

Assessment of routine health information

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Abstract

Background: - A Routine Health Information System (RHIS) is referred to as the interaction between people, processes, and technology to support operations management in delivering information to improve healthcare services. Routine health information is likely to allow public health facility providers to document analyze and use the information to improve coverage, continuity, and quality of health care services. In Ethiopia, information use remains weak among health professionals. Besides, more have to be done on the utilization of routine health information among health professionals to strengthen and improve the health of the community at large. This study aimed to assess the level of routine health information use and identified determinants that affect health information use among health professionals.

Method: Facility-based cross-sectional study design was used from March to April 2020 among 408 health professionals within 22 public health centers using a multi-stage sampling technique. Data was collected using a Semi-structure questionnaire and an observational checklist. The data collected were entered into EpiData version 3.1 and transferred into SPSS version 20 for further statistical analysis. Stepwise regression was used to select the variable. Variables with a p-value of less than 0.05 for multiple logistic regression analysis were considered statistically significant factors for the utilization of RHIS.

Result: In this study, Routine health information utilization rate among health professionals was 37.3% (95% CI: 32.6%, 42.1%). The findings also showed a significant positive association between routine health information utilization and health professionals who use of Both manual and computer-based files (AOR = 1.474, 95 % CI =1.043-2.082); Organizational rules, values, and practices (AOR = 1.734, 95 % CI =1.212-2.481); Human resource (AOR = 1.494, 95 % CI = 1.056-2.114); Had problem solving skill on HIS tasks (AOR = 2.091, 95 % CI = 1.343-3.256); Professional who believe that routine health information use is important (AOR = .665, 95 % CI = .501-.883); Planning and monitoring practice (AOR = 1.464 95% CI (1.006-2.131)) and Knowing duties and responsibilities (AOR = 1.525, 95 % CI = 1.121-2.073)

Conclusion and Recommendations: Good health information utilization status of health professionals in Addis Ababa was low. Use of recording information; Organizational rules, values, and practices; Inadequate Human resource; Problem-solving skill of health professionals on HIS tasks; Professional who believe that routine health information use is important; the Collected information used for planning, monitoring, and evaluation of facility performance; and Staff know their duties and responsibilities in their workplace were found significantly associated with routine health information use. Thus, major improvements must be done in equipping health professionals to utilize the information they have by improving the above key findings/factors in the health care system. And, health professionals have to use routine health information for evidence-based decision-making in health facilities for a better quality of health care system implementation. [*Ethiop. J. Health Dev.* 2021; 35(SI-1):05-14]

Keywords: Routine Health information Utilization, Health centers, Health professionals, Information Use, healthcare data.

Introduction

RHIS is a system whereby health data are recorded, stored, retrieved, and processed to improve decision-making about health (1-5). It is cost-effective in reducing work burden and improve the quality of patient care (4, 6). RHIS is effective in identifying problems and gaps and also helps to resolve the identified problems and improving the health care system (7).

Globally the development and origin of RHIS are in the late 1950s (8). Information technology and the Internet have revolutionized the possibilities of creating integrated routine health information use (9). Nowadays in most developing countries, the role of information technology is mainly emphasized in the RHIS in which information is used for multiple purposes (10).

In Ethiopia, a national RHIS assessment was carried out in 2008 and this was updated and validated in 2011 (11). Information Revolution is one of the four transformation agendas of the Health Sector Transformation Plan (HSTP) (12).

According to a Global review, 16 % of crisis countries documented the utilization of information for health activities, while 32 % of non-crisis countries reported

this capability (13). In Korea, over 80% of the total respondents working the health facilities were positively evaluated on the utilization of Routine health information (14). The study of Ghana shows information that was generated from the RHIS is ideally useful for not only patients, service users, and policymakers, but also the healthcare staff (15). In the Amansie-west rural bank of the Ashanti Region of Ghana, there was consistency in reporting and the use of information from health centers (16).

In Ethiopia, information that was gathered and analyzed by the district public health office was mainly used to assess plans against accomplishments, guide monthly review meetings between the health center and district health office, and give feedback and for decision-making (17). A study in the East Gojjam zone showed 45.8% of the health workers had good routine health information utilization (18). A study conducted in northwest Ethiopia showed that the overall existing routine health information utilization in the study area was 46.5% (19). A study done in public health centers of Addis Ababa revealed that only 27.2% of health employees reported that they used generated information to give health information to the user, to

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compare it with the previous performance, and to monitor/evaluate programs.

