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DATA MANAGEMENT PRACTICE AND ITS ASSOCIATED FACTORS AMONG HEALTH EXTENSION WORKERS IN WEST GOJJAM ZONE, NORTHWEST ETHIOPIA.

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A THESIS REASERCH SUBMITTED TO BAHIR DAR UNIVERSITY COLLEGE OF MEDICINE AND HEALTH SCIENCES, SCHOOL OF PUBLIC HEALTH,IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS IN GENERAL PUBLIC HEALTH

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ABSTRACT

Introduction: Generating quality data for decisions at all levels of health care systems is a global agenda.Similarly, health information system resources, data management, dissemination and use are poor in Ethiopia. However, the status of data management practice is not studied adequately in Ethiopia.

Objective: The objective of the study is to assess data management practice and associated factors among health extension workers in the West Gojjam zone, Northwest Ethiopia.

Methods: A facility based cross-sectional quantitative study supported by aqualitative approach was conducted from August to September, 30/2019 . Stratified sampling technique was used to select 491 study participants. the data was collected with structured self administer questionaire. Bivariable and multivariable logistic regression analyses were performed using SPSS version 20. P-value<0.05 was used to declare statistically significant variables.Semi structured indepth interview guide was used to collect qualitative data.Thematic analysis of the interviews was performed.

Results: Of the total 491 health extension workers, 479 were responded to interview questions with a response rate of 97.6%. About 44.1% (95% CI= 41.2-50.3) respondents had good data management practice. having home located inside the compound of the health post(AOR=3.2, 95% CI= 1.9 – 5.4, p < 0.001), having good knowledge about data management(AOR=2.1, 95% CI= 1.2 – 3.5, p = 0.005), training on data management(AOR=1.3,95%CI= 0.7-2.4)availability of reference materials for data management(AOR=2.4, 95% CI= 1.1 – 5.1, p = 0.027), availability of field book(AOR=2.7, 95% CI= 1.5 – 4.8, p = 0.001), easily understandability of the existing Community health information materials (AOR=5.3, 95% CI= 2.8 – 9.9, p < 0.001), were significant of good data management practice. similarly indepth interview inline with, training, availability of field book and knowledge are factors that influence data management practice.

Conclusions: The overall data management practice was poor. Factors for data management practice were organizational and technical related.Addressing knowledge gap through training and accessing home in the compound, field book, registration book and design easily understandable reporting format are needed to improve datamanagment practice.

Keywords: Data, data management practice, HEWs, factors. West Gojjam zone, Ethiopia

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LIST OF ABBRIVATIONS AND ACRONYMS

AOR: Adjusted Odds Ratio

BDU: Bahir Dar University

CHIS: Community Health Information System

CI: Confidence Interval

COR: Crude Odds Ratio

e-CHIS: Electronic Community Health Information System

FMOH: Federal Ministry of Health

HC: Health Center

HEP: Health Extension Program

HIS: Health Information System

HISP: Health Information System Program

HIV: Human Immune Virus

HMIS: Health Management Information System

HP: Health Post

HSD: Health Service Delivery

HSDP : Health Sector Development Program

ICT : Information Communication Technology

IT: Information Technology

LGA Local Government Area

LQAS: Lot Quality Assurance

M&E: Monitoring and Evaluation

NGOs: Non-Governmental Organizations

SPSS: Statistical Package for Social Science

TBA Traditional Birth Attendance

WGZHD: West Gojjam Zone Health Department

WHO: World Health Organization

WoHO: Woreda Health Office

1   INTRODUCTION

1.1   Background

Health information is aback bone of public health system and services (1).Health care information is important for effective clinical and managerial decision makings at different levels of the health system(2-3).

The global shift from curative to preventive care, from centralized to decentralized healthcare, and from a specific project approach to a comprehensive sectoral approach, has necessitated the restructuring of fragmented health information system into single comprehensive health and management information system (HMIS)(4).

HMIS is designed to integrate data collection, processing, reporting and use health information and knowledge to influence policy-making, program action and research(2). Therefore, maintaining good HMIS is an essential part of strengthening a health system(1-2). It is a system to avail accurate, reliable, valid and timely information necessary for the improvement of public health services, effectiveness and efficiency through better management of patient/public data at all levels of implementation(2).

Community health information system (CHIS) is a form of the health information system that involves data collection, management, and analysis of health and related services provided at HP and communities house hold. It encompasses information collected, how it is collected, and how it flows. This system enables information to be shared among community-based services and between community-based services, higher-level health facilities and to some extent, it feeds information into national HMIS (5-6).

CHIS is the health information system where community health workers/HEWs practice data management (6-7).

Data management is a set of procedures for collecting, processing ,record keeping ,using and communicating health care data (8). This is creating information by an organization, that is timely, accurate, clear, concise and presented in a way that is appropriate for the users' needs (9).

In 2003, Ethiopia launched the health extension program (HEP), to expand the national health program to include community-based health interventions as a primary component of the health sector development program (HSDP). The HEP is "a package of basic and essential promotion, preventive and curative health services targeting the households in a community, based on the principle of primary health care (PHC) to improve the family's health status with their full participation (10)

In Ethiopia data quality and use remain weak, particularly at the district health offices and PHC facilities. (11).

1.2 Statement of the problem

Health information systems in most countries of the world are inadequate in providing the needed management support. As a result of this, countless lives are lost around the world. (12-13).

Globally, a majority of health facilities, specifically public health service delivery units, either do not submit any health report or no standardized format exists. This in turn creates problems for data compilation and analysis, resulting in issues of drawing inference for managerial decision making (14). Furthermore, data received from many health facilities are incomplete, inaccurate and none timelines(9).

Most health care system in developing countries equate information systems with filling endless registers and sending out reports without receiving any feedback (3). The HMIS in most developing countries is inefficient, poor in quality and is greatly affected by unreliability of data resulting from inadequate collection, poor aggregationand poorly analyses (15).

Finding shows that the problem of under reporting is huge and is linked to lack of knowledge and practice among the health workers characterized by insufficient analysis skills, training and lack of initiative for using information(7).

Like other developing countries, the HMIS of Ethiopia is of low quality affected lack of knowledge and practice among the health workers characterized by insufficient analysis skills, training and lack of initiative for using information(7).The information technology, infrastructure in Ethiopia is low in its quality and also in accessible to community health workers specially

HEWs which is the frontline health workforce about 85% of preventive health data generated in the Ethiopian health care system and provide essential PHC services in the country (7, 9)

However, the remote location of the health posts, the skill of documentation and paper-based record-keeping procedures present a challenge for reporting the Health Extension Package information. That is, data collected, compiled and reported by HEWs are unreliable and of low in quality (9, 16).This in turn can lead to incomplete data and time lags between reporting and use of data for decision making locally, regionally and nationally, which hinders optimal health system performance (17).

Despite the intensive efforts conducted on data management practice in the past few years, data management practice for decision making is still a big challenge in Ethiopian health facilities. Therefore, information on how HEWs are managing data; how they collect, register, summarize, analyze and how they use or report is a valuable resource to combat the challenge.

Moreover, having information about factors affecting the HEWs data management practice is the primary step and base for the improvement of CHIS, HMIS and health system performance in the study area and in the country at large.

Updated evidence on these issues is valuable at these days to know the status and make timely interventions to improve data management and use in all health facilities. Therefore, the aim of this study is to assess the data management practice and its associated factors among HEWs in the study area.

1.3 Significance of the study

The findings of this study could be important to know the level of data management practices and identify possible factors of data management among the HEWs, a major primary healthcare data sources in the Ethiopian health care system.

It is important to Amhara Regional Health Bureau, West Gojjam Zone, respective woreda health offices, health posts and the community to take evidence based decision , improve data quality and use of primary health care data at all levels of the health system

It can also provide, program planners/managersand nongovernmental organizations with relevant information for future planning and interventions of appropriate strategies to promote good data handling and utilization practices.

The finding of this study might also be important evidence for researchers who are interested in carrying out further research in Ethiopia health information system.

2   LITERATURE REVIEW

2.1   Overview of data management practices

A study done in Nigeria to assess the knowledge, attitude and practices of Voluntary health Workers and TBAs regarding record keeping showed that 61% of the respondents in Ibarapa Central keep records of their health activities using an exercise book. Most Voluntary Health Workers orTBA did not have the record of work or the community profiles (wall chats) developed and   recommended   by the Federal Ministry of Health (FMOH) because they were not supplied (18).

A descriptive cross- sectional study done in Iran revealed that the mean score of compliance of district health information system framework was 35.75%, The maximum score of data collection process (70%) and the minimum score of compliance belonged to information based decision- making process with a score of 10 %. and 90%, district health information system was inefficiency where decisions and policies were made either experience based or subjective individual opinion, not based on the utilization of information (19).

A cross-sectional study was conducted in Dares Salaam region, Tanzania reported that there was lack of data in 66.7% of private and 9.5% government facilities. The average data completion rate was 64.2% ,level of timeliness of reporting rate 43.3% and data level of accuracy was two fold variation between the actual and the record (20)

Studies done in different areas of Ethiopia(7,16, 21) also reported poor data management practices. Assessment done in North Gondar revealed that, out of 84.3% data collected daily only 22.5% of them utilized. Among 45 units only 17.7% changed their data into information and used it for immediate decision making, from the total study units only 13.2% were properly documented their reports and registration books also revealed low level of support and supervision which is 34.7% of the study units were supervised once and 12.2% of them had given feedbacks in the quarter (22).

 A Facilty based cross-sectional study done on government Health Centers and Health Posts in Jimma among 332 observed units/departments, 236(71.0%) keep their reports and registrations in well-organized hard copy form. Seventy nine (24.0%) units/departments did not have well

organized data, while 17(5.0%) secured data in both hard and soft copy form. 236(71.0%) reported they filled the format properly. Regarding utilization of the collected health information 8(26.7%)health post and 57(31.3%) health centers utilized it. (11).

Based on the study conducted in Gamo Gofa Zone Southern Ethiopia of (74.3%) of HEWs have good data management practice and 411 (97.6%) respondents can make report for the collected data by themselves(21)

Study conducted in East gojjam Zone shows 53.3% of HEWs had good practice on data management. More than three fourth of the respondents (78.8%) had written list of health extension package. Out of the total respondents, 87(28.8%),132(43.7%) and 223(73.8%) use writing materials of notepad, notebook and HMIS form ,respectively for data recording but 7% of HEWs did not use any writing materials for data recording (7).

According to the study done on the working conditions of HEWs in Ethiopia result revealed that all HPs send regular reports to woreda health offices,but there are challenges in harmonizing the staffing pattern at the HP level,guiding time use,work schedule and relationship with the communityand most HPs do not have a format for reporting (15).

Based on the assessment conducted on the existing paper based HIS health data collection, reporting and analysis in the region was inconsistent, fragmented and poor quality and redundant data (3)

2.2   Factors on the data management practices of HEWs
2.2.1   Socio-demographic characteristics
Study findings from Ethiopian HEWs working conditions showed very little access to information that majority (76%) had their own radio as source of information and no access to news paper or television (23).An institution based cross-sectional study conducted on 250 health center and department/unit heads showed that the majority (80%) of the respondents were males, and 54% of them were in the ≤30 year's age group.The mean age of respondents was 29 ± 3.2 , Sixty percent of respondents had ≤6 years working experience(24).

2.2.2 Organizational factor of health extension workers

According to study findings from Tanzania on bridging the gaps on the HMIS change the health sector 81% of health professionals had never been received training on HMIS (15).an other study result on the working conditions of HEWS in Ethiopia showed supervisors mostly checked records (77%), checked stocks (65%) and discussed work plan (58%) (23).

According to the study done in GamoGofa Zone 134 (31.8%) of HEWs did not have reference materials in their office. 404 (96.0%) were supplied with registration books. More than half (56.5%) of the respondents obtain pen and pencil from respective health office (21).

Study conducted on East Gojjam Zone 275(91.1%) of HEWs had reference materials in their HP. Two hundred fifty seven (85.1%) and 286(94.7%) of the study participants had reporting formats in their HP and were received supportive supervision, respectively. Substantial number of respondents 264(87.4%) were took training on data management (7).

2.2.3 Technical factors on data management practice

A qualitative study done in Sidama Ethiopia all HEWs had believed that their paper-based HMIS tools were convenient, as it made their work "easy and efficient". However, two HEWs complained that reporting tools were in English instead of Amharic. This created confusion and data inaccuracies, especially when coupled with training deficits. (25)

Study conducted in Jimma Zone showed that 236 (71%) health centers and district offices filled the format properly and the rest 29% did not do that due to non-understandability and ambiguity of the tools/formats. 170 (51.2%),91(27.4%) 71(21.4%), of respondents lacked training, computer skills and incompleteness of the reports respectively (16).

