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Health Management Information System Data use Practice and its Determinants at Health Centers and Woreda Health Office in Fafan zone, Somali Region, Ethiopia

Abdi Farah[1*], Khaldir Hassen[2] and Abdi Mohamed[2]

[1]College of Medicine and Health science, Jigjiga University, Ethiopia
[2]College of business and economics, Jigjiga University, Ethiopia

Abstract

Sound and reliable information is the foundation of decision making across all health system building blocks and is essential for health system policy development and its implementation. Ethiopian health sector transformation plan has given special attention to health information management, data use intending to promote the quality and culture of health information data use for decision making. Hence, this study aims to assess the practice of routine Health Information data use for decision making and its determinants in Fafan Zone Somali region.

A cross sectional study was carried out in August 2021 to assess routine Health Information, data use practices, and its determinants in the Fafan zone Somali region. The participants of the study were 359 health workers from different departments of selected health centers and woreda health offices by using cluster sampling techniques.

The study findings showed that the health workers' practice of RHI data use for decision making is very low. The determinants of Routine health information management data use practice that was identified in the study include work position level, Health worker's educational level, presence of regular Supportive supervision flowed by timely feedback on performance, training status of data users, and availability of all required inputs for the preparation and display information, and data management guidelines. Therefore, enhancing knowledge, skills, data management inputs, supportive monitoring, and access to user training are important to expand the use of routine health information data in health centers and woreda health offices in the Fafan zone.

Keywords: Routine health; Information; Practices; Somali regional state

Introduction

Sound and reliable information is fundamental to decision making in all the building blocks of health systems and is essential for the formulation and implementation of health system policies, governance, and regulation, medical research, human resource development, medical education and training, delivery, and funding services [1].

Health Management Information System is one of the six building blocks of a health system that integrates data collection, processing, reporting, and use. The effectiveness and efficiency of health services need to be improved through better health management information systems at all levels of the health service delivery system. HIMS can be classified as a population based health information system and a routine health information system "RHIS". Thus, RHIS is a system in which health data has been recorded, stored, retrieved, and processed to improve health decision making [2,3].

Since the introduction of primary health care as the essential healthcare strategy in 1978, Health information systems come to the attention of health sector leadership and become a discussion agenda throughout the world [4-7]. Countries around the world including developing countries have instigated to implement extensive reforms to improve and expand health information systems as part of health system reform [5].

Ethiopia showed a commitment to institutionalize primary health care strategy following to Almeta conference. Government of Ethiopia has made series reforms on health system to improve access, quality and equity health care services and ensure the health status of Ethiopian citizens [8-10]. To translate this commitment into action and institutionalize the health sector reforms up to grass root level, FMOH has developed and implemented twenty years health Sector development plan which was taken four consecutive phases from 1997 to 2015 [8]. Health information system was part of these reforms; nationally it was introduced in 2006. Its implementation was started as a pilot in some selected regions between 2006 to 2007 [11]. Later on, the implementation was scaleup to different level of health sector and all regions in Ethiopia. The development of HMIS reforms passed through different stages starting from paper based reporting to digitalized web-based reporting system which currently under implementation [8,11,12]. Reforms have taken important steps to address common health information management problems that limit the quality of health care systems, planning and management, and decision making of managers in Ethiopia [13]. As a result, the Health Sector Transformation Plan (HSTP) identified the need for an information revolution as one of four transformation programs related to the advancement of methods from data collection to information use culture [8,13]. The main idea of implementing the information revolution agenda is to make a radical transformation in the process of data generation, analysis, and promotion of culture and attitude toward data use in order to optimize health care at all levels by increasing the availability, usability,

***Corresponding author:** Abdi Farah, College of Medicine and Health science, Jigjiga University, Ethiopia, E-mail: ahmedafarah24@gmail.com

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quality, and use of health information for decision making processes through the right use of information and communication technology [8,13].