The value and effectiveness of health information is determined by its utilization by health professionals in decision-making (1, 20). In Addis Ababa, routine health information use remains weak and health workers' levels of attitude and belief in data collection and recording are the main factors for the low rate of information used in health centers (21). To improve the situation with RHIS, many international agencies are investing a huge amount of money (22). Different technical, organizational, behavioral, and data processing factors in RHIS tasks that affect information use are not investigated well.

This study assessed the health information utilization status and identified determinants among health professionals of Addis Ababa city public health centers. The study aims to contribute to policy decision-making to make RHIS more amenable for better improvement of the health services among health professionals at primary health care facilities level, Addis Ababa health bureau level, and Federal Ministry of Health level.

Methods and Materials

Study Design and Area: A facility-based cross-sectional study was conducted from March to April 2020 to assess the routine health information utilization and its determinants factors among health professionals in Addis Ababa city public health centers. The city is divided into 10 sub-cities (i.e., Arada, Addis ketema, Kolfie Keranio, Bole, Gullele, Yeka, Kirkos, Nifassilk-Lafto, Lideta, and Akaki-/Kality) and 116 Woreda. The city has 98 functional health centers of which 86 are governmental and the rest are owned by NGOs. There are around 12,104 identified health professionals in health centers of all sub-cities. The poor functioning of health information system in Addis Ababa health centers will enable us to see how severe the problem will be in the rural areas of the country.

Source and Study Population

The source population for the study was all health professionals currently working at the public health centers of Addis Ababa city administration. The study population was randomly selected health professionals

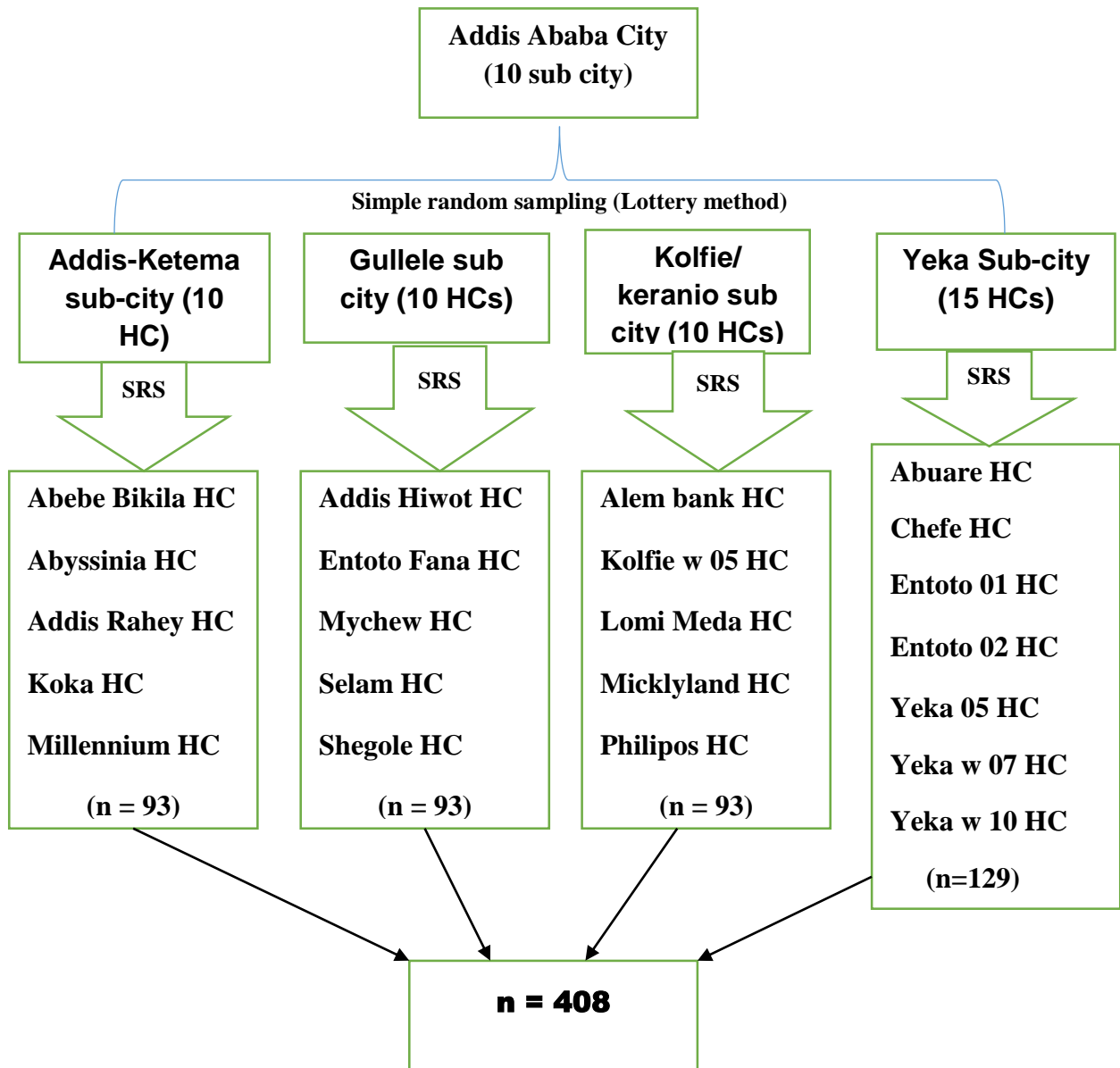
from the four selected sub-cities (Addis Ketema, Gullele, Kolfie/Keranio and Yeka). The four sub-cities were selected randomly because Addis Ababa's sub-cities have similar health structure and service deliveries. However, health professionals with six and fewer months were excluded from the study, because newly employed health workers of six and fewer months' almost had no clue about RHIS related activities and even were not considered permanent workers of the health centers.

