Routine Health Information Utilization and Associated Factors among Public Health Center Managers in Addis Ababa, Ethiopia: A Cross-Sectional Study.

Alem Sebsbie[1*], Mesfin Addise[2], Mengistu Yilma[2], Ephrem Biruk[2], Adiam Nega[2], Tamiru Demeke[2], Girma Taye[2]

Abstract

Background: In many low and middle-income countries (LMIC), the use of routine health information systems (RHIS) for decision-making remains unsatisfactory. In the Contrary, evidence regarding the level and factors associated with use and non-use of RHIS is limited. Therefore, this study aimed at assessing the level and factors associated with RHIS utilization among public health centers in Addis Ababa.

Methods: An institution-based cross-sectional study was conducted in 49 randomly selected public health centers, from August to September, 2020. A simple random sampling technique was used to identify study participants (health managers). A self-administered structured questionnare was used to collect data. EPI-info version 7 and SPSS version 20 softwares were used for data entry and analysis, respectively. A binary logistic regression model was fitted to identify factors associated with RHIS. Variables having a p-value of less than 0.05 in the multivariable analysis were considered statistically significant.

Results: The overall utilization rate of RHIS among health center managers was 66.6%. Use of computer software for data analysis (AOR = 3.76, 95% CI; 1.84–7.65), data analysis and interpretation training (AOR = 3.03, 95% CI; 1.31–6.99), supervisory visit feedback (AOR = 3.07, 95% CI; 1.34–7.02), and information utilization culture (AOR = 2.16, 95% CI; 1.11-4.21) were significantly associated with routine health information utilization.

Conclusions: The rate of RHIS utilization is low when compared to the national target and other data in the region. To boost RHIS utilization, stakeholders could promote the use of computer tools for data analysis, train health professionals in data analysis and interpretation, and provide written feedback. [*Ethiop. J. Health Dev.* 2022;36 (SI-1)]

Key words: Routine Health Information System, Health Information Utilization, Health Center, Addis Ababa.

Introduction

Globally, fostering health systems to improve health outcomes has become a primary health agenda (1). While all the building blocks of health systems are essential to improve health outcomes, health information systems (HIS) are the bases of the overall system. HIS supports generation of quality data to inform decision making for the other building blocks of the health system (2).

The routine Health Information System (RHIS) is an integral part of the health information system. Its purpose is to routinely generate quality health information that offers information support for decision making at all levels of the health system (3).

Worldwide, a huge number of resources (financial and human) are spent to collect routine health care data from facilities, communities and populations (4). However, the use of evidence for sound decision making remains very low in many low- and middle-income countries (LMICs) (5).

In Africa, the use of RHIS ranged from 44.1% to 58 % (6–9). In Ethiopia, common to similar LMIC, the use of RHIS remain as low as 32.9% ranging to a maximum of 69% (10–16). This indicates that the use of RHIS in Ethiopia is much lower than the national expectation which is 90 % (17).

To end the limitations of evidence-based decision making and improve routine health information utilization guided by the information revolution (IR) road map, the Federal Ministry of Health (FMOH) of Ethiopia has introduced and implemented various interventions (18). The IR agenda is one of the four agendas of the health sector transformation plan (HSTP) of the country, which has been implemented from 2016 to 2020. In Ethiopia, the health information revolution is one of the key components of health system strategies and plans. However, the HIS quality and use are reported to be weak, particularly in the primary health care facilities. The information revolution agenda targets were attaining fundamental cultural and attitudinal change regarding perceived value and practical use of information (19).

In spite of the extensive effort to enhance the efficiency of HIS in Ethiopia over the past few years, the prevailing practice in terms of effectively utilizing information is not satisfactory, especially at the local level (20).

This very low usage of data/information to make informed decisions has led to inequity in allocation of resources and poor planning for provision of essential healthcare services (21) and compromises the capability of the health system to respond to priority needs at all levels of the health system (22). However, evidence about RHIS utilization, especially among public health centers, is very limited across the country including Addis Ababa. Besides, limited assessment study was done on how far the target of the information revolution agenda regarding RHIS utilization was achieved in Addis Ababa. Therefore, this study aimed at assessing the level of RHIS utilization and its

[1] Department of Maternal and Child Health, Kirkos Sub City Health Office, Addis Ababa, Ethiopia.
[2] School of Public Health, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia.
Corresponding Author email- alemsebsbie5@gmail.com

associated factors among public health centers in Addis Ababa.

Methods

Study area

The study was carried out in Addis Ababa, the capital of Ethiopia. The city has an estimated total population of 4,793,699 based on world population review projection of 2020 (23). Addis Ababa has six government hospitals and 98 public health centers currently providing comprehensive health services to the population. In Addis Ababa about 6,370 healthcare workers worked in public health facilities.