According to study done in GamoGofa Zone Southern Ethiopia 50(11.9%) of HEWs have no reporting format for different activities in their HP ,202 (48.0%) respondents had face shortage reporting formats frequently. 105 (24.9%) the existing reporting formats were too complex or difficult to understand . The main reasons for its complexity were use of uncommon words/terms (60.0%), abbreviations (25.7%), and inconsistency of the formats (5.7%)respectively (21).

Study conducted in East Gojjam Zone Northern Ethiopia shows 186(61.6%) of HEWs faced difficulties in understanding of report formats, in which 46.2% of them facing difficulties because of inconsistency of the reporting formats (7).

2.2.4   Knowledge about data management practice

According to the study done in district Lahore showed that 32(80%),6(15%)and 2(5%) had good ,satisfactory and unsatisfactory knowledge regarding data recording and reporting tools(16)

As the study result in Gamo Gofa Zone, Southern Ethiopia result shows that (58.2%) of HEWs have good knowledge of data management, (95.5%) respondents reported that they knew data processing, and almost all (98.6%) HEWs know to whom they report the performed activities .From the types of data collection methods, 375(89.1%)respondentsknow interview as data collection method followed by record review1 61(38.2%)   and observation 158 (37.5%)(21).

According to assessment in East Gojjam Zone, North West Ethiopia result shows 52.8%) of the HEWs had poor knowledge of knowledge questions (7)

3.CONCEPTUAL FRAMEWORK
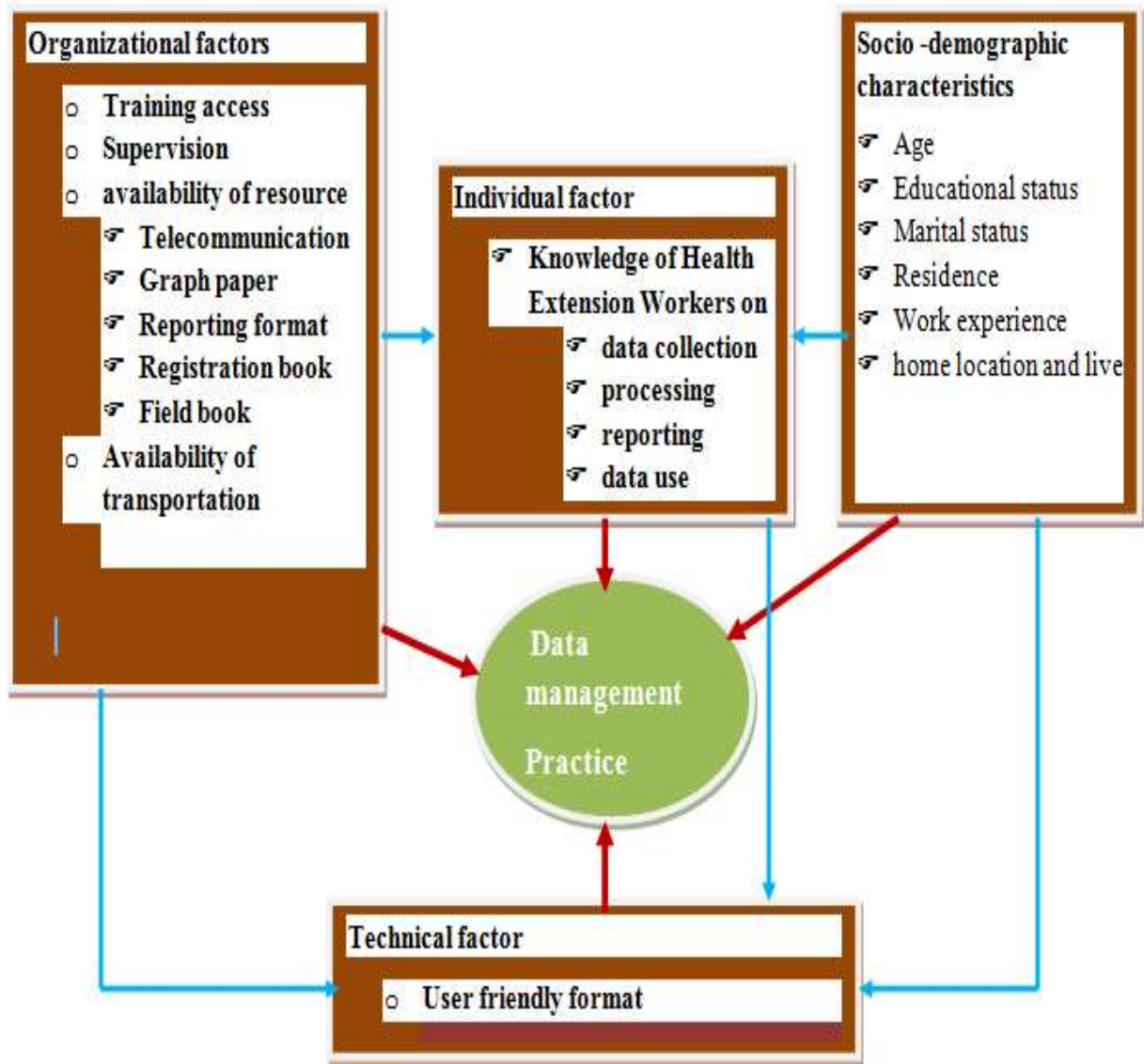
Figure 1: Conceptual framework adapted from similar topic of the study to assess data management practice and its associated factors among health extension workers in West Gojjam Zone Northwest Ethiopia, 2019 G.C

Source: Developed by the principal investigator after review of relevant literature or adopted on the similar topic(8, 26).

4 . OBJECTIVES

4.1 General objective

The purpose of this study was to asses' data management practice and its associated factors among health extension workers in West Gojjam Zone, Northwest Ethiopia, 2019 G.C

4.2 Specific objectives

o   To determine the level of data management practice of HEWs in West Gojjam Zone, North west Ethiopia.2019 G.C

o   To identify factors associated with data management practice of HEWs in West Gojjam Zone, Northwest Ethiopia.2019 G.C

5.METHODOLOGY

5.1 Study design and period

A Facility based cross- sectional quantitative study supported with qualitative approach was conducted inWest Gojjam Zone Northwest Ethiopia from August to Sempember 2019 G.C.

5.2 Study Settings

This study was conducted in West Gojjam Zone,Amhara Region,Northwest Ethiopia and 175 km away from Bahir Dar the capital city of Amhara regional state. The zone is divided in to 16 administrative districts/woredas (4 urban and 12 rural) each having its own health office. According to the plan and program report of the west Gojjam Zone health department, the total projected population of the zone is **2, 699,498.** There are 7 public hospitals, 104 public health centers and 388 health posts. There are 1320 health extension workers working in these health posts. There are about 2 to 4 health extension workers per health post(26).

5.3 Source and study population

5.3.1 Source population

The source population was all health extension workers who were working in West Gojjam Zone.

5.3.2 Study population

All health extension workers working in eight randomly selected woredas of West Gojjam Zone during the study period.

5.4 Eligibility criteria

5.4.1 Inclusion criteria:

- ✓ All health extension workers who were currently working in selected woredas of West Gojjam Zone .

5.4.2 Exclusion criteria:

- ✓ Health extension workers who were absent from their work for annual leave, long term training , leave for delivery issues during data collection period were not included in the study

- ✓ Health extension workers who were seriously ill and unable to respond to the interview/discussion.
- ✓ Health extension workers who were newly recruited less 6 months work experience.

5 .5 Study variables

5.5.1 Dependent variable

- o Data management practice(poor or good)

5.5.2 Independent variable

- o Socio demographic factors
  - ✓ Age
  - ✓ Educational status
  - ✓ Marital status
  - ✓ Residence
  - ✓ Work exprience
  - ✓ Home location and live
- o Individual factor

  Knowledge of HEW on:
  - ✓ Data collection
  - ✓ Data processing
  - ✓ Data reporting
  - ✓ Data use
- o Organizational factors
  - ✓ Training access
  - ✓ Supervision
  - ✓ Availability of resources
    - ☞ Telecommunication
    - ☞ Graph paper
    - ☞ Field book
    - ☞ Reporting formats
    - ☞ Registration books

☞ Field book

✓ Availability of transportation

o Technical factors

✓ User friendly formats

5.6 .Operational definitions

o *Data management practice:* Refers to the ability of collecting data, doing report ,presenting information using different methods and materials , record keeping and use it.

o *Data management knowledge:* Refers to knowing how to collect, process, analysis, how to interpret ,present ,knowing how and where to report

o *Good knowledge:* HEWs who scored mean and above on questions asked for the assessment of knowledge was considered as they have good knowledge.

o *Poor knowledge:* HEWs who score below mean on questions asked for the assessment of knowledge was considered as they have poor knowledge .

o *Good practice:* HEWswho scored mean and above on questions asked for the assessment of data management practicewas considered as they have good data management .

o **Poor Practice:** HEWs who scored below mean on questions asked for the assessment of data management practicewas considered as they have poor data management practice .

5.7 Sample size determination and sampling procedure

5.7.1 Sample size determination

The sample size of the study was calculated using the standard formula for single a population proportion Using Open Epi Info Version 7 soft ware calculator, using the following parameters:

✓ Total Health extension workers in west Gojjam zone (N) was 1320.

✓ The proportion of data management practice (p) from the former study was 0.53 done in East Gojjam(7).

✓ Margin of error (d) = 5%,

- ✓ 95% level of confidence(Z=1.96)
- ✓ Design effect of 1.5 and 10% none response rate.Then the total samplel size become 491.

Table 1: Show sample size determination for each objectiveusing proportion and factors in West Gojjam Zone, Northwest Ethiopia, 2019G.C

Objectives	Expected proportion (P)	Sample size	Place of study (Reference)
Objective 1 (Level of data mg't practice)			
Appropriate data management practice	**0.53**	**491**	East Gojjam, Ethiopia (7)
Objective 2 (Associated factors)	**P**		
Knowledge about data management	0.69	461	East Gojjam, Ethiopia (7)
Availability of registration book	0.76	423	Gamo Gofa, Ethiopia (21)
Availability of reference material	0.80	392	Gamo Gofa, Ethiopia (21)

Qualitative data was collected through face to face in-depth interview until information saturation and by observation of main indicators.

5.8 Sampling technique and procedure

5.8.1 Sampling procedure

For Quantitative:Stratified sampling technique was used to identifythe woreda to be sampled.Due to resource constraints only 8(50%)from the total sixteen woredas included in the study using lottery method. Then, due to variations in activities and data management practice HEWs were stratified into urban and rural.

Proportional allocation to sample size to each selected woreda and simple random sampling method was used to select study units from each woreda list of HEWs until the required sample size for the woreda was achieved.The lists of the study population were obtained from the woreda health offices.

 For qualitative:The maximum sample size was determind when we reached saturation point.A total of eight HEWs were purposively selected for in-depth interview and observation done from 208 health posts .

Purposive sampling technique was employed to select respondants from selected woredas .A total of eight HEWs were selected for interview.Selection of HEWs was made by principal investigator those who are volunteer to give more information in Urban and Rural HEWs. six of HEWs were selected from rural and two were in Urban HEWs.