Sample size determination

The sample size was determined by a single population proportion technique using the following assumptions (Confidence interval of 95% and $Z_{\alpha/2}$ with a significant level of alpha (α) of 0.05, which is 1.96, A 6% margin of error ($d=0.06$), $P = 41.7\%$ which is the current utilization rate of routine health information system among health professionals of Addis Ababa health centers)(21). This yields a sample size of 259. A design effect of 1.5 was added due to the stratified sampling procedure used in our study and a 5% non-response rate added, and then the total sample size became 408.

Sampling procedure

The multi-stage sampling technique was used to select samples for this study. The 10 sub-cities in Addis Ababa have similar health structures. So, 4 sub-cities were selected randomly using the lottery method. Three of the selected sub-cities have 10 health centers (Addis Ketema, Gullele, and Kolfie) while Yeka sub-city has 15 health centers that yield a total of 45 health centers. Then, 22 (about half) of these health centers were selected by using a simple random sampling method for the study. The sample size was allocated proportional to each sub-city, and the corresponding sample size was allocated proportionally to each health center. The respondents were identified by using a stratified sampling method by profession in selected health centers (namely, Nurses, Laboratory technicians, Midwives, Doctors, Health officers, pharmaceutical professionals, HIT professionals) and the sample size allocated to the facility was proportionally distributed to the professional group. Accordingly, 408 samples were collected from 22 health centers. (Figure.1)



Stratification by profession and SRS

Figure 1. Schematic presentation of sampling procedure and technique of public health centers; Addis Ababa, 2020

Data collection tool and procedure

Data were collected using a pre-tested questionnaire in a similar study population in Lideta sub-city taking five percent of the actual sample size. The questionnaire was developed based on the findings of the above relevant literature review and PRISM assessment tool (7). The PRISM assessment tool comprises four components which are RHIS performance diagnostic tool, RHIS overview and facility/office checklist, organizational and behavioral questionnaire, and RHIS management assessment tool. The data collection tool comprises an information sheet and a self-administered questionnaire which had three sections. The first section had background information of participants like sex, age, educational status, the field of study, working department, year of experience, managerial experience, and training in RHIS. The second section comprises questions of technical, organizational, and behavioral factors. And the third section holds the dependent

variable. Data was collected using a structured questionnaire among health professionals and a direct observational checklist in the health institutions. Four health professionals were recruited for data collection while one Master of Public Health holder was recruited to supervise the overall data collection processes. A two-day practical and theoretical training was given for the data collectors on RHIS.