Study design and period

An institution-based cross sectional study design using quantitative method was conducted from August to September 2020 to assess routine health information utilization and associated factors among public health centers of Addis Ababa.

Study population

The source population was all health facility managers working at functional public health centers in Addis Ababa. The study population was health managers (Medical Directors, Core Process Owners, Sub Core Process Owners and Case Team Coordinators) who were working at randomly selected public health centers of Addis Ababa.

Sample size determination

Sample size was calculated using a single population proportion formula for each of the four objectives of the study using Epi Info version 7 stat calc software. To calculate the sample size, P = 45.8%, P = 74.9% and P = 46.5% were used from a study conducted in East Gojjam Zone (19). Confidence level (95%), margin of error (5%) and non-response rate (10%) were assumed to calculate the sample size for each objective. A total of 422 health managers from randomly selected public health centers were included.

Sampling procedures

According to WHO, taking 30% of health facilities/districts is adequate to draw conclusion (24). So, 49 health centers (50%) were selected using simple random sampling technique. Since the structure of the public health facilities and number of health center managers is similar among health centers, the sample size was allocated equally to those 49 health centers. Then the study participants (422 health managers) were selected using simple random sampling technique from health managers working in each public health center.

Data collection procedures

A self-administered structured questionnaire adapted from Performance of Routine Information System Management (PRISM) toolkit (25) and other similar literature (14 - 16, 26, 27) was used to collect the data. Among the four PRISM tools, organizational and behavioral assessment tool (OBAT) was used to adapt the questionnaire to assess some of the organizational and behavioral factors. The questionnaire had five sections which include questions about socio-demographic factors, routine health information utilization, technical factors, organizational factors and behavioral factors. The questionnaire was prepared in English. Five data collectors and two supervisors who had Bachelor of Science (BSc.) degree in nursing and health officer and had experience in data collection were recruited and deployed to collect data, and to supervise the data collection process respectively. A two day training was given to the data collectors and supervisors prior to the data collection.

Operational Definition

Routine health information utilization: is the use of health information generated from HMIS for formulation of plans, budget preparation/budget reallocation, client management and follow up, medicine supply and drug management, human resource management, involvement of the community and local government, service delivery improvement, identification of gaps and priority areas, prediction and detection of outbreaks, and monitoring and evaluation of performance. Those dimensions (monitoring and evaluation of performance, client management and follow up, formulation of plans, improvement of service delivery, identification of gaps and priority areas, medical supply and drug management, etc.) which are used to measure routine health information utilization were adopted from PRISM toolkit and validated (25).

Overall routine health information utilization practice: Mean score was used to dichotomize health managers' routine health information utilization practice into "Overall Good" if equal or above the mean score and "Overall Poor" if less than the mean score.

Promotion of culture of information utilization: was assessed using five dimensions: evidence-based decision making, use of information, emphasize on data quality, sense of responsibility and empowerment/accountability. Each of those dimensions was in turn assessed with a minimum of three and a maximum of five questions. Totally 20 Likert-scale questions were used to assess culture of information. Mean score was used to dichotomize culture of information. Accordingly, those who scored 10 and above were considered as "Good" whereas below 10 was considered "Poor".

Perceived data quality: was measured by asking study participants about their perception on the completeness, reliability and timeliness of HMIS data. Mean score was used to dichotomize perceived data quality into "Good" if equal or above the mean score and "Poor" if less than the mean score (19).

Attitude towards HMIS tasks: is the belief of the respondents regarding HMIS tasks which was measured using 7 Likert scale questions. Mean score was used to dichotomize attitude towards HMIS tasks into "Positive" for those who scored 4 and above whereas below 4 was considered "Negative".

Perceived competency to perform HMIS tasks: is the capacity of the study participants to carry out HMIS tasks which was measured using 6 Likert scale

questions. Mean score was used to dichotomize perceived competency to perform HMIS tasks into "Good" those who scored 3 and above and "Poor" if less than 3.

Health managers: are medical directors, core process owners, sub core process owners and case team coordinators who are working in health centers.

Data management and analysis

Data were entered using Epi- info version 7.2 software after ensuring its completeness. The data were cleaned to deal with missing values and outliers. Cleaned data was then transferred into Statistical Product and Service Solutions (SPSS) version 20.0 for data analysis purpose. Descriptive statistics (mean, frequencies, tables, and graphs) were used to summarize and describe the data. Binary logistic regression model was used to observe the association between the explanatory variables and the outcome variable. Variables with a significance level of below 0.2 in the bi-variable analysis were entered into the multivariable logistic regression model. Both crude odds ratio (COR) and adjusted odds ratio (AOR) using 95% confidence intervals were calculated to determine the strength of associations. In the multivariable analysis, a p- value less than 0.05 ($p \leq 0.05$) was used to declare statistical significance.

