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Knowledge sharing practice and associated factors among health care workers at Health facilities, in Gonji Kolella District, West Gojjam Zone zone, North West Ethiopia.

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Abstract: Introduction: Even though knowledge sharing is an important strategic resource for organizational success, poor practice of knowledge sharing is a problem in health care facilities. Though most of the health care worker were aware, willing and have an intrinsic motivation to share their knowledge, they practiced it poorly. Hence, assessing the knowledge sharing practice and associated factors among health care workers are important to take appropriate action.

Methods: An institutional based cross-sectional quantitative study supported with qualitative data was conducted in selected public health centers Gonji Kolella district from February30 to March30/2014. A total of 291 health workers for the quantitative data and 10 department heads were interviewed for the qualitative part. Logistic regression was used to assess the presence of association between dependent and independent variables using SPSS at 95% CI and 5% margin of error.

Results: the study revealed that level of knowledge sharing among health care workers in the selected hospitals was 41.9%. Knowledge sharing opportunity (AOR = 2.65, 95% CI = [1.17-6.01], access to technology (AOR=2.27, 95% CI= [1.17-4.40], familiarizing health care workers to technology (AOR=3.23, 95%CI= [1.28-8.12] and trust on others' knowledge (AOR =4.78, 95% CI = [1.73-13.22] were independent predictors for knowledge sharing practice.

Conclusion: Even though most of the participants were aware, willing and have an intrinsic motivation to share their knowledge, they practiced it poorly for several reasons. The identified main determinants are access to ICT infrastructure, familiarization to available technologies, trust on others' knowledge and knowledge sharing opportunity. Health center should enhance trusting relationship among health care workers; create knowledge sharing opportunity; avail technological infrastructure and familiarize health care workers to technology to increase knowledge sharing in the organization.

Key words: Knowledge sharing Practice, Health care workers, public hospitals, Ethiopia.

INTRODUCTION

Knowledge emerged from the application, analysis and productive use of data provides the means to understand data /information for the causality of actions or events(1, 2). Among the taxonomies of knowledge, tacit knowledge is the knowledge or know-how that in people's heads which is rarely documented and communicated through informal methods such as group discussion, meeting, conference and observations. whereas, explicit knowledge can be expressed in a formal and systematic language which is shared in the form of data, scientific formula and manuals(3, 4).

The rising interest of knowledge is critical asset of an organization which further leads to increasing focus in knowledge management system. In the health care system, knowledge management encompasses all management activities necessary for the effective creation, sharing and managing health care workers knowledge(5, 6). According to world health organization (WHO), knowledge management can be defined as a set of principles, tools and practice that enables people to create knowledge, to share and to apply what they know to improve effectiveness(7). In the knowledge management, knowledge sharing can be regarded as a systematically planned and managed activity involving a group of individuals engaged in sharing their knowledge resources, insights and experiences for a defined objective(8).Heath care KS can be characterized as the explication and dissemination of context-sensitive healthcare knowledge by and for the health care (decision-makers) sector through a collaborative communication medium(9).Health care knowledge-sharing is practiced for a variety of reasons(10-12); including clinical decision making, practitioner's education and experience enhancement, health care policy-making, clinical protocol and guideline formulation, public health and community support for patients, and disseminating clinical research findings.

There are many ways to perform knowledge sharing(13),among which People can share knowledge in the form of documents or through discussions which involve conversations and interactions(14).

Scholars argued that organizations cannot create knowledge without individuals. Unless individual knowledge is shared with other individuals and groups, the unshared knowledge is likely to have limited impact on organizational effectiveness(15-17). Healthcare workers need to share three areas of patient knowledge in healthcare services(18, 19).Technical knowledge includes the identification of patient conditions and problems, reasons and objectives for patient care, patient background, treatment agreement strategy, and explicit patient requirements and needs.