To check data quality, each questionnaire was checked for competence and code given before data entry. Data cleaning was performed by generating a frequency table to check accuracy, consistencies, missed values, and variables. Errors identified during data entry were corrected after the revision of the originally completed questionnaire. Data were cleaned and entered the computer by using EpiData version 3.1 and the analysis was done using SPSS version 20.

Operational Definitions and Study variables

Routine health information utilization: The dependent variable and the other components of the assessment tool have Likert scale measures, ranging from “strongly disagree” to “strongly agree”. The dependent variable has a total of sixteen questions. Finally, a health worker is considered as “has good routine health information utilization” when scored equal or greater than 64, or “has poor routine health information utilization” when scored below 64. The independent variables are: -

- Socio-demographic characteristics (sex, age, educational status, a field of study, working department, year of experience, managerial experience, and training in RHIS)
- Technical factors (RHIS software, data entry personnel, data collection tools, training, feedback, data management skill)
- Organizational factors (organizational rule, human and financial resource, supervision, the culture of information use, being superior directive, motivational incentives) and
- Behavioral factors (level of knowledge, confidence, competence, attitude, and beliefs, problem-solving skill)

Health care professionals in this study were defined as any health personnel who were collecting health data while working to utilize the information for the improvement of health status.

Data processing and Analysis

Data were cleaned and entered the computer by using

EpiData version 3.1 and the analysis was done using SPSS version 20. Frequency, percentage, and descriptive summaries were computed and used by the logistic regression model to describe the study variables for the assessment of RHIS use. The odds ratio and confidence interval were calculated to show the association between the utilization of health information and exposure variables. A Chi-square test was performed to check the cross-tabulation. The Bivariable analysis was conducted and variables with $p < 0.2$ were selected as candidate variables for multivariate analysis. Finally, variables with $p < 0.05$, during multivariable analysis were considered significant. Both Crude Odds Ratio (COR) and Adjusted Odds Ratio (AOR) with 95% confidence interval were estimated to show the strength of associations.

Result***Socio-demographic Characteristics of Health professionals***

A total of 402 respondents have participated in the study with a response rate of 98.5%. Most of the respondent's ages were within the range of 24-35(85.3%), with a mean age of 29.65 and SD of 5.464. More than half, 205(51%), of study participants were female. Around respondents, 299(74%) of them have work experience of between 7 months-5 years. Only 25.6% of participants have received RHIS related training in the past 6 months. (Table.1)

Table 1. Socio-demographic characteristics of respondents in public health centers of Addis Ababa, Ethiopia, 2020[n=402]

Variables	Category	Response
Sex of respondents	Male	197(49%)
	Female	205(51%)
Age of respondents	20-24	37(9.1%)
	25-29	204(50.6%)
	30-34	96(32.8%)
	35-39	44(10.9%)
	Above 40	21(4.9%)
Educational status	Diploma	108(26.9%)
	Degree	266(66.2%)
	Postgraduate	28(7%)
Working department	OPD/IP	138(34.3%)
	Dispensary	55(13.7%)
	Maternity	70(17.4%)
	Laboratory	43(10.7%)
	Emergency	49(12.2%)
	HMIS room	23(5.7%)
	Core processor unit	24(6%)
Year of experience	7 months -5 years	299(74%)
	Above 6 years	103(25.3%)
Managerial experience	Had experience	108(26.9%)
	Not experienced	294(73.1%)
Training in RHIS	Trained	103(25.6%)
	Not trained	299(74.4 %)

Hundred and seventeen of the respondents (29.1) were nurses and 96(23.9%) were Health officers. (Figure.2)