Data quality assurance

The quality of data was assured at the maximum attainable level by using standardized adapted questionnaire. Recruited experienced data collectors and supervisors and two days training was also provided for the data collectors and supervisors on the questionnaire. During data collection, data completeness and consistency was checked daily and corrective measures were taken timely. After data collection, each questionnaire was coded and checked for completeness and consistency prior to data entry. Checking of data for missed values, inconsistencies and outliers were also done after data entry into EPI-Info version 7.2 and after exporting into SPSS version 20.

Ethical considerations

The study obtained ethical approval from Institutional Review Board (IRB) of College of Health Sciences, Addis Ababa University and Health Research and Emergency Management Directorate of Addis Ababa Health Bureau respectively. Informed consent was obtained from the participants, after providing information about the purpose, procedures, benefits, risks and confidentiality of the study. The right of study participants to abstain from answering any question or stop the interview at any time was also respected.

Results

Socio-demographic characteristics of respondents

From a total of 422 eligible health managers, 416 participated in the study, yielding a response rate of 98.6%. From the total respondents, about half or 213 (51.2%) of them were females. The mean (± SD) age of respondents was 31 (± 4.96) years with a range of 22 to 46 years of age. Regarding their academic background, about three-fourth 308 (74%) of the study respondents had a BSc degree. And regarding participants current job position half (49.8%) of them were case team leaders. (Table 1)

Table 1 Socio-demographic characteristics of respondents in public health centers of Addis Ababa, Ethiopia, 2020 (n = 416)

Variables		Frequency	Percent
Sex	Male	203	48.8
	Female	213	51.2
Age	≤ 24 years	9	2.2
	25-29 years	164	39.4
	30-34 years	146	35.1
	35-39 years	61	14.7
	> 39 years	36	8.7
Level of education	Diploma	41	9.9
	BSc degree	308	74.0
	Master's degree	67	16.1
Profession	Medical Doctor	2	0.5
	Health Officer	135	32.5
	Nurse	170	40.9
	Midwife	45	10.8
	Pharmacist	29	7.0

	Laboratory Technologist	29	7.0
	Others *	6	1.4
Position	Medical director	30	7.2
	Core process owner	78	18.8
	Sub core process owner	101	24.3
	Case team coordinators	207	49.8
Years served in current position	≤ 3 years	233	56.0
	4-6 years	130	31.3
	≥ 7 years	53	12.7

*MPH

Routine health information utilization

According to the study, good level of routine health information utilization among health managers was 66.6%. A higher routine health information utilization was observed for the purposes of monitoring and evaluation of performance 385 (92.5%), client management and follow up 378 (90.9%), formulation of plans 369 (88.7%), improvement of service delivery 364 (87.5%), identification of gaps and priority areas 361 (86.8%) and medical supply and drug management 355 (85.3%). A lower routine health information utilization was observed for the purposes of budget preparation/budget reallocation 262 (63%), involvement of the community and local government 262 (63%), human resource management 274 (65.9%) and prediction and detection of outbreaks 308 (74%).

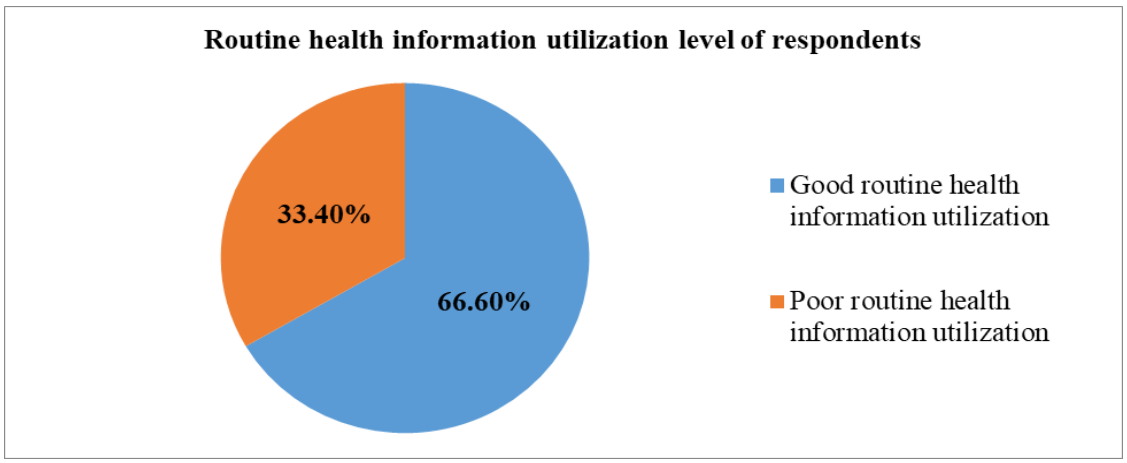

Figure 1 Routine health information utilization level of respondents in public health centers of Addis Ababa, Ethiopia, 2020 (n = 416)