Among the three areas of patient knowledge, technical knowledge is usually explicitly recorded in patient records and is easier to share using information systems and delivering patient records and any other relevant documents (either electronic or paper-based records). On the other hand, ethical and emotional knowledge and the social and behavioral knowledge consist of individual workers'

experiences and perceptions, which they accumulate by dealing and interacting with individual patients. Therefore, when compared with technical knowledge, these two types of tacit patient knowledge are more difficult to share, and sharing them is invaluable for patient-centered practice. Therefore it is critical for healthcare workers to communicate and adequately share all three areas of patient knowledge. A study conducted in Addis Abeba ,Mekele and Hawasa at selectd public hospital and Bahir Dar at Felege Hiwot referral hospital shows that knowledge sharing practice among health workers were 49.0%,49.18%,53.95% and 17.7%respectivelly(20,21,22,16).

A study conducted in Mekele at selected public hospitals indicates that the significant predictors of knowledge sharing practice were; motivation to transfer knowledge, salary increment, supportive leadership, knowledge sharing opportunity. And also revealed that there is still lower level of knowledge sharing, which is affected by leadership, openness, opportunity, amount of monthly income and staff motivation (21).

As shown by various studies, developing knowledge sharing habits within the organizations is essential for the success of health institutions and their customers by increasing intellectual capital, reducing costs, and making individuals and organizations competitive in their environment (10, 16, 21, 22).

The attainment of health-related Millennium Development Goals (MDGs) depends on turning scientific knowledge into effective action for people's health through bridging the "know-do" gap. Many solutions exist for health problems but are not applied. This is called the "know-do" gap - the gap between what is known and what is done in practice. The discipline of knowledge management (KM) aims to bridge this gap(23, 24).

Even though the importance of knowledge sharing practice is mentioned by various studies, it is poorly practiced in health facility of resource-scared countries(16). Health professionals from resource-limited countries are known for their limited knowledge sharing practices (21).

Knowledge sharing is defined as a deliberate act that makes knowledge reusable by other people through knowledge exchange (25). It has been identified as the key component of knowledge management and performance improvement system. Effective knowledge-sharing practices have the potential to give an organization a sustainable competitive advantage(26).

The low knowledge sharing practice of health workers in the health facility need to be improved. Hence, this studyhelps to estimate the need for increasing the knowledge sharing practice of health workers in the study area by designing appropriate knowledge sharing policy strategy activities to increase the knowledge sharing practice of health workers.

METHODS

Study design and setting:

Facility based cross-sectional study was conducted from February to March, 2014 in Gonji Kolella district Public health facilities. Gonji kolella district is located 72 km far away from Bahir Dar, the capital town of Amhara region, to the Southwest direction. There are 6 health centers, 26 health posts, several private and limited number of non-governmental health institution. The study subjects for this study were health workers who have been in the health facility of the district.

Study participants, sample size, and sampling procedure:

All full time health care workers who are actively working in each Health center were the population under study. Those health care workers from outsourced services (laundry, janitors, and guards) and health care workers under probation were excluded from the study.

Sample Size:

Sample size was calculated using single population proportion formula by considering the following assumptions; the proportion of knowledge sharing practice as 49%,95% level of confidence, 5 % margin of error, and 5% non-response rate. Sample size has been checked for its adequacy for the analytical component. Finally, the minimum sample size of 291 was obtained. To employ individual participant's simple random sampling technique was utilized by lottery method, the list of all health care workers in the respective health center were obtained from the human resource department which is taken as the sampling frame.

Data collection tools and procedure:

Data were collected using a structured interviewer-administered questionnaire. To maintain consistency, the questionnaire was first translated from English to Amharic (the native language of the study area) and was re-translated to English by professional translators and Public Health experts. Six health professionals as data collector and one supervisor were recruited for the study. Two days intensive training regarding the objective of the study, confidentiality of information, and techniques to conduct interview was given to data collectors and supervisors. The tool was also pretested on 5% of the total sample out of the study area and the acceptability and applicability of the procedures and tools were evaluated during pretest.

Operational definition and study variables:

Knowledge sharing practice, the outcome variable is defined as the exchange of experience, events, thoughts or understanding of work related things that is used to improve their performance and to achieve the quality health care services. Therefore, eleven Likert scale close ended questions ranged from strongly disagree to strongly agree were adapted from standardized questionnaire (20-22). Respondents who had above the mean score was considered as having knowledge sharing practice and coded as "1", otherwise he/she supposed to have no knowledge sharing practice. Among the study variables, trust is defined as the degree to which health care workers have confidence on the knowledge of their coworkers. Willingness refers to the participant's desire to explain know how to their colleagues,

and to get knowledge about how to perform the task. Intrinsic motivation indicates the pleasure and inherent satisfaction derived from a specific activity like enjoying by sharing their knowledge to others.