The detailed sampling procedure of quantitative has been displayed schematically in the following figure(Figure 2).
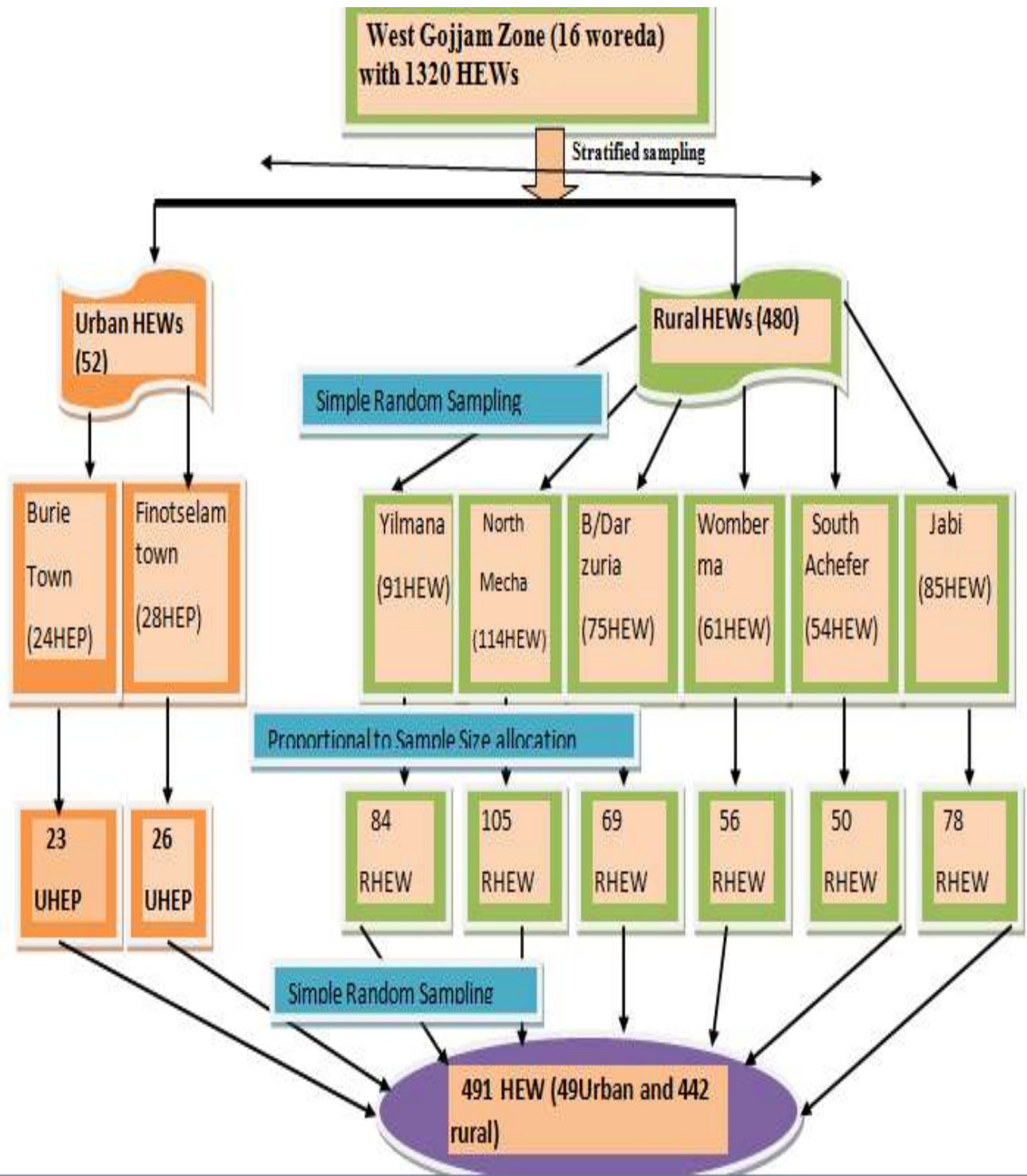
Figure 2: Schematic presentation of sampling procedure for the study to assess data management practice and its associated factors among health extension workers in West Gojjam Zone, Northwest Ethiopia, 2019 G.C

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5.8.2 Data collection tool

For quantitative: Structured self-administered questionnaire was used to collect quantitative data. These data collections tools were prepared after review of relevant literatures. Based on the result of literature review the tools was adapted from studies done in GamoGofa zone Ethiopia(21) and East Gojjam zone, Ethiopia (7). The questionnaire have 42 questions grouped in five sections; 7 questions related to socio-demography, 8 questions related to knowledge about data management, 11 questions related to organizational conditions, 6 questions related to technical factors like the perceived complexity of the data collection formats and registration books and 10 questions related to data management practices of HEWs.

For Qualitative: Data was collected through in-depth interview and observation. in-depth interview guide, tape recorder and observation checklist was used to collect the actual or physical data management practice.The in-depth interview covered areas of discussion like: practices in data management and factors that might affect practice including; knowledge, organizational factors, resource availability etc…

5.8.3 Data collection procedure

For Quantitative: For data collection process sixteen data collectors (clinical nurses) with the criteria of being interested, known to be honest and willingness to face difficulty that may arising during the process of interview, know the zone well and have experience in data collection were hired to collect the data.

Eight supervisors (BSC nurse/HO) who are familiar with the population and social administration and setting of the health facility were hired with the responsibility of facilitating the whole process, timely supply the necessary materials for interviewers, and check the questionnaires each day. The data collection process was started with greeting and asking consent to participate in the study after explanation of the purpose and data confidentiality issues.

For Qualitativ :The principal investigator conducted an in-depth interview among the purposively selected HEWs using the interview guideline, tape recorder and field note book. During qualitative data collection, field notes were taken to support data collected by the tape recording.The interview was continuing until reaching to the information saturation point. There

was probing of respondents while conducting the interview to get adequate information /explanation. The qualitative data collection processes was conducted with the quantitative survey to complement gaps or support the quantitative.

5.9 Data managment and analysis

Quantitative data:The data were coded, entered and cleaning in to EPI data 4.6 and was analyzed by using SPSS version 20.0. Data were cleaned by using frequency and cross tabulation to check accuracy,consistency and missing value.The descriptive analysis results of the independent and dependent (outcome) variables was summarized using descriptive summary measures:expressed as mean (standard deviation) or median (minimum-maximum) for continuous variables and percent for categorical variables.

Binary logistic regression was carried out to find presence and degree of association between the independent variables and the dependent variable. Those variables which were significant at ($p<0.2$) were considered as candidate variables for multiple logistic regression analysis.

Moreover, multiple logistic regression analysis was employed to control the possible confounding effect and to assess the separate effects of the significant determinant variables. All statistical tests was performed using two-sided tests at the 0.05 level of significance. Odds ratio with 95 % CI and associated p-values was computed to assess the presence and degree of association between dependent and independent variables. P-values was reported to three decimal places with values less than 0.001 will reported as <0.001.

Qualitative data: Data were collected by in-depth interview and observation then the interview transcribed text from each informants.Codes were developed and defined operationally.Subthemes that emerge from the data were identified. The data were translated and analyzed manually, in line with the objectives of the study. Findings were summarized and then compared and triangulated with the quantitative findings. Finally the findings were reported by narrating the concepts followed by important quotes or simply using quotes of respondents.

5.10 Data quality assurance

Data collection guideline was prepared and given for data collectors and supervisors. Two days training was given for data collectors and supervisors. Data collectors and supervisors were

reviewing every questionnaire for completeness and for logical consistency, and counter checked by the principal investigator at the end of each day. Data cleaning was conducted at the end of data entry. Apart from the training of data collectors, strict supervision of data collection process using field supervisors by using the following methods were employed to assure the data quality. All questionnaires were checked by the field supervisors to ensure all questionnaires were completed every week. Pre-test of the questionnaires were conducted on 5% (25) study subjects who fulfill the eligibility criteria.

5.11 Ethical consideration

Ethical clearance was obtained from the ethical review board of BDU, college of medicine and health science department of public health. Then officials at different levels in the study area were communicated through letters from BDU, college of medicine and health sciences. Letters of permission were presented to West Gojjam zone health department. Written informed consent was obtained from each study subject prior to the interview after explaining the purpose of the study is explained to respondent. Confidentiality of the information was assured and privacy of the respondent was maintained.

6   RESULT

6.1   Socio-demographic characteristics of health extension workers

From the total 491 sampled population, 479 health extension workersresponded to the interview with a response rate of 97.6%. The mean age of the study subjects was 28.3years ± SD, (SD = 3.4).The educational status of the study participants ranged from level III HEW to clinical nurse diploma; where more than half (55.3%) were level III HEW (Table: 2).

Table 2:Socio-demographic characteristics of the health extension workers in West Gojjam Zone, Northwest Ethiopia, 2019

Variable	No	%
Age		
≤ 28 years	216	45.1
>28 years	263	54.9
Marital status		
Single	309	64.5
Married	170	35.5
Educational status		
Level III HEW	265	55.3
Level IV HEW	153	31.9
Clinical Nurse diploma	61	12.7
Work experience		
≤ 7 years	225	47.0
> 7 and above years	254	53.0
Residence		
Rural Kebele	430	89.8
Urban Kebele	49	10.2
Home location		
Inside the compound of the health post	233	48.6
Outside the compound of the health post	246	51.4

The qualitative result inline that importance of residential area and home location of respondents said *"We want a place to live we do not have to pay much money for house rents. Since there is no house for us in rural area, I had to travel more than an hour every day from Woreda town to my health post to perform my duty. That definitely affects my actualperformance. We need houses to do our work properly either in rural or urban area. It's hard for a woman to go back*

and forth to work. "We do not ask for a farm land but a small house to live".(Rural Female 28, HEW)

One HEW confirmed that : *"The hunger, thirst and long distance travel sometimes make me lose hope, and forget to record and report the data that collect".*

6.2   Knowledge of health extension workers about data management

Two hundred sixty (54.4%) of the HEWs knows that data management is a procedure that include data collection and registering, while 180 (37.6%) of the HEWs did not know what a data management mean. The most frequently responded purpose/use of data was for planning; it was responded by 339 (71.2%) HEWs. The majority of HEWs, 423 (88.9%) know register as a source of data for routine activities report and 309 (64.9%) of the HEWs responded tally as a source of data for routine activities report. One hundred fifty four (32.2%) and 316 (66.0%) of the HEWs know what data/report accuracy and data/report completeness respectively .

 Based on the above assessment 262 (54.7%) of the HEWs scored mean and above (a score of 8.48 ± SD, (SD = 3.4) and above) and considered as they had good knowledge on data management.See (annex IX)

Similarly, the result of the in-depth interview revealed that because of little attention given by responsible government bodies to data management, lack of adequate training and supportive supervision on data management, most of the HEWs did not have knowledgeaboutdata management. For example, one of the respondents said that.

 One of the respondents said "there is lack of knowledge about CHIS I usually

 face many problems when filling the format because of disorientation and lack

 of training. I think that make the data being inconsistent and also time wastage"

 *(A*34- years Rural HEW)

Responsible government bodies did not give attention about HEW′s data management knowledge as well as their data management practice. they simply gave direction to HEW to send reports to HC by increasing number for their performance. Regarding this, a participant mentioned that:

"I don't know why I collect the daily data…..may be for huge number report tohealth center for my salary using my phone without standard registration andcomplication".(A 25 years old HEW). One participant also confirmed that, "adequate training or constructive onsite supervision was not given on data management they simply gave any report format, registration to do it" (Rural Kebele 32 years old HEW).

6.3   Data management practicesof of health extension workers

Regarding CHIS practice, only 36 (7.5%) of the HEWs practiced CHIS in their health post according to the required standard. The reasons of the HEWs for not practicing CHIs were incomplete resource (46.3%), knowledge gap (44.2%), difficult to implement (65.5%), partner influence (13.8%) and negligence (10.4%). Majority of the HEWs, 407 (85%), were correctly registered their daily activities; most of these, 369 (90.7%) registered their daily activities using Note book. Regarding data use, 277 (67.2%) of the HEWs used the collected data after converting it into information or report.