Determinants of routine health information utilization

Lack of capacity to manipulate electronic systems was the major reason for data unavailability stated by 46.8% of the study participants. More than half (51.4%) of the respondents did not use computer software for data analysis. The majority (68.5%) of the respondents had good perception on HMIS data quality**.** (Table 2)

Table 2 Determinants of routine health information utilization in public health centers of Addis Ababa, Ethiopia, 2020 (n = 416)

Variables	Frequency	Percent
Availability of HMIS data for decision making		
Yes	369	88.7
No	47	11.3
Reasons for HMIS data unavailability (N = 47)		
Synthesis of data using non-understandable formats	8	1.9
Lack of electronic system to enter and analyze data	19	40.4
Lack of capacity to manipulate electronic systems	22	46.8
No way to access data	11	23.4
Lack of channels to communicate findings of data analysis	13	27.6
User friendliness of formats	375	90.1

Yes	41	9.9
No		
Use of computer software for data analysis		
Yes	202	48.6
No	214	51.4
Perceived data quality		
Good	285	68.5
Poor	131	31.5

Organizational determinants of routine health information utilization

As far as training on HMIS is concerned, only a quarter 106 (26%), 87 (21%), 87 (21%) of the health center managers were trained on data analysis and interpretation, DHIS2 (Demographic Health Information Software 2) and, data utilization, respectively.

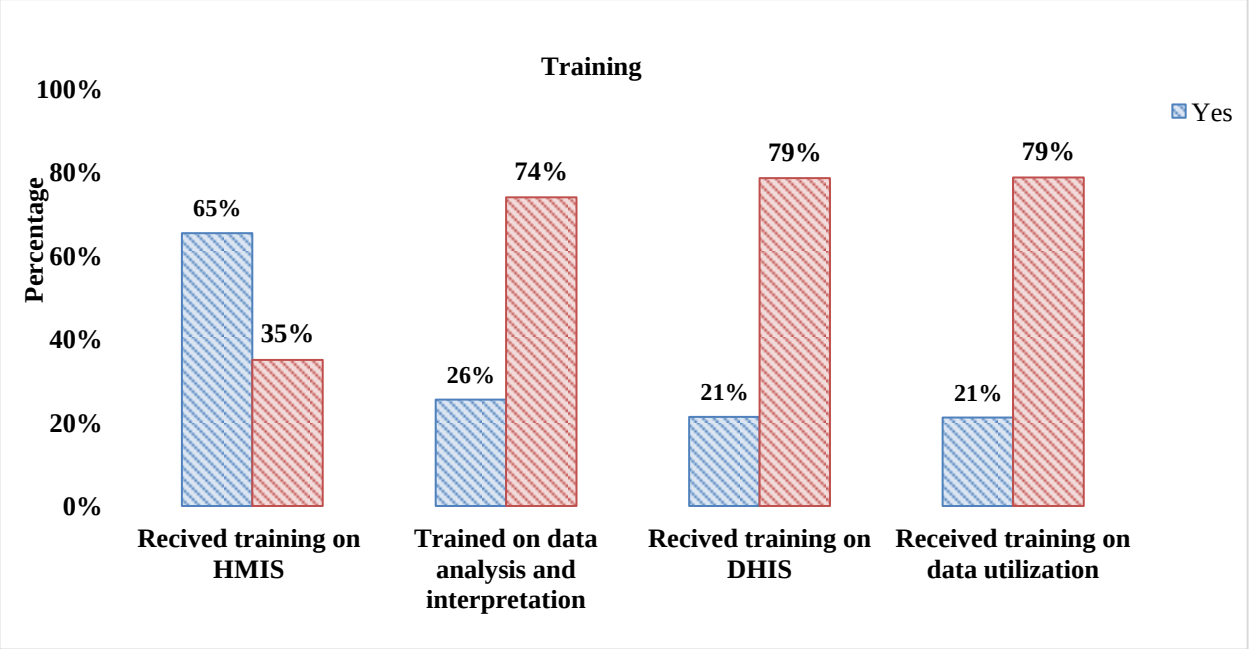

Figure 2.Training received by health managers in public health centers of Addis Ababa, 2020. (n = 416)**Availability of supervision, feedback and data management and information user guideline**

From a total of 416 health center managers, about 249 (60%) has reported receiving supportive supervision on routine health information utilization. Majority of the health center managers 136 (54.6%) reported that the frequency of the supportive supervision is quarterly. Regarding feedback, 211 (84.7%) of health managers reported that they receive feedback of the supervisory visits and among these 135 (64%) of them reported that they receive feedback quarterly, **Table 3**.