Closed ended Likert scale questions were developed to measure and the mean score was used to classify respondents as have/no trust.

Data Processing and Analysis:

Data were entered into Epi-info version 3.5.3 and exported to Statistical Package for Social Sciences (SPSS) version 20 for further analysis. Data cleaning was done by running frequencies. Descriptive statistics, including frequency and proportions were computed to summarize the study variables. A binary logistic regression model was used. Both bivariable and multivariable logistic regression analyses were carried out. Variables with a p-values of <0.2 in the bivariable analysis were entered to the multivariable analysis. Both Crude Odds Ratio (COR) and Adjusted Odds Ratio (AOR) with a 95% confidence interval were estimated to show the strength of association. A p-value of $\leq$ 0.05 was used to identify variables that showed statistical significance in the multivariable analysis. Hosmer-Lemeshow goodness of fit test was checked to assess how the model is fit.

Ethical Consideration:

Ethical clearance was obtained from Ethical review committee of GAMBY College of medical science. Permission to conduct the research was obtained from the district. Written Informed consent was obtained each participant who were selected to participate in the study after explaining the purpose of the study.

RESULT

Socio-demographic and economic characteristics:

A total of two hundred eighty four health care workers were included in the study, with a response rate of 97.6%. One-third (31.3%) of respondents were females. more than three-forth (76.4%) of them were in the age group between 21-30 years. more than half(53.5%) of health care workers were degree holders, and about 78.9% of workers had within 5 years of working experience. Only 34(12%) of respondents responded that there is resource for knowledge sharing activity and three-forth (75.3%) of health care workers told that there is openness to share knowledge in their organization (Table 1).

Table 1: Socio demographic characteristics of study participants in Gonji kolella district health centers, 2014. (N=284)

Variable		Frequency	Percentage
Sex	female	89	31.3
	male	195	68.9
Age	20-30	217	76.4
	31-40	29	10.2
	41-50	17	6.0
	51 and above	21	7.4
Educational level	Diploma and below	131	46.1
	Degree and above	153	53.9
	Laboratory	18	6.3
	Midwifery	24	8.5
	Nurse	94	33.1
	Pharmacy	24	8.5
	Support staff	76	26.8
	Others	4	1.4
Work experience	5 years and below	224	78.9
	6-10 years	8	2.8
	Greater than 10 years	52	18.3
Monthly salary	Below 1000	31	10.9
	1000-3000	149	52.5
	Greater than 3000	104	36.6

Technological and individual factors for knowledge sharing:

Half (50.3%) of participants agreed that there is ICT access for knowledge sharing and only one-fifth (20.1%) of respondents responded that they are familiar with Information technology this study revealed that 72.2 % of the respondents have trust on others' knowledge. A 39 years old matron said, "There are individuals who share their knowhow and ready to accept and apply the knowledge they get from others. On the other hand there are individuals who are reluctant to accept or to share knowledge with colleagues" The level of knowledge sharing practice among health workers in the selected health center was found to be 41.9% (**Ошибка! Источник ссылки не найден.**).

Table 2:Technological and individual factors for knowledge sharing practice among health care workersin Gonji kolella district health Centers, 2014. (N=284)

Variable	Response	Frequency	percent
ICT availability	No	141	49.7
	Yes	143	50.3
IT familiarization	No	227	79.9
	Yes	57	20.1
Intrinsic motivation	No	28	9.90
	Yes	256	90.10
Extrinsic motivation	No	203	71.50
	Yes	81	28.50
Trust	No	79	27.80
	Yes	205	72.20
Awareness	No	19	6.70
	Yes	265	93.30
Willingness to share	No	36	12.68
	Yes	248	87.32
Fear of losing competitiveness	No	211	79.6
	Yes	73	20.4
Knowledge sharing practice	No	165	58.1
	Yes	119	41.9

Associated factors for knowledge sharing among Health workers:

Multi-variable logistic regression analysis; constructed by including the factors found to be significant in the bi-variable analysis showed that, knowledge sharing opportunity (AOR = 2.65, 95% CI = [1.17-6.01], access to technology (AOR = 2.27, 95% CI = [1.17-4.40], familiarizing employees to technology (AOR=3.23, 95%CI=[1.28-8.12] and trust on others' knowledge (AOR =4.78, 95% CI = [1.73-13.22] were significant predictors of knowledge sharing practice(Table 3).

