ADDIS ABABA UNIVERSITY
FACULTY OF MEDICINE AND FACULTY OF INFORMATICS
HEALTH INFORMATICS PROGRAM

Knowledge, Attitude and Practice of HealthCare Providers on Health Management Information System in Health Centers in North Shoa Zone, Oromia Region, 2010

By

Tegegn Kifle (BSC in public health)

July, 2010

Addis Ababa, Ethiopia

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A thesis submitted to the school of graduate studies of Addis Ababa University in partial fulfillment of the requirements for the degree of Master of Science in Health Informatics.

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SCHOOL OF GRADUATE STUDIES

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Acknowledgements

I would like to pass my deep hearted and foremost gratitude to my advisor Dr.Fikru Tesfaye for his precious advice, comments and versatile encouragement to carry out this study.

My heartfelt thanks go to Ato Abebaw Gebeyehu for his support and comments during data processing and analysis.

My great thanks go to all my research team including the supervisor and the data collectors who sacrificed their pricey time in carrying out the data collection for this thesis.

My thanks also extend to North Shoa Zone health departments, all Woreda health offices and all health center staffs for their highly appreciable cooperation and giving the required information for my work.

I would also like to acknowledge Addis Ababa University for sponsoring me to conduct this study.

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List of Acronyms

AOR = Adjusted Odds Ratio

ART = Anti-Retroviral Therapy

CI = Confidence Interval

COR = Crude Odds Ratio

HCPs = Healthcare Providers

HMIS =Health Management Information System

HR = Human Resource

HSDP =Health Sector Development Program

FMOH = Federal Ministry of Health

OPD = Out Patient Department

SPSS = Statistical Package for Social Sciences

TB = Tuberculosis

VCT = Voluntary Counseling and Testing

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Abstract

Background: The HMIS is a tool which could be used to improve health services. Nations all over the

world are demanding to improve their healthcare service delivery quality through HMIS. Currently HMIS is coming up as one of the hot issues initiated to be reformed and implemented in Ethiopia. The purpose is to revitalize the health service provision through evidence-based decision-making.

Objective: To assess the situation of Healthcare providers working in health centers of North Shoa Zone, Oromia region in relation to HMIS

Methods: A cross-sectional survey was conducted among all 301 HCPs in Oromia region, North shoa Zone, in all health centers in March 2010.The quantitative data were collected using self- administered based pre-tested questionnaire. The study was consolidated with in-depth interview. EPI6 was used for data entry and cleaning and exported to SPSS version 16 statistical package for coding and analysis. Descriptive analysis was done to calculate the knowledge, attitude and practice scores. To show the association between dependent and independent variables, odds ratio with 95% confidence interval was employed. Logistic regression analysis was done to control confounding effects amongst variables.

Results: 296 questionnaires were returned making the response rate 98.3%. The overall knowledge and attitude on HMIS basic concept was found to be relatively good. But not seem to correspond with practice as it is comparatively very low. About 70.61% of the respondents were found to have good knowledge. The favorable attitude score was also found to be 81.08%. Concerning the practice, only 20.6% of the respondents were found to have good practice and significantly associated with unmarried marital status [COR=3.22(95%CI=1.80, 5.75)] and [AOR=2.67(95%CI=1.28, 5.59)].From professional category, degree holders had better practice of HMIS [COR= 2.93(95%CI=1.37,6.24)] and [AOR=2.93(95%CI=1.06,8.11)]. According to the in-depth interview result, lack of trained and full time HMIS workers, unstandardized data collection and reporting tools were underlined as the main factors for malpracticing of HMIS at the health centers.

Conclusion: Although the practice of HMIS neglected, the knowledge and attitude status of the HCPs on basic HMIS concepts was relatively found to be good. As a result, the HMIS status in general was found to be very poor in the study area.

Recommendation: Motivation and Training of HCPs on HMIS, provision of standardized data collection, and reporting tools, allocation of properly trained and full day HMIS workers with sustainable supportive supervision at each health centre were recommended to be given due consideration.

1. Introduction

1.1. Background

The HMIS is an instrument which could be used to improve patient satisfaction with health services by pathway certain range of service quality. The aim of a HMIS is to advance the capacity to collect, store and analyze accurate health data, to improve service delivery efficiency and effective use of information at data generation site at different levels of health sectors. Another function of HMIS is to organize data from diverse subsystems to share and distribute them to the various users for public health interventions. Only few countries in the globe today have valuable and comprehensive health systems in a position to collect and use data **(1).**

Nations all through the world are struggling to increase their health services delivery quality using HMIS. This is true for the developing countries including Ethiopia. Unfortunately, the status of HMIS in Ethiopia is remained very poor when compared to other low-income countries. The patient/client record handling, reporting system and utilization of health information for evidence-based decision making, planning and budget allocation is extremely low. These by large attributable to potentially preventable infectious diseases, nutritional deficiencies and burden of ill-health, alarming population growth rate, low educational level and poor access to the health services. At health facilities where adequate information is collected and a considerable effort has been done to be practice, it is often n t available for use at the local level particularly at health level (**3**).

The Ethiopian HMIS has previously been incapable to respond either qualitatively or quantitatively to the health needs of the community. As a result, the FMOH of health has initiated new HMIS as of today it is being started to be put into practice at different levels of the health sector in Ethiopia. Even though the importance of HMIS at all level of health sectors well recognized, actions were not taken actively yet (**2, 3)**.

The HMIS draws its data from routine service and administrative records provide an ideal source for indicators that are evaluated commonly to monitor health program implementation and indicator definition. The information that is most readily available for timely monitoring also obtains from these sources. It has also been clearly described in the HSDP III strategy (**3)**.
The HMIS strategy is mainly meant for information use for appropriate public health intervention before and after any ill- health events occurred to mention few such like integrated disease surveillance response is currently in practice (**2, 4).**

One of the foremost elements of HMIS is medical record which exists for life long as far as the patient alive. This record is multifunctional document kept by healthcare organizations. It is used to communicate and document critical information about patient's medical care by the health care professionals. A complete medical record is crucial in the quality and efficiency of patient care during the health facilities visits and in subsequent follow-up visits. This is because, it can provide a complete and correct chronologically ordered of patient illness history, physical examination results, investigation results, treatments and future plans for care (**5, 6)**.

In most cases, the paper-based record is considered as the golden standard for patient medical record documentation. But there are healthcare organizations that used computer- based documentation, but, not yet fully replaced the paper- based system rather; a combined documentation system has been in use. The paper- based medical record is still the preferred source of health information for the daily health service delivery in low-income countries including Ethiopia for numerous reasons (**7)**.

1.2. Statement of the Problems.

The HMIS with trained and knowledgeable HR problems in developing countries are by far higher compared to developed countries. In spite of rising awareness to the acute lack of HMIS trained health care workers, solutions to the HR scarcity are hard to attain, especially in the poorest

countries. Although we are conscious about the problems and some HR strategies have developed, due to severely affected old and traditional health systems and poor managing HR for HMIS, situations are not on the correct ways.

When we see the HMIS status in Ethiopia at health facilities and at health administrative office levels, we encountered tremendous HMIS problems throughout the levels. Just to mention few: inconsistent data collection and redundancy and unable to use the available health information for the public health intervention. Irrelevant, too much and unanalyzed data at the point of collection, incomplete and untimely report, limited evidence-based planning are also common problems in HMIS activities. Lack of systematic data collection and lack of well defined indicators are also prominent problems especially at health facility levels. From other angles, poor HMIS strategy planning, lack of communication and coordination in the health system including lack of supportive supervision and feedback are some of the managerial insufficiencies. Unreliable HMIS due to low quality, being unvisionary by the health managers for HMIS, lack of motivation and confidence of HCps for their job performances with regard to HMIS etc are some of the copious problems which seriously affect the HMIS in Ethiopia (**3, 8&10**).

Therefore, it is mandatory to assess the HCPs knowledge, attitude and practices on HMIS in order to take constructive and practical interventions on them.

1.3. Rationale and justification of the study.

A HMIS is an essential means for planning, implementing, monitoring, strengthening and managing the overall health service activities in the health centers. In other way, HMIS enables us monitoring of health service delivery in terms of plan achievement, resource use, HR, disease trends and profile and health outcomes. HMIS benefits in support of health systems performance assessment in general and to address deficiencies and gaps in the health services has often been recommended by researchers. The main issue is realy by using the paper-based HMIS can deliver quality of healthcare services to the most extent that would bring about improvement in patient satisfaction with the health centers for the services provided. Although HMIS is a key factor for the effectiveness of health program, almost no work has been done to assess knowledge, attitude and practice of HCPs on HMIS and to establish it in Ethiopia. There was also no study carried out on the same issue in North Shoa zone, Oromia region.

HMIS is highly considered to be within the priority sets by the Health Sector Development Program (HSDPIII) strategic plan. It is initiated as one of the burning issues to be implemented in Ethiopia **(10)**. Therefore, it was found to be indispensable to assess how the HCPs perceive and practicing HMIS and to identify their knowledge gaps on it to recommend interventions on HCPs for improvement of HMIS. Furthermore, we anticipate that the result of this study will be used as a base line for the future researchers interesting in this area, planners, evidence based policy makers and other stakeholders who want to use this work as reference.

2. Review of Related Literature.

2.1 Anticipated benefits of implementing the HMIS.

Nowadays, there are tremendous imperative HMIS associated circumstances to public health issues facing many nations all over the world. The anticipated benefit of HMIS in HCPs perspectives imposes on the HCPs sensitivity towards patients (**7).**

HMIS is a very crucial and all rounded factor for the effective improvement of health conditions of the community. HMIS background can be positively or negatively affected by status of knowledge and attitude of personal characteristics of the HCPs. whereas directly or indirectly affected by patients/clients as well as the community at large. HMIS stands for all health sector levels to support health organizations objectives for performance improvement. It also used for supportive supervision process. HMIS is measured by whether information is continuously used to evaluate policy impact, and whether the data are locally processed and used to solve the identified problems at data generating sites. It is used for sufficient quality information to create a basis for the ongoing monitoring and evaluation of the health programmes. A report done in Zambia revealed that there is wide-reaching effort to build up the experience of evidence-based policy and decision-making, to identify problems and set priority, and to make action oriented plan, allocating resource, set objectives and to develop implementation strategies (**15, 18**).

Another most important anticipated benefit of HMIS is enhancing community awareness which increases the quality of healthcare services resulting in improved patient satisfaction through better communication. This will in turn promote the appropriate use of the health services by the community at large. It helps us to understand the health needs and aspirations of the community. Data are obtained through the multifaceted nature of the HMIS which will help us in understanding the perceptions of the population and the factors influencing health services utilization. This will eventually allow strong prediction for the development of a health system providing to the needs of the local population. Hence, improved healthcare service coverage and quality of the services could be anticipated outcome (**19**).

According to a survey in Burkina Faso on HMIS found that patients sensed that services were suited more towards their needs after HCPs had received training on patient service recordings. The knowledgeable HCPs on HMIS could benefit from the information generated by an HMIS. It could help them re-arrange their service by adopting a more kindhearted patient/client-centered

approach. They adjusted their attitude and introducing a welcoming atmosphere at health service outlets based on the feedback of their clients (**8**).

In general, quality, well designed and managed HMIS results in the reliable, consistent and better health service delivery (curative, preventive, promotive and rehabilitative) to the community. This can be achieved at all levels of health service delivery points as well as health administrative offices. As it clearly stated in HMIS for Ethiopia, the cornerstone to implement HMIS is HR who are working in the health sectors in particular those who are working at health facilities level. This is because the health facilities are the primary producers of HMIS data. HCPs collect data on patients/clients encounter forms and aggregate them primarily for the patient's own benefit. Secondly, they deliver the data to administrative levels via a routine report. For sure, sometimes health data are obtained directly from populations. Most health data generated during the provision of routinely clinical services at the time of recording and reporting of services at the health facilities. The District health offices are supposed to give first line supervisory support to health facilities in particular to primary healthcare units from which most health data are originated**(3, 14).**

2.2 Situation of HMIS.

According to HMIS guideline in Ethiopia, there are no standard tools to collect data when patients/ clients interact with health care givers at health facilities. There are also little standardized HMIS reporting forms. The end result of this will cause information from one location not be comparable to that of another location.

In many instances, standardized instruments that do exist are often determined by the requirements of certain programs, whose information needs may in turn be determined by donor reporting requirements. Data use remains very weak within the health sectors, particularly at the health center levels. The current HMIS progression is very low in Ethiopia in terms of appropriate HMIS staff assignment with assigned tasks and responsibilities. Very little integration of the recording and reporting formats for different health service entities are common problems at health centers**.** Absence of well developed guidelines for HMIS is also impassable mess in the health system.

The consequence is that the same information may be recorded several times, creating unusable large data burden. Yet the HCPs may lack essential information on other services provided. In

Ethiopia, currently a useful starting point is initiating on HMIS as pilot at selected hospitals with training of HCPs (**10, 13)**.

A typical survey was done at Adama Hospital in which a pilot test organized after HCPs were trained in all aspects of the new HMIS. The training included: registers with instructions for all department service wards, patient admission and discharge cards for inpatients and appointment for follow up. Master patient index cards, integrated folders and reporting formats for the newly reformed HMIS were also included in the training. It was being confirmed that it is possible to reduce the accumulation of numerous and unnecessary records for the same patient as compared to previously a patient typically received a new card for each visit to one health facility. Because of this, HCps would never know the patient's past medical history in that facility since they used a new card for each encounter. This fragmented recordkeeping led HCPs to make errors during diagnosis and treatment. The introduction of the new HMIS forms was initially received unfavorably by HCPs who erroneously anticipated more paperwork. An effective and standardized HMIS can help to improve health service delivery through proper data collection and interpretation for informed decision-making locally in the health facility (**21**).

There is also reform of the HMIS began with a BPR assessment. This technical and process assessment identified lack of standardization and duplicative information recording and reporting processes as two major barriers to providing quality information efficiently. This document contains the revisions in recording tools and reporting procedures proposed to standardize and simplify the HMIS. The HMIS captures much of its service and disease surveillance data from patients/clients records that HCPs maintain for care and follow up at health centers. HMIS simply utilizes this routinely established procedure and builds on its potential without itself imposing a totally separate requirement. Obviously there is a need for close integration between patient/client recording and HMIS reporting in order to avoid information inconsistency and data burden as one mechanism. Patients/clients need to have a unique record number where ever they received it and got the healthcare services (**10, 11**).

One study done in Ghana aimed at assessing strengths and weaknesses of HMIS from which the overall assessment for Health Service records was found to be adequate but still needed to be strengthened. In general the HMIS in Ghana seems to have developed in response to demands made by the overall health sector reforms. Quality of health information with regards to morbidity data generated from the routine health facilities were assessed as being very high (94%).

Population based surveys which was given a score of 93% was also showed direct response to demands made on the system by developments in the health sector. However, some weaknesses were identified: resources and data management had the lowest scores which were reflection of the limited emphasis given to the overall development of health information in Ghana. The HMIS of Ghana has been designed to capture data on volume of services delivered rather than quality. There was duplication of data collection forms and sometimes there were more than three different data collection tools being used to capture the same data. In this country, it was found that data collectors at the facility level hardly use for decision making the data they collected. The system was data-driven and not action driven. The study also showed that the culture of information use throughout the health system also remained a major dispute in Ghana which is very comparable with Ethiopia (**22)**.