Based on the above assessment two hundred eleven (44.1%) of the HEWs scored mean and above (a score of $6.07 \pm SD$, (SD = 2.71) considered as they had good data management practice. (Annex X).
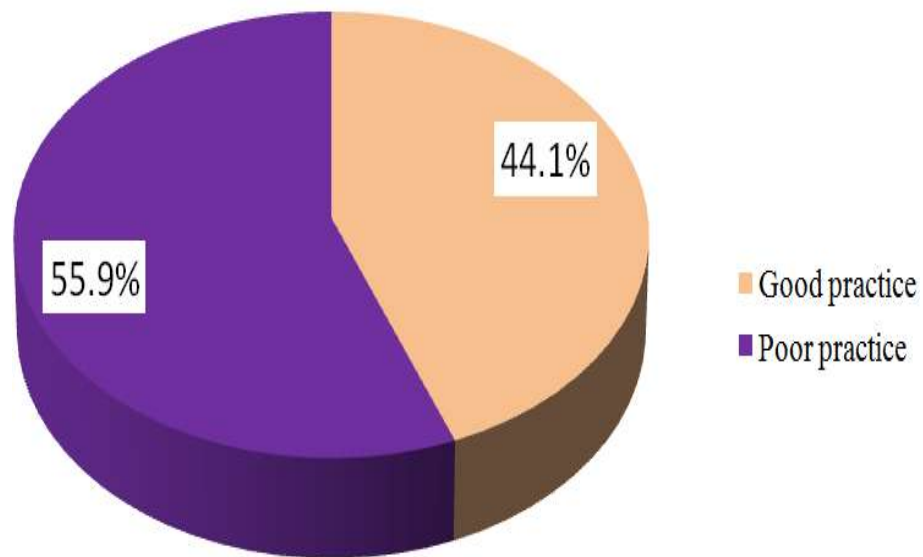
Figure 3:Level of data managment among HEWs in West Gojjam Zone Northwest Ethiopia

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The qualitative finding supports quantitative that One participant shows that:

"the health center staff come to the HP to support quarterly even at that time they help and advice to add number they do not worry about how data is process,analyse,interpret and use" (Rural, 36 year, HEW)

Another HEWs shows that "irregular and unplanned visits is crime for us such to emergency supervision may give rise to add data that are inaccurate and drive policy makers to take wrong decisions. (Rural, 29 year, HEW)

One participant explained that : *"Government has to improve the supervision mechanisms to avoid false reporting down to Kebele level. There has to be a cross checking mechanisms of data secured from rural Kebeles because often times there are big chance of misreporting for the purpose of recognition"* (Rural, 21 year, HEW)

6.4 Technicalfactors of health extension workers

Three hundred four (63.5%) of the HEWs reported that the registration books, reporting formats, and CHIS materials were easy and simple to them to understand. While the rest reported that the registration books, reporting formats, and CHIS materials were not easy and simple to them to understand. Presence of different abbreviations, being inconsistent and uncommon words/terms were the reasons for 140 (80.0%), 122 (69.7%) and (65.1%) of them. The table below (Table 4) show these and the rest technical conditions of health extension workers related to their data management practices.(Annex XI)

Regarding technical competency of the HEWs, one HEW interviewee said that:

> *"CHIS formats are unfriendly for me because of long statement,written in english which is difficult to read as well as to understand, I tell you that it is one of the big challenges I faced in routine data management activities"(Rural kebele, 32 years old HEW).*

6.5 Organizational factors the health extension workers

Only 82 (17.1%) of the HEWs had training on data collection, processing, and handling practice. According to their response,most of the inputs and supports needed to data management activities were not supplied to the HEWs; 58 (12.1%) respondents did not have reference

materials that support data management practice in their office, 189 (39.5%) were supplied with field books and 328 (56.5%) of the total HEWs obtained stationary from respective health office/health center. Two hundred seven (43.2%) of the total respondents were supervised by their supervisors where 40 (19.3%), 94 (45.4%), 78 (37.7%) and 28 (13.5%) of them were supervised at least once weekly, monthly, quarterly and every six month respectively.

Table 3: Organizational factors of health extension workers in West Gojjam Zone, Northwest Ethiopia, 2019

Variable	N<u>o</u>	%
Attend training on data data management		
Yes	82	17.1
No	397	82.9
When training was given*(n = 82)*		
0-6 months	13	15.9
6 months - 1 year	11	13.4
1 - 2 years	25	30.5
Above 2 years	33	40.2
Availability of reference materials like guideline that support data management practice		
Yes	58	12.1
No	421	87.9
Availability of field books		
Yes	189	39.5
No	290	60.5
Availability of reporting formats in HP		
Yes	440	91.9
No	39	8.1
Availablity of transportation		
Yes	274	57.2
No	205	42.8
Availablity oftelecommunication		
Yes	183	38.2
No	296	61.8
Provision of writing and presentation inputs (stationary)		
Yes	328	68.5

Variable	No	%
No	151	31.5
Availability of registration books in HP		
Yes	336	70.1
No	143	29.9
Ever been supervised by supervisors on data management		
Yes	207	43.2
No	272	56.8
Frequency of supervision *(n = 207)* $^\phi$		
Weekly	40	19.3
Monthly	94	45.4
Quarterly	78	37.7
Biannually	28	13.5

ϕ: Because of possibility of multiple responses the percent do not sum to 100%.

In line with the quantitative result, the qualitative result revealed that most respondents agreed with the presence of insufficient training, in available formats and registrations, irregular support, and leader's poor attention to data management practice. Most of the interviewees emphasized that if CHIS has to work, awareness rising activities must be done by responsible bodies. An interviewee said:

One participant confirmed that, "adequate training or constructive onsite supervision was not given on data management they simply gave any report format, registration to do it" (32 years old Rural HEW).

Another participant confirmed that " *Responsible bodies should be able to create a common understanding among all the health posts and HEWs about data management practice, importance of quality data for quality service to the facilities themselves as well as the country*".(A 34 years old HEW).

Almost all of the interviewees agreed that the organizational culture itself needs to be reformed to support and strengthen so as to change health extension worker data management and handling behavior.

"We are lying because the government bodies really appreciate figures like 100 percent performance without cross checking whether it is real or not. This discourages those who perform less than 100 percent, This still drive us to give 100 percent for our superiors to make them happy temporarily and to avoid unnecessary blame. But the 100 percent report definitely is multiplied by zero when you come and see actua l performance on the ground ". (A 32 years old Rural HEW).

All of the interviewees responded that unless the necessary inputs are available, CHIS can't be functional. One participant said that:

"The government does not offered the necessary inputs to implement CHIS; like the family folder are not updated, still we use what we have do 7 years ago, but there is a population growth; those new households are not included because no new family folders. Standard registration, tally sheet, integrated card are not available we prepare tally sheets and substandard registration book manually" (A 30 years old Rural HEW).

An other HEW shows that: "The government forgot the urban health extension package system we have no Health post ,no community health information ,no register simply the health extension assigned for referal using apiece of paperor using self mobile that leads undefined information" (A 30 years old Urban HEW).

6.6 Observed data management practices of the health extension workers

In the observation process there were 208 health posts observed and the following items were considered like daily data registration,current CHIS status, standardness of registration tools(registration book, report format tally), presence of copies of weekly ,monthly and quarterly report ,presence of information in the form of chart, table, and graph, availability of current kebele profile, minutes of important CHIS related meetings, copies of official feedback, and frequency of supportive supervision.

The observation result shows that one fourth 50(24%) of HP used standard registration book and tally. Three-fourth of Hp 158(76%) register important data by any materials like note book, any small paper, substandard manually prepared Registration and tally that all item not properly filled completely. very low 18(8.7%) of HP properly practice CHIS and 190(91.3%of Hp

interrupted .there was no regular supportive supervision done weekly by health center and no regular feedback copies in health post(Table 4).

Table 4 :Observed data management practices of health extension workers in West Gojjam Zone, Northwest Ethiopia, 2019 G.C

Observation variables	Yes		No	
	N<u>o</u>	%	N<u>o</u>	%
Document of daily collected data in 4th quarter 2011E.C	146	70.2	62	29.8
Use of standard (CHIS FF, Tally, report format for data collection)	18	8.7	190	91.3
Use of standard registration book (Nationally prepared registration book for data collection)	50	24.0	158	76.0
Use of substandard (manually prepared) registration book	141	67.8	67	32.2
Document of weekly report in 2011 E.C	179	86.1	29	13.9
Document of monthly report in 2011 E.C	138	66.3	70	33.7
Document of quarterly report in 2011 E.C	81	38.9	127	61.7
Presence of information in the form of tables, charts, graphs or maps updated in 2011 E.C	72	34.6	136	65.4
Document of Kebele base line census data based on age and sex classification in 2011E.C	51	24.5	157	75.5
Document of the 4th quarter 2011E.C health package counting survey conducted for the Kebele	48	23.1	160	76.9
Minutes of review work with stallholders and staff member 3 times consequently in 4th quarter 2011E.C	65	31.3	143	68.8
Presence of 3 consecutive feedback from higher official in 4th quarter 2011 E.C	62	29.8	146	70.2
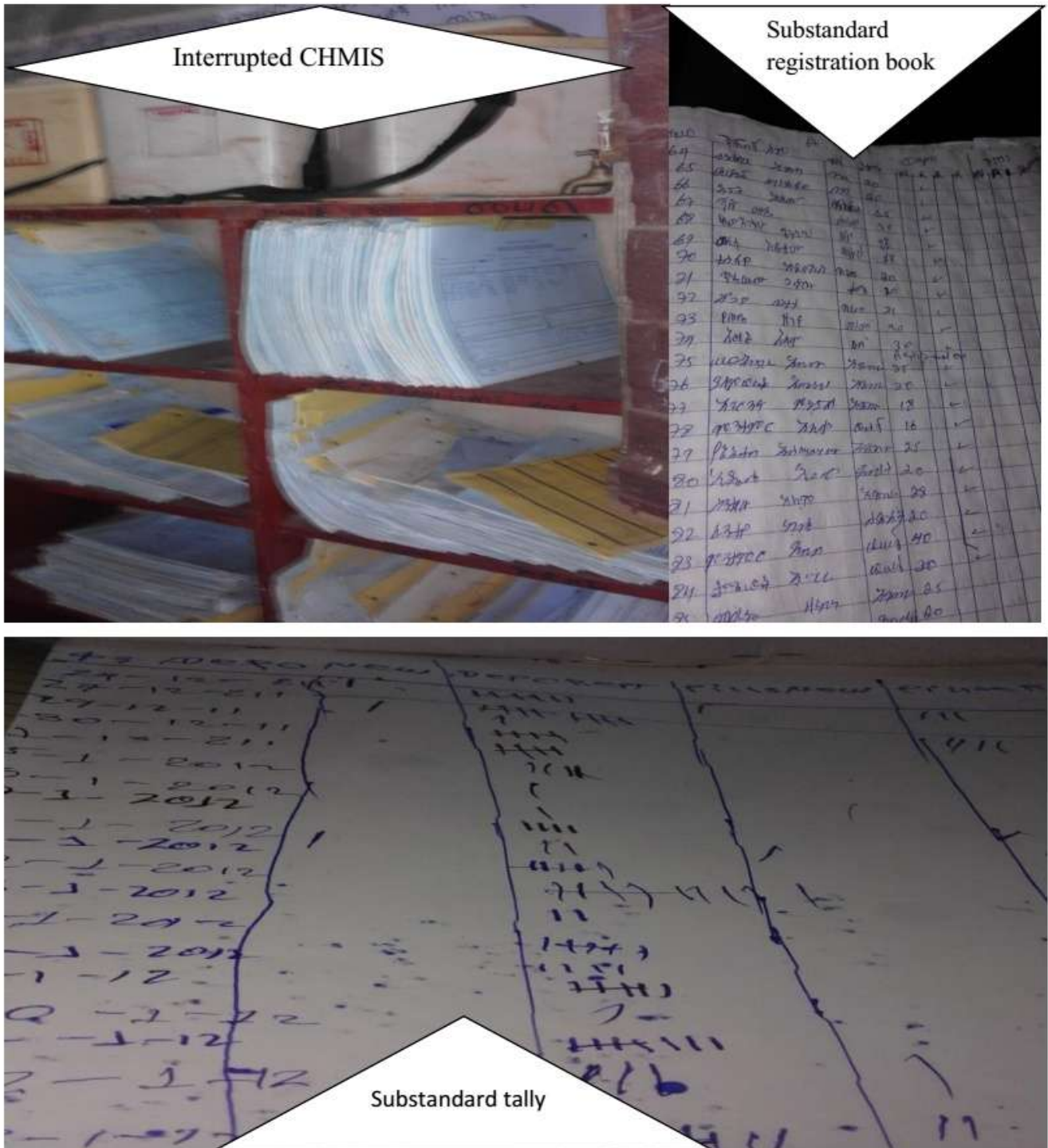
Figure 4: Observed actual/physical data management practice among health extension workers in West Gojjam Zone Northwest Ethiopia, 2019 G.C

The result of the in-depth interview also showed that poor data management practice in terms of data collection, processing, reporting and use. Respondents experienced with poor data management and use; including poor arrangement of reporting file, data recorded by manually prepared registration book, mixing of report copies with past year weekly with quarter report which is not easily differentiated and use it.

Urban HEWs reported that their personal motive and passion for their health extension job ultimately declined due to their restricted job description and poor acceptance of the community.

> *"Frankly speaking, I am working very hard to meet the set goals of urban health extension program. But looking at our acceptance by the community is really disastrous. And as long as the government ignore,There is no appreciation, neither by the community nor by the government. For your surprise, there is nobody who says thank you and God bless you. This is real pain for me". (Urban Female 29, HEW)*

6.7   Factors associated with data management practices

Socio-demographic of the study participants and other independent factors were examined for the presence of association with data management practice of HEWs. The binary logistic regression modeling result identified that age, educational status, work experience,home location, knowledge about data management, training on data management, availability of reference materials, availability of field book,simple and ease of CHIS materials to understand, complexity of report formats to use and facing challenge in daily data management activities is stastically significant ($p < 0.2$ level) with data management practice of HEWs.