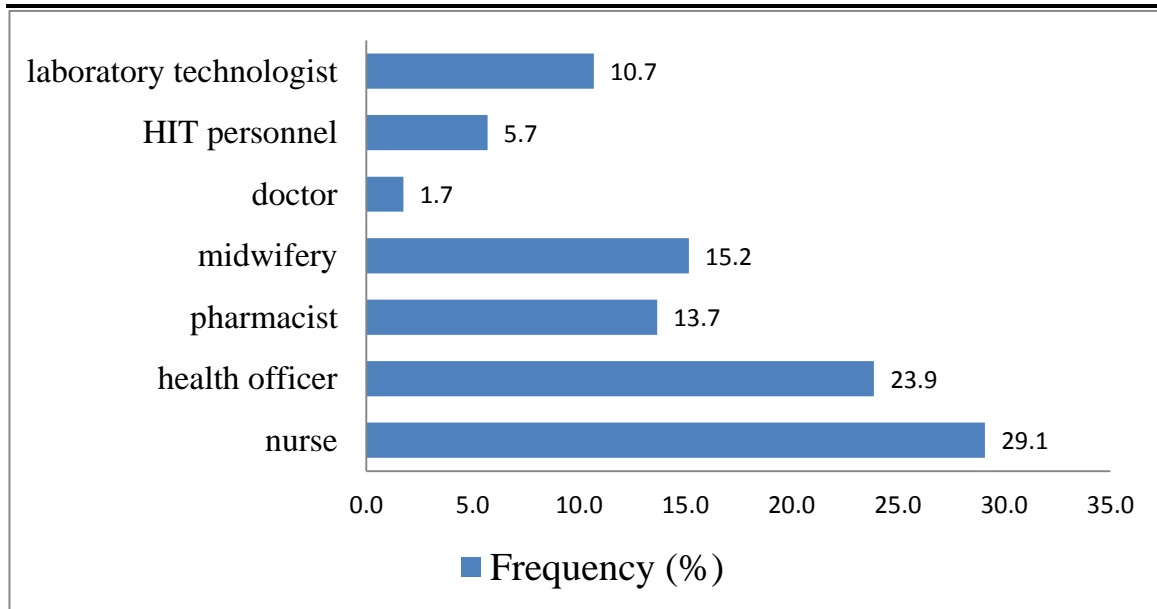


Figure 2. Schematic presentation of Health professional's Distribution in Addis Ababa public health centers, 2020

Technical factors

Of the respondents, 209 (52%) responded that using a computer-based system for data management is user-friendly. Half of them knew RHIS implementation formats and had common understandings of information use. A total of 218(54.2%) participants responded that most health information systems require employing trained personnel for data entry. Two hundred and five 205(55%) participants appreciate the use of electronic media parallel with paper-based media. In this study, 44.5% of respondents agreed that data collection done by untrained personnel about RHIS related activities leads to poor information use. This study also found that health professionals with the skills of data collection, data analysis, information presentation, and data use were 216 (53.7%), 225 (56%), 230 (57.2%), and 228 (56.7%) respectively.

Organizational factors

Of the respondents, 242 (60.2%) indicated that the presence of organizational rules, values, and practices affects participation in RHIS positively. Two hundred and twenty-seven (56.5%) of the respondents agreed that inadequate human resources are the main organizational obstacle for effective use of RHIS in health centers. Even in this study, during data collection, there were health centers without health information technologists. Two hundred and nineteen (54.5%) professionals claimed that poor leadership and low management support of health facility is the main reason for poor RHIS practice.

A total of 242 (57.5%) respondents agreed that poor information use culture at health facilities is the main obstacle to the effective implementation of RHIS. About 62.7% and 63% of the total respondents replied that the presence of access to timely reporting and timely feedback increases the effective utilization of RHIS respectively. Only 193(48%) of participants agreed that being superior directive (working in an administrative related position) influences information used for the decision-making process. Two hundred and twenty-five

(56%) respondents agreed that staff rewarding for their good work facilitates effective information use for the decision-making process.

Two hundred and forty-six (61.2%) of the respondents responded that having trained staff in data management had a better result in health information use. Two hundred and forty-seven (61.4%) of the respondents replied that gathering evidence-based data to find the root cause of the problem is the best practice in routine health information used for the decision-making process. Two hundred and thirty-six (58.7%) of the participants replied that the use of Routine health information for community education and mobilization affects information used for the decision-making process.

Behavioral factors

A total of 233 (58%) participants reported that a good level of attitude of staff towards data collection and recording influences the use of RHIS positively. Out of the total participants, 238 (59.2%) of them had a good level of knowledge of RHIS forms which positively influences the utilization of RHIS. Around 59.5% of respondents replied that the problem-solving skill of health professionals is one of the vital wealth for effective utilization of routine health information within health centers.

About 60% of the participants complained that having good confidence to use the generated information by the HMIS management team increases the utilization rate of routine health information. Fifty Nine percent of the participants responded that performing their RHIS tasks competently contributes to the good and effective utilization of routine health information.