Based on the assessment result, they recommended developing a comprehensive health facilities wide system for HMIS to include all HCPs, health commodities and to review data collection tools for the health facilities. They also decided the legal framework for data reporting within the health sector to synchronize the existing data collection mechanisms and tools. Capacity building of health information officers, training organizations to improve the HR base for data collection and management were also their steps to improve their HMIS. Implementing the concept of unique identity codes for health facilities, enhancing the development of strong evidence based planning systems at all health sector levels and disseminate health information after developing the health information resource centers were taken as intervention (**22**).

A nationwide survey conducted in Ethiopia for information system across all levels of the health system showed that the median number of staff assigned for HMIS was found to be one. Typically, that staff member reports spending an average of 16 hours per month (10% of working hours) on HMIS tasks. The survey also confirmed that there is considerable regional variation. In Addis Ababa and Tigre HMIS staff spending an average of 40 hours per month (25% of their time) on these tasks. While in Gamelan HMIS staff used averagely 2 hours per month (almost 1% of their time). There is also considerable variation across levels (**21**).

At most regions and at the federal level HMIS staff report spending all their time on HMIS tasks. HCPs working at hospitals spent 25% of their time and at district health offices and health centers spending 10% or less time on HMIS activities. This unacceptable practice was mostly due to absence of knowledgeable and responsible staff for HMIS. This indicates that the HCPs have less

awareness and poor attitudes towards HMIS. However, at all levels the HMIS workers should spend their whole working time for the HMIS tasks (**21, 24**).

A report on HMIS in Pakistan indicated that HMIS has now been implemented in a phased manner and more than 90% of primary health care facilities are using it. Although a sound and basic health infrastructure available, the majority of facility-based HMIS currently only track type and quantity of services related to improve the health status indicators. On the same report it has been depicted that HMIS can be easily adopted in resource-constrained healthcare settings in developing countries (**18).**

A report on HMIS by ESHE Ethiopia suggested that to provide District level managers with usable information, all facilities report to the Districts should be well organized, integrated and timely reported. This information also should be valid and appropriate to increase the effective utilization of quality health services **(39)**.

An important experience was learned in one research conducted in Ethiopia on HMIS emphasized topic. The study was an interventional study on the development of patient registration and medical records management system. The finding indicated that a well-organized medical record management system can be effective to improve patient information access and completeness in healthcare delivery points in developing countries despite the lack of resources (**5**).

Capacity for effective HMIS in Ethiopia at all levels remains poor mainly due to the overall shortages in HR, lack of knowledge and unfavorable attitude. Such problems contribute to the failure to use data as a basis for informed decision-making and planning. One of the major concerns relating to the HMIS refers to have quality health information to measure health indicators but still in crisis. Therefore, HMIS needs to be investigated at all levels of health sectors to take evidence-based intervention on HCPs.

There are various factors influencing the successful implementation of a HMIS. Several authors have identified these factors and issues contributing positively or negatively to the successful implementation of HMIS into health centers.

The health system in developing countries has changed drastically in the last few years from a centralized system with hierarchical reporting to a decentralized system. Health systems in a

centralized system only used to focus on disease entities and death reporting from individual health units to the district and national level keeping the chains. With the introduction of a decentralized system there has been significant change in using and managing the health information. The focus of this system is to use information at the point of collection. The FMOH of Ethiopia emphasized on this system through the implementation of HMIS. Decentralization system gives more freedom for HCPs where they precede HMIS. It gives responsibilities for HCPs working at each point of healthcare delivery. This system needs more skilled and accountable HMIS officers for the data to be handled in a good way at all levels of health care system on a nationwide level (**23, 32**).

An assessment done in Ethiopia on Ethiopian national HMIS in March 2007 showed that 50% appropriate data collection methods were present but not adequate. In general, the assessment depicted that as there were deficient in all angles of the HMIS. Efforts should be made on the flow of information to be through single channel along with other reforms. The HMIS activities should be with the involvement of all stakeholders and special emphasis needs to be given to those HMIS components which showed the least performance. It also strongly recommended that a great deal of effort should be exerted on the management, dissemination and use of data (**24)**.

A study which used both qualitative and quantitative research conducted in two Health facilities in Uganda in Busia district to establish the type of health data/information generated at the health units and how it is processed and stored. This study described the levels of utilization of health data/information and to assess the level of flow of data/information to and from the health unit using self-administer questionnaire. The study also included key informant interviews and a Semi - structured questionnaire.

The findings indicated that most health delivery points inherited a very fragmented paper-based information system. All the health delivery points that were visited did not have a resource centre and therefore poor data storage. Lack of resources, inadequate and unskilled manpower, poor motivation and record misplaced were the major constraints facing HMIS. From the findings it is concluded that the HMIS and utilization of it is still inadequate and recommended as there is a need to establish record offices/resource centers at all health centers. In general, the study indicated that to establish, implement and to have good practice of HMIS. The basic thing is first to acquaint the HCPs with principles of HMIS to make them responsible and accountable for routine health service records. It is also important to orient HCPs information are their duties.

Enhancing use of data at data generating site and assigning focal person for overall HMIS activities at the health facilities level (**25**).

A study conducted in South Africa on patient medical records had shown that improving HMIS performances have the potential to improve the outcomes of clinical practice. The study depicted in the system of paper-based medical records, the only course of action to prevent omission of information is by standardization of medical record forms and continual education of HCPs regarding the importance of complete medical records. It was also stated on the same study that errors were apparent in paper-based medical records include illegible hand-written entries, medication orders, and confusing abbreviations. These all have the potential for serious complications to the patient that could easily be avoided using an electronic health records but it is not the aim of this study to address this gap in the literature (**26).**

A survey done in Ethiopia showed that one of the challenges which influence the implementation of HMIS at health centre level is the running costs for both personnel and patient / client records. It is estimated that the cost that incurred for HMIS can be reduced by 25% by reducing the data collected and modifying the disease reporting and tallying process. It was also confirmed that in best Practiced regions improvements in planning and monitoring practices go hand in hand with improvements in the information systems. The prevalence of practices that use information to improve service is a key indicator of HMIS performance desired HMIS system (**11**).

2.3. The status of knowledge and attitude towards HMIS among HCPS.

In the age of knowledge the need of information system for all professionals is obligatory to be well acquainted in information system as per the type and mission of the organization. Knowledge is very important resource which has been ignored in using and making sustainable HMIS efforts. Knowledge provides the foundation for changing attitude and is enhances practicability in the line of predetermined objectives in the health system. It also facilitates communication among health professionals coming from different backgrounds such as health officers, nurses, pharmacists, laboratory technologists & beneficiaries on HMIS. Currently, the issue of knowledge use in HMIS is assuming an important element in the world. To this effect there is a need to identify knowledge level, attitudinal status and design intervention for sustainable and good practice of HMIS. In this regard there are different studies which had been done to identify shortcomings and to propose solutions accordingly.

Currently HMIS is coming up as burning issue to be established at all levels of health sector in Ethiopia. However, as several guidelines and literatures pointed out HCPs at all levels especially at health services delivery points are lacking knowledge in HMIS. Even have poor attitude towards HMIS even though the knowledge of HMIS is on the way of wide spreading without well-deepening to the required extent to practicing in the right track. A typical survey conducted in Ghana revealed that, HR accessibility and HCPs knowledge and skill building for HMIS remains a challenge in the health facilities (**22)**.

One of the basic problems faced by the health sectors tackling different health services lies in the issue of gathering valid and reliable health information that will enable the health sectors to smoothly manage the changes occurring in the health system.

No comprehensive survey has been conducted to measure knowledge and attitude of HCP on HMIS in Ethiopia. However, a survey conducted in Tanzania on HCPs knowledge and attitudes towards HMIS and to assess quality of data indicated that 8 in 10 HCPs have heard about HMIS but unfortunately many of them did not have adequate knowledge about HMIS. Only 10% of these HCPs correctly identified the HMIS functions. 20% of those who knew HMIS always provided information to patients/clients and they record information from patients but they did not knew the primary purpose of recording information. This implied that HCPs need to be well trained about HMIS. In the same country and study reported that using a structured questionnaire and health facility heads interview showed that although knowledge on HMIS concept was found to be associated with improved quality of data, training in HMIS did not give the impression to correspond with improved quality of data. Regardless of duration, supervision had no relationship with quality of data thus raising serious doubts on its quality (**27**).

Presence of a focal person, responsible for day to day HMIS activities, had a positive influence on the quality of data where facilities with a focal person had a higher data completion rate (69.9%) compared to those without (44.7%). Queries on delay in sending report had no influence in quality of data and they concluded that training followed by supervision in HMIS is necessary. There is need to re-examine the approaches used in training and supervision to focus on actual needs of HCPs (**27)**.

Another research done in Uganda about the HMIS reported that information not more than10% used for health care action at the site of data generation. The reason that was considered was incorrect and as not helpful for decision- making. 20% of the information enters in a register was ever never used to improve health service delivery in any important means. One of the most serious attributable factors for the malpractice and for unused the HMIS that has reported was unskilled and poor knowledge and unfavorable attitude of HMIS working at health facilities towards HMIS (**28**).

Even though the HMIS recording and reporting tools are not well formatted in Ethiopia, currently the medical records and related information stocked up at health centers. It also reported to higher levels keeping the chains in assumption for the purpose of resource allocation, planning and for any public health interventions. Hence, assessing the attitude and knowledge levels of HCPs on HMIS is obligatory before initiating whichever intervention and decentralizing the newly reformed HMIS to implement at the health centers level .Therefore, behavioral interventions are needed to change HCPs attitudes towards their own roles in the health centers (**33 and35**).

HCPs knowledge and attitude status are the determinant factors for implementation of HMIS to improve the efficiency and quality of health care services that patients/clients receive. The generated health information to be utilized by the health planners, health managers, health researchers, educators and policy-makers the knowledge of HCPs in particular is very important (**23, 36**).

A study report on research investigating the HMIS implementation process and active strengthening in Uganda revealed that bottlenecks rose during implementation. The reasons were multiple processes nature than the HCPs expectation when endeavoring to comprehend the causes of HMIS obstacles in implementation phases. And also the HMIS practitioners were not knowledgeable when they were promoting an informational approach to HMIS. Changing from a centralized reporting system to HMIS supporting use of information at the level of collection was also a challenge due to poor knowledge. Additionally, designing strategies to facilitate this approach was not advocated (**29**).

Different Studies that have been done in sub-Saharan countries revealed as there was resistance from HCPs against implementing HMIS. The struggle on HMIS in these resource poor countries was aimed at to ensure the routine record keeping to the extent of sufficiently high quality.

Another purpose was to improve the paper based system before considering the use of information technology systems just like currently attempting in Ethiopia (**16, 30).**

Another survey conducted in North Gondar to assess the utilization of HMIS confirmed that the health center heads were responsible for Statistics work in the health centre. The overall coordination of all activities related to HMIS also left for them as additional work. Moreover, they were also responsible for monitoring and evaluation activities in the health center. In this survey, in all studied health centers the common data collection and reporting tools were manually filled formats. Among the total HCPs interviewed about these tools, 86.6% of them did not face any practical difficulty in filling the formats. But the rest faced problem of filling the reporting formats. Some of the problems encountered understood and complexity of report formats (**9**).

It was also clearly depicted that 23% of the studied health centers had standard data collection tools and 77% did not have it. Based on the individual HCP response working in the study area, about 58% of them did not organized and documented properly their registration books and monthly reports. 28.9 % of them completely did not have registration books and monthly reports copies. Among the total HCPs interviewed about their feelings of data generation, 49.9 % of them showed that there was problem of timeliness of reports. 43% of them also showed that lack of trained HR. 3.0% of the respondents reported the presence of untimely feedback (**9**).

In this study, it was concluded that in the majority of the health centers, the quality of the HMIS was poor and the practice of using health information by the HCPs was low as they lack knowledge in HMIS. Finally they recommended solutions as per the problems they identified.

In summary, the HMIS principles (standardization, simplicity and integration) and methods provide the foundation for public health. In other words, using HMIS information locally at the site of collection for decision-making appropriately can avoid drawing false conclusions and recommendations. For all aspects of HMIS activities, HCPs are the central key player. Whatever resources and health data a country has, they cannot be used by themselves for any public health actions without HCPs intervention. For these resources and health data to be used, they need HCPs at each level with their knowledge and good attitude.

In the near future, one can anticipate that health planning and other public health practices particularly at the healthcare delivery point levels will be substantially improved by development

of appropriate HMIS. That is, via the application of newly reformed HMIS to public health practices.

Ideally, each HCP will have the potential to link together health information from a variety of data sources. This helps to recognize and compare local and wide area data patterns that suggest which public health interventions can be applied and effective. Lack of knowledge, unfavorable attitude and shortage of appropriately trained HCPs in HMIS are the main setbacks to use health information at generating site at health centers throughout the study area.

3. Objective of the study

3.1. General objective

- To assess the situation of Healthcare providers working in health centers of North Shoa Zone, Oromia region in relation to HMIS.

3.2. Specific objectives

- To assess the knowledge and attitudes of Healthcare providers on HMIS at health centers in North shoa zone, Oromia region
- To assess the practice of Healthcare providers on HMIS at health centers in North shoa Zone, Oromia region

4. Methods and materials

4.1 Study design

A descriptive cross-sectional study using both quantitative and qualitative method was employed to assess knowledge, attitude and practice of HCPs on HMIS at health centers in North shoa Zone, Oromia Region.

4.2 Study area and period.

The study was conducted in North shoa Zone Oromia Region. North shoa Zone is located to the North from Addis Ababa. The zone town is Fitche which is located 112 kilometers to the North from Addis Ababa. North shoa zone has a total area of 9775.32 square kilometer. The zone is divided into267rural kebeles and 23 urban kebeles and its altitude ranges1100-2800 meters above sea level. The climate of this zone is ranges from “Qolla” (23%), “Woinadega” (42%) followed by “Dega” (35%)”.

The total projected population of North shoa Zone of Oromia Region in 2008/09 is estimated to be1603548 of which724172 is males’ and735046 are females. A total of 1459218 (91%) people live in rural areas and144330 (9%) live in urban areas. The health coverage of the zone is 93.3% in 2008/09 fiscal year. There are 13 District health offices which are accountable to their respective district administration. There is one Zonal Hospital run by Oromia health bureau and there is also one District hospital which is under construction. There are 29 functional government health centers all of which are run by their respective District Health offices. Pertaining the private health sectors, there is one higher clinic, 10medium clinic, 43 lower clinics, 16 drug stores and 8 drug vendors in the Zone.

Concerning the HCPs working at health centers, there are 32 health officers, 35 BSc nurses, 163 Diploma nurses, 7 BSc midwives, and 19 Diploma midwives,18BSc laboratory technologists, 10 diploma laboratory technicians, 7 BSC pharmacists, 13 diploma pharmacy technicians and 4 health assistants. A total of 308 HCPs working in the health centers in the zone and 7 of them were heads of health centers that were included for qualitative study. In addition to these there were 34 environmental and health education workers and out of these, 22 were health centers heads.