As summarized in the following table, multivariate logistic regression modeling was fitted to assess the independent effect of each of the factor found to be associated in the bivariable analysis. Residence, home location, knowledge about data management, availability of reference materials, availability of field book, simple and ease of CHIS materials to understand and complexity of report formats to use were remained to be independent factors for data management practice of HEWs

Home location were statistically significant factors of data management practice; HEWs whose home located inside the compound of the health post were 3.2 times more likely to have good data

management practice than those HEWs whose home located outside the compound of the health post (AOR=3.2, 95% CI= 1.9 – 5.4, p < 0.001).

Knowledge of HEWs about data management was another factor associated with data management practice of HEWs; compared to their counterparts, those HEWs who had good knowledge on data management had 2.1 times higher ratio of odds to have good data management practice (AOR=2.1, 95% CI= 1.2 – 3.5, p = 0.005).

HEWs who had reference materials about data management in their HP had 2.4 times higher ratio of odds to have good data management practice when compared to HEWs who had not reference materials about data management in their office (AOR=2.4, 95% CI= 1.1 – 5.1, p = 0.027). Availability of field book and registration books were the other determinants; accordingly, HEWs who had field books and registration books in their office were 2.7 and 2.4 times more likely to have good data management practice compared to those HEWs who had no field book and registration book in their HP (AOR=2.7, 95% CI= 1.5 – 4.8, p = 0.001)and (AOR=2.4, 95% CI= 1.4 – 4.1, p = 0.002) respectively.

The other stastically significant factor of data management practice was the simplicity of the existing CHIS materials to understand for the HEWs. According to the result, those HEWs who found the existing CHIS materials easy to them to understand were 5.3 times more likely to have good data management practice compared to those HEWs who found the existing CHIS materials difficult to understand (AOR=5.3, 95% CI= 2.8 – 9.9, p < 0.001).Complexity of the existing report formats to use was also an important determinant factor of data management practice; compared to those HEWs who found the existing report formats complex to the to use, those HEWs who found the existing report formats simple to the to use had 1.7 times higher probability to have good data management practice (AOR=1.7, 95% CI= 1.01 – 3.0, p = 0.048) (Table 5).

Table 5:Factors associated with data management practices among health extension workers in West Gojjam Zone, Northwest Ethiopia, 2019

Variables	Good		Poor		COR (95% CI)	AOR (95% CI)
	N<u>o</u>	**%**	**N<u>o</u>**	**%**		
Educational status						
Level III HEW	121	45.7	144	54.3	**2.0 (1.1-3.6) ***	0.9 (0.5-1.6)
Level IV HEW	72	47.1	81	52.9	**2.1 (1.1-4.0) ***	1.5 (0.5-4.4)
Clinical Nurse diploma	18	29.5	43	70.5	1	1
Work experience						
≤ 7years	108	48.0	117	52.0	1	1
>7 years	103	40.6	151	59.4	0.7 (0.5-1.1)	1.5 (0.9-2.5)
Home location						
Inside the compound of the health post	128	54.9	105	45.1	**2.4 (1.7-3.5) ****	**3.2 (1.9-5.4) ****
Outside the compound of the health post	83	33.7	163	66.3	1	1
Knowledge on data management						
Good	157	59.9	105	40.1	**4.5 (3.0-6.7)****	**2.1 (1.2-3.5) ***
Poor	54	24.9	163	75.1	1	1
Training on data management						
Yes	51	23.2	31	12.0	**2.4 (1.5-4.0) ****	1.3 (0.7-2.4)
No	169	76.8	228	88.0	1	1
Availability of reference materials						
Yes	35	60.3	23	39.7	**2.1 (1.2-3.7) ***	**2.4 (1.1-5.1) ***
No	176	41.8	245	58.2	1	1
Availability of field books						
Yes	120	63.5	69	36.5	**3.8 (2.6-5.6) ****	**2.7 (1.5-4.8) ***
No	91	31.4	199	68.6	1	1
Availability of registration books						
Yes	167	49.7	169	50.3	**2.2 (1.5-3.4) ****	**2.4 (1.4-4.1) ***
No	44	30.8	99	69.2	1	1
Ease of CHIS materials to understand						
Yes	184	60.5	120	39.5	**8.4 (5.3-13.5) ****	**5.3 (2.8-9.9) ****

Variables	Data management practice				COR (95% CI)	AOR (95% CI)
	Good		Poor			
	N<u>o</u>	%	N<u>o</u>	%		
No	27	15.4	148	84.6	1	1
Complexity of report forms to use						
Yes	115	36.4	201	63.6	1	1
No	96	58.9	67	41.1	**2.5 (1.7-3.7) ****	**1.7 (1.01-3.0)***
Facing challenges in daily data management activities						
Yes	126	40.3	187	59.7	1	1
No	85	51.2	81	48.8	**1.6 (1.1-2.3)***	0.8 (0.5-1.3)

* Association is significant at the 0.05 level. ** Association is significant at less than 0.001 levels

7 DISCUSSION

This study tried to assess the level of data management practice and investigated a wide range of possible factors that might be significantly associated with the HEW's data management practice. The finding of this study showed that about 44.1% (95% CI= 41.2-50.3) of the HEWs had good data management practice. This finding was lower than the study findings from GamoGofa, Ethiopia(21), and East Gojjam Zone, Ethiopia(7) that reported data management practice levels of 74.3% and 53.3%,respectively.This might be inadequate training on data management (17.1%) for health extension workers ,housing condition also far from there working area (51.4%) and less support of higher officials(43.2%) on data managmenat practice .

In the current study, the level of data management practice of the HEWs significantly associated with personal, technical and organizational factors. These group of factors had previously been reported by others as determinant factors affecting data management practices of community health workers at primary healthcare facilities(25). According the finding of the current study HEW's data management practicewas varied by personal factors (the HEWs , home location, knowledge about data management); organizational factors (availability of reference materials,availability of field book and availability of registration books); and technical factors (ease of CHIS materials to understandand simplicity of report formats to use).

In agreement with the finding of a study done in East Gojjam, Ethiopia (24), the findings of this study showed that home location of the HEWs were significantly affect the data management practice of the HEWs. The odds of the HEWs to have good data management practice was higher among HEWs whose house located inside the compound of the health post than HEWs whose house located and live out side the compound of the health post. This might be due to the fact that if the residence of employees is near to their work area, the higher the probability the employees to practice their duty.

In this study knowledge about data management showed significant association with data management practice, higher odds were noted among HEWs who had good data management knowledge compared to HEWs who had poor data management knowledge. This finding was supported by studies that mentioned good data management knowledge as crucial to data management practice(25). The variation of HEW's data management practice status by

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difference in their knowledge status about data management might be due to the fact that HEWs with adequate knowledge on how to collect, manage, process routine data into meaningful information and how to communicate or report and use health information, can incorporate their knowledge more easily in to their daily activitieskeeping the other variable constant.

In consistent with findings of most previous studies(21, 24); the result of this study revealed that HEW's data management practice was varied by organizational factors.like: availability of reference materials on data management, availability of field book and availability registration books were found to be the crucial factors in predicting data management practice status of the HEWs.

This study showed the importance of the availability of reference materials for good data management practice. Those HEWs who reported they had reference material on how to manage data were about two times (AOR=2.4, 95% CI= 1.1 – 5.1, p = 0.027) more likely to have good data management practice compared with those who had not reference materials. This might be due to continuous supply of data management recourses to the health extension program which might resulted in increased utilization of the resources. That is, when the HEWs had reference material on how to manage data, they might refer these materials during their data management activities and minimize faults which in turn lead to improved data management practices.

Availability of field book and registration books was positively associated with good data management practice. The odds of good data management practice was higher among HEWs who had field book and registration books in their office than those who had no field book and registration books in their HP (AOR=2.7, 95% CI= 1.5 – 4.8, p = 0.001) and (AOR=2.4, 95% CI= 1.4 – 4.1, p = 0.002) respectively. This could be explained by the fact that those HEWs who had field book and registration books in their office are more likely to collect, register their field daily activities and to present their data which in turn contribute to their good data management practices. As stated above, the continuous supply of data management resources to the health extension workers might similarily promote utilization of these resources (field book and registration books) which in turn might contributed an increased probability of appropriate data management practice could be the other possible explanation.

In agreement with studies in Ethiopia, understandability of the existing CHIS materials and complexity of report formats to use were the other important determinants of good data management practice. The finding of the current study revealed that understandability of the existing CHIS materials was one of the strong significant factors of HEW's data management practice. Thus, the existing CHIS materials are easily understandable to the HEWs, the higher the odds for the HEWs to have good data management practice; whereas, when the existing CHIS materials are not easily understandable to the HEWs, the odds for the HEWs to have good data management practice will be lower. This might be explained due to the fact that when the HEWs faced challenge to understand the existing CHIS materials obviously, they could also fail to use these materaials and to have good data management practice.

Similarily, those HEWs who don't face challenges in using reporting format were almost two (AOR=1.7, 95% CI= 1.01 – 3.0, p = 0.048) times more likely to have good data management practice than those HEWs facing difficulties in using the reporting format. This could be explained as failing to understand and using the reporting formats might lead to miss the necessary components of data management activities. Even inclusion of ambiguous texts and indicators in the reporting format might also practice and resulted in poor data management practice (7).

Similarly indepth interview result inline with, training, availability of field book and knowledge are factors that influence data management practice.

8. STRENGTH AND LIMITATION OF THE STUDY

Strengths

1. In order to have strong evidence, the study used both qualitative and quantitative data.

Limitations

1. Self desirability bias since data collection were self administered type

2. Since it is conducted only among HEWs it may not be representative to data management practice of primary health care facilities in the study area.

9 CONCLUSION

Data management practice among HEWs in West Gojjam Zone was poor which could compromise the decision making of health service delivery in primary health care unite.

The main associated factors of data management practice were mostly personal,technical and organizational factors. The major factors identified include. being older or serving for longer perion , having home located inside the compound of the health post, having good knowledge about data management,availability of field book, registration books and easily understandability of the existing CHIS forms and materials predictors of good data management practice.

10 RECOMMENDATIONS

☞ For Ministry of health of Ethiopia

- o It is better if the Ministry of health of Ethiopia revised the CHIS formats and materials (registrations books, report formats, to make them clear, consistent and more understandable forHEWs and other users.this will increase data management practice and utilization

☞ For Amhara Regional Health Bureau

- o The Amhara Regional Health Bureau in collaboration with FMoH need to make HMIS/CHIS formats and field note books available to health post timely. Accessing regular data management training and data management information resources to HEWs is also required.

☞ For West Gojjam Zonal health department

- o Zonal health department should have to strengthen the frequency of supportive supervision for health extension workers on data management practices. The zonal health department in collaboration with regional and woreda offices also need to regularly assist in practice of data management activities, accessing data management resources, preparing workshops and experience sharing among HEWs.

☞ For Woreda health offices.

- o It is also better to teach HEWs by creating a role model Health post in data management and decision making so that they can learn easily from that continuous supports(practical and theory) to HEWs is required from WoHO.

☞ For Cluster health centers

- o Should have to strengthen frequent supportive supervision for health extension workers so as to early identify gaps and take appropriate action on data management practice of HEWs

☞ For Researchers

- o Researches in better study design by including health centers and hospitals is better to know the data management practice level and associated factors in zone, region and country levels .

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12.ANNEXES

Annex I: English version information sheets and consent form
Title of the research: DataManagement Practice and Its Associated Factors among Health Extension Workers in West Gojjam Zone, Northwest Ethiopia,

Name of principal investigator: DerejeYenealem

Name of the organization: BahirDar University college of Medical science and Health Science.

Name of sponsor: North Mecha Woreda finance

Introuction: - This information sheet and consent form is prepared to explain the purpose of this research in order to get your willingness to participate in the study. The research team includes principal investigator, data collectors who are degree health professional and woreda health office officers as a supervisors.

Purpose of the reasrch proccess: The main aim of the research project is to assess the level of data management practice and Its associated factors among Health Extension Workers in West Gojjam Zone, Northwest Ethiopia study this will provide valuable information to planners, educators and others to design evidence based interventions.