One hundred and seventy (42.2%) of the respondents explained that data collection was a boring process. Two hundred and sixty-two (65.2%) participants explained that collecting data gives them the feeling that is needed for planning and monitoring facility performance. Out

of the respondents, 186 (46.3%) complained that collecting information that is not used for decision-making is discouraging. Two hundred and fifty-eight (64.2%) of respondents understand and appreciate their roles and responsibilities regarding health information management.

Routine Health Information utilization of Health Professionals

The study revealed that the utilization of Routine health information among health professionals was 150(37.3%). (Figure.3)

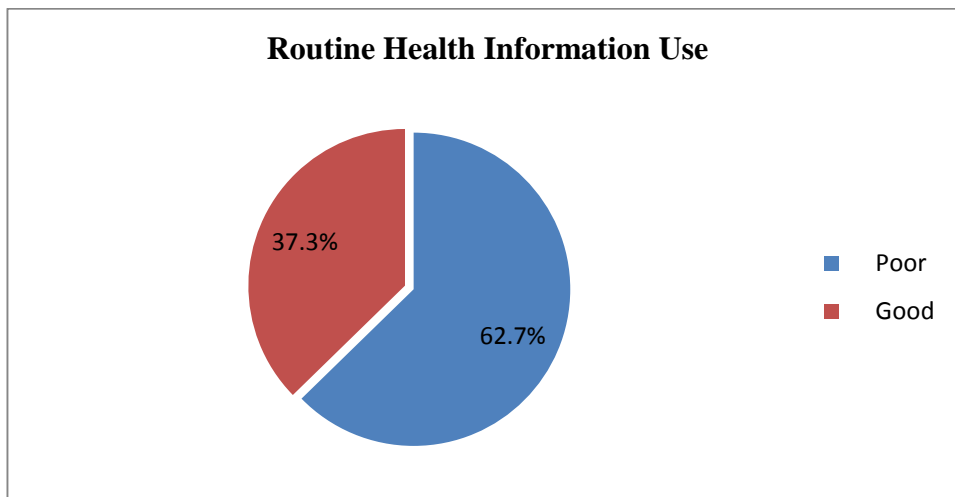


Figure 3. Schematic presentation of Routine health information utilization status among health professionals of public health centers in Addis Ababa, Ethiopia, 2020

Bi-variable and multivariable binary logistic regression analysis results of Routine health information use

The utilization of Routine health information was compared with important (key) selected variables from technical, organizational and behavioral factors as well as the computed predictors. But the majority of those factors are not statistically significant after adjusted multiple logistic regression.

As the result indicates, the use of both manual paper files and computer-based files for recording information was found to be significantly associated with routine health information use [AOR= 1.474 95% CI (1.043, 2.082)] at p-value 0.028. Those who use both manual paper files and computer-based files for recording information were 1.474 times more likely to practice and use good routine health information than those who use only paper-based files.

Organizational rules, values, and practices were found to be significantly associated with good Routine health information use [AOR= 1.734 95% CI (1.212, 2.481)] at p-value 0.003. The presence of Organizational rules, values, and practices that support and give access to the practice of RHIS related activities among health professionals within a facility was found to be 1.734 times more likely to increase the use of good routine health information than the absence of Organizational rules and values.

Human resource at the health center was found to be significantly associated with good routine health information use [AOR= 1.494 95% CI (1.056, 2.114)] at p-value 0.023. In health centers which have inadequate human resource, health professionals were found to be 1.494 times less likely to use and practice RHIS than

those of primary health facilities with adequate human resource.

The problem-solving skill of health professionals on RHIS tasks was found to be significantly associated with good routine health information use [AOR= 2.091 95% CI (1.343, 3.256)] at p-value 0.001. Health professionals with good skills in handling their RHIS tasks and work were found to be 2.091 times more likely to utilize RHIS at their health facilities than those health professionals with poor skills related to RHIS tasks.

Professional who believes that routine health information use is important was found to be significantly associated with good routine health information use [AOR= 0.665 95% CI (0.501, 0.883)] at p-value 0.005. Health professionals who have a positive and good belief about RHIS were 0.665 more likely to use RHIS than health workers who believed that "RHIS is useless and performing this system is waste of time".

Collecting information used for planning and monitoring facility performance was found to be significantly associated with good routine health information use [AOR= 1.464 95% CI (1.006, 2.131)] at p-value 0.046. Health professionals who had a feeling and knowledge that the collected data is further needed for planning and monitoring facility performance beyond recording purposes were 1.464 more likely to utilize good routine health information than those who only know the collected data used for recording purpose and putting on the shelf.