Table 3:Factorsassociatedwith Knowledge sharing practice among health care workersat Gonji kolella district health Centers, 2014. (N=284)

Variable		Knowledge sharing practice	
		Yes	**AOR(95% CI)**
Sex	female	44	1
	Male	145	1.73(0.69,4.35)
Educational level	Diploma and below	71	1.63(0.58,4.58)
	Degree and above	118	1
Work experience	10 years and below	162	0.97(0.36,2.67)
	Greater than 10 years	27	1
Job satisfaction	Satisfied	147	1.25(0.58,2.69)
	Not satisfied	42	1
Extrinsic motivation	motivated	58	
	Not motivated	131	
Intrinsic motivation	motivated	163	3.26(0.56,19.10)
	Not motivated	26	1
Trust on staffs' knowledge	Yes	116	4.78 (1.73-13.22)*
	No	73	1
ICTs access	Yes	81	2.27(1.17-4.40)*
	No	108	1
Familiarization to IT	Yes	27	3.23 (1.28-8.12)*
	No	162	
Knowledge Sharing Opportunity	Yes	108	2.65 (1.17-6.01)*
	No	81	1

*= P< 0.05

DISCUSSION

In this study, knowledge sharing practice among health workers was found to be 41.9%.Findings of this study is lower than a study conducted in Addis Ababa at selected public hospitals (49.0%)(20), Mekele at selected public hospitals (49.18%)(21), Hawasa at selected public hospitals(53.95)(22) and in Baher Dar at Felegehiwot referral hospital(17.7%)(16). The possible reasons for the difference might be the difference in infrastructure, staffs awareness, management support, resource allocation, and geographical location.

Of the variables, trust on others' knowledge had positive association with knowledge sharing practice. This finding is consistent with studies done in Taiwan and Malaysia from outside(31, 47) and selected public hospitals in Addis Ababa, Mekele, Hawasa and Bahir Dar (16, 20-22).

The other predictor variable that has positive association with knowledge sharing is opportunity to share knowledge. This study showed that the higher knowledge sharing opportunity in the hospital, the more likely health workers to practice knowledge sharing. This finding is consistent with studies done in Mekele, Bahir Dar and Hawasa (16, 21, 22).

Technological infrastructure availability and familiarity to the available technology had positive association with knowledge sharing practice in this study. This finding is supported by a study done in China(18)and Ethiopia(10,

20). But a similar study done in Mekele showed that technological factors have no significant association with knowledge sharing practice(21). This variation can be due to organizational system and study time differences.

CONCLUSION

Even though most of the participants were aware, willing and have an intrinsic motivation to share their knowledge, they practiced it poorly for several reasons. The identified main determinants are access to ICT infrastructure, familiarization to available technologies, trust on others' knowledge and knowledge sharing opportunity.

COMPETING INTERESTS

The authors have declared that no competing of interests exists.

AUTHORS' CONTRIBUTIONS

AN designed the study, participated in the data collection, performed analysis and interpretation of data and drafted the paper and revised the manuscript. RB assisted with the design, approved the proposal, and revised drafts of the paper and prepared and revised the manuscript. All authors read and approved the final manuscript.

ABBREVIATIONS AND ACRONYMS

CI: Confidence Interval
FMOH: Federal Ministry of Health
ICT: Information Communication Technology
IT: Information Technology
KM: Knowledge Management
KMS: Knowledge Management Systems
KS: Knowledge Sharing
MDG: Millennium Development Goal
SPSS: Statistical Package for Social Sciences
WHO: World Health Organization

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