Table 3. ***Availability of supervision, feedback and data management and information user guideline in public health centers of Addis Ababa, Ethiopia, 2020 (n = 416)***

Variables		Frequency	Percent
Receive supportive supervision on utilization of HMIS information	Yes	249	59.9
	No	167	40.1
Frequency of supportive supervision	Every month	37	14.9
	Every 3 month	136	54.6
	Every 6 month	58	23.3
	Every year	18	7.2
Name of the institution providing supportive supervision	Ministry of Health	5	2
	Regional Health Bureau	17	7
	Sub City Health Office	227	91
Receive feedback of supervisory visits	Yes	211	84.7
	No	38	15.3
Frequency of feedback	Monthly	13	6.2
	Quarterly	135	64.0
	Bi-annually	52	24.6
	Annually	11	5.2
Name of the institution providing feedback	Sub City Health Office	195	92.4
	Regional Health Bureau	14	6.6
	Ministry of Health	2	0.9

Availability of data management and information user guideline	Yes	306	73.6
	No	110	26.4

Promotion of culture of information utilization

Good promotion of culture of information utilization was observed among 225 (54.1%) of the respondents. **(Figure 3)**

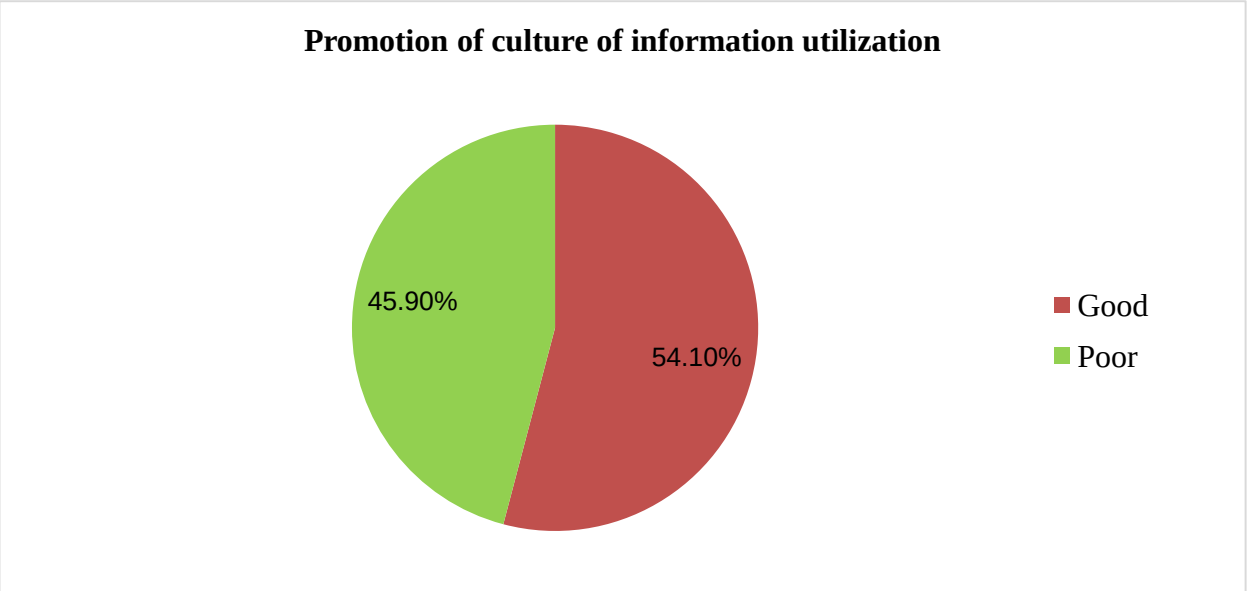

Figure 3 Promotion of culture of information utilization among public health centers of Addis Ababa, Ethiopia, 2020 (n = 416)

Behavioral characteristics of respondents Attitude towards HMIS tasks

The majority of study participants 216 (51.9%) had positive attitude towards HMIS tasks.