Since the introduction of the information revolution agenda in the Somali region, RHB with the support of the FMOH and partners has made a lot of investments to translate the agenda idea into action and improve data use culture at lower levels of the health system in the Somali region. Some of the supports include organizing different platforms and providing capacity building opportunities to woreda and health facilities leadership and staff, and distribution of different supplies, and equipment required for strengthening lower level HMIS implementations [14,15]. Despite all of these efforts, there is no evidence suggesting the progress of the of data use [15,16]. So, it is critical to assess the status and generates evidence to use for further development of the implementation of the agenda. Therefore, this study assesses the practice of routine health information data use for decision making and its determinants in health centers and woreda health offices of Fafan zone, Somali region.

Methods

A cross-sectional study was carried out from May to June 2021 to assess the practice of routine health information data use for decision making and its determinants at selected health offices and health centers in the Fafan zone Somali region, Ethiopia.

Fafan zone is located in the north part of the Somali region which is located 630 KM away from the east of the capital city of Ethiopia. It has a total population of the Fafan area is estimated at 1,314,718 (CSA, 2007). Of this total, 44.1% and 56.3% were women and men, respectively. Fafan area has 14 Woreda, 32 medical centres, and 275 medical stations, including 49 private clinics. According to the 2012 EFY zonal health office report, the potential health service coverage of the Fafan zone is 87%. A total of 5349 different level Health professionals and 1312 Administrative workers are currently providing service to the community in the government health facilities. According to the zonal health office report, the zone has 7 GP, 62 HO,_168 Nurses,_196 Midwives, 79 Lab technicians, and 47 HIT staff [14]. Fafan zone has a zonal health Team, 11 Rural woreda health offices (WoHo) teams, 3 city administration health office teams, and 36 Health centre teams. Due to resource and time constraints, it was not visible to reach all woreda and Health centres in the Fafan zone. So, 50% of each team was selected randomly by using the lottery method, and a total of 6 Rural Woreda health office teams, 2 city administration health office teams, and 18 Health centre teams were selected by using the Cluster sampling technique. 317 study health workers selected from different departments of health centres and woreda health offices were included in the study. Data was collected using a pre-tested questionnaire that was developed based on the PRISM assessment tool. Data were collected using a pre-tested questionnaire developed using the findings of the different kinds of literature reviewed. In addition to this, the PRISM assessment tool contains behavioural, Technical, and organizational factors affecting routine health information system use [5,17]. Questionnaire pretesting was made immediately after finalizing the questionnaire development process. Then, it was converted to the Kobo tool to make data collection and save data entry time.

Descriptive analysis was made to summarize data and frequencies, and percentages and descriptive statics were computed and presented using graphs, and tables. Binary logistic regression was used to determine the factor influencing the data use practice of study participants. Bivariate analysis was made to see variables that have associations and crude odds ratio and confidence interval was computed to measure the association between the utilization of health information and exposure variables. In Bivariate analysis all variables with P<0.2 was considered significant and selected as a candidate variable for multi-variables analysis. Finally, all variables that become significant in the bivariate analysis were selected and looked at in multivariate analysis to see the effect of different variables on information use practice. In Multivariate analysis, all variables with P<0.05 were considered significant. Both Crude odd ratio and Adjusted OR with a 95% confidence interval were calculated to describe the association.

Ethical clearance was obtained by institutional review board (IRB) college of business and economics; Further Permission was obtained from Graduate Coordinator of the Department and submitted to the Somali Regional state health bureau at Jigjiga, Fafan zone health office, woreda health Office, and health Center studied. During the interview, each individual was informed about the aim of the study and the possible benefit of the study Informed consent was obtained from each respondent, and they were told to have the right to give up the interview at any time she/he wishes.

Results

Description of socio-demographic characteristics of the respondents

A total of 359 respondents were included in the study, representing a response rate of 96.8%. Of these, 255 (71%) respondents were male and 103 (29%) were female. Regarding the age of the study subjects, 232 (65%) were under 30 years old, and the remaining 126 (35%) were over 30 years old. The mean age of the respondents was 29.51 (SD ± 4.20 years) while the mean age of the respondents was 29 years old (Table 1).