In order to accomplish the researchwe invite you to take part in our research, if you are willing. You need to understand and sign the consent form. Then; you are requested to take the questionnaire and respond accordingly.

Risk and/or disconfort: By Participating in this research, you may feel some discomfort, especially in scarifying your time (to the maximum 20-30 minutes) otherwise, no risk in participating in this research project. Therefore, your response provides an important input to show the gap and means to improve society's attitude.

Incentive/payment for participation: You will not providedany incentives or payment to take part in this project.

Confidentiality: The information collected from you was kept confidential. It was stored in file using codes, without your name. And it will not be revealed to anyone except the principal investigator. In addition it was used only for this particular research but no other purpose.

Right to refuse or withdraw: You have the full right to refuse them participating in this research. You can choose not to respond some or all the questions and this will not affect you from getting any kind of health related service. You have also the full right to withdraw from this study at any time you wish, without losing any of your right.

Person to contact: This research proposal was reviewed and approved by the ethical committee of BahirDarUniversity college of Medical and Health science. If you want to know more information, you can contact the following me and you may ask any time you want.

1. DerejeYenealem   Mobil +2519-18800661

Email helinadereje12@gmail.com

I understand about the advantage of the research and the roles I will have in the research, I have agreed to participate in the research

1. Yes   2. No

If respondent agrees to be interviewed,

Starting time ------------------------:   End time: ---------------------------------------

Questionnaire code: -----------------------   date of data collection: -----------------------

Name of data collector: -----------------------------   signature: -----------------------------

<div align="center">Thank you</div>

Annex II: English version questionnaire

<u>SECTION 0:</u>*QUESTIONNAIRE IDENTIFICATION DATA*

001 Questionnaire ID _____Woreda----------------------Kebele----------------------

002 Data collector's: Name_____ Signature _____ Date _____

003 Date of data collection: _____ day\ month\ year

004 Checked by supervisor: Name _____Signature _____ Date _____

<u>SECTION ONE:</u> *SOCIO-DEMOGRAPHIC CHARACTERSTICS OF THE HEWs*

No.	Questions	Coding categories	Skip to
101	Sex	1.Male 2. Female	
102	Age (in year)?	_____ Years	
103	Marital status?	1.Single 2.Married 3.Divorced 4.Widowed	
104	What is your highest education level?	1.Level III HEW 2.Level IV HEW 3.Clinical Nurse diploma 4 .First degree and above	
105	Working experience (in year)??	_____ Years	
106	Working area	1.Rural Kebele 2.Urban Kebele	
107	Where does your home located and you live?	1.Inside the Kebele compound of the health post 2.Outside the Kebele compound of the health post	

SECTION TWO: ITEMS RELATED TO DATA MANAGEMENT KNOWLEDGE OF HEWs

No.	Questions	Coding categories	Skip to
201	What is data management? (More than one answer is possible)	1.Doing data collection and register 2.Processing data and use 3. Reporting data for concerned body 4. I don't know	
202	What are the methods of data collection? (More than one answer is possible)	1.Interview 2.Observation 3.Recording review 4.house to house discussion 5.I don't know	
203	Assume that you have 200 households in your Keble of this 30 households are finished the expected health extension packages. If you are asked to report this number in percentage, what percent of households finished the expected health extension packages?	1.15% 2.30% 3.13% 4.25% 5.None	
204	Primarily for whom do you report the performed activities? (More than one answer is possible)	1.Cluster health center 2.Woreda health office 3.Regional health bureau 4.I don't know	
205	Can you tell me source of data for your routine report?(More than one answer is possible)	1.register 2.tally 3 Note book 4.By thinking my work 5.I do not know	
206	What is the purpose of information?	1.For planning 2.to prevent disease 3.for budget allocation 4. I don't know	
207	When we say data are accurate?	1.If all reporting unit submitted the report 2.If the data has mathematical errors 3.If the data reported within the normal schedule 4.Idon.t know	
208	What does complete data mean	1. If all reporting unit submitted the report	

No.	Questions	Coding categories	Skip to
		2.If the data has no mathematical errors	
		3.If the data reported within the normal schedule	
		4.I don't know	

SECTION THREE: ITEMS RELATED TO ORGANAIZATIONAL FACTORS

No.	Questions	Coding categories	Skip to
301	Have you attended training on data management (data collection, processing, and handling practice) ?	1.Yes 2.No	If no skip to Q 304
302	If Q no 301 yes, when did you take the training?	1. 0-6month 2. 6month-1 year 3.1year-2year 4.Above 2 year	
303	Are reference materials like standard guideline that support data management practice available in your HP?	1.Yes 2.No	
304	Do you have field book?	1.Yes 2.No	
305	Are reporting formats available in your HP?	1.Yes 2.No	
306	Do you have transportation?	1.Yes 2.No	
307	Do you have telecommunication service?	1.Yes 2.No	
308	Are you getting writing and presentation materials from concerned offices?(stationary)	1.Yes 2.No	
309	Do you have registration book in your HP	1.Yes 2.No	
310	Have you ever been supervised about data management by supervisors?	1.Yes 2.No	If no skip to Q 401
311	If yes to Q310, how often are you supervised?	1.Weekly 2.Monthly 3.Quarterly 4.Biannually	

SECTION FOUR: ITEMS RELATED TO TECNICAL FACTORS

No.	Questions	Coding categories	Skip to
401	Are CHIS materials simple and easy to understand?	1.Yes 2.No	If 1, skip to Q403
402	If no Q401,What makes the formats to be difficult to understand? (you can choose more than one)	1.Uncommon words/terms 2.Abbreviations 3.Formats are inconsistent 4.Others (Specify)_____	
403	Is there complexity of report forms?	1.Yes 2.Not	If 2, skip to Q405
404	If yes to Q403, what makes its complexity? (you can choose more than one)	1.to much format 2.frequent changeable format 3.English word format	
405	Have you faced challenges in your daily data collection activities?	1.yes 2.No	If 2, skip to Q 501
406	If yes for Q405, what is the challenge? (you can choose more than one)	1.Shortage of stationary 2.Complexity reporting formats 3.Transportation 4.Unwillingness of the community 5.Distance 6.Un presence of the community 7.No	

SECTION FIVE: ITEMS RELATED TO DATA MANAGEMENT PRACTICE OF HEWs

No.	Questions	Coding categories	Skip to
501	Does your health practice practice CHIS?	1.Yes 2.Partialy 3.No	If yes skip to Q 503
502	If Q 501 is No what is the reason? (More than one answer is possible)	1.incomplete resource 2.knwoldge gap 3.dificult to implement 4.partner influence 5. Negligence	
503	Do you record your daily activities?	1.Yes 2.No	If 2, skip to Q 508

No.	Questions	Coding categories	Skip to
504	If yes to Q503, which writing material do you use to record data? (More than one answer is possible)	1.Notebook 2 Field book 3.CHIS (FF) 4.e-CHIS	
505	If yes to Q503, do you use the collected data after converting it into information or report?	1.Yes 2.No	If 2, skip to Q507
506	If yes to Q505, for what purpose do you use the collected data?(More than one answer is possible)	1.For daily activities 2.For planning 3.For monitoring and evaluation 4.For management 5.Not use	
507	Do you reported the collected to woreda health office or cluster health center as per the standard?	1.Yes 2.No	If 2, skip to Q 510
508	If yes to Q507, how regular is your reporting habit?	1.Usually timely 2.Sometimes timely 3.Sometimes delayed 4.Usually delayed	
509	If you delayed for Q508, what is your reason for delay report?	1.Lack of capacity to compile and report 2.Over burden with other activities 3.Negligence 4.Other (Specify) _____	
510	Have you done LQAS as per standard?	1.Yes 2.No	

Annex III: English version data management observation checklist

My name is ---------------- and I would like to observe to your experiences in data handling and storage at your health post. The information that will be observed and collected will be for partial fulfillment of my master degree of General public health.

1. Code: ……

2. Date of observation: ……………..

No.	Observation items	Observation result	
		Yes	No
1	Document of daily collected data in 4th quarter 2011E.C		
2	Use of standard(CHIS,FF,Tally,report format for data collection		
3	Use of standard registration book(Nationally prepared registration book for data collection)		
4	Use of sub-standard registration book (manually prepared registration book for data collection)		
5	Presence of 12 week copies of weekly report in 4th quarter 2011E.C		
6	Presence of 12 month copies of monthly report 2011E.C		
7	Document of quarterly report 2011E.C		
8	Presence of performed activities in the form of tables, charts, graphs or maps for data of the last recent 4 quarters 2011E.C		
9	Document of kebele base line census data based on age and sex classification 2011E.C		
10	Document of the4th quarter 2011E.C health package counting survey conducted for the kebele		
11	Three consecutive minute of review work with stallholder and other staff e in 4th quarter 2011E.C		
12	Presence of 3 consecutive feedback from higher official in 4th quarter 2011E.C		

Annex IV: English version in-depth interview guide

My name is ---------------- and I would like to talk to you about your experiences in data management practice and storage at your health post as among the member of decision-making. The information that will be collected will be for partial fulfillment of my master degree of General public health. I will be taping the session because I don't want to miss any of your comments. Although I will be taking some notes during the session, I can't possibly write fast enough to get it all down. Because we're on tape, please be sure to speak up so that we don't miss your comments

Part I: General Information

No	Background Information		
1	Code		
2	Age of participant in year		
3	Marital status		
4	Educational level		
5	Work experience		
6	Setting	Urban Kebele (1)	Rural Kebele (2)
7	Date of interview		

Part II: Interview guide Questions for HEWs

1. What is data management mean? How are you practicing in your HP?

2. Do you thing data management is important to improve your work? How?

3. How do you see standardization, simplification and integration in data capturing, recording and reporting in the current data management practice?

4. To what extent does the senior manager support you about the data management practice?

5. What are the existing challenges/problems/ you are facing to your data management practice? How can this situations could be improved?

Thank you for taking the time to participate in this interview!!

Annex V: Amharic version information sheet and consent form

ስለጥናቱ መረጃና መጠይቁ

መግቢያ

ስሜ ------------------------------------- ይባላል በአሁኑ ሰዓት በባ/ዳር ዩኒቨርስቲ የድህረምረቃ ተማሪ ከሆነው ደረጀየ ኔዓለምጋርአብሬ እሰራለሁ፡፡

የጥናቱን ዋና አላማ በአሁኑ ወቅት በም/ጎጃም ዞን ባሉ ጤና ኬላዎች ውስጥ በሚሰሩ የጤና ኤክስቴንሽን ሰራተኞች ያለውን የጤና መረጃ አያያዝ እና የጤና መረጃ እንዳይዙ የሚያደርጓቸውን ምክንያቶች ለማወቅነው፡፡ እርስዎ ከዚህ ጥናት ተሳታፊ ይሆኑ ዘንድ ተመርጠዋል፡፡

ምንም እንኳ ይህ ጥናት የተደረገው የድህረ ምረቃ ሂደቱን ለማማሟላት ቢሆንም ነገር ግን ከዚህ ጥናትጥቅምከዚህበላይእንደሆነይታመናል፡፡ ይህ አሁን ያለውን የጤና ኤክስቴንሽን ሰራተኞች የመረጃ አያያዝ ሁኔታ ለማወቅ በአሁኑ ስዓት በመረጃ አያያዝ እያገጠሙ ያሉ ሁኔታዎችን አስመልክቶ ለመረዳትና መፍትሄ ለማፈላለግ ይረዳል፡፡

ይህ መጠይቁ ደግሞ ጥናቱን ለማከናውን ጠቃሚ ስለሆነ እንዲሞሉ በትህትና ይጠየቃሉ ስምዎም በመጠይቁ አይ ዛፍም፤ የሚሰጡትም መልስ ደግሞ ሙሉ በሙሉ ሚስጥራዊነቱ ተጠብቆ በጥናት እለት ብቻ የሚውልነው፡፡ ስለዚህ በሂደቱ ላይ እንዳስፈላጊነቱ በነፃነት ይሙሉ ምንም ሊያስፈራዎት አይገባም ከዚህ በላይ ደግሞ እርስዎ መሙላት የማይፈልጉት ጥያቄ ቢኖር መሙላት አይገዱዱም፡፡ለጥያቄው ከ25 - 30 ደቂቃ በቂ ሲሆን ምንም አይነት አስተያየት እና ጥያቄ ቢኖሮት የተሰጠውን አድራሻ በመጠቀም መልስ ያገኛሉ፡፡

በጥናቱለመሳተፍፈቃደኛነዎት?