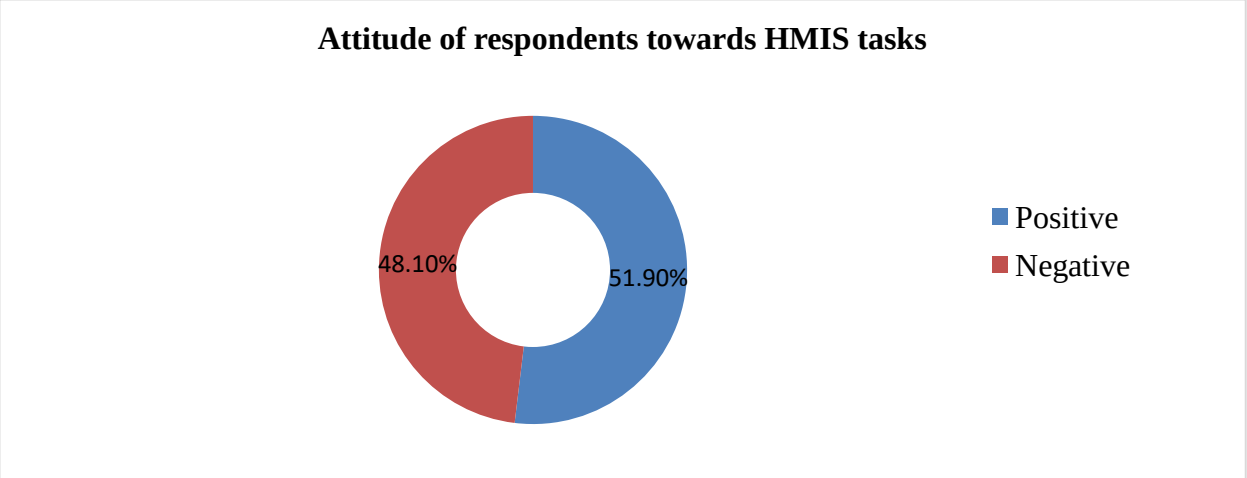

Figure 4. ***Attitude of respondents towards HMIS tasks in public health centers of Addis Ababa, Ethiopia, 2020 (n = 416)***

Perceived competency to perform HMIS tasks

Good competency level to perform HMIS tasks was observed among 263 (63.2%) of the respondents. **(Figure 5)**

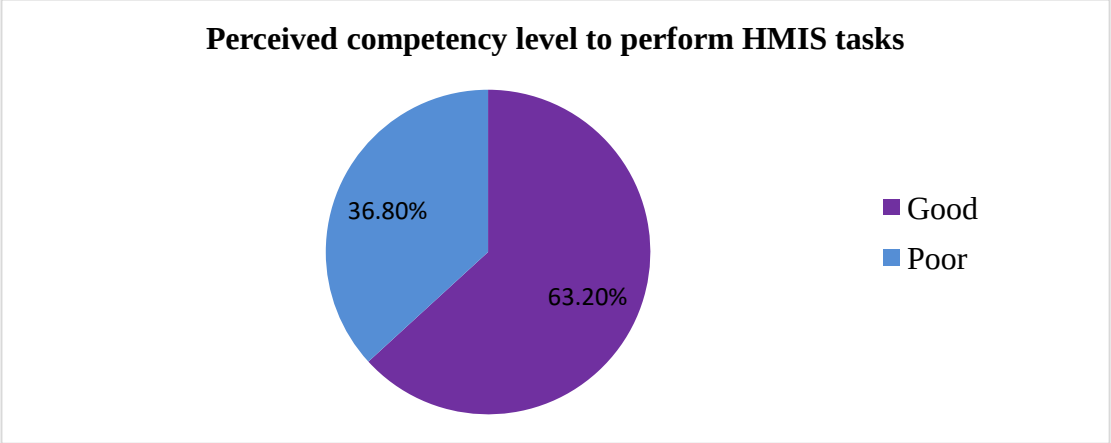

Figure 5. ***Perceived competency level of respondents to perform HMIS tasks in public health centers of Addis Ababa, Ethiopia, 2020 (n = 416)***

Predictors of Routine Health Information utilization

A multivariate logistic regression analysis showed the following variates: use of computer software for data analysis, training on data analysis and interpretation, feedback of supervisory visits, and promotion of culture of information utilization were found to be significantly associated with RHIS utilization. After controlling the effect of level of education, profession, availability of HMIS data for decision making, user friendliness of formats, perceived data quality, received training on DHIS, trained on data utilization, availability of data management & information user guideline, attitude towards HMIS tasks and perceived competency to perform HMIS tasks.

As such, health managers who used computer software for data analysis had about a fourfold (AOR = 3.76, 95% CI; 1.84 - 7.65) increased odds of RHIS use. Similarly, managers who obtained training on data analysis and supervisory feedback had a threefold (AOR = 3.03, 95% CI; 1.31 – 6.99 and 3.07, 95% CI 1.34 - 7.02) increased odds of RHIS utilization, compared to those who did not receive the respective training, respectively. Promotion of culture of information utilization had a twofold (AOR = 2.16, 95% CI, 1.11-4.21, p = 0.024) increased RHIS utilization.

