-sharing practices. Stakeholders needed to increase the opportunities and resources for knowledge-sharing practice, and health professionals share their experiences and information they have with their colleagues for the best patient care practice.

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