Variables (N=359)		Frequency in N (%)
Sex	Male	255(71)
	Female	103(29)
Age	Above 30	126(35)
	Below 30	232(65)
Education level	Degree	183(51)
	Master and Above	4(1)
	Diploma	169(47)
	Certificate	2(1)
Type of profession	Nurse	136(39)
	Health officer	69(20)
	Midwifery	53(15)
	Laboratory	32(9)
	Pharmacy	36(10)
	Information Technologist	10(3)
	General Practitioner (Dr)	1(0)
	Others,	16(5)
Position	Service provider	223(62)
	Institution or department head	122(34)
	Others	13(4)

Experience/Service years	Oct-14	30(8)
	0-4	253(71)
	05-Sep	75(21)

Table 1: Study participants' socio-demography, in selected woreda health and health centers in fafan zone

Regarding the education level, 169(47%) of the respondent were diplomas, 183(51%) were degree holders and the remaining 4 (1%) were master level degree holders. Of the study participants, 223 (62%) were in a medical institution, and the remaining 122 (34%) were in management positions. The majority of the participants 253(71%) had work experience or service years below 4 years. 8% of the study participants had more than 10 years' work experience while 21% had five up to 10 years of experience. The overall mean of participants' work experience was 4.5 years (SD: ±3.23 years). Regarding profession type of study participants,39% were nurses, 20% were health officers, 15% were midwifery and the remaining study participants were other health professionals.

HMIS implementation

Regarding the availability of inputs required for the implementation HMIS, all most all participants, or 90(59) heard about HMIS while 261(73) knew the importance of HIMS, and 57% of the study participants trained on HMIS (Table 2).

Variables	Response	
	Yes	No
HMIS Trained	205(57)	153(43)
Ever heard HMIS	90(59)	63(41)
Know HMIS importance	261(73)	97(27)
Register	328(92)	30(8)
Tally sheet	296(83)	62(17)
Monthly reporting formats	320(89)	38(11)
HMIS procedure manual	158(44)	200(56)
HMIS user guideline	121(34)	237(66)
Required stationeries for recording	242(68)	116(32)
data collection standards including case definitions	162(45)	196(55)

Table 2: Availability of required inputs for RHIMS implementation

Availability of key HIMS input, most of the respondents 328(92) had standard service registration books, 296(83) had Standard tally, 320(89) had Standard reporting formats and 121(34) of them had a new HMIS procedure manual. 234(65) of the respondents were registering their activities and 170(47) of the participants filled out complete registration books. All most all of the participants reported having data transmission, processing, and reporting rules. 171(48) study participants aggregate or compile services from the tally sheet correctly according to the guideline (Table 3).

Variables	Response	
	Yes	No
Register all your activities	234(65)	124(35)
Register filled completely	170(47)	188(53)
Aggregate or compile services from tally sheet correctly	171(48)	187(52)
Report submitted complete timely and accurate	184(51)	174(49)
Conducted data accuracy taste	130(36)	228(64)
Received supervision for the last three months	174(50)	175(50)
Get Feedback from the top-level organization	156(47)	176(53)
Data collection standards including case definitions	162(45)	196(55)
Having data transmission processing and reporting rules	185(52)	173(48)
Conducted Self-Assessment on your performance	169(47)	189(53)

Table 3: RHMIS implementation status at woreda health offices and health centers, fafan zone.

Regarding the reporting of activities, all woreda health offices and health centers had a uniform reporting schedule set. At the health center level, all deportments were expected to compile data from the tally sheet and send their report to the HMIS focal person of the Health center. Thus 184(51) of the study participants submitted complete, timely, and accurate reports. 28(88%) practices and conducted a Self-Assessment of performance. 174(50) participants reported having supervision from top-level organizations and 156(47) got feedback.

Health information data use practice

About 192(54) study participants had practiced changing the data into information on a monthly basis while around 177(49) of studied subjects also practiced using data for Action planning purposes. Around 211(59) of the study participants used to practice adapting the national target to the local situation by using the woreda Health sector based national target. In addition to these, 145(41) study subjects also reported having an HMIS multi-disciplinary committee While 144(40) of them also reported having a health information steering committee to set the long term goals for HIS (Table 4).