Table 4. **Multivariate analysis: Factors associated with routine health information utilization among public health centers of Addis Ababa, Ethiopia, 2020 (n = 416)**

Variables	Routine health information utilization		COR (95% CI)	AOR (95% CI)	p-value
	Good	Poor			
	n (%)	n (%)			
Level of education					
Diploma	22(53.7%)	19(46.3%)	1[R]		
BSc degree	204(66.2%)	104(33.8%)	1.69(0.88-3.27)	1.18(0.37-3.78)	0.781
Master's degree	51(76.1%)	16(23.9%)	2.75(1.19-6.33)	1.56(0.35-7.00	0.563
Profession					
Health Officer	108(78.8%)	29(21.2%)	1.68(0.69-4.07)	1.52((0.28-8.29)	0.629
Nurse	104(61.2%)	66(38.8%)	0.71(0.31-1.65)	0.49(0.94-2.59)	0.404
Midwife	23(51.1%)	22(48.9%)	0.47(0.18-1.25)	0.64(0.10-4.01)	0.630
Pharmacist	16(55.2%)	13(44.8%)	0.55(0.19—1.62)	0.64(0.09-4.23)	0.641
Laboratory Technologist	20(69%)	9(31%)	1[R]		
Availability of HMIS data for decision making					
Yes	256(69.4%)	113(30.6%)	2.81(1.52-5.19)	1.04(0.30-3.56)	0.950
No	21(44.7%)	26(55.3%)	1[R]		
User friendly of formats					

Yes	254(67.7%)	121(32.3%)	1.64(0.85-3.16)	1.71(0.51-5.79	0.387
No	23(56.1%)	18(43.9%)	1^R		
Use of computer software for data analysis					
Yes	166(82.2%)	36(17.8%)	4.28(2.73-6.71)	3.76((1.84-7.65)	**<0.001***
No	111(51.9%)	103(48.1%)	1^R		
Perceived data quality					
Good	132(76.3%)	41(23.7%)	2.18(1.41-3.36)	0.92(0.44-1.94)	0.831
Poor	145(59.7%)	98(40.3%)	1^R		
Received training on DHIS					
Yes	70(78.7%)	19(21.3%)	2.14(1.23-3.72)	0.56(0.23-1.37)	0.206
No	207(63.3%)	120(36.7%)	1^R		
Trained on data analysis and interpretation					
Yes	86(81.1%)	20(18.9%)	2.68(1.57-4.59)	3.03(1.31-6.99)	**0.009***
No	191(61.6%)	119(38.4%)	1^R		
Trained on data utilization					
Yes	72(81.8%)	16(18.2%)	2.70(1.50-4.85)	1.13(0.36-3.51)	0.831
No	205(62.5%)	123(37.5%)	1^R		
Receive feedback of supervisory visits					
Yes	165(78.2%)	46(21.8%)	3.59(1.76-7.33)	3.07(1.34-7.02)	**0.008***
No	19(50%)	19(50%)	1^R		
Availability of data management & information user guideline					
Yes	225(73.5%)	81(26.5%)	3.09(1.97-4.87)	1.81(0.82-3.99)	0.144
No	52(47.3%)	58(52.7%)	1^R		
Promotion of culture of information utilization					
Good	172(76.4%)	53(23.6%)	2.66(1.75-4.04)	2.16(1.11-4.21)	**0.024***
Poor	105(55%)	86(45%)	1^R		
Attitude towards HMIS tasks					
Good	128(59.3%)	88(40.7%)	0.49(0.33-0.766)	0.55(0.28-1.07)	0.078
Poor	149(74.5%)	51(25.5%)	1^R		
Perceived competency to perform HMIS tasks					
Good	197(74.9%)	66(25.1%)	2.72(1.78-4.15)	0.80(0.37-1.72)	0.571
Poor	80(52.3%)	73(47.7%)	1^R		

Note: 1^R -reference value ***- Significant at p < 0.05**

Discussion

The study revealed that the overall utilization rate of RHIS among health center managers was 66.6%. The study also showed that use of computer software for data analysis, training on data analysis and interpretation, feedback of supervisory visits, and promotion of culture of information utilization were factors that found to be significantly associated with RHIS utilization. The finding was consistent with the systematic review and meta-analysis done (27).