Knowing duties and responsibilities at the health facility found to be significantly associated with good routine health information use [AOR= 1.525 95% CI (1.121, 2.073)] at p-value 0.007. Health professionals who knew their roles, duties, and responsibilities at the health

facility according to HIS tasks were initiated to do a better job and were found to be 1.525 more likely to use RHIS than those health professionals who did not know

their roles, duties, and responsibilities at a health facility. (Table 2).

Table 2. Multivariable logistic regression analysis of factors associated with utilization of RHIS information among health professionals in Addis Ababa public health centers 2020 (n 402)

Variables	Use of RHIS		Crude OR (95%CI)	Adjusted OR (95%CI)	P-value
	Yes	No			
Use of both manual and computer-based files					
Yes	112	188	1.622(1.272,2.070)	1.474(1.043, 2.082)	.028*
No	38	64			
Organizational rules, values, and practices					
Yes	125	117	2.322(1.827, 2.952)	1.734(1.212, 2.481)	.003*
No	25	135			
Human resource					
Yes	85	142	1.873(1.536, 2.284)	1.494(1.056,2.114)	.023*
No	65	110			
Problem-solving skill on HIS tasks					
Yes	89	150	2.281(1.816, 2.864)	2.091(1.343, 3.256)	.001*
No	61	102			
Professional who believes that routine health information use is important					
Yes	61	102	1.119(.960, 1.304)	.665(.501, .883)	.005*
No	89	150			
Collecting data used for P/M facility performance					
Yes	98	164	2.406(1.892, 3.060)	1.464(1.006, 2.131)	.046*
No	52	88			
Knowing duties and responsibilities					
Yes	72	122	1.769(1.461, 2.143)	1.525(1.121, 2.073)	.007*
No	78	130			

* Shows predictor variables for Routine health information utilization at $p < 0.05$

Discussion

Utilization of Routine Health Information among Health Professionals

The value and effectiveness of health information were determined by its utilization by health professionals in decision-making. The routine health information utilization rate of health professionals in the selected health centers of this study is about 37.3%. This utilization rate is poorer than the study done in the health facilities of Korea, in which over 80% of the total respondents working in the health facilities were positively evaluated on the utilization of routine health information (45). The reason behind this difference in utilization rate was that Korean primary health facilities were well organized and had a better managerial system than the Ethiopian health tier system.

The utilization rate of routine health information among health professionals of this study was better than a study done in North Gondar, Northwest Ethiopia, in which the trend of routine health information utilization among health professionals was very low (23.1%) (2). And this result showed that emphasis given to health professionals in North Gondar health facilities for

improving their routine health information utilization was exceptionally low.

On the other hand, the utilization rate of health professionals in this study was slightly less than the two studies done in the East Gojjam zone that reported 45.8% (19) a study in northwest Ethiopia that reported 46.5% (23). The poor rate of utilization revealed in this study is due to less emphasis given to health professionals in almost all sub-cities health centers since recently with regard to on-job training to update their RHIS related activities.

Also, health professionals' routine health information use rate in this study is better when compared to a study done in the Jimma zone where the cumulative utilization of routine health information among health professionals was only 32.9% (21). In contrast, the health information utilization rate among health professionals of Addis Ababa health centers was low as compared with that of the Amhara region. This implies emphasis given by health workers and district offices in Addis Ababa to strengthen RHIS were exceptionally low.

In this study, health information utilization of health professionals was poorer than a study done in the Hadiya zone which showed that the utilization of routine health information among health professionals was 69.3% (1). The possible reason for their better performance was that staff became initiated and motivated to use the skills they have got in data collection, data handling, information analysis, and presentation. Routine health information utilization status among health professionals of this study is different from a study done three years back that showed the utilization rate of routine health information among health professionals in Addis Ababa health centers to be 41.7% (26); The possible reason for the low practice of health information use revealed in this study was that health professionals became reluctant and bored to use the skills they have in their hands. Also, health professionals thought that their work was only treating patients and reporting their findings to the next higher level; they believed that data handling and information generation was only the job of HIT personnel. So, to alleviate this misunderstanding, complete changes have to be made in RHIS practice at Addis Ababa city health facilities.