Variables	Response	
	Yes	No
Change the data into information every month	192(54)	166(46)
Use your data to prepare a plan of action	177(49)	181(51)
The adaption national target to the local situation	211(59)	147(41)
Has key indicators with charts, tables	172(48)	186(52)
Maintain worksheets and charts for monitoring performance	164(46)	194(54)
to identify problems in performance, discuss and analyze with unit staff and present possible reasons/causes to review in a team meeting	160(45)	198(55)
Present HMIS reports and discusses at the performance monitoring team	165(46)	193(54)
In your unit team meetings, was the achievement of targets included	164(46)	194(54)
Having HIS/HMIS multi-disciplinary committee	145(41)	213(59)

Has a Health information steering committee to set the long-term goals	144(40)	214(60)
Monitors key indicators and prepares woreda profile	173(48)	185(52)
Supervises health information system activities at facilities	158(44)	200(56)
Dept- compare facility performance against plan target	170(47)	188(53)
Dept-compare facility performance against target Population	167(47)	191(53)
Presence of any display related to your department's activity	170(47)	188(53)
The average HMIS utilization practices (Utilization status)	166(46)	192(54)

Table 4: Status of RHIMS utilization indicators in selected woreda health and health centers in fafan zone.

About 158(44) of the study participants reported their department used KPI analysis reports for catchment area profile preparation. Around 200 (56) of the participants stated that their department does not oversee the activities related to the health information system at the facilities.

As shown in Table 4, Fifteen performance measurement indicators were used to collect practice related information to determine the level of practicing data use for decision making in the departments of the healthcare facilities participated in the study. The average score for these indicators was calculated for each department to be classified the status. Healthcare departments that achieved average score 10 and above were classified as having data use practice, and departments scored below 10 were classified as not having data use practice. The overall average of HMIS usage practices (usage status) in the study area was 46%.

Bi-variable analysis results of health information data use practice

To evaluate the possible associations between the outcome variable and Exposure (predictor) variables bivariate logistics regression analysis was employed. Crude odds ratio and confidence interval was computed to measure the association between the health information data use practice and exposure variables. In bivariate analysis all variables with P<0.25 was considered significant and selected as a candidate variable for multi-variables analysis. According to the bivariate analysis results, Gender, educational background, Age of the respondents, position of work, and years of working experience become statistically significant (Table 5).

Variable	Responses	Utilization status (%)		OR at 95.0% C.I)	Value
		No	Yes		
Sex	Female	35(34)	68(66)	0.76(0.45-1.27)	0.23
	Male	77(30)	178(70)		
Position	Manager	31(29)	77(71)	3.17(0.7-3.93)	0.15
	Service provider	81(32)	169(68)	1	
Educational Level/ background	Degree	53(31)	116(69)	2.38(1.91-3.17)	0.19
	Diploma	59(32)	128(68)	1	
Age of the respondents	20-29 Years	69(30)	163(70)	1.33(0.78-2.29)	0.22
	Above-30 Years	43(34)	83(66)		
Experience	0-4	78(31)	175(69)	1.06(0.61-1.86)	0.183
	Oct-14	9(30)	21(70)	1.27(0.48-3.34)	0.163
	05-Sep	25(33)	50(67)		0

Table 5: Comparison of socio-demographic characteristics of study subjects with the utilization of RHIMS, fafan zone.

Similar to a socio-demographic variable, bivariate analysis was also used for other exposure variables related to the level of health information data use practice and factors influencing.

According to the analysis result, the health information data use practices related variables that were found to be significantly associated with outcome variables in bivariate analysis were knowing HMIS importance, HMIS use guidelines and HMIS procedure manual, receiving supervision for the last 3 months, registering all your activities, Aggregate or compile data from tally sheet correctly, Report submitted complete, timely, and accurate and conducted data accuracy checking (Table 6).