አዎ ☐ አይደለሁም ☐

የጥናቱን ዓላማና ጥቅም በደንብ ስለተገነዘብኩ በጥናቱ ለመሳተፍ ወስኛለሁ

ፊርማ---------------------------ቀን-------------------------

የቃለ-መጠይቁ አቅራቢዉስም-------------------------ፊርማ----------------ቀን---------------

በመጠይቁ ለመሳተፍ ፈቃደኛ ከሆኑ ከዚህ ገጽ በታች ላሉት የምርጫ ጥያቄዎች አሉ መልሳቸሁን በማክበብና ለመልስ በተዘጋጀው ቦታ መልሳቸሁን በመጻፍ እንድትሞሉ በትህትና እንጠይቃለን፡፡

አድራሻ፡ደረጀ የኔዓለም ስልክ ቁጥር 0918800661

ስለትብብርዎ ከልብ እናመሰግናለን!!

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Annex VI: Amharic version questionnaire

<u>ክፍል0</u>:የጥያቄዎች መለያ ቁጥር----------------

001. የጥያቀዉ መለያቁጥር _____ ወረዳ_____ ቀበሌ_____

002.የመረጃ ሰብሳቢዉ ስም_____ ፊርማ_____ ቀን ___

003.መረጃዉ የተሰበሰበት ቀን _____/_____/_____ ቀን/ወር/ዓ.ም

004.መረጃዉን ያረጋገጠዉ ሱፐርቫይዘር ስም_____ፊርማ _____ ቀን -------

ክፍል 1፤ማህበራዊ ኢኮኖሚያዊና ስነ-ህዝብ ሁኔታን የሚዳስሱ ጥያቄዎች

ተ.ቁ	ጥያቄ	ትክክለኛዉን መመለስ	እሴፍ
101	ፆታ	1. ወንድ 2. ሴት	
102	እድሜ	--------------ዓመት	
103	የጋብቻ ሁኔታ	1.ያለገባች 2.ያገባች 3.የተፋታች 4.ባሳ የሞተባት	
104	የትምህርት ደረጃ	1. ደረጃ III ጤና ኤክስቴንሽን 2. ደረጃ IV ጤና ኤክስቴንሽን 3. ዲፕሎማ ክሊኒካል ነርስ 4. ዲግሪና ከዚያ በላይ	
105	የአገልግሎት ዘመን	----------------------ዓመት	
106	የሚሰሩበት ቦታ	1.ገጠር ቀበሌ 2.ከተማ ቀበሌ	
107	የሚኖሩበት መኖሪያ ቤት የት ነው	1.ከጤና ኬላግቢ ዉስጥ(ቀበሌዉ) 2.ከቀበሌዉ ዉጭ	

ክፍል ሁለት፥የጤና ኤክስቴንሽን ሰራተኞች መረጃ አያያዝ እውቀትን የሚዳስሱ ጥያቀዎች

No.	ጥያቄዎች	ትክክለኛዉንመመለስ	እሰፍ
201	መረጃ አያያዝ ማለት ምን ማለት ነው? (ከአንድ በላይ መመለስ ይቻላል)	1.መረጃ መሰብሰብና መመዝገብ 2.መረጃ ማጠናከርና መጠቀም 3.መረጃ ሪፓ`ርት ማድረግ 4. አላውቀውም	
202	የመረጃ መሰብሰቢያ መንገዶች ከምንላቸዉ አንዱ? (ከአንድ በላይ መመለስ ይቻላል)	1.ቃለመጠይቅ 2.ምልከታ 3.መዝገብ እይታ 4.ቤትለቤት በመሄድ (በዉይይት) 5.አላዉቅም	
203	ምሳሌ በጎጥሽ 200 አባውራ ቢኖርሽ እና 30 አባውራዎች የሚጠበቅባቸውን ሁሉን የጤና ኤክስቴንሽን ፓኬጆችን ቢያጠናቅቁ በፐርሰንት ምን ያክሉ አባውረሽ አጠናቀቀ ብለሽ ሪፓ`ርት ታደርጊያለሽ?	1. 15% 2. 30% 3. 13% 4.25% 5.አላዉቅም	
204	የስራ ክንውን ሪፓ`ርት በዋናነት ለማን ሪፓ`ርት ታደርጊያለሽ? (ከአንድ በላይ መመለስ ይቻላል)	1.ለክላስተር ጤና ጣቢያ 2.ለወረዳ ጤና ጽ/ ቤት 3.ለክልል ጤናቢሮ 4.አላዉቀዉም	
205	ለመደበኛ ስራዎች የሪፓ`ርት ምንጮ ምንድን ነዉ? (ከአንድ በላይ መመለስ ይቻላል)	1.መዝገብ 2.ታሊ 3.ማስታዎሻ ደብተር 4.በማስታወስ 5. አላውቀውም	

No.	ጥያቄዎች	ትክክለኛዉንመመለስ	እስፍ
206	መረጃ ለምን ይጠቅማል? (ከአንድ በላይ መመለስ ይቻላል)	1.ዕቅድ ለማቀድ 2.በሽታን ለመከላከልና ህክምና ለመስጠት 3.ገንዘብ ለማግኘት 4.ውሳኔ ለመወሰን 5.አላዉቅም	
207	ሪፖ`ርቱ ትክክለኛ(correct) መረጃ ነው የምንለው መቼ ነው? (ከአንድ በላይ መመለስ ይቻላል)	1.ሁሉም ክፍሎች ሪፖ`ርት ከላኩ እና ሁሉም የሪፖ`ርት ፎርማቶች በትክክል ሲሞሉ 2.ሁሉም መረጃዎች የሂሳብ /የቁጥር ስህተት ከሌለበት 3.መረጃው በጊዜ ገደቡ ውስጥ ሲላክ 4.አላዉቅም	
208	አንድ ሪፖ`ረት የተሟላ (complete) መረጃ የምንለው መቼ ነው? (ከአንድ በላይ መመለስ ይቻላል)	1.ሁሉም ክፍሎች ሪፖ`ርት ከላኩ እና ሁሉም የሪፖ`ርት ፎርማቶች በትክክልሲ ሞሉ 2.ሁሉም መረጃዎች የሂሳብ/ የቁጥር ስህተት ከሌለበት 3.መረጃው በጊዜ ገደቡ ውስጥ ሲላክ 4.አላዉቅም	

ክፍል ሶስት: የጤና ኤክስቴንሽን ሰራተኞች መረጃ አያያዝን ተጽዕኖ ሊያሳድሩ የሚችሉ አስተዳደራዊ ነገሮች የሚዳስሱ ጥያቀዎች (Organizational factors)

ተ.ቁ.	ጥያቄዎች	መልስ ሊሆኑ የሚችሉ	እስፍ
301	የጤና መረጃ ስርዓትን በተመለከተ ለጤና አክስቴንሽን ባለሙያዎች የሚሰጥ ስልጠና ወስደዋል?	1.አዎ 2..የለም	

ተ.ቁ.	ጥያቄዎች	መልስ ሲሆኑ የሚጌችሉ	እለፍ
302	ጥያቄ ቁ.301 መልስም አዎን ከሆነ ስልጠና የተሰጠው መቼ ነው?	1. 0-6 ወር ባለው ጊዜ ውስጥ 2. ከ6ወር-1ዓመት ባለው ጊዜ ውስጥ 3. ከ1-2ዓመት ባለው ጊዜ ውስጥ 4.ከ2 ዓመት በላይ	
303	በቢሮሽ ለስራሽ አጋዥ የሚሆኑ ማጣቀሻ መጽሐፍት (መመሪያዎች) CHIS Manual አሉ?	1.አዎ 2..የለም	
304	የመስክ መዝገብ/Field book አለሽ?	1.አዎ 2..የለም	
305	በጤና ኬላዉ የሪፖ`ርት ቅፅ አለ ?	1.አዎ 2..የለም	
306	ከወረዳ(ጤና ጣቢያ) እስከ ጤና ኬላ የትርንስፖ`ርት አገልግሎት (መጓጓዣ) አለ ?	1.አዎ 2.የለም	
307	የስልክ አገልግሎት አለ?	1.አዎ 2.የለም	
308	መረጃዎችን ለመፃፍና ለመለጣጠፍ የሚዉሉ ቁሳቁስ ከሚመለከተዉ አካል ታገኛላችሁ?	1.አዎ 2.የለም	
309	በጤና ኬላዉ መዝገብ አለ	1.አዎ 2..የለም	
310	ስለመረጃ አያያዝ ድጋፋዊ ተደርገልዎት ያውቃል?	1.አዎ 2.የለም	የለም ከሆነ ወደ ተ.ቁ 401 ይለፉ

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ተ.ቁ.	ጥያቄዎች	መልስ ሊሆኑ የሚችሉ	እስፍ
311	ለጥያቄ ቁጥር 309 መልስዎ አዎ ከሆነ በየስንት ጊዜ ነዉ?	1.በየሳምንቱ 2.በየወሩ 3. በየሶስት ወሩ 4. በ6 ወሩ	

ክፍል አራት: የጤና ኤክስቴንሽን ሰራተኞች መረጃ አያያዝን ሊያደናቅፉ የሚችሉ ቴክኒካል ነገሮች የሚዳስሱ ጥያቀዎች(Technical factors)

ተ.ቁ.	ጥያቄዎች	መልስ ሊሆኑ የሚችሉ	እስፍ
401	ሁሉንም የማኅበረሰብ መረጃ ፎርማቶች በቀላልና በግልጽ ለመረዳት ይችላሉ ?	1.አዎ 2.አይደለሁም	አዎ ከሆነ ወደ ጥያቀ ቁ 403 ይለፉ
402	መልስዎ አይደለሁም ከሆነ ግልጽ ላለመሆኑ ምክንያቱ ምን ይመስልዎታል? (ከአንድ በላይ መምረጥ ይቻላል)	1.ያልተለመዱ ቃላት መጠቀም 2.ቅጹ ቃለ-አጽሪፆ ቃላት መጠቀሙ 3.የቅጹ ወጥነት አለመኖር 4.የለም	
403	የሪፖ`ርት ማድረጊያ ፎርሞች ዉስብስብ ናቸዉ?	1.አዎ 2. አይደሉም	አይደሉም ከሆነ ወደ ጥያቄ ቁ 405 ይለፉ
404	መልስዎ አዎን ከሆነ ዉስብስብ የሆነብዎት ምክንያቱ? (ከአንድ በላይ መምረጥ ይቻላል)	1.የሪፖ`ርት ፎርማቶች መብዛት 2.በየጊዜዉ ፎርማቶች መቀያየር 3.ፎረሞች በእንግሊዘኛ መሆኑ	
405	የእለት ከለት ስራዎን ሲሰሩ (መረጃ ሲሰበስቡ) አስቸጋሪ የሆነብዎት ነገር አለ?	1. አዎ 2. የለም	የለም ከሆነ ወደ ጥያቄ ቁጥር 501 ይለፉ
406	ለጥያቄ ቁጥር 405 መልስዎ አዎ ከሆነ ምንድን ነበር (ነዉ)? (ከአንድ በላይ መምረጥ ይቻላል)	1.ትራንስፖ`ርት 2.የተገልጋይ ህብረተሰብ ፈቃደኛ አለመሆን 3. የቦታ ርቀት	

ተ.ቁ.	ጥያቄዎች	መልስ ሲሆኑ የሚችሉ	እለፍ
		4.የተገልጋይ ህብረተሰብ በቦታቸው አለመገኘት	
		5.የመመዝገቢያ ቅፅ ግልጽ አለመሆን	
		6.የመብራት አገልግሎት አለመኖር	
		7.የአቅም ችግር	

ክፍል አምስት፡ የጤና ኤክስቴንሽን ሰራተኞች መረጃ አያያዝ ተግባርን የሚዳስሱ ጥያቄዎች
(Data management practice)