The study found relatively high level of good routine health information utilization among public health centers in Addis Ababa. The present finding was much higher than HIS utilization compared to a previous study conducted in Addis Ababa (28). It is also higher compared to findings of studies done in East Gojjam Zone, Eastern Ethiopia and East Wollega Zone (15, 14, 11). The possible reasons for this might be access to frequent and quality of the trainings, and availability of regular supervision and feedback by sub city health office and Addis Ababa Regional Health Bureau. Similarly, cultural and attitude change regarding perceived value and practical use of health information as a result of the implementation of information revolution agenda, which was one of the four agendas of HSTP, may have played a significant role (26, 29). The result of this study is also higher when compared to findings of studies conducted in Kenya, South Africa, Tanzania and Rwanda (6 - 9). However, the result of this study was lower when compared to findings of a study conducted in India (29). These contrasting results might be because of the variance in the designs of health information system and health

professionals' attitude towards routine health information system (2, 15).

The study found a significant association between use of computer software for data analysis and routine health information utilization. The odds of routine health information utilization among health managers who used computer software for data analysis was 3.76 times that of health managers who did not use computer software for data analysis. The finding was in line with a study conducted in Eastern Ethiopia (14). It was also supported by a finding from India, which noted that use of ICT technologies encourages health systems to generate and use health data (31). The result was also supported by a finding from Pakistan, which reported that developing and installing data entry and analysis software and databases improved information use (32). This may be due to that, use of computer software to analyze data saves time, reduce errors and enhances the timeliness and reliability of the data.

This study also noted that, having training on data analysis and interpretation is strongly associated with use of routine health information. The odds of routine health information utilization among health managers who were trained on data analysis and interpretation was 3.03 times that of health managers who were not trained on data analysis and interpretation. This result is supported by a study conducted in Kenya, Nigeria, Papua New Guinea and India (6, 32, 34, 35). This is because pre-service and in-service trainings are important ways to transfer knowledge and skills (36). According to Measure Evaluation 2010, lack of skill in data analysis and interpretation affects use of data for decision making and specific training in data analysis and interpretation is critical (22).

Feedback received from supervisory visits from higher levels was found as another determinant factor of routine health information utilization among health managers. Respondents who received feedback of supervisory visits were 3.07 times more likely to use routine health information as compared to their counter parts. This result is in agreement with findings from East Gojjam Zone, Hadiya Zone, and Western Oromia (15, 17, 37). The finding is also supported by a study conducted in Jimma Zone, which indicated that sustained efforts of supportive supervisions with timely and concrete feedbacks improve routine health information utilization by health workers (10). This is because, availability of regular and effective supportive supervision is a powerful method to address issues of health care workers in real time since they involve direct interactions with health care workers at their work place (38). Health care workers who receive feedback of the supervisory visits regularly might obtain productive and appropriate advice to use their data for enhancing their service delivery (15).

This study also revealed that a good promotion of culture of information utilization improves routine health information utilization. The odds of routine health information utilization among health managers who had good promotion of culture of information utilization was 2.16 times higher compared to health managers who had poor promotion of culture of information utilization. This result is in line with a study conducted in Hadiya Zone (29). The result is also supported by findings from Nigeria, South Africa and Kenya which showed that lack of information use culture affects routine health information utilization (33, 7, 39). This is because the demand and use of information by senior managers shows the importance of information throughout the health system (34).

Study limitations

The study did not include hospitals and private health facilities. Moreover, routine health information utilization was assessed by self-reporting of the study participants which may affect the outcome even though the supervisors tried to verify their self-report by observing documents and reports.

Conclusion

The study revealed higher level of good routine health information utilization in Addis Ababa compared to previous studies conducted in different parts of Ethiopia even if it is still far below the national expectation. The study also indicated that health managers lack training in data utilization, DHIS management and data analysis and interpretation, use of computer software for data analysis, training on data analysis and interpretation, receiving feedback of supervisory visits and good promotion of culture of information utilization, which were found to be the determinant factors that enhance routine health information utilization among health managers.

Recommendations

Based on the finding of this study, the following important measures are recommended to improve routine health information utilization among health managers.

For public health centers:

-Making sure that health managers use available computer software for data analysis through follow up, mentorship and training to enhance routine health information utilization.

-Continuous training and updating of health managers especially core-process owners and case team coordinators on data utilization, DHIS software and data analysis and interpretation through on-job training, seminars and workshops.

-Enhancing good culture of information utilization through demonstrating evidence-based decision making, emphasizing on data quality, making staff members accountable and promoting their sense of responsibility to demand and use routine health information.

For Sub City Health Offices and Addis Ababa City Administration Health Bureau:

-Providing data analysis tools to health centers to improve routine health information utilization - Building the capacity of health managers in data utilization, DHIS software and data analysis and interpretation through training, supportive supervision and feedback.

-Providing feedback of supervisory visits regularly for health centers regarding routine health information utilization.

-Enhancing good culture of information utilization through demonstrating evidence-based decision making, emphasizing on data quality, making staff members accountable and promoting their sense of responsibility to demand and use routine health information.

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