Variable	Responses	Utilization status (%)		OR at 95.0% C.I)	P-Value
		No	Yes		
HMIS Trained	No	37(24)	116(76)	1	
	Yes	75(37)	130(63)	2.08(1.57-2.07)	0.08*
know HMIS importance	No	25(26)	72(74)	1	
	Yes	87(33)	174(67)	1.54(0.73-3.26)	0.26*
HMIS use guideline	No	50(21)	187(79)	1	
	Yes	62(51)	59(49)	3.8(2.87-4.95)	0.1*

Register all your activities	No	21(17)	103(83)		
	Yes	91(39)	143(61)	0.56(0.29-1.09)	0.09*
Register filled completely	No	32(17)	156(83)		
	Yes	80(47)	90(53)	0.7(0.33-1.51)	0.37
Aggregate or compile data from tally sheet correctly	No	28(15)	159(85)	1	
	Yes	84(49)	87(51)	3.33(2.7-3.7)	0.004*
Report submitted complete, timely, and accurate	No	27(16)	147(84)	1	
	Yes	85(46)	99(54)	0.36(0.17-0.76)	0.01*
Received supervision for the last 3 months	No	39(22)	136(78)	1	
	Yes	71(41)	103(59)	3.3(3.04-4.78)	0.17*
having data transmission, processing, and reporting rules	No	44(25)	129(75)	1	
	Yes	68(37)	117(63)	0.91(0.41-2.03)	0.82
HMIS procedure manual	No	42(21)	158(79)	0.96(0.4-2.28)	0.92
	Yes	70(44)	88(56)	1	
know who utilizes HIS	No	18(31)	41(69)	1	
	Yes	52(36)	93(64)	3.64(3.34-4.2)	0.17*
Conduct data accuracy	No	51(22)	177(78)	1	
	Yes	61(47)	69(53)	2.79(2.62-3.1)	0.08*
Self-assessment	No	45(24)	144(76)	1	
	Yes	67(40)	102(60)	0.96(0.4-2.28)	0.92
Get feedback from top-level	No	6(23)	20(77)	1	
	Yes	46(26)	130(74)	1.54(0.6-3.93)	0.37

Table 6: Comparison of factors affecting the level of RHIM practices with the utilization of RHIMS, fafan zone.

Multivariable analysis results of Routine health information data use practice

In this study, multivariable logistic regression analysis was carried out to control possible confounders and identify factors independently associated with Routine information utilization. Finally, variables with a $p<0.05$ in multivariable logistic regression analysis are considered as independently significant association with Routine information practice. To determine the magnitude of association between the dependent and independent variables odds ratio was used.

In our analysis, health information utilization practice was compared with socio-demographic variables such as age, year of services; sex, experience, position of work, and educational status of study participants were analyzed. Educational level and position were significant before adjusting confounders and still show significant association yet in multiple logistic regressions analysis. The remaining socio-demographic variable still did not show statistically significant associations even after adjusted multiple logistic regression.

According to our study findings, a managerial level position has a higher likelihood of practicing health information utilization when compared with a health care provider level position at a p=0.035, (AOR=2.09, (95% C.I, 1.5-2.91)). Similarly, the educational level of the respondent had significant associations with HMIS utilization practices after adjustment at a p=0.023 [AOR=2.09, (95% CI, 1.38-2.61)]. The results of this study also showed that those who were trained were approximately 2.3 times more likely to practice routine health information than those who were not trained in routine health information [AOR=2, 3; 95% CI: (0.67-2.55)] (Table 7).

Variable	Responses	Utilization status (%)		COR at 95% C.I)	AOR at 95% C.I)	P-value
		No	Yes			
Sex	Female	35(34)	68(66)	0.76(0.45-1.27)	0.98(0.49-1.93)	0.943
	Male	77(30)	178(70)	1	1	
Position	Manager	31(29)	77(71)	3.17(0.7-3.93)	1.97(1.5-2.91)	.035*
	Service provider	81(32)	169(68)	1	1	
Educational Level	Degree	53(31)	116(69)	2.38(1.91-3.17)	2.09(1.38-2.61)	.023*
	Diploma	59(32)	128(68)	1	1	
Age of the respondents	20-29 Years	69(30)	163(70)	1.33(0.78-2.29)	0.63(0.09-4.32)	0.638
	Above-30 Years	43(34)	83(66)	1	1	