Factors Associated with Routine Health Information Use

In this study, 205 (55%) replied that the use of manual paper file recording makes health information to be poorly managed for use. A study done in the public health sectors of South Africa revealed, about 55% of health professionals believed that the process that uses paper is more efficient than the use of electronics (34). So, health professionals in Addis Ababa public health centers have shown better acceptance of using electronic-based RHIS than those of South Africa.

In the current study, of the respondents, 242(60.2%) responded that the presence of organizational rules, values, and practices affect RHIS positively. This finding was supported by the study conducted in central Ethiopia public health centers where 60% of the professionals explained that provision of new organizational practices and policy initiates for the maximum use of health information in the health facilities (23). Also, a study which was done in North Gondar, North West Ethiopia, showed that 57% of the total participants in the health centers had good organizational rules for RHISs in their facilities (2).

In this study, 227 (56.5%) of respondents agreed that inadequate human resources are the main organizational obstacle for effective use of RHIS in health centers. During data collection of this study, there were health centers without HIT personnel and the data compilation was done by other representative health professions. Also, a study which was done in public health centers of Addis Ababa supports the idea that the presence of only one HIT personnel in the HMIS room causes poor management of health information and more than one HIT personnel should be employed in every health centers (21). Similarly, studies done in Cameroon and Ghana claimed that data collection and entry were a laborious process and more personnel especially data clerks were needed for data collection and management (15, 24).

Routine health information use among Health professionals who had Problem-solving skill on RHIS tasks were higher than those who did not [AOR= 2.091 95% CI (1.343, 3.256)]. The result was supported by studies conducted in North Gondar and Amhara National Regional State, in which more than two-third of health professionals had no professional skill in RHIS (2, 25). This may be due to the reluctant behavior of health workers to know and engage in health information-related activities.

In the current study, 165(41%) of respondents believed that routine health information use is important in the health sector management process. A study done in Amhara national regional state in Ethiopia to assess the perceived knowledge of health professionals revealed that 85% of the respondents reported they believe the RHIS was important (22). In North Gondar, more than half (58.6%) of respondents had a positive belief in routine health information utilization (2). Generally, the beliefs of health professionals in this study were lower as compared with rural health centers of North Gondar and Amhara regional health settings. And, the possible reason for Addis Ababa health professionals to have a poor belief in RHIS is that they thought that their job is only treating patients and data collection was HIT personnel's duty.

In this study, 262 (65.2%) participants responded that the collected data in their facility about patients, clients, and health services were used for planning, monitoring, and evaluating facility performance in addition to patient's treatment. A study which was done in North Gondar also suggested that around 51% of the health professionals use routine health information for planning their routine health activities(2). But, only 27% of health professionals use generated health information for monitoring and evaluation of programs and further planning purposes of RHIS activities in a previous study done by public health centers of Addis Ababa (21).

Odds of routine health information use among health professionals who know their duties and responsibilities in their workplace were higher than those who did not know their duties and responsibilities [AOR= 1.525 95% CI (1.121, 2.073)]. The result was supported by a study conducted in public health centers of Addis Ababa three years back in which health professionals take data collection, registration, information analysis, and use of the generated information for further activities as part of their duty(21). This predictor was also suggested by the study done in Ethiopian health sectors in which around 84% of the respondents knew their roles and responsibilities in their health facilities (25).

Conclusion

This study found that good Routine health information utilization among health professionals of public health centers to be low compared to the national expectation. Among many factors expected to affect the utilization rate of a health information system significantly were: use of both paper-based and computer-based files for recording health information; Organizational rules, values, and practices; Human resource; Problem-solving skill of health professionals on RHIS tasks; Belief in

routine health information use; Collected information further used for planning, monitoring and evaluating facility performance and Knowing duties, roles and responsibilities. Therefore, routinely monitoring and checking the availability of all the above factors in the health facility is highly recommended. The study also suggested further investigations on the culture of health information utilization among health care providers where routine data are generated.

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Ethics approval and consent

Ethical clearance was obtained from the ethical clearance committee of Addis Ababa College of Health Sciences. A formal letter from Addis Ababa College of Health Sciences was submitted to Addis Ababa's public health research and emergency management directorate. All participants' right to self-determination was respected. All study participants were informed about the purpose of the study and participated by signing the written consent form.

Competing interests

The authors declare no competing interest.

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