ተ.ቁ.	ጥያቄዎች	መልስ ሲሆኑ የሚችሉ	እለፍ
501	ጤና ኤላፃ የማህበረሰብ ጤና መረጃ ስርዓቱን (CHIS)ተግባራዊ አድርጋችኋል	1.አዎ 2.በከፊል 3.የለም	መልስዎ አዎ ከሆነ ወደ ጥያቄ 503 እለፍ
502	ጥያቄ ቁጥር 501 የለም ከሆነ ምክንያቱ (ከአንድ በላይ መምረጥ ይቻላል)	1.የግብዓት አለመሟላት 2.የዕውቀት ችግር 3.ስራዉ አስቸጋሪ በመሆኑ 4.የአጋር አካላት ተፅኖ 5.ግዴለሽነት	
503	በየቀኑ የምትሰሩትን ስራ ትመዘግባላችሁ?	1. አዎ 2. የለም	መልሱ የለም ከሆነ ወደ 507 እለፍ
504	ለጥያቄ 503 መልስዎ አዎ ከሆነ የትኞቹን መረጃ መያዣ ትጠቀሚያለሽ? (ከአንድ በላይ መምረጥ ይቻላል)	1.ማስታወሻ ደብተር 2.የመስክ መዝገብ 3. የማህበረሰብ ጤና የቤተሰብ ማህደር 4.ኤሌክትሮኒክ የማህበረሰብ ጤና የቤተሰብ ማህደር 5.አላዉቅም	

ተ.ቁ.	ጥያቄዎች	መልስ ሲሆኑ የሚችሉ	እስፍ
505	ለጥያቄ ቁጥR 503 መልስዎ አዎ ከሆነ የተሰበሰበውን መረጃ (data) ወደ ጠቃሚ መረጃ (information) ወይም ሪፖ`ርት በመቀየር ለአገልግሎት ይውላል?	1. አዎ 2. የለም	መልሱ የለም ከሆነ ወደጥያቄ 507 እስፍ
506	ለጥያቄ ቁጥR 503 መልስዎ አዎ ከሆነ የተሰበሰበውን መረጃ ለምን አገልግሎት ትጠቀሚበታለሽ? (ከአንድ በላይ መምረጥ ይቻላል)	1.የእስት·ተ·ዕለት·ተግባርለማክናዎን 2.እቅድ ለማቀድ 3.ለስራ መገምገሚያ 4.ለአስተዳደራዊ ስራ 5.ለዉሳኔ 6.አልጠቀምበትም	
507	የተሰበሰበውን መረጃ ለክላስተር ጤና ጣቢያ ወይም ለወረዳ ጤ/ጥ/ጽ/ቤት በስታንዳRድ መሰረት ሪፖ`ርት ይደረጋል?	1. አዎ 2.የለም	መልሱ የለም ወደ ጥያቄ 510 ዕስፍ
508	ለጥያቄ ቁጥR 507 መልስዎ አዎ ከሆነ እንዴት ወቅታዊነቱን ይገልጹ·ታል	1.ሁልጊዜ ወቅቱን የተጠበቀ 2.አልፎ አልፎ ወቅቱንይጠብቃል 3.አልፎ አልፎ ይዘገያል 4.ሁልጊዜ ይዘገያል	
509	ለጥያቄ ቁጥR 508 መልስዎ አልፎ አልፎ ወይም ሁልጊዜ የሚዘገይበት ምክንያት ምን ሊሆኑ ይችላሉ?	1.ሪፖ`ርት ለመስራትየአቅምችግR 2.የስራ ጫና 3.ግዴለሽነት 4.አለዉቅም	
510	LQAS ትሰራላችሁ?	1.አዎ 2.የለም	

Annex VII: Amharic version data management practice observation checklist

(በማየት የሚረጋገጡ ጥያቄዎች)

ተ.ቁ.	በማየት የሚረጋገጡ ጥያቄዎች	በእይታ የተረጋገጡ	
		አዎ	የለም
1	በእየለቱ የተመዘገበ የ4ተኛ ሩብ ዓመት 2011መረጃ ፋይል አለ?		
2	በስታንዳርድ የማህበረሰብ ጤና መረጃ ስርዓ ት (CHIS FF) ፥ ታሊና ሪፖርት ፎርማት በመጠቀም ሁሉም መረጃዎች ተሞልተዋል?		
3	እንደአገር አቀፍ የተዘጋጀ ስታንዳርድ የጤና ኤክስቴንሽን መዝገብ ላይ ሁሉም መረጃዎች ይመዘገባሉ?		
4	ከማህበረሰብ ጤና የመረጃ ስርዓ ት ፎርማቶች ዉጭ(መዝገብ በማስመር በማዘጋጀት) የሚሰሩ ተግባሮች ተመዘግበዋል?		
5	የ2011ዓ.ም 4ኛ ሩብ ዓመት 12 የሳምንታዊ ሪፖርት መረጃ ፋይል አለ?		
6	የ2011ዓ.ም የ12 ወር ወርሃዊ ሪፖርት መረጃ ፋይል አለ?		
7	የ2011ዓ.ም የታሰረ 4 ኮፒ የሩብ ዓመት መረጃ ፋይል አለ?		
8	ወቅታዊ መረጃዎች በግራፍ ፥በሰንጠረዥ ፥እንዲሁም ካርታዎችን በመጠቀም የ2011ዓ.ም4 በጤና ኬላዉ ተግባራዊ ሆነዋል?		
9	የቀበሌዉ አጠቃላይ የስነ-ህዝብ መረጃ በዕድሜ በፆታ የተከፋፈለ ወቅታዊ መረጃ አለ? ፕሮፋይል የ2011ዓ.ም አለ?		
10	ወቅታዊ የሆነ የጤና ፓኬጅ መረጃ እስከዚህ ሩብ ዓመት የተሰራና በቆጠራ የተገኘ አለ?		
11	የተሰሩ ስራዎችን ከአጋር አካላት ጋር በቃለ-ጉባኤ በመደገፍ ተከታታይ 3 ጊዜ በ2011ዓ.ም 4ኛ ሩብ ዓመት አለ?		
12	ሶስት ተከታታይ የድጋፉዊ ግብረ መልስ ፋይል በ2011ዓ.ም 4ኛ ሩብ ዓመት አለ?		

የጤና ኤክስቴንሽን ሰራተኞች የቃለ ምልልስ ጥያቄዎች

ክፍል አንድ፤ ማህበራዊ ጥያቄዎች

ተ.ቁ	ጥያቄ		
1	ኮድ		
2	ዕድሜ በዓመት		
3	የጋብቻ ሁኔታ		
4	የትምህርት ደረጃ		
5	የአገልግሎት ዘመን		
6	የሚኖሩበት	የከተማ ቀበሌ (1)	የገጠር ቀበሌ (2)
7	ቃለ-መጠይቅ የተደረገበት ቀን		

ክፍል ሁለት፤የቃለ ምልልስ ጥያቄዎች

1. መረጃ አያያዝና አተገባበር ማለት ምን ማለት ነዉ? እንዴትስ በጤና ኬላ እየተተገበረ ነዉ?

2. የመረጃ አያያዝና አተገባበር ለስራዎች መሻሻል ይጠቅማል ብለሽ ታስቢያለሽ? እንዴት?

3. መረጃ በመሰብሰብ ላይ ባለዉ የመረጃ ስርዓት መሰሩት በቀላልና በተቀናጀ እንዲሁም በረቀቀ መንገድ የማቅረብ ሁኔታ እንዴት ይመስለቱታል?

4. በጤና ኬላዎ ውስጥ የበላይ አካላት የማህበረሰብ ጤና መረጃ ስርዓት በመደገፍና በማሣደግ ሂደት ውስጥ ያላቸው ጥረት ተሣትፎ ምን ይመስላል?

6. በአሁኑ ስዓት የማህበረሰብ ጤና መረጃ ስርዓቱን በመተግበር ሂደት ላይ እንቅፋት የሆኑ ችግሮች ምንድን ናቸው? እንዴትስ ሊሻሻሉ ይችላሉ?

መጠይቁን ለመሞላት ስለ ሰጡኝ ጊዜ እጅግ አመሰግናለሁ!!

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Annex IX:Table of Knowledge about data management among health extension workers in West Gojjam Zone, Northwest Ethiopia, 2019

Knowledge related items	N<u>o</u>	%
Meaning of data management $^\phi$		
Doing data collection and registering	260	54.4
Processing data and use	226	47.3
Reporting data for concerned body	115	24.1
Don't know	180	37.6
Data collection methods $^\phi$		
Interview	277	58.2
Observation	166	34.9
Recording review	172	36.1
House to house discussion	122	25.6
I don't know	135	28.2
Calculating percentage		
Correct	386	80.6
Incorrect	93	19.4
Purpose/use of data $^\phi$		
For planning	339	71.2
To prevent disease	205	43.1
For budget allocation	54	11.3
For decision	95	20.0
Don't know	130	27.1
Primarily to whom to report $^\phi$		
Cluster health center	445	92.9
Woreda health office	20	4.2
Don't know	29	6.1
Source of data for routine activities report $^\phi$		
Register	423	88.9
Tally	309	64.9
Note book	153	32.1
By remembering work	15	3.2
Other	15	3.2
Data accuracy $^\phi$		
If all reporting unit submitted the report	272	56.8

Knowledge related items	N<u>o</u>	%
If the data has no mathematical errors	154	32.2
If the data reported within the normal schedule	138	28.8
Don't. know	130	27.1
Data completeness *ɸ*		
If all reporting unit submitted the report	316	66.0
If the data has no mathematical errors	106	22.1
If the data reported within the normal schedule	131	27.3
Don'tknow	133	27.8
Overall on data management		
Good knowledge	262	54.7
Poor knowledge	217	45.3

ɸ: Because of possibility of multiple responses the percent do not sum to 100%.

Annex X:Table of Data management practices of health extension workers in West Gojjam Zone, Northwest Ethiopia, 2019

Variable	No	%
Health post practice CHIS according to the standard		
Yes	36	7.5
Partially	168	35.1
No	275	57.4
Reason for not practicing CHIS (n = 443) $^{\phi}$		
Incomplete resource	205	46.3
Knowledge gap	196	44.2
Difficult to implement	290	65.5
Partner influence	61	13.8
Negligence	46	10.4
Posting written list of health extension packages		
Yes	322	67.2
No	157	32.8
Recording daily activities		
Yes	407	85.0
No	72	15.0
Materials used for registering daily activities (n = 407) $^{\phi}$		
Notebook	369	90.7
Field book	63	15.5
CHIS (FF)	39	9.6
e-CHIS	2	.5
Using the collected data after converting it into information or report		
Yes	277	68.1
No	130	31.9
For what Purpose of the collected data used (n = 277) $^{\phi}$		
For daily activities	194	51.1
For planning	175	46.1
For monitoring and evaluation	198	52.1
For management	72	18.9
For decision	61	16.1
Reporting of the collected data to respective as per the standard		
Yes	479	100.0
Habit of reporting on the fixed time for report submission (n = 470) $^{\phi}$		
Usually timely	336	70.9

Variable	N<u>o</u>	%
Sometimes delayed	93	19.6
Usually delayed	45	9.5
Reason for delayed reporting habit *(n = 138)* $^{\phi}$		
Lack of capacity to compile and report	9	6.4
Over burden with other activities	139	98.6
Negligence	29	20.6
Doing LQAS as per standard		
Yes	62	12.9
No	417	87.1
Overall data management practice of HEWs		
Good practice	211	44.1
Poor practice	268	55.9

ϕ: Because of possibility of multiple responses the percent do not sum to 100%.

Annex XI :Table of Technical factors of health extension workers in West Gojjam Zone, Northwest Ethiopia, 2019

Variable	N<u>o</u>	%
Ease of CHIS materials to understand		
Yes	304	63.5
No	175	36.5
Reasons for difficulties to understand CHIS materials *(n = 175)* $^{\phi}$		
Uncommon words/terms	114	65.1
Abbreviations	140	80.0
Formats are inconsistent	122	69.7
Complexity of report forms to use		
Yes	316	66.0
No	163	34.0
Reasons for report formats to be complex *(n = 316)* $^{\phi}$		
Too much format	241	76.3
Frequent changeable format	248	78.5
English word format	127	40.2
Facing challenges in daily data management activities		
Yes	313	65.3
No	166	34.7
Type of challenge faced in daily data management activities *(n = 313)* $^{\phi}$		
Shortage of stationary	52	16.6
Complexity reporting formats	86	27.7
Transportation	113	36.1
Unwillingness of the community	91	29.1
Distance	111	35.5
Un presence of the community	41	13.1

ϕ: Because of possibility of multiple responses the percent do not sum to 100%.

Annex XII: Declaration form

Declaration

I, the under signed, declared that this is my original work, has never been presented in this or any other University, and that all the resources and materials used for the research, have been fully acknowledged.

Principal investigator

    Name:_____

    Signature: _____

    Date: _____

Advisors: The MPH thesis has been submitted for examination with my approval as a University's Academic Advisor

    1.Name: _____

    Signature: _____

    Date--------------------------

    2.Name:--

    Signature-------------------------------------

    Date:--