Experience	0-4	78(31)	175(69)	1.06(0.61-1.86)	1.92(0.8-4.62)	0.146
	Oct-14	9(30)	21(70)	1.27(0.48-3.34)	0.68(0.18-2.51)	0.563
	05-Sep	25(33)	50(67)	1	1	
HMIS Trained	No	37(24)	116(76)	1	1	
	Yes	75(37)	130(63)	2.08(1.57-2.07)	2.3 (0.67-2.55)	.031*
know HMIS importance	No	25(26)	72(74)	1	1	
	Yes	87(33)	174(67)	1.54(0.73-3.26)	0(0-0)	0
HMIS user guideline	No	50(21)	187(79)	1	1	
	Yes	62(51)	59(49)	3.8(2.87-4.95)	2.34(1.17-2.68)	.002*
Register all your activities	No	21(17)	103(83)	1	1	
	Yes	91(39)	143(61)	0.56(0.29-1.09)	0.71(0.35-1.44)	0.342
Register filled completely	No	32(17)	156(83)	1	1	
	Yes	80(47)	90(53)	0.7(0.33-1.51)	0(0-0)	0
Aggregate or compile data from tally sheet correctly	No	28(15)	159(85)	1	1	
	Yes	84(49)	87(51)	3.33(2.7-3.7)	2.5(2.67-2.95)	.015*
Report submitted complete, timely, and accurate	No	27(16)	147(84)	1	1	
	Yes	85(46)	99(54)	0.36(0.17-0.76)	0.28(0.12-0.63)	.002*
Received supervision for the last 3 months	No	39(22)	136(78)	1	1	
	Yes	71(41)	103(59)	3.3(3.04-4.78)	2.2(2.9-3.81)	.019*
having data transmission, processing, and reporting rules	No	44(25)	129(75)	1	1	
	Yes	68(37)	117(63)	0.91(0.41-2.03)	0(0-0)	0
HMIS procedure manual	No	42(21)	158(79)	0.96(0.4-2.28)	0(0-0)	0
	Yes	70(44)	88(56)	0(0-0)	0(0-0)	0
know who utilizes HIS	No	18(31)	41(69)	1	1	
	Yes	52(36)	93(64)	3.64(3.34-4.2)	3.41(3.19-3.89)	.024*
Conduct data accuracy test	No	51(22)	177(78)	1	1	
		61(47)	69(53)	2.79(2.62-3.1)	2.41(1.18-2.92)	.031*

At the p=0.024, participants who knew who used the HMIS report had odds of practicing health information data use that were about three times higher than those of their counterparts [AOR=3.41; 95% CI: (3.19-3.89)]. The odds of routine health information use practice were about 2.4 times more among individuals who conducted data accuracy tests in the last three months when compared with individuals who did not conduct data accuracy at a p=.031 [AOR=2.41; 95% CI: (1.18-2.92)]. This study also found that participants who received supportive supervision over the previous three months had an approximately two fold higher likelihood of using routine health information usage practices than those who had not received any supervision from a higher level (AOR=2.2; 95% CI: (2.9-3.81)) at p=0.019. In addition to this, the study also reported that participants who had an HMIS user guide had an approximately two fold higher likelihood of using routine health information data usage practices than those who don't have this guideline [AOR=2.34 95% CI (1.17-2.68)] at p=0.002.

Discussion

The present study tried to assess the practice of health information data uses for decision making in the studied health institutions Fafan zone. According to the study result, the overall health information utilization practice of the study area was founded to be 46%, which indicates low coverage when we compare with a study conducted in south Korean health facilities which showed over 80% of the use of regular health information was rated highly by the total respondents working in health facilities [18,19]. The difference in utilization rate was because Korean primary health care facilities were better structured and equipped than the Ethiopian health tier system.

The study reported that the use of health data for decision making in Fafan Zone healthcare facilities was less practiced than the study conducted in Addis Ababa, which reported 78% data utilization, and other studies conducted in health facilities in the southern and eastern parts of Ethiopia where, also reported the practice of data use of 54.4%

and 53.1%, respectively [20,21].

On the contrary, the use of data for decision making is more practices/better in our studied health facilities when we compared to the results obtained in the studies conducted in the health facilities of the Jimma, Arsi, and Gonder areas [22-24]. The reason for this variation could explain the difference in the period studied the type of structure, and other technological developments and advances at HMIS.