4.3 Source population. All clinical HCPs and health center heads working in Health centers of North shoa zone, Oromia Region at the time of the survey.

4.4. Study population

Those clinical HCPs and health center heads who presented during the day of data collection at the health centers of the zone were study population.

Inclusion criteria for quantitative study

Those permanently employed clinical HCPs and if head of the health centers are clinical HCPs and not included for in-depth interview were included in the quantitative study. During data collection time, voluntary participation of the study subjects was also considered to be included in the survey.

Exclusion criteria for quantitative study

Those nonclinical and nonpermanent employed health workers excluded from the quantitative study.

4.5. Sample size determination

In this study, the total HCPs in all Health Centers under North Shoa Zone of Oromia Region were taken as study subjects for the quantitative method. Thus, we had avoided sample size calculation procedure at all to have the likelihood of access to all source population and at the same time to get rid of sampling error. Hence, questionnaires were prepared for all HCPs working in all health centers whom were determined to be study participants in this study. Twelve health centre heads were purposively taken for the qualitative study.

4.6. Study variables

4.6.1. Independent variables

Socio-demographic characteristics including: Age, sex, marital status, religion, ethnicity, professional category, salary, year of services and responsibility.

4.6.2. Dependent variables

Knowledge of respondents' outcome on HMIS

Attitude of respondents' outcome towards HMIS

Practice of respondents' outcome on HMIS

4.7. Sampling procedure

There are 29 functional health centers within North Shoa zone from which all 301 HCPs have been taken to be included in the study. HCPs in each health centre were listed according to the

professional category. For qualitative study, twelve health centre heads were taken as key informants by using purposive sampling technique.

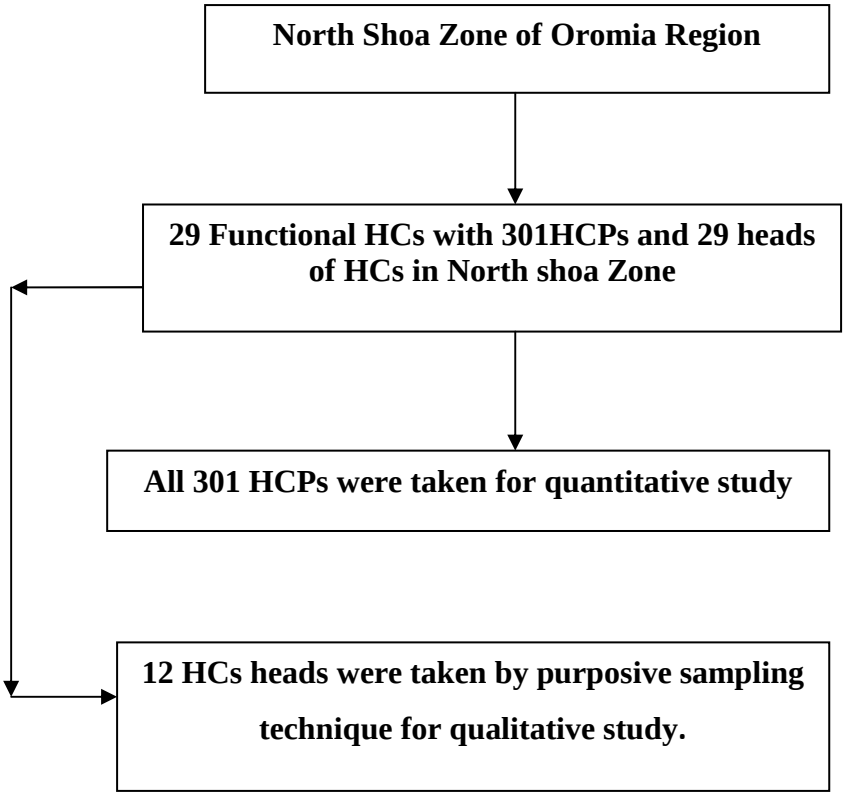

Figure-1.Diagrammatic presentation of sampling procedures

Note: For selection of the HCs heads for the in- depth interview by the assumption of having role in the HMIS of the HCs.

HCs: Health Centers.

4.8. Data collection procedures

The last revised description of the English questionnaire was developed after appropriate literatures were reviewed. Two combined most important data collection methods were employed in this study namely: structured questionnaire and in-depth interview. The questions that were organized in the questionnaire were assembled and accustomed after meticulously revised. Quantitative data were collected using pre-tested structured questionnaire.

The knowledge was assessed by coding the response 1(one) for correct answers and 0(zero) for incorrect answers including yes or no answers with some reserved and short answers and closed

ended questions. Responses of the respondents on HMIS were assessed and concluded by analyzing their response scores to a set of questions prepared on knowledge, attitude and practices. Respondents who scored greater or equal to 2nd quartile (≥50%) were Categorized as having ‘’Good” knowledge and while those scored less than2nd quartile (<50%) were categorized as having poor knowledge.

Attitude was also assessed by seven questions. To measure attitude of the study participants, questions were prepared with the Likert scale. The result was assessed by scoring favorable responses as 1(one) and as 0(zero) for unfavorable responses. Attitudes of the respondents who scored equal to and above 2nd quartile (≥50%) were categorized as having “favorable attitude” and those who scored less than 2nd quartile (<50%) were considered as having “unfavorable attitude”

The responses of the respondents’ practice were also dichotomized into ‘’Good” and “Poor” practice rate. Respondents who scored greater or equal to 3rd quartile (≥75%) were Categorized as having good practice whereas those scored less than 3rd quartile (<75%)were classified as having poor practice.

Qualitative data collected from twelve health centers heads by using in-depth interview each for one hour with semi-structured questions to enrich and substantiate quantitative study what dealings are practicing by HCPs on HMIS. Explanations on HMIS in all relevant questions were noted and summarized. Data collection and reporting tools to the respective health centers also observed to the specific questions to add evidence on the findings of practices. Tape record also was used to capture the information from interviewees during in-depth interview.

4.9. Operational definitions

HMIS: The term HMIS for this particular assessment is made operational to fit into the existing situation of the study area. Thus, for the purpose of this assessment, HMIS encompasses some of the components of HMIS included in this standard definition. In fact, the current HMIS in Ethiopia is limited to data reporting and the study area is not exceptional, the term HMIS in this study mainly meant these limited tasks in particular emphasis of the current paper- based system.

HCPs: Most of the time HMIS services are given by HCPs in addition to their primary work within the healthcare delivery points. For the purpose of this study, the HCPs refers to clinical healthcare service givers at health center levels those who record, compile and report health

information primarily collected from patients/clients during clinical or other health service encounters at health centers levels.

Knowledge: Is the information that the HCPs what they know about HMIS. The assessment was treated in terms of the respondents their own previous knowledge which emphases on principles, patient/client records, use of health information, HCPs responsibility. The respondents' knowledge was measured according to the correct and incorrect responses to the series of knowledge questions.

Attitude: Is the study subject opinion and personal intentions towards HMIS. In this study, study subjects who have concerns and opinions on HMIS and responded negatively to questions were considered to have unfavorable attitude towards HMIS whereas study subjects who responded positively to questions were considered to have favorable attitude towards HMIS.

Practice: This is different unconcealed current activities of HCPs on HMIS. This was to examine how the HCPs are practicing the HMIS in the line of its principles and guidelines by providing appropriate questions based on the current practicing of HMIS.

Data: Are the raw unprocessed or unorganized facts that are stored or are seldom immediately useful to a decision maker but by themselves are meaningless or no meaning until it is placed in a context**.**

Information: Is the processed data and presented in a meaningful form which can be used for planning, controlling and decision- making activities within health system**.**

Non-clinical HCPs: are those supportive workers in health centers who professionally are not Health workers such as record workers, cashiers, accountants, cleaners, personnels, drivers and guards working in the health centers.

4.10. Selection of data collectors and their supervisors and training:

Four 10^{th} grade completed data collectors and two health officers' supervisors were employed. Two days training were given for both data collectors and supervisors about the objective of the study and data collection techniques for quantitative study. The duty of data collectors during data

collection time was administering questionnaires to respondents and collecting the questionnaire after completed.

4.11. Data processing and Analysis

4.11.1. Quantitative data

Data were entered, and cleaned by EpI6.04d then exported into SPSS version 16.0 statistical package for coding and analyzing. Frequency distribution, percentage, graphs, tables and charts used to present the result of the study. Associations between independent and dependent variables were analyzed by calculating odds ratio with 95% confidence interval. Logistic regression analysis was done to control confounders.

4.11.2. Qualitative data

Data were transliterated, summarized and analyzed each day during data collection. Analysis was done for different themes of responses of the in-depth interview.

4.12. Data quality assurance

Data were collected using self-administered questionnaire for quantitative study and semi-structured question guides for qualitative study. The questionnaires were prepared in English and then translated into Amharic and again translated back to English to ensure consistency. The questionnaire was adopted from previously used HMIS and related surveys topics in Ethiopia and other countries with some modifications to make applicable and contextual to this study.

A pre-test of the questionnaire was done in two health centers of similar professions of HCPs found in the Oromia special zone. The questionnaire was modified based on the pre-test survey findings. Every collected data were reassessed by the supervisors and principal investigator for completeness and accurateness every day. Up to 30% of the collected questionnaires were also checked by the data collectors and supervisors on the daily bases.

4.13. Ethical considerations

The study was conducted after getting ethical clearance from ethical review Committee of faculty of medicine and Faculty of Informatics of Addis Ababa University. Letter of support was obtained from health informatics department of Addis Ababa University, Oromia health bureau and North Shoa Zone Health Department of Oromia region. Informed verbal consent from each health center was obtained prior to commencing data collection. Before administering questionnaire, verbal

consent was obtained from each respondent. Information on the purpose and procedures of the study given verbally to all study subjects and being assured about their privacy and Confidentiality. Names and other identification of the respondents remain undisclosed in this study. Each respondent was informed that the information that they provided used only for the purpose of the research not for any other dealings.

4.14. Dissemination of results plan

Results of this study will be submitted to school of public health and informatics department of Addis Ababa University, Oromia health bureau, North Shoa Zone health department of Oromia region and to other HMIS implementing agencies and other stakeholders as necessary. The findings will be presented in various appropriate workshops and seminars. Publication of the findings also will be attempted in a scientific journal.

5. Results.

5.1. Quantitative study

5.1.1. Socio-Demographic characteristics of the Respondents.

A total of 296 clinical HCPs with a response rate of 100% from all 29 health centers in North Shoa Zone of Oromia region were included in the analysis for the quantitative study. Twelve (41%) health centre heads from 29 health centre heads were included in the qualitative study. None of the eligible study subjects who were found on the data collection day refused to participate.

The age of the study subjects ranges from a minimum of 21 years to a maximum of 52 years with the mean age of 26.03 ±4.11 years and the median age of 25 years. The sex distribution of the HCPs participated in the study, out of 296 respondents, 110 (37.2%) were males' while186 (62.8%) were females. Most of the respondents, 253(85.5%) were followers of Orthodox Christianity followed by Protestants and Muslims account for 22 (7.4%) and 19(6.4 %) respectively. Two hundred (67.6%) of respondents were not married till the data collection day whereas the rest 96 (32.4%) were married. Two hundred seventy five (92.9 %) of the respondents were Oromo ethnic group followed by 19 (6.4 %) Amhara and 2 (0.7%) were others ethnic groups respectively.

Pertaining the distribution of the professional categories of the respondents according to the level of education showed (as it is seen in table1) that HCPs participated in this study with diploma holders constituted 208(70.3%), among these categories, 162 (54.7%) were diploma nurses, 13 (4.4%) were pharmacy technicians, 10 (3.4%) were Laboratory technicians, 19 (6.4%) were diploma midwives and4 (1.4%) were health assistants. The rest 88 (29.7%) were degree holders from these, 26(8.8%) were health officers, 31(10.5%) were Bsc nurses, 7(2.4%) were BSC midwives, 6(2%) were pharmacists, and18 (6.1%) were BSc laboratory technologists. For 62.2% of the respondents, their salary less than or equal to 942 birr and 76.4% of the respondents had less than or equal to 4 years work experience. (Table1)

Table1: Socio-demographic characteristics of respondents working in health centers of North shoa Zone, Oromia Region March 2010.

Characteristics	**Frequency**	**Percent**
Age groups(years)	N=296	
≤ 25	157	53
> 25	139	47
Median	25	
Sex		
Male	110	37.2
Female	186	62.8
Marital status		
Single	200	67.6
Married	96	32.4
Religion		
Orthodox	253	85.5
Muslim	19	6.4
Protestant	22	7.4
Other	2	0.7
Ethnicity		
Oromo	275	92.9
Amhara	19	6.4
Other	2	0.7
Profession category		
Degree holders	88	29.7
Diploma holders	208	70.3
Salary(Birr)		
≤ 942	184	62.2
>942	112	37.8
Median	942	
Year of service		
≤ 4	226	76.4
> 4	70	23.6
Median	4	
Responsibilities		
Outpatient department	137	46.3
MCH Clinic	117	39.5
TB and ART Clinic	42	14.2

5.1.2. Knowledge of respondents on Basic HMIS

About 163(55.1%) of the respondents were able to write in full what HMIS is and133 (44.9%) could not correctly write HMIS in full.

Two hundred sixteen (73%) of the respondents reported that at the health centre level data should be changed into information before used for decision- making. Two hundred fifty three (85.5%) of the respondents reported that health management tools describes the HMIS which is directly linked to the use of information at the health centre level or in general to use information locally at the site of information generation. Two hundred seventy two (91.9%) of respondents responded that the ultimate goal of HMIS is to improve the health of the community at large. Two hundred sixty (87.8%) of the respondents correctly reported that the primary data source for HMIS at health centre level is health service records. The rest 36 (12.2%) of them mentioned different sources. Only 28(9.5%) of the respondents from the total study participants knew culling procedure in the HMIS activities and 157(53%) of the respondents responded as they did not know it. One hundred eleven (37.5%) of them considered it inappropriately such as keeping and analyzing records.

One hundred seventy nine (60.5%) of the respondents revealed that when patients come to the health center with a health record numbers (card no) from somewhere else and have the slip cards need to issue new number and give services. One hundred eight (36.5%) of the respondents said no need to issue new number and provide services and 9(3%) reported as they did not know whether new numbers are issued or not. Concerning the personal data written on individual patient card, those respondents said health centers property were 204 (68.9%), and those said patients property were 85 (28.7%).The rest7 (2.4%) thought to be HCPs property.

Two hundred ninety three (99%) of the respondents knew at least one benefit of HMIS. In the health centers, whatever medical information originated from patients/ clients and any other physical and investigation findings recorded primarily for the patients/clients benefits. But among the respondents only 160(54.1%) of them responded supporting this idea. The rest responded as health centers and HCPs account 132 (44.6%) and 3 (1%) respectively. Each respondent knew at least one HMIS principle. (Table2).

Most of the respondents described that the common description of indicators, data collection instruments, data processing and analysis procedures form the basis for effective HMIS. Few of

them explained that without consistent principles and case definitions, healthcare delivery service performance cannot be systematically measured and improved across different places and time. Some of them described that one HMIS report at one place should be shared at all places by stakeholders or partners through integrated report and reporting channel. This is very important for all customers of HMIS information to derive their data. Another important HMIS principle which elicited by the study participants was enables HMIS to be implemented simplicity which is collecting, analyzing and interpreting only the information that is immediately relevant to performance improvement makes best use of limited human and other resources.

Majority of the respondents knew the primary objective of the newly reformed HMIS as it is for local use of information for action where it is generated were 242 (81.8%). Similarly 50% of those who were responded correctly for the question about the number of health indicators in the line of the new reformed HMIS compared to the previous old practice is less were118 (39.9%).The rest responded incorrectly as the same and greater were 34(11.5%) and 139(47%) respectively.

One hundred ninety six (66.2%) of the respondents reported that patient card is fastened with the other documents in its chronological order. From these only 86 (29.1%) reported that medical records are lifetime records of patients kept by healthcare organization and the rest said that medical records are not lifetime records for the patients which is actually wrong postulation. One hundred (33.8%) of the respondents were unable to identify how the patients /clients individual cards can be fastened and kept with other documents at each patient encounter which is actually their day to day duties and responsibilities.

Table-2: Knowledge of respondents on HMIS principles working in health centers of North shoa Zone, Oromia Region March 2010.

Variables	Frequency (N=296)	Percent
Which of the following is the principle of HMIS?		
Standardization		
Yes	189	63.9
No	107	36.1
Integration		
Yes	116	39.2
No	180	60.8
Simplicity		
Yes	85	28.7
No	211	71.3
I do not know		
Yes	0	0
No	296	100

About 290 (98 %) of the HCPs said that they have never heard about master patient index and only 6(2 %) heard about it. But still they unable to knew about its function when they asked specific questions on master patient index and almost similar report was found on patient tracer card.

Two hundred one (67.9%) of the respondents elicited that HMIS activities should be the responsibilities of all clinical HCPs, supportive staffs and other health care receivers. They verified such integrated actions help to improve the healthcare services and to reduce HCPs workload and patients/clients waiting time, to reduce cost for both patients/clients and health centers. The rest 95(32.1%) of the respondents said that HMIS is the only responsibilities of health professionals. The reason that they have given were privacy and confidentiality issues.

One hundred forty three (48.3%) of the study participants reported that the target of completeness and timely submission of routine health and administrative report is to achieve 80% or more. The remaining 150(50.7%) were mistakenly reported as to achieve 100% and 3(1%) of them responded as they did not know.

Only 35 (11.8%) of the respondents described that as the patients have right to inspect or copy their medical records whenever they want. The rest 261(88.2%) said that patients do not have right to inspect or copy their medical records that they have in the health centre and the reason that they

gave was because of ethical issues. But this is not the case according to the newly reformed HMIS principles.

All respondents verified that they have limitations of knowledge, resources and poor management system to practice HMIS activities on the right track. All of them proposed solutions for the limitations that they stated for. Their proposed solution were giving training for all HCPs and supportive staffs about basic principles of HMIS, different tools, technique of analyzing, compiling and how to change data into information and how to make use of it. In addition to this, they also proposed adequate resource allocation and the administrators who direct and manage the overall work process should be skillful. On top of this, the respondents' suggested that responsible, technically well trained and skillful, full time HMIS workers should be assigned at each health centre.

In summary, when the overall knowledge score of the respondents in the study area measured, about 209(70.61%) of them were found to have good knowledge. Whereas 87(29.39%) of them have poor knowledge (Figure-2).

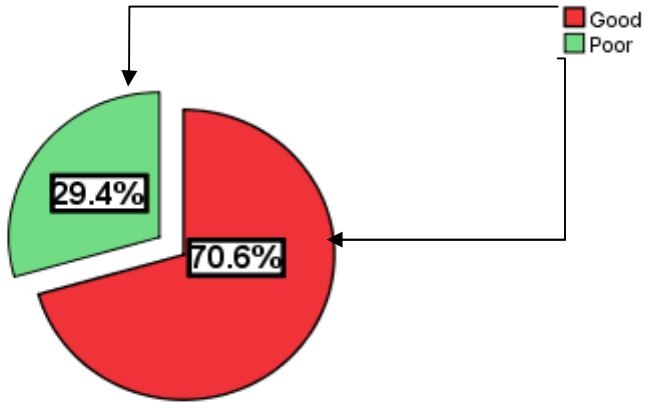

Figure-2.knowledge score of respondents working in health centres in North shoa zone, Oromia Region March 2010

Binary logistic regression analysis was done among selected knowledge questions and knowledge outcome to see their relations. Multiple logistic regression analysis was also done to control potential confounders. No statistical significant associations were found before and after adjusted for other variables.

Table3.Relationships between selected variables and knowledge of healthcare providers' on HMIS working in health centers of North shoa zone, Oromia Region March 2010.

Variables	Knowledge score		COR(95%CI)	AOR(95%CI)
	Good	Poor		
HMIS is the only responsibility of health professionals.	N=296			
Yes	64(67.37%)	31(32.63%)	0.80(0.47,1.35)	1.35(0.76,2.40)
No ỏ	145(72.14%)	56(27.86%)	1.00	1.00
The patient card is fastened with the other documents in its chronological order.	N=293			
Yes	135(68.88%)	61(31.12%)	1.02(0.99,1.04)	0.23(0.01,5.55)
No ỏ	73(75.25%)	24(24.74%)	1.00	1.00
Medical records are lifetime records of patients.	N=293			
Yes	63(73.26%)	23(26.74%)	1.02(0.99,1.04)	0.23(0.01,5.55)
No ỏ	145(70.05%)	62(29.95%)	1.00	1.00
Clinical and service records are hand written on different forms.	N=294			
Yes	173(68.92%)	78(31.08%)	0.59(0.27,1.30)	2.09(0.84,5.22)
No ỏ	34(79.07%)	9(20.93%)	1.00	1.00
The completeness and timely submission of routine health reports in health centre level is to achieve 80 % or more.	N=293			
Yes	99(69.23%)	44(30.77%)	1.02(0.99,1.04)	0.29(0.02,3.61)
No ỏ	109(37.20)	41(13.99)	1.00	1.00
Patients have right to inspect or copy their medical records.	N=296			
Yes	21(60.00%)	14(40.00%)	0.58(0.28,1.21)	1.93(0.83,4.47)
No ỏ	188(72.03%)	73(27.97%)	1.00	1.00

P-value 0.05 Ỏ reference groups

Statistical analysis was done to see crude and adjusted associations of some selected socio-demographic variables and the score of knowledge of respondents on HMIS principles and activities. When socio-demographic variables compared with knowledge outcome of respondents, no statistical significant associations were found (Table4).

Table4.Relationships between selected socio-demographic variables and knowledge of healthcare Providers on HMIS working in health centers of North shoa zone, Oromia region March2010

Variables(N=296)	Knowledge score		COR(95%CI)	AOR(95%CI)
	Good	Poor		
Age group(years)				
≤ 25	112(71.34%)	45(28.66%)	0.93(0.56,1.53)	1.14(0.61,2.14)
> 25	97 (69.80%)	42(30.20%)	1.00	1.00
Sex				
Male	77(70.00%)	33(30.00%)	1.05(0.63, 1.76)	1.09(0.62,1.90)
Female ỏ	132(71.00%)	54(29.00%)	1.00	1.00
Marital status				
Single	154(67.54%)	74(32.46%)	0.82(0.48, 1.38)	0.77(0.41,1.44)
Married ỏ	53(77.94%)	15(22.06%)	1.00	1.00
Monthly Salary(Birr)				
≤ 942	125(67.90%)	59(32.10%)	1.42(0.84,2.40)	1.34(0.52,3.46)
> 942	84(75.00%)	28(25.00%)	1.00	1.00
Profession category				
Degree holders	62(70.50%)	26(29.50%)	1.01(0.59,1.75)	0.65(0.31,1.37)
Diploma holders	147(70.70%)	61(29.30%)	1.00	1.00
Year of service				
≤ 4	157(69.50%)	69(30.50%)	1.27(0.69,2.33)	0.79(0.27,2.33)
> 4	52(74.30%)	18(25.70%)	1.00	1.00
Responsibilities				
Outpatient department	93(67.90%)	44(32.10%)	1.57(0.71,3.47)	1.97(0.49,7.85)
MCH Clinic	86(73.50%)	31(26.50%)	1.21(0.53,2.73)	1.30(0.44,3.84)
TB and ART Clinic	30(71.40%)	12(28.60%)	1.00	1.00

*Significant at p-value < 0.05

Ỏ Referent groups

5.1.3. Attitude of respondents towards HMIS

Attitude of the respondents towards HMIS were dichotomized into favorable attitude and unfavorable attitude by computing the median score. As a result, 240(81.08%) of respondents out of all respondents found to have favorable attitude and the rest 56(18.92%) of them have unfavorable attitude towards HMIS (Figure3).

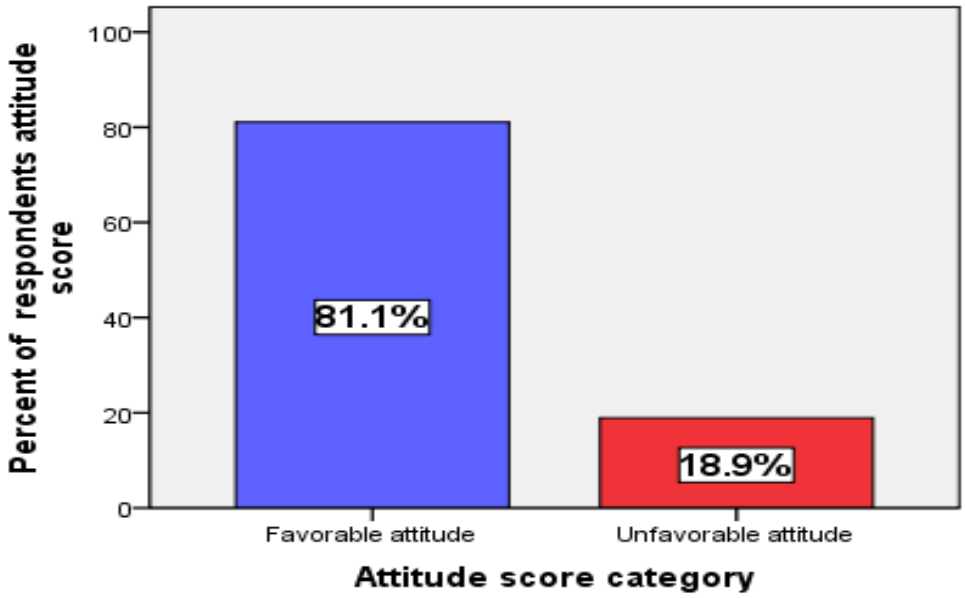

Figure-3.Attitude score of the respondents working in health centres in North shoa zone, Oromia Region March 2010

Among all respondents who had favorable attitude towards HMIS 26(10.8%) of them were health officers,26 (10.8 %) were BSc Nurses, 128(53.1%) were diploma Nurses, 13(5.4%) were BSc Laboratory technologists, 10(4.1%) were diploma laboratory technicians,4(1.7%) were BSc pharmacists,10 (4.1%)were diploma pharmacy technicians,4(1.7% were BSc midwifery,19(7.9%) were diploma midwifery and 3(1.2%) were health assistants respectively.

HMIS is easy to implement at health centre level, having reformed HMIS for health centers will bring reasonable advantage, to implement and strengthen HMIS at health centers levels HCPs need to change their attitude positively towards HMIS, at health centers level data burden is unreasonably high and have adequate time to perform HMIS job at health centre were Some of the inquiries on which favorable attitudes reported by the respondents (Table5).

Table5. Distribution of the respondents' attitude response levels about the specific questions on HMIS working in health centers of North shoa zone, Oromia Region March 2010.

Specific questions on HMIS attitude.	**Strongly disagree(1)**	**Disagree (2)**	**Neither (3)**	**Agree (4)**	**strongly agree(5)**
1. Respondents level of agreement on high data burden.	2(0.68%)	1(0.34%)	23(7.77%	119(40.20%)	151(51.01%)
2. Attitude of respondents on HMIS implementation.	9(3.04%)	179(60.47%)	4(1.35%)	80(27.03%)	24(8.11%)
3. Attitude of respondents on changing of HCPs attitudes on HMIS.	_____	13(4.39%)	40(13.51%)	163(55.51%)	80(27.03%)
4. Attitude of respondents on HMIS advantages.	4(1.35%)	76(25.68%)	87(29.39%)	105(35.47%)	24(8.11%)
5.Respondents level of agreement on HMIS implementation	1(0.34%)	4(1.35%)	6(2.03%)	37(12.50%)	248(83.78%)
6.Respondents level of agreement on quality of data Collection and reporting tools	26(8.78%)	161(54.39%)	90(30.41%)	16(5.41%)	3(1.01%)
7. Respondents level of agreement on adequacy of time for HMIS activities.	5(1.69%)	110(37.16%)	97(32.77%)	80(27.03%)	4(1.35%)

Logistic regression analysis was done to see the relative effect of the independent variables on the attitude outcome. Crude logistic regression analysis was done and no statistical significant association was found. All socio-demographic variables still did not show statistical significant associations yet after adjusted multiple logistic regression analysis was done (Table6).

Table6.Relationships between selected socio-demographic variables and attitude of HCPs on HMIS working in health centers of North Shoa Zone, Oromia Region March2010.

Variables(N=296)	Attitude score		COR(95%CI)	AOR(95%CI)
	Favorable	Unfavorable		
Age groups(years)				
≤ 25	128(81.5%)	29(18.5%)	0.94(0.53,1.68)	0.72(0.35,1.50)
> 25	112(80.6%)	27(19.4%)	1.00	1.00
Sex				
Male	87(79.1%)	23(20.9%)	0.82(0.45,1.48)	1.17(0.61,2.23)
Female ỏ	153(82.3%)	33(17.7%)	1.00	1.00
Marital status				
Single	159(79.5%)	41(20.5%)	1.39(0.73, 2.67)	1.72(0.79,3.74)
Married ỏ	81(84.4%)	15(15.6%)	1.00	1.00
Ethnicity				
Oromo	222(80.7%)	53(19.3%)	0.24(0.02, 3.88)	0.20(0.01,3.65)
Amhara	17(89.5%)	2(10.5%)	0.12(0.01,2.71)	0.11(0.00,2.82)
Other ỏ	1(50%)	1(50%)	1.00	1.00
Profession category				
Degree holders	65(73.9%)	23(26.1%)	1.01(0.59,1.75)	2.16(0.84,5.57)
Diploma holders	175(84.1%)	33(15.9%)	1.00	1.00
Monthly Salary(Birr)				
≤ 942	145(78.8%)	39(21.2%)	1.50(0.80,2.81)	2.31(0.65,8.20)
> 942	95(84.8%)	17(15.2)	1.00	1.00
Year of service				
≤ 4	183(81.0%)	43(19.0%)	1.03(0.52,2.05)	0.47(0.11,1.92)
> 4	57(81.4%)	13(18.6%)	1.00	1.00
Responsibilities				
Outpatient department	107(78.1%)	30(21.9%)	1.19(0.50,2.85)	0.62(0.12,3.26)
MCH Clinic	99(84.6%)	18(15.4%)	0.77(0.31,1.94)	0.91(0.26,3.17)
TB and ART Clinic	34(81.0%)	8(19.0%)	1.00	1.00

*Significant at p-value <0.05
Ỏ Referent groups

5.1.4. Practice of respondents on HMIS

The responses of the respondents to practice were dichotomized into ‘’Good” and “Poor” practice score.

As it is shown in table6, only 10(3.4%) of the respondents were supervised in the third quarter of the year2010 by their respective supervisors twice. Fifty six (18.9%) of the respondents had supervised once. Majority of them 230(77.7%) of the respondents were not supervised during same period. From those supervised respondents one and two times, feedback was given to very rarely only for 24(36.4% of them after supervision was made.

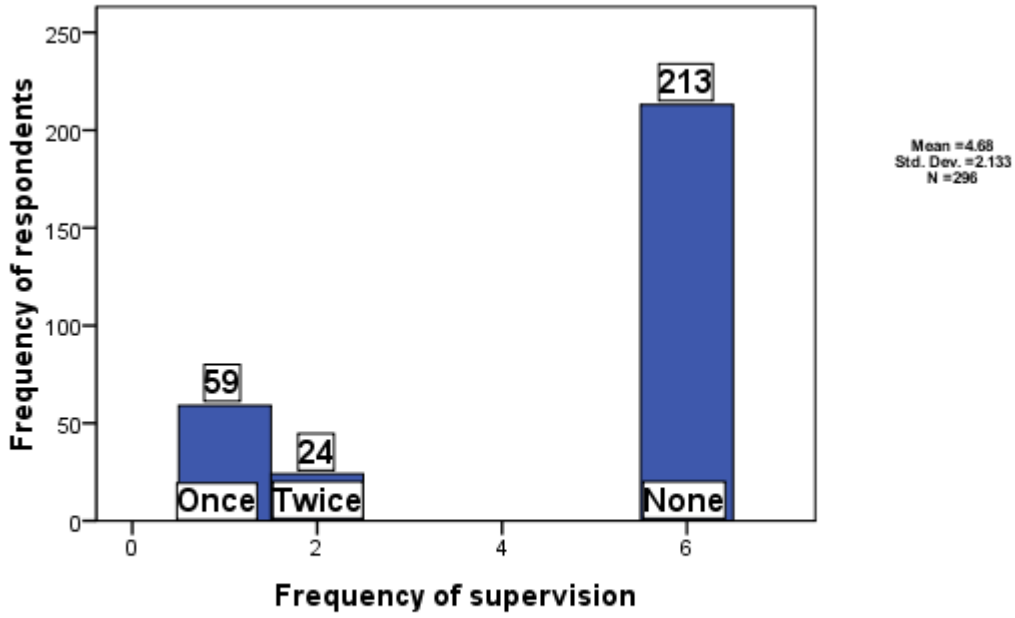

Figure-4.Number of supervision made for respondents working in health centres by their respective supervisors in the third quarter of the year 2010 in North Shoa Zone, Oromia Region March 2010

All HCPs reported that their monthly report preparation day from day one of every month as Ethiopian calendar extends up to 18th day. Of which142 (48%) prepare before 14th day and the rest 154(52%) prepare from 14th to18thdays of every month as it clearly depicted in (Table7). The study found out that respondents also submitted their report not only on Monthly bases but also quarterly and annually bases.

Table7.Duration of Monthly report preparation day by respondents in health centers of North shoa zone, Oromia Region March 2010.

Dates	**Frequency**	**Percent**
Before 14 th day	142	48
Between 14th to 18th day	154	52
Total	296	100

Respondents were recognized that there was lack of trained, responsible and full time HMIS workers in 94.3% of the health centers to run the overall activities of HMIS. But actually there should have been there responsible and full day devoted HMIS workers in addition to the clinical and other supportive workers. Eleven (3.7%) of the respondents said that as they did not spent any time for HMIS activities alone. According to the respondents report, majority of them spent little

time on HMIS activities ranges from zero to six hours per month and averagely it was calculated to be 3.37 ±1.51 hours per month (Figure-5).

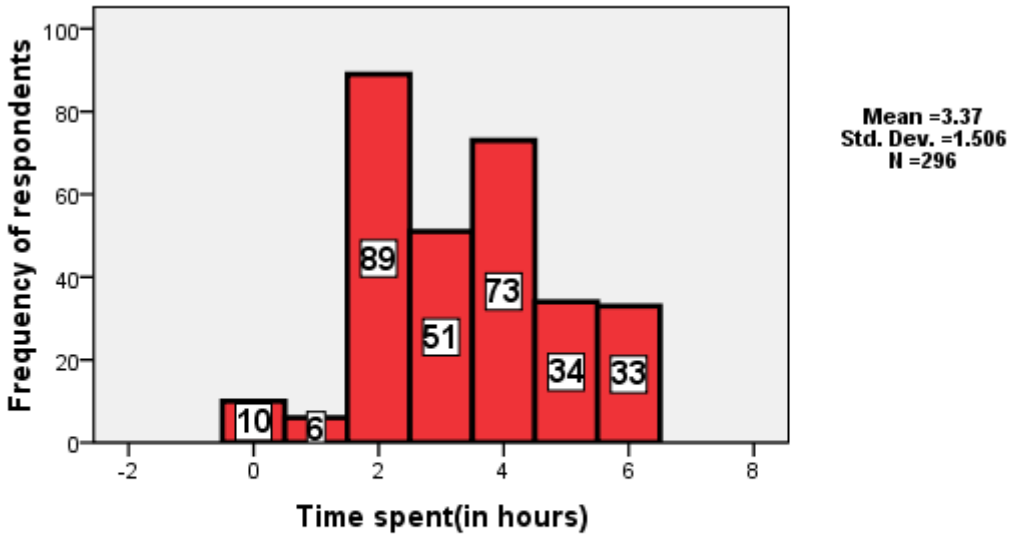

Figure-5.Distribution of time spent(in hours)by respondents on HMIS per Month in health centres in NOrth shoa zone, OromiaRegion March 2010

Two hundred seventy nine (94.3%) respondents were stated that there were no full time HMIS workers at their health centers. two hundred forty six (88.2%) of them explained correctly that the responsibility for this HMIS were all health professionals and supportive staffs. The rest 33(11.8%) of them reacted that the responsible bodies in the health centers were only HCPs at the service rendering rooms and heads of the health centers. The remaining 17(5.7%) of the total respondents stated that those health centers which have full HMIS workers were employed by global fund for the purpose of ART services.

One hundred forty four (48.6%) of the total respondents reported that as they analyze, compile, interpret and report data monthly but out of 144 respondents only 15(10.4%) of them documented appropriately in the record room. The remaining 129(43.6%) did not document in the record room. Keeping in mind that all HMIS activities performed by error prone and tedious paper-based system. The rest 152(51.4%) were reported as they did not analyze, compile, interpret and report data monthly.

Only thirty five point five percent of the respondents reported that as they use important tools to display health indicators in HMIS process. From these eighty seven point six percent of them were

able to write the indicator tools that they reported. Table, graph and charts were that they mentioned. The remaining twelve point four percent of the respondents were unable to write the tools that they responded for. Sixty four point five percent of the respondents reported that they did not use tools to show their health and related information indicators.

Only 65(22%) of the respondents reported that they were discussed with other health centre staffs to evaluate their health centers HMIS activities ranges from 1-24 times per year. But 231(78%) of the respondents have never discussed.

In respect to provision of information support to communities for surveillance, about130(43.9 %) of respondents reported that they were provided information to the communities on different epidemic prone diseases, immediately reportable and other public health importance diseases. The disease entities that they mentioned were polio, tetanus, measles, tuberculosis, leprosy, cholera, malaria etc. Out of 130 respondents, 115(88.5%) of them mentioned correctly while 15(11.5%) out of them pointed out other type of health information other than information for surveillance.

Inquiry was prepared for respondents if they had received any formal or informal training on HMIS. All respondents reported that they had not received training.

Out of the total respondents only 5(1.7%) of them reported that they have HMIS rules and guidelines in their health centers. But all these guidelines were other programs guidelines not particularly prepared for HMIS.

From the total of the respondents 136(45.9%) enlighten that they calculated plan achievement for essential services and prepare map for their health centers catchment area. The remaining 160(54.1%) of the respondents responded that they did not calculate the plan achievement which is actually very important to provide a better health care services and to improve community health in general. Two hundred seventy two (91.9%) from the total respondents responded that they have registration book in their office to record their patients/clients information, routine service delivery records. The remaining 24(8.1%) said that they did not have registration book because all routine health information that they got from the patients/ clients registered or recorded by their colleagues.

One hundred seventy (57.4%) of the study participants were aggregated their data on daily basis. Among the total aggregated 116 (68.2%) were used data to prepare their plan of action and to make decision after changing to information that generated at their health centers. One hundred twenty six (42.6%) of the respondents aggregated data Monthly, not on daily basis.

Majority of the respondents uttered that they changed the data in to information at health centers level. They also expressed that they used the information for decision making to know the magnitude and trends of the disease in the area and to treat cases and to take other public health actions in their catchment areas. They also used the data to build up suitable strategic preventive methods based on the situation of the local background but they did not have standard procedure to change the data into information.

According to the study finding, only 23(7.8%) of the respondents were developed HMIS activities plan of action for their health centers. The type of plan that they reported were annually, semi-annually and quarterly. But all these plans were not based on the newly reformed HMIS principles rather based on the previous old and manual HMIS practices.

To sum up, When the overall practice score of the respondents in the study area measured, only 61(20.6%) of them were found to have good practice whereas 235(79.4 %) of them have poor practice (Figure-6).

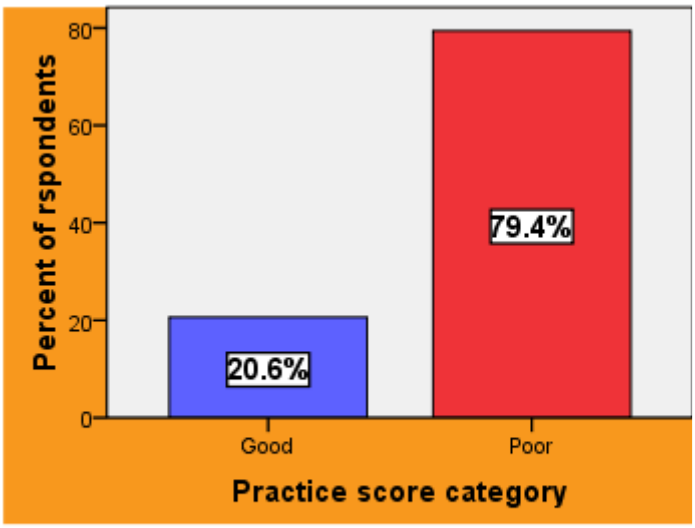

Figure-6.Practice score of respondents workingin health centres in North shoa zone, Oromia Region March 2010

Practice of the respondents on HMIS was compared with their socio- demographic variables. Among the marital status that was statistically significant before and after adjusting for confounders was unmarried groups [COR=3.22(95%CI=1.80, 5.75)] and [AOR=2.67(95%CI=1.28, 5.59)]. Those who unmarried HCPs working in health centers in North shoa zone of Oromia region almost about 3 times more likely to accomplish HMIS activities than those married HCPs in the same health centers. Among professional category, the statistical analysis for degree holders before and after adjusted to see the relations with the practice outcome was also statistically significant [COR=2.93(95% CI=1.37, 6.24)] and [AOR=2.93(95% CI=1.06, 8.11)]. Being degree holders was found about 3 times more likely to accomplish HMIS tasks than diploma holders (Table8).

Age ≤ 25[COR=2.01(95%CI= 1.13, 3.57)], salary ≤ 942 [COR=2.14(95%CI=1.21,3.78)], year of service ≤ 4 [COR= 2.93(95%CI= 1.60,5.37)], from responsibilities, working in outpatient department[COR=4.14(95%CI=1.92,8.93)] and working in MCH Clinic [COR=3.24 (95%CI=1.50,6.98)] also were statistically significant before adjusting for other variables. But after adjusted for other variables their significance were disappeared. The other variables which were considered to be factors to affect the practice of the respondents on HMIS did not show statistical significant associations before and after adjusting for confounders (Table8).

Table8.Relationships between selected socio-demographic variables and practice of HCPs on HMIS working in health centers of North Shoa Zone, Oromia Region March 2010.

Variables(N=296)	Practice score		COR(95%CI)	AOR(95%CI)
	Good	Poor		
Age groups(years)				
≤ 25	24(15.3%)	133(84.7%)	**2.01(1.13,3.57)***	1.53(0.68,3.41)
> 25 ỏ	37(26.6%)	102(73.4%)	1.00	1.00
Sex				
Male	22(20.0%)	88(80.0%)	1.06(0.59, 1.91)	1.35(0.67, 2.72)
Female ỏ	39(21.0%)	147(79.0%)	1.00	1.00
Marital status				
Single	28(14.0%)	172(86.0%)	**3.22(1.80, 5.75)***	**2.67(1.28, 5.59)***
Married ỏ	33(34.4%)	63(65.6%)	1.00	1.00
Religion				
Orthodox	56(22.1%)	197(77.9%)	3.52(0.22, 57.14)	4.95(0.27,91.82)
Muslim	2(10.5%)	17(89.5%)	8.50(0.37, 195.45)	10.34(0.38,281.02)
Protestant	2(9.1%)	20(90.9%)	10.00(0.44, 228.70)	11.82(0.45,307.84)
Other ỏ	1(50.0%)	1(50.0%)	1.00	1.00
Professional category				
Degree holders	9(10.2%)	79(89.8%)	**2.93(1.37,6.24)***	**2.93(1.06,8.11)***
Diploma holders ỏ	52(25.0%)	156(75%)	1.00	1.00
Monthly salary				
≤ 942	29(15.8%)	155(84.2%)	**2.14(1.21,3.78)***	1.07(0.34,3.37)
> 942 ỏ	32(28.6%)	80(71.4%)	1.00	1.00
Year of service				
≤ 4	36(15.9%)	190(84.1%)	**2.93(1.60,5.37)***	1.61(0.47,5.51)
> 4 ỏ	25(35.7%)	45(64.3%)	1.00	1.00
Responsibilities				
Outpatient department	21(15.3%)	116(84.7%)	**4.14(1.92,8.93)***	1.62(0.35,7.44)
MCH Clinic	22(18.8%)	95(81.2%)	**3.24(1.50,6.98)***	2.41(0.79,7.31)
TB and ART Clinic ỏ	18(42.9%)	24(57.1%)	1.00	1.00

*significant at p- value <0.05,
Ỏ Referent groups

Selected predictors of practice on HMIS

Various predictors of practice were selected and binary logistic regression analysis was done. After adjustment, multiple logistic regressions were also done for the possible confounding factors. Among these predictors, use of tools to display health indicators in HMIS process had statistically significant association with poor HMIS practice rate [AOR=0.42(95%CI=0.20, 0.88)]. Availability of HMIS rules and guidelines in health centers also had statistically

Significant association with poor HMIS practice rate [AOR=0.05(95%CI=0.01, 0.34)]. Use of data in health centers to prepare plan of action and decision-making [COR=0.39(95%CI=0.22, 0.69)],

Provision of information support to communities for surveillance [COR=0.43(95%CL=0.24, 0.76)] and aggregating data on daily basis in health centers [COR=0.54(95%CI=0.30, 0.99)] were

statistically significant when binary logistic regression analysis was done but disappeared when adjusted for other variables (Table9).

Table9. Relationships between selected variables and practice score of HCPs on HMIS working in health centers of North Shoa Zone, Oromia Region March 2010.

Variables(N=296)	Practice score		COR(95%CI)	AOR(95%CI)
	Good	Poor		
Presence of full time HMIS workers in health centers				
Yes	2(11.8%)	15(88.2%)	2.01(0.45,9.04)	1.38(0.27,7.03)
No ỏ	59(21.1%)	220(78.9%)	1.00	1.00
Use of important tools to display health indicators in HMIS process in health centers				
Yes	37(35.2%)	68(64.8%)	**0.26(0.15,0.48)***	**0.42(0.20,0.88)***
No ỏ	24(12.6%)	167(87.4%)	1.00	1.00
Use of data in health centers to prepare plan of action and decision-making				
Yes	35(30.2%)	81(69.8%)	**0.39(0.22,0.69)***	0.69(0.32,1.49)
No ỏ	26(14.4%)	154(85.6%)	1.00	1.00
Provision of information support to communities for surveillance				
Yes	37(28.5%)	93(71.5%)	**0.43(0.24,0.76)***	0.90(0.42,1.93)
No ỏ	24(14.5%)	142(85.5%)	1.00	1.00
Availability of HMIS rules and guidelines in your health center				
Yes	9(81.8%)	2(18.2%)	**0.05(0.01,0.24)***	**0.05(0.01,0.34)***
No ỏ	52(18.2%)	233(81.8%)	1.00	1.00
Aggregating data on daily basis in health centers				
Yes	42(24.7%)	128(75.3%)	**0.54(0.30,0.99)***	0.67(0.33,1.39)
No ỏ	19(15.1%)	107(84.9%)	1.00	1.00
Presence of plan for the HMIS activities in health centers				
Yes	8(34.8%)	15(65.2%)	0.45(0.18,1.12)	2.16(0.44,10.65)
No ỏ	53(19.4%)	220(80.6%)	1.00	1.00

*significant at p- value <0.05

Ỏ Referent groups

5.2. Qualitative study

A total of 12 health centre heads were involved as key informants who were taken purposively. The in-depth interview data were compiled based on the thematic approach of Knowledge, attitude and practice of the heads of health centers inquiry responses on HMIS at their health centers. Almost all interviewed health centre heads were agreed on the importance of HMIS establishment at health centre level and they were able to state the relevance of HMIS.

According to the interview of health centre heads, lack of knowledgeable and skilled manpower is prominent problems for HMIS to practice in the health centre. These problems affect the HMIS implementation program in multidirectional. That is nationally and hierarchically at all levels the HMIS programs will be severely affected. Such like allocation of resources to address the health problems of the community at large in prevention, promotion, curative and rehabilitation. As a result of this there will be mal-distribution and wastage of resources to the country as a whole. Furthermore the effect of improper HMIS activities at individual health centre level has collective effect on the national health sectors development program.

Most of the health centre heads gave their positive justification on the advantages of establishing good HMIS at the health center. They explained these into two broad categories. The first advantage suggested was in the patients' side and the other was in the HCPs side. Pertaining to patients' side, most of the interviewees clarified that it augments patient's satisfaction by avoiding the patient medical records loss so as to improve the quality of service. This is because the likelihood of finding medical record numbers for returning patients/clients increased significantly as the result reduced patients waiting time. All the previous history, physical examination findings, laboratory findings and ordered treatments will be kept properly and at the same time unnecessary cost can be avoided.

Concerning the HCPs side, they can get all the previous information written on the patients/clients individual cards so that HCPs can have access and adequate time to take care of their patients/clients. One of the interviewees forwarded her idea as;

"If HMIS is re-engineered and implemented, it will have a great deal of advantages like, workload for each HCP will reduced so that the quality of data can be improved and responsibility responsiveness will be increased by all HCPs."

Some of the interviewees recommended as strategy that HCPs should be educated on HMIS starting from their pre- service training to make them familiarized with the HMIS and to create team sprit with supportive staffs and to consider as part of their future career in the healthcare services. The interviewees also suggested that it is worth to establish HMIS committee at each health centre to monitor, evaluate the effectiveness of HMIS and to make correction action practice. They also stated that the HCPs have responsibilities to inform the patients/clients and their accompanies to participate in HMIS while they are in the health centre by giving appropriate information at each encounter of health centre health service gateways.

One key informant recommended as the solution to improve the HMIS was first to assign a responsible and appropriately trained fulltime HMIS worker. Secondly, a single point entry for patients/clients registration needed. Standardization of medical record formats which adapted to the unique needs of Ethiopian languages and a continuous supply of these formats must be guaranteed so that data will be consistently recorded and reported over time and across locations. Recognizing and rewarding for positive change as motivating HCPs, identifying appropriate opportunities to introduce information and communication technology although this is viewed as a second step after first establishing more fundamental and well-reformed, well cleaned and reliable paper-based HMIS. Enhanced HR training and sustainable strengthened regular supportive supervision should be maintained. One interviewee underlined the following;

“Without adequate and appropriately trained staffs, the HMIS implementation will not be achievable. As prerequisite, HMIS requires well experienced health personnel with special training in information technology to use HMIS information to improve performance of all HCPs. And those supportive staffs that have relation to patient records and documentation should be trained in HMIS activities on their line of duties. … all other necessary resources should be allocated adequately, timely and monitored to insure the sustainability.”

Almost all interviewees critically pointed out that the quality of medical data recording; reporting and documentation formats are not good. Since different forms provided for different departments have similar disease entities and they changed at another time which supplied from higher level as the result of this unreseanonable and unusable high raw data burdens are stored unsuitably. They revealed that the action plan that set at all time at health centre level did not base on the health

information generated at the health centre. The data that reported each month is not complete and analyzed so it needs intervention in the future.

As all health centre heads stated, the main challenges to implement HMIS and to keep its sustainability that, the work load, lack of budget, HCPs turnover and time constraints.

One of the key informants said that, “I often repeat my clinical examination due to loss of patient history, it is difficult to look for the laboratory test results in the medical records, other patient’s information often mixed in my patients medical records, it is difficult to find out the vital signs of the patients, it is difficult to find out the medication administration details of the patients and my written orders in medical records frequently have not been followed.”

Another health centre head explained his idea as; “despite the difficulties and challenges it is possible to implement and improve the HMIS to support clinical practice and reduce the time needed to find medical records moreover, to take action on any ill health for the community at large.”

Two of the key informants also pointed out similar thought as; “well- designed HMIS, Collaboration and trust among HCPs can improve application of HMIS, the safety of patient care by reducing medication errors”. They recommended a team approach involving all HCPs and collaboration between them is very important to implement HMIS and to reach its goals.

All of the interviewed health centre heads indicated, most of the HCPs have favorable attitude towards the HMIS as reflection seen from their share HMIS activities in particular if they trained on it. But few of them do not welcome to have good opinion and sense of ownership of HMIS activities because there is no trend of utilizing health information for any action at the health centre level.

All interviewees responded that all HCPs and supportive staffs of the health centers should have responsibility for HMIS as per the individual workplace characteristics.

One health centre head said that, “I am responsible for all HMIS activities particularly for compiling, monthly, quarterly and annually reporting and documentation without any formal training and orientation because the other HCPs did not consider HMIS as part of their main duties

and responsibilities as they experienced inappropriate practice trends on it. They also consider HMIS is the duty of data clerks only".

6. Discussions

There were no adequate comparable study conducted in Ethiopia as well as in the study area to assessing the knowledge, attitude and practice of HCPs on HMIS. There were also limited other related literatures and information to make comparison with this study finding. Therefore, it is possible to say, this is the first study carried out on knowledge, attitudes and practice of HCPs on HMIS in the study area so that it put in base line information for evidence-based decision-makers and other interested prospective researchers on the same area. The main objective of this study was to assess knowledge, attitude and practice status of HCPs on HMIS in the study area.

This study has tried to show the status of knowledge, attitude and practice of HCPs on HMIS with a special emphasis on paper-based HMIS at health centers in North Shoa Zone, Oromia Region. In the view of the fact that the paper-based HMIS principles and methods provide strong bases for the prospective computer-based one In addition, the study tried to distinguish the associations between the HMIS knowledge, attitude and practice assessment outcomes of the HCPs working at health centre in the study area with selected socio-demographic variables of the respondents. These variables are, age, sex, marital status, religion, ethnicity, profession, salary, year of services and responsibility. HMIS remains poorly understood with little practice for local information use and decision-making at information generating site in the study area.

From the total respondents participated in this study, 70.6% of the HCPs in the study area were found to have good knowledge. Similar study conducted on HCPs in Tanzania showed that very much less result was found, that is only 20% of the HCPs knew HMIS principles and related activities. Ten percent of these HCPs correctly identified the HMIS functions (**27**). The possible reason for the increased knowledge level in our study will be the HCPs could have more information about HMIS in Ethiopia even if the practice was very low and the HCPs could not had adequate knowledge on HMIS at which time the study was conducted in Tanzania.

In this study analysis, duration of year of services was expected to have significant effect on knowledge, attitude and practice of HCPs on HMIS but it was found out that it was insignificant after adjusting for other variables. The possible reason for this could be, the HCPs particularly those who have a better work experience were occupied with other administrative, clinical activities. Most of the time they participated in different field work and meetings out of the health centers rather than engaging only in HMIS activities, therefore, HMIS overall activities found to

be weak which is actually very important to advance healthcare service delivery performance and ultimately to improve the community health in wide-ranging.

Sixty point five of the respondents reported that when a patient comes to the health center with a health record number from some other places needs to issue new number and give services. Thirty six point five percent of them reported correctly that no need to issue new number and deserves services. Concerning the personal data written on individual patient card, those respondents said correctly patients property were only 28.7%. This implied that HCPs need well organized training on HMIS before acting to implement at the health centre levels since majority of them do not have sufficient knowledge on patients return record management and the owner of the information recorded on the patient card.

Ninety nine percent of the respondents knew at least one benefit of HMIS. In the health centers, whatever medical information originated from patient/ clients and any other physical and investigation findings recorded primarily for the patients/clients benefits. But among the respondents only 54.4% responded supporting this idea. The implication is the HCPs do not have adequate knowledge about the primary purpose of recording the patients' information and therefore, HCPs need appropriate in-service training.

Each respondent knew at least one HMIS principle. Most of the respondents described that the common description of indicators, data collection tools, data processing and analysis procedures created the basis for effective HMIS. Few of them explained that without consistent principles and case definitions, healthcare delivery service performance cannot be systematically measured and improved across different places and time. Few of the respondents described that one HMIS reported at one place should be shared at all places by stakeholders or partners through integrated report and common channel and from these, all customers of HMIS information derive their data. Another important HMIS principle which elicited by the study participants was developing simple HMIS to be easily implemented and to enable to increase simplicity in collecting, analyzing and interpreting only the information that is relevant to performance improvement makes best use of limited human and other resources.

Eighty two percent of the respondents knew the primary objective of the newly reformed HMIS as it is for local use of information for action and evidence- based decision-making to identify problems, to set priority, to make action oriented plan, to set objectives and develop

implementation strategies. This finding supported by a study conducted in Zambia that was carried out to assess the experience of evidence-based decision- making **(15, 18**).

Sixty eight percent of the respondents explained their brainwave that HMIS activities should be the responsibilities of all clinical HCPs, supportive staffs and other health care service receivers. This is crucial to improve the healthcare services and to reduce HCPs workload and patients/clients waiting time and to reduce cost for both patients/clients and health centers. The rest thirty two point one percent of the respondents said that HMIS is the only responsibilities of health professionals. The reason that they have given were privacy and confidentiality issues. This implied that, it is obligatory to initiate training on newly reformed HMIS strategies for HCPs in the study area to clear the sideway practices by the HCPs in health centers level.

All respondents verified that they have at least one of the following limitations such as lack of knowledge, resources and or poor management system to practice HMIS activities on the right track. All of them proposed solutions for the limitations that they stated for. Their proposed solution were giving training for all HCPs and supportive staffs about basic principles of HMIS, different tools, technique of analyzing, compiling and how to change data into information and how to make use of it. In addition to this, they also proposed adequate resource allocation and the administrators who direct and manage the overall work process should be skillful.

Pertaining to the attitude of the respondents, 81.1% of them from the total study participants have favorable attitude towards HMIS.A comparable survey conducted on HCPs knowledge and attitude towards HMIS in Tanzania had shown that 80% of them were found to have favorable attitude which was almost similar result with this study (**27**). The implication of this result can be articulated as the readiness of HCPs is existed in the favorable way if the preconditions for HMIS activities are fulfilled.

Majority of respondents felt that it is good if HMIS strengthened and implemented at health centre level. They showed their positive views that they will involve in the implementation process to increase HMIS performances for better use of health information for better healthcare service delivery in the future. Majority of the respondents also strongly agreed that the HMIS data burden was very high and unused locally at their health centers for public health action and planning purpose. It was encouraging that over four in five of the HCPs in North shoa Zone working at the

health centre agreed with the weaknesses that HMIS is not well exercising as it should have been at the health centers.

Different Studies that have been done in sub-Saharan countries revealed resistance from HCPs against in developing and implementing HMIS. The struggle on HMIS in these resource poor countries were aimed at to ensure the routine record keeping to the extent of sufficiently high quality and improving the paper based system before considering the use of information technology systems just like currently attempting in Ethiopia (**16, 30**).

With respect to supervision and feedback, only 3.4% of the respondents were supervised in the third quarter of the year 2010 by their respective supervisors two times. Around nineteen percent of them supervised one time and 77.7% of them were not supervised at all. From those supervised respondents one and two times, feedback was given very rarely only for 36.4% of them after supervision was made. This study finding is relatively comparable with a study done in North Gondar which had shown that about 34.7% of the HCPs supervised but only12.2% of them was given feed back in the first quarter during the study year(**9**).

In another report in Ethiopia indicated that only 40% of HCPs working at health centers were received supportive supervision for overall health information system in 1997 EC (**10**).

The absence of appropriate trained and responsible HR for HMIS, absence of standardized rules and guidelines were the major constraints for HMIS activities. Absence of communication of data between HCPs who work at the health centers and district health offices, lack of timely supportive supervision and feedback for HCPs and tastelessness of reports were also setbacks in improving HMIS performance. All will cause for the deterioration of motivation of HCPs in many features. Continued supportive supervision will be required if quality data collection is to be maintained. A study was done in Tanzania showed that presence of a focal person, responsible for day to day HMIS activities, had a positive influence on the quality of data where facilities with a focal person had a higher data completion rate (69.9%) compared to those without (44.7%) (**27).**

The use of locally generated information was almost none existing in the study area. Data collection in the health centers was poorly organized. Data aggregating processing was fragmented, time consuming and error prone. The HCPs at each office did not feel sense of possession about the data at the site of data generation because HCps did not make use of it for

better decision making for their health service performance improvement. In the study area, the entire HCps were not trained how to change the data in to information and how they use the information for decision-making.

In this study, monthly report preparation day from day one of every month as Ethiopian calendar extends up to 18th day for HCPs at health centers level. Out of 296 HCPs 48% of them prepare before 14th day and the rest 52% prepare from 14th to18thdays. A study done in North Gondar showed that 19.92%of HCPs were reported before 19th day, 33.9% were reported between20th and 24thday and46.19% were reported after 25th day of every month at health centers level. This reporting day's differences may be due to the differences of the reporting policy of the areas but currently the reporting period policy might be changed (**9**).

This study showed that, majority of the respondents spent little time on HMIS activities ranges from zero to six hours per month and averagely it was calculated to be 3.37 ±(SD1.51) hour. A survey conducted in Ethiopia showed that at the health centers level HCPs spent 16 hours or less per month their time on HMIS activities keeping that a considerable variation across health centers. This unacceptable practice result in this study mostly due to lack of appropriate and unknowledgeable staff allocating, workload, lack of supportive supervision, lack of sense of ownership of the HCPs and absence of responsible and fulltime HMIS workers . This indicates that the HCPs have less awareness and dispossessed giving emphasis towards HMIS (**12, 18**)**.**

In this survey, no one respondent reported that had taken formal or informal training on HMIS. This implies that lack of knowledge on HMIS might negatively compromise information use for decision making and other public health intervention especially in community. Rate of analyzing, compile and interpret found out to be 48.6% by the HCPs at health centers in the study area. Thirty five point five percent of them use important tools to display health plan achievement indicators in HMIS process. Fifty seven point four percent of the respondents were aggregated their data on daily basis. Among these 68.2% of them were used data to prepare their plan of action and to make decision after changing data into information that generated at their health centers.

A report during the national health sector development program III strategic plan evaluation and self-assessment workshop in 2002 GC showed that fewer than 25% of the HCPs who were working at health centers were developed their annual plan for HMIS (10). In our survey, from the total respondents 45.9% of them reported that they calculated plan achievement for essential

services and use charts, graphs and tables to display and prepare map for their health centers catchment area. A comparable study conducted in health centers in North Gondar showed that 22.8% of the HCPs used graphs and charts to display their calculated achievement indicator. Twenty three percent of them used their information to prepare plan of action and 18.2% of the HCps calculated area coverage for essential services and prepare Maps (9).

In this study, among the total study participants, 272(91.9%) of them reported that they have registration book in their offices to record their patients/clients information, routine service delivery records. A study conducted in North Gondar showed that 71.1 % of the HCPs have these registration books in their working offices (9).

Practice outcome of the respondents on HMIS was compared with all socio- demographic variables but only marital status from these, being unmarried was found statistically significant before and after adjusting for confounders [COR=3.22(95%CI=1.80, 5.75)] and [AOR= 2.67 (95%CI =1.28, 5.59)] were respectively. The possible explanation for this evidence will be those unmarried HCPs will give more emphasis for their jobs when they at their duty areas and more likely to have potentials to perform their duties and responsibilities in a better way than those married HCPs. On other words married HCPs will feel additional responsibilities for their home and families which share their time when they accomplishing their routine duties at their working offices.

Among the professional categories, Degree holders [COR= 2.93 (95%CI= 1.37, 6.24)] and [AOR=2.93 (95%CI= 1.06, 8.11)] had better practice almost three folds than Diploma holders. This difference implied that as the pre-service training of HCPs is longer, their practice of HMIS is better.

7. Strengths and Limitations of the study

7.1. Strengths of the study

The study included all HCPs (100%) for quantitative study and 41% of health centre heads for qualitative study in the study area. The response rate of the respondents was 98.3%. Qualitative study design was used to enrich the main quantitative study. Currently the study topic is one of the hot priority issues of the Ethiopian government. Logistic regression was employed to control the effect of confounders. Since there is no similar study in this area, this study can provide baseline information for policy makers, stakeholders and can be used as an icebreaker for those interested researchers in the same area.

7.2. Limitations of the study

Lack of comparable studies and references to compare this study finding were the main limitations of this study. Since the study design was cross-sectional; it did not take into account to relate cause and effect relations. One of the limitations of this study also could be the fact that non- health professionals like record workers, cashiers, cleaners, accountants and guards were not included in the study which could have been equally essential to identify the knowledge, attitude and practice problems on HMIS in the study area.

Acquiescence bias might be there, i.e. participants may agree with statements as presented in order to “please” the researcher particularly in attitude questions. Social desirability bias also possible i.e. respondents may portray themselves in a more socially favorable light rather than being honest.

8. Conclusions

In conclusion, the study in general has shown that the HCPs practice on overall HMIS activities was found very low even though the knowledge and attitude status of them on basic HMIS concepts was relatively found to be good. Higher proportion of respondents working at health centers in North shoa zone, Oromia region were not using the health information properly that generated at the health centers from routine patients/clients healthcare service delivery records and administrative records.

Several negatively compromising factors for HMIS practice which are associated with it were verified particularly in the line of HMIS routine work related which make HMIS in a weak position and not to be practiced in the right track for better health service delivery at health centers. This implied that HMIS needs all rounded vigorous interventions in the study area.

In this study, only few predictors were found to be significant factors to affect the knowledge, attitude and practice of the HCPs. But the other variables had not shown significant association. It indicated that further extensive study needed to verify the insignificant associations.

9. Recommendations

To improve and maintain the HCPs knowledge, attitude and practice on HMIS based on this study finding and conclusion, the following recommendations were made:

1. In-service training should be given by Regional health bureau, zonal health department and Woreda health offices to all HCPs working in health centers about HMIS. Motivation measures also should be taken to have HCPs sense of ownership and responsibility on HMIS.
2. A sustainable and regular supportive supervision with timely feedback should be maintained by Woreda health offices as well as zonal health department and Regional health bureau for all HCPs for those working in health centers as an essential element for improving overall performance and to create conducive working environment for the sustainability of good HMIS practice.
3. Responsible appropriately trained and full time HMIS workers should be assigned by Woreda health offices at each health centre in order to improve HMIS activities performance in turn to improve the healthcare service performances.
4. Standardized, integrated and simplified data collection and reporting tools should be developed by Federal ministry of health and put into practice in all health centers.
5. A well designed and standardized guidelines and rules about HMIS principles should be developed by Federal ministry of health and distributed to all HCPs working in health centers to improve their HMIS performances.
6. Redundancy of data collection and reporting should be strictly monitored and controlled by all health centers to avoid unnecessary time wastage by HCPs so as to increase the time for the HCPs to take care of their patients
7. As the second stepladder after well establishing the paper-based HMIS, computerized HMIS should be considered by Regional health bureau, Zonal health department, Woreda health offices and health centers in order to improve the HCPs efficiency on HMIS practices as well as to improve the healthcare services performance.
8. It is worth to conduct further study by Federal ministry of health to determine different factors among HCPs and other non-health professionals to get up-to-dated information about the status of the HCPs knowledge, attitude and practices on HMIS to design strategies and to make favorable ground for the speculated computer-based HMIS.
9. HMIS sensitization training should be given for all health science and medical students in the tertiary education level before graduating to equip them with adequate knowledge about HMIS to practice well after they assigned to the actual job in the health sectors. To develop curriculum and implement this strategy, Federal ministry of health should take due attention.

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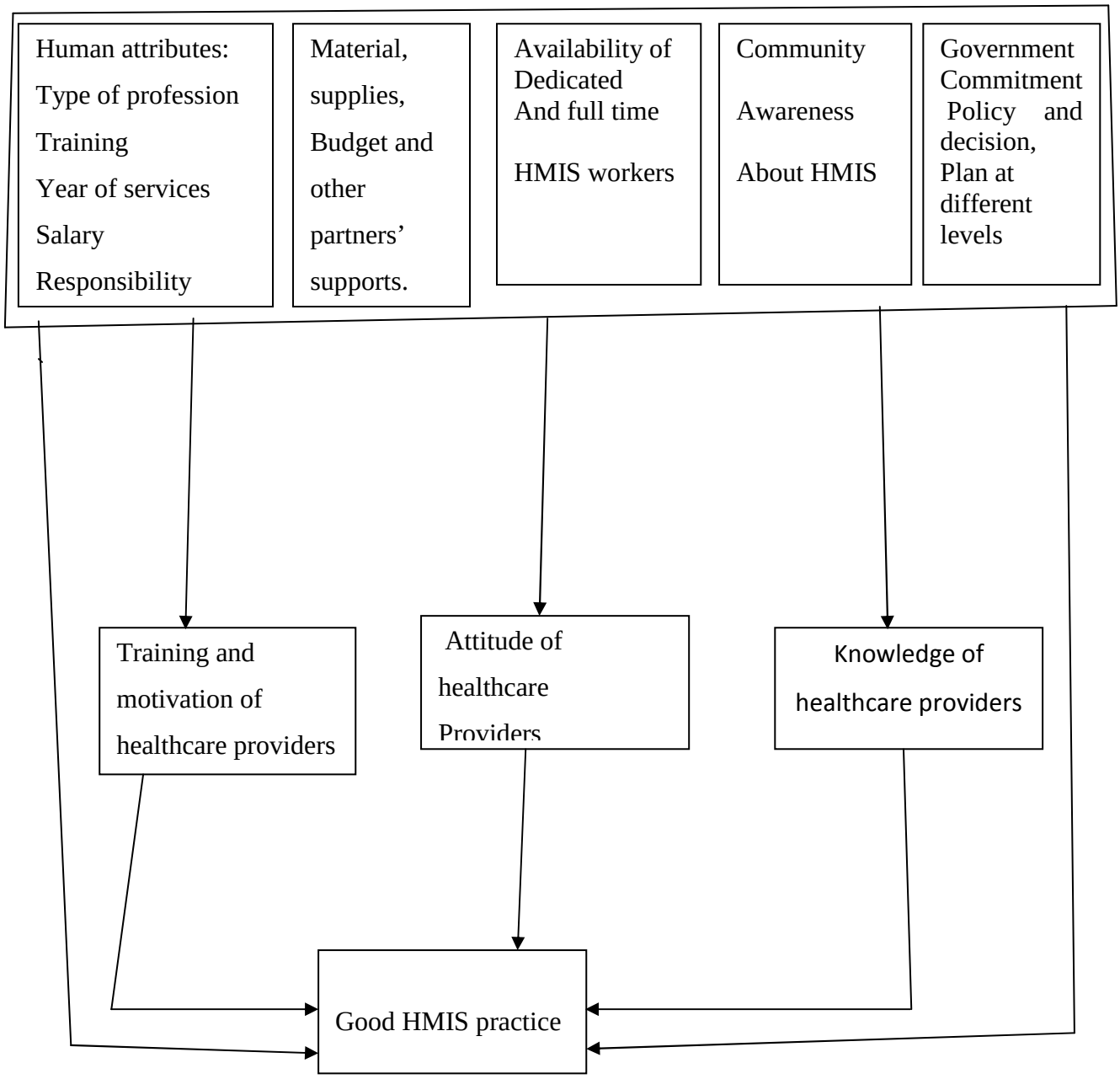
11. Annexes

Annex 1. Conceptual framework for KAP factors interrelated to HMIS.



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A survey questionnaires to assess Knowledge, Attitude and practice of healthcare providers on health management information system at health centers of North Shoa Zone of Oromia Region, 2010.

Annex 2. Information sheet

Hello, my name is _____and I am working with Ato Tegegn Kifle who is a Master student in Health informatics program at Addis Ababa University, medical and informatics faculty. Currently he is working his Master's thesis entitled as "Assessment of Knowledge, Attitude and practice of healthcare providers on health management information system at health centers in North shoa zone oromia region." In this study, my role is introducing the objectives of the study to the study participants, confirming their willingness, administering the questionnaire and collecting the questionnaire after they completed.

Contact address

If you have any questions, contact any of the following individual and you may ask at any time when you want:

1. **Tegegn Kifle:** Faculty of medicine and Informatics, Addis Ababa University.
   Telephone: 0911197859
2. **Dr.Fikru Tesfaye:** School of public health, faculty of medicine, Addis Ababa University.
   Telephone 0911433355

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Annex 3. Informed consent form (to be taken by data collectors)

Today, I am here to take data from Healthcare providers by using questionnaires which are prepared by Tegegn Kifle. You are selected to participate in this study.

The purpose of this questionnaire is to collect data from healthcare providers to study their knowledge, attitude and current practices of health management information system at health centers in North Shoa Zone of Oromia Region and the result of this study will help to improve the healthcare services and used as an input.

I would like to assure you that, the information that you provide is strictly confidential and will be used only for the research purpose. Your name will not be written on the questionnaire and you do not have to answer any question if you do not want to take part or you have right to stop filling this questionnaire at any time and I will respect what so ever your decision will be. But the genuine information that you will provide is enormously useful to achieve the objective of this study.

Taking the information you got from the above into account, I would greatly appreciate your co-operation in responding to this questionnaire. The time that you need is about 20-30 minutes to fill it. Are you willing to participate in this study? 1. Yes 2. No

Thank you for your willingness to participate in this study.

Name of data collector_____ Sign.____ Date_____

Name of Supervisor_____ Sign.____ Date_____

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Annex 4. Structured Self- administer questionnaire for healthcare providers

01:QuestionnaireID.No_____ Date of interview_____

Address of respondent.

02: Region_____ 03: Zone_____04: District_____

05: H. facility_____06:Kebele_____07:Town_____

Self-administer questionnaire to assess Knowledge, Attitude and practice of healthcare providers on health management information system at health centers in North Shoa Zone, Oromia Region March 2010.

PART I – Demographic and socio-economic characteristics**.**

Instruction: In this section please encircle the number given of the choices that exactly fits your status out of the list.

NO	Questions	Categories	Skip
101	Age	_____Years (age in completed years)	
102	Sex	1) Male 2) Female	
103	Your marital status	1) Single 2) Married 3) Divorced 4) Widowed/Widower 5) Separated	
104	Your religion	1) Orthodox 2) Muslim 3) Protestant 4)Other (specify)_____	
105	Your ethnicity	1) Oromo 2) Amhara 3 Other (specify)----------	

106	Profession category. Encircle one	1) HO 2)Nr(BSc) 3)diploma Nr 4) Lab.(BSc) 5) Lab.(diploma) 6)Pharmacy(BSc) 7) pharmacy (diploma) 8)Midwifery(BSc) 9)midwifery(diploma) 10)Health assistant/Junior nurse	
107	Your Monthly Salary. write on space provided	1) <5oo_____ 2)500-1000_____ 3)1001-1500 _____ 4)1501-2000_____ 5) >2000_____	
108	Year of services in year. Write on space provided	1) ≤5_____ 2) 6-10_____ 3)11-15_____ 4) ≥16_____	
109	Current responsibility. Encircle one	1) Adult OPD 2) under 5 OPD 3)Immunization and growth monitoring room 4) Maternity room 5) VCT room 6) TB/Leprosy & injection room 7) Laboratory room 8) Pharmacy room 9) ART room 10) Other (specify) _____	

Part II. Assessment of Knowledge

Instruction: For the following questions, please, answer what you know according to the given questions.

No	Questions	Category	Skip
201	What does HMIS stand for? Write it in full	_____	
202	At health center level before using data for decision- making it needs to be changed into __(Encircle one)	1) information 2)knowledge 99) I do not know	
203	Which one describes HMIS as information use at health center level? (Encircle one)	1)health management tool 2)health research tool 99) I do not know	
204	What is the ultimate goal of HMIS?(Encircle one)	1)to improve community health 2) to allocate budget 3) to make decision 99) I do not know	
205	Which of the following is the principle of HMIS? (Encircle as much as you know)	1)standardization 2) simplicity 3) integration 99) I do not know	
206	Which of the following is used as primary data source for HMIS at health centre level? (Encircle one).	1)health service records 2) guidelines 3)research findings 4) books 99) I do not know	
207	What is culling procedure in the HMIS activities? (Encircle one)	1)removing unnecessary records 2)Keeping records 3) analyzing records 99) I do not know	

208	What is the primary objective of the newly reformed HMIS at each health centre level? (Encircle only one) see from the given lists only.	1)local use of information for action 2)improve economy 3)sending report to higher level 99) I do not know	
209	If a patient comes to your health center with a health record number (card no) from somewhere else and has the slip card, according to the new HMIS rule, which one is the correct action? (Encircle only one)	1)no need to issue new number and give services 2) needs to issue new number and give services 3) no need to accept the patient at all 99) I do not know	
210	What do you know about the number of health indicators in the line of the new reformed HMIS compared to the old Practice?	1) less 2) the same 3)greater 99) I do not know	
211	What are the benefits of HMIS in general? (Encircle as much as you know.)	1) For resource allocation 2) For decision- making 3) For any public health action 99)I do not know	
212	Which one is the responsibility of healthcare providers at health center?(Encircle as much as you know)	1)Data collection & aggregating daily 2)data storage 3)data analysis 4)distribution of healthcare information 99) I do not know	
213	According to the newly reformed HMIS the personal data on a patient card is the property of the----------(Encircle one)	1) patients 2) health facilities 3) healthcare providers 99) I do not know	

214	Medical records primarily recorded for the benefits of _____ (Encircle one)	1) patients 2)health facilities 3) Healthcare providers 99) I do not know	
215	Is HMIS the only responsibility of health professionals at health facility level? Elicit your reasons for your response On the space provided.	1) yes 2) no 99) I do not know _____	
216	Have you ever heard about Master Patient Index?	1)Yes 2)No	→217
217	If yes for question no 216, what is it? Describe briefly.	_____	
218	The patient card is fastened with the other documents in its chronological order	1)Yes 2)No 99) I do not know	
219	Medical records are lifetime records of patients kept by healthcare organization	1)Yes 2)No 99) I do not know	
220	Have you ever heard about Tracer Card?	1)Yes 2)No	→221
221	If yes for Q#220 what do we use it for? Describe briefly	_____	
222	At your health center clinical and service records are hand written on different forms by healthcare providers and administrative staffs.	1)Yes 2)No 99) I do not know	
223	In HMIS principle, the completeness and timely submission of routine health and administrative reports at health centre level is to achieve 80 % or more. (Encircle one)	1) Yes 2) No 99) I do not know	

224	Patients have right to inspect or copy their medical records	1)Yes 2)No 99) I do not know	
225	Do you have Limitation/s to practice HMIS?	1)Yes 2)No	→226
226	If yes for Q#225, what type of Limitation/s? Encircle More than one answer is possible	1)Knowledge 2)Resources 3)Others_____	→ 227
227	What type of solution would you recommend for your limitation/s answered in Q # 226? Mention on space provided	_____ _____	

Part III. Assessment of attitude

Instruction: (Please complete the table below by ticking " √ '' in the appropriate box to show your level of agreement to the given HMIS Characteristics)

		Level of agreement to be ticked				
S.NO	**Characteristics of HMIS**	**Strongly agree (5)**	**Moderately Agree(4)**	**Neither agree nor disagree (3)**	**Moderately disagree(2)**	**Strongly disagree (1)**
301	What will be your level of agreement; if your supervisor tells you that your health center HMIS data burden is unreasonably high?					
302	HMIS is easy to implement and use for the health centers					
303	To implement HMIS, the healthcare providers working at your health center need to change their attitudes to support and strengthen it					
304	Having reformed HMIS for health centers will bring reasonable advantages by the current available staff's patterns.					
305	Do you agree, if the reformed HMIS is established at your health center?					
306	What is your level of agreement, if the quality of data collection and reporting tools are said to be 100% standardized currently present at your health center?					
307	You have adequate time to perform HMIS job at your health center					

Part IV. Current Practices of HMIS

Instruction: (Please encircle the answer from the given lists in front of each question that best describe HMIS practice at your health centre).

401	How many times have you been supervised by your respective supervisors in the last 3 months?(Encircle one)	1)1, 2)2, 3)3 4)4, 5) morethan4times 6) None	
402	How often do you get a feedback from your respective District health office at your working unit?	1) every month 2) sometimes 3) very rarely 4) Not at all	
403	What is your monthly report preparation day starting from day one of every month as Ethiopian calendar?	1) before 14^{th} day 2)between14^{th}-18^{th} days 3)after 18^{th} day	
404	How much time do you spent per month on HMIS activities averagely? (In hour).Write on space provided	_____	
405	Do you analyze, compile and interpret monthly report and document its copy very well?	1)Yes 2)No	→ 406
406	If yes for question no 405, where? And if not, why? Please describe briefly on the space provided. Evidence	_____	
407	Are there full time HMIS workers at your health center?	1) Yes 2) 2) No	→ 408
408	If not for Q#407, who are responsible for it? Describe briefly	_____	
409	Do you use the important tools to display health indicators in HMIS process at your health center?	1) yes 2)No	→ 410
410	If yes for Q # 409write two frequently used tools on the space provided.	1)_____ 2)_____	
411	Have you ever discussed formally with the health center staffs to evaluate the effectiveness of your health information system?	1)Yes 2)No	→ 412

412	If yes for question no 411, how often per year? Write on the space provided.	_____	
413	Do you use your data at your health center to prepare your plan of action and decision-making?	1)yes 2)No	
414	Have you ever trained in HMIS?	1)yes 2)No	
415	Do you provide information support to communities for surveillance?	1) Yes 2) No	→ 416
416	If yes for Q # 415, what type? Give evidences on the space provided.	_____	
417	Do you have HMIS rules and guidelines in your health center?	1) Yes 2) No → 418	
418	If yes for Q# 417, what type? Write the name/s on the space provided	_____	
419	Do you calculate plan achievement for essential services and prepare map for your health centre catchment area?	1) Yes 2) No	
420	Do you have registration book in your working room rather than patient/ client individual sheet? If No why?	1) Yes 2) No _____	
421	Do you aggregate data on daily basis in your office?	1) Yes 2) No	→ 422
422	If not for Q#421, who aggregate it? Elicit on the space provided	_____	
423	Has the planning for the HMIS activities been developed at your health centre?	1) Yes 2) No	→ 424
424	If Yes for Q # 423, What type of planning is it, if it is available? More than one answer is possible	1)Annually 2) Semi-annually 3) Quarterly 4) Monthly	

This is the end of this questionnaire. Thank you very much for your patience and co-operation to complete this questionnaire

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Annex. 5. In- depth interview Guides for health center heads

Address of respondents: Region…….Zone……District…….

Kebele…….Town……Name of health facility…….

Date of interview……..Name of interviewer.....Sign…….

Respondents: The respondents for this interview in particular are the health center heads working at health centers in North Shoa Zone, Oromia Region, Ethiopia.

Introduction: Good morning! I am Tegegn Kifle. I came from Addis Ababa University and I am a second year postgraduate student in health informatics program. I am here today to interview healthcare providers and the head of this health center about their HMIS knowledge, attitude and practices. All comments, both positive and negative are welcome. You would say many points about HMIS in the line of your view concerning your knowledge, attitude and current practices of HMIS at your health center. With your permission, I will use a tape recorder to ensure accuracy of the data collection. I would like to confirm that all your comments are confidential and will be used for research purpose only. This interview will be conducted only if you agree to take part in this study. Are you willing to participate in the study?

If you are willing to participate in this study, I will continue the interview.

Thank you for your willingness!

1. What advantages do you anticipate if HMIS is well established at this health center? It relevancy?
2. What strategies would you recommend for HMIS?
    - As prerequisite before implementing
    - During implementing phase
    - For sustainability
3. How do you feel about the quality of data collection instrument and the whole process at your health center?
4. What could be the main challenges to implement and make sustainable HMIS at your health center level?
5. How do you see the existing attitude of HCPs on HMIS working at your health center?
6. If the new reformed HMIS implemented at your health centre, who should responsible for overall its activities and what is your role in your health center for HMIS activities?
7. Any other points and recommendations that you would like to add about HMIS!

We finished the interview. Thank you for your patience and spending your much time to conduct this interview!!

አዲስ አበባ ዩኒቨርሲቲ
ህክምና እና ኢንፎርማቲክስ ፋካልቲ
የጤና ኢንፎርማቲክስ ፕሮግራም

በኦሮሚያ ክልል በሰሜን ሸዋ ዞን ስር በሚገኙ ጤና ጣቢያዎች ውስጥ በሚሰሩ የጤና ባለሙያዎች ስለጤና መረጃ አያያዝ ስርዓት ያላቸውን እውቀት፣ አመለካከትና አተገባበራቸውን ለማጥናት የተዘጋጀ መጠይቅ፡፡

አባሪ 6.የመረጃ ቅጽ

ጤና ይስጥልኝ! እኔ _____ እባላለሁ፡፡ አቶ ተገኝ ክፍሌ በአዲስ አበባ ዩኒቨርሲቲ፣ በህክምና እና ኢንፎርማቲክስ ፋካልቲ በጤና ኢንፎርማቲክስ የትምህርት ክፍል የማስተርስ ተማሪ ሲሆን የመመረቂያ ጽሁፉን በኦሮሚያ ክልል፣ በሰሜን ሸዋ ዞን ስር በሚገኙ ጤና ጣቢያዎች ውስጥ የሚሰሩ ጤና ባለሙያዎች ስለጤና መረጃ አያያዝ ስርአት ያላቸው እውቀት፣ አመለካከትና አተገባበር ምን ይመስላል በሚል የጥናት ርዕስ ላይ ስለሚሰራ እኔም አብሬው እሰራለሁ፡፡ የኔ ዋና የስራ ድርሻ ለጥናቱ ተሳታፊ እንዲሆኑ ለተመረጡ የጤና ባለሙያዎች የጥናቱን ዓላማ ካስተዋወቅሁ በኋላ የጥናቱን ተሳታፊዎች ፈቃደኝነታቸውን ጠይቄ ለጥናቱ የተዘጋጀውን መጠይቅ መስጠትና ሞልተው ከጨረሱ በኋላ ላቅ ያለ ምስጋና አቅርቤ መሰብሰብ ነው፡፡

አድራሻ

ጥያቄ ካለዎት በማንኛውም ጊዜ ከዚህ በታች በተሰጠው የስልክ ቁጥር በስም የተጠቀሱትን ሰዎች መጠየቅ ይችላሉ፡፡

1. አቶ ተገኝ ክፍሌ: ህክምና እና ኢንፎርማቲክስ ፋካልቲ: አዲስ አበባ ዩኒቨርሲቲ

የስልክ ቁጥር: 0911 197859

2. ደ/ር. ፍቅሩ ተስፋየ: የህብረተሰብ ጤና ትምህርት ቤት: ህክምና ፋካልቲ:አዲስ አበባ ዩኒቨርሲቲ

የስልክ ቁጥር: 0911 233355

አዲስ አበባ ዩኒቨርሲቲ
ህክምና እና ኢንፎርማቲክስ ፋካልቲ
የጤና ኢንፎርማቲክስ ፕሮግራም

አባሪ 7.ተሳትፎ ፍቃደኝነት ማረጋገጫ ቅጽ (በመረጃ ሰብሳቢዎች የሚሞላ)

ዛሬ እዚህ የመጣሁበት ጉዳይ ከላይ በተጠቀሰው መሰረት በአቶ ተገኝ ክፍሌ በተዘጋጀው መጠይቅ መሰረት ከጤና ባለሙያዎች መረጃ ለመሰብሰብ ነው፡፡ እርስዎ ለጥናቱ ተሳታፊ ይሆኑ ዘንድ ተመርጠዋል፡፡ የጥናቱ ዋና አላማ ጤና ባለሙያዎች ስለጤና መረጃ አያያዝ ስርዓት ያላቸውን እውቀት፣ አመለካከትና አተገባበራቸውን ለማጥናት ሲሆን የጥናቱ ውጤትም በሀገራችን ውስጥ የጤና አገልግሎት አሰጣጥን ለማሻሻልና እንደአንድ ግብአት ሆኖ ያገለግላል፡፡

ለተጠየቁአቸው ጥያቄዎች የሚሰጧቸው መረጃዎችም ሆነ አስተያየቶች ሚስጥርነታቸው የተጠበቀና ለጥናቱ አላማ ብቻ የሚውል ከመሆናቸውም በላይ ስምዎትም ሆነ ሌሎች እርስዎን ሊገልጹ የሚችሉ ነገሮች ሁሉ በመጠይቁ ላይ አይጻፉም፡፡ ይህ በዚህ እንዳለ ለሚጠየቁት ጥያቄዎች በከፊልም ሆነ በሙሉ ላለመመለስ መብትዎ የተጠበቀ ነው፡፡ መጠይቁን ለመሙላት ከ20-30ደቂቃ ይፈጃል፡፡ በጥናቱ ለመሳተፍም ሆነ ላለመሳተፍ የሚወስኑትን ውሳኔ እቀበላለሁ አከብራለሁም፡፡ ይህን መጠይቅ የሚሞሉት ሙሉ በሙሉ ሲስማሙ ብቻ ነው፡፡ የሚሰጡኝ መረጃ ለጥናቱ በጣም ወሳኝ ስለሆነ ትክክለኛ መረጃ እንዲሰጡኝ በአክብሮት እጠይቅዎታለሁ፡፡ ስለዚህ በጥናቱ ለመሳተፍ ፍቃደኛ ነዎት?

1. አዎ 2. አይደለሁም

በጣም አመሰግናለሁ!

የመረጃ ሰብሳቢው/ዋ ስም _____	የተቆጣጣሪ ስም _____
ፊርማ _____	ፊርማ _____
ቀን _____	ቀን _____

አዲስ አበባ ዩኒቨርሲቲ

ህክምና እና ኢንፎርማቲክስ ፋካልቲ

የጤና ኢንፎርማቲክስ ፕሮግራም

አባሪ 8. የጤና ባለሙያዎች እራሳቸው እንዲሞሉት የተዘጋጀ መጠይቅ

01:**የመጠይቁ መለያ ቁጥር፡** _____**መጠይቁ የተካሄደበት ቀን** _____

የመጠይቁ ተሳታፊዎች አድራሻ

02:**ክልል**----------03:**ዞን**----------04:**ወረዳ**----------05: **የጤና ጣቢያው ስም** ----------

06:**ቀበሌ**----------07:**ከተማ**----------

በኦሮሚያ ክልል በሰሜን ሸዋ ዞን ስር በሚገኙ ጤና