The results of this study showed that trained individuals were about 31 times more likely to practice routine health information than those who were not trained in routine health information [AOR=1.31; 95% CI: (0.67-2.55)]. The finding of this study supported other studies conducted at primary healthcare facilities in Western Amhara which reported a significant association between the training of staff on HMIS user guide and data to use for decision making [AOR=2.85; 95% CI: (0.67-2.55)] [25].

According to this study, people who have received supportive supervision in the previous three months are about twice as likely to use routine health information utilization practices compared to people who have not received supportive supervision [AOR=2.2; 95% CI: (2.9-3.81)] [P=0.019]. This is proved by studies conducted in the Gojam Amhara region in north-western Ethiopia, which reported supportive supervision as an important determinant for the practice data use culture [95% CI=[1.71, 5.28]] [26]. In addition to this, the study also reported that participants who had an HMIS user guide had an approximately two fold higher likelihood of using routine health information data usage practices than those who don't have this guideline [AOR=2.34 95% CI (1.17-2.68)] at p=0.002. This result was confirmed in a study in East Gojam, north-western Ethiopia, in which participants with data management guides were approximately three times more likely to use daily health information than those participants don't have [OR=3; 95% CI: (1.27, 8.32)] [27].

Strength of the study

Use of PRISM tool, which is a standard tool, designed to capture key information on the study subject. Probably this is the first study of its type in the Somali region and will helps other future studies. This study can provide a snapshot of RHIM use/practice in the study area. It will help or guide the development of some interventions for improving the program implementation.

Limitation of the study

The study may not represent the general population of the study (to the whole region) since it involves only a sample of health facilities in the Fafan zone. It was not also included health posts. So, we cannot generalize all level health facilities. The design of the study (cross-sectional) design and cannot provide detail all the required information's for improving the RHIM in the study area. The use of professional data collectors could also be one of the limitations of this study, as professionals tried to redirect and use the respondents in their own way. The study lacks a qualitative part, which helps us to get more about a topic.

Conclusion and recommendations

In conclusion, the findings of this study showed that the level of health workers' practice of RHI data use for decision making is still very low in Fafan zone health institutions compared to national health sector transformation plan and information revolution road maps expectation or target. The finding of this study also identified the major factors that determine the practice of data use, which include work position level, Health worker's educational level, presence of regular Supportive supervision flowed by timely feedback on performance, training status of data users, and availability of all required inputs for the preparation and display information, and data management guidelines. Thus, to strengthen the data use practice in the studied health facilities, it's critical to focus on improving users' knowledge and skills, availing all necessary inputs and manuals for HMIS implementation. In addition to these, it is also important to implement regular supportive supervision and feedback mechanisms to facilitate the promotion and reinforcement of data use culture in health centers and woreda health offices in Fafan.

Ethics Approval and Consent to Participate

Ethical clearance was obtained by institutional review board (IRB) college of business and economics, Jigjiga University with IRB protocol number JJU/0082/14. Further Permission was obtained from Graduate Coordinator of the Department and submitted to the Somali Regional state health bureau at Jigjiga, Fafan zone health office, woreda health Office, and health Center studied. A written informed consent was obtained from all subjects, and this study is done in accordance with declaration of Helsinki procedures.

Consent for Publication

This study doesn't involve details, images, videos related to an individual's persons. So, getting consents for publication is not applicable.

Availability of Data and Materials

All data generated or analyzed during this study are available at corresponding author but is not publicly available. This is because the raw data collected by the interviewed health facilities contains detailed, and sensitive information about the facilities. The Somali Regional Health bureau (government), owned by the institutions studied, does not allow the sharing of this raw data or information's directly with third parties or publicly.

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Authors' Contributions

AF developed the study design, collected data, and did the analysis, interpretation, and manuscript write up. KH, AM contributed to the conception of the research idea, participate in the conceptualization of the idea, and assisted draft finalizing. All authors read and approved the final manuscript.

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Competing Interests

The authors declare that they have no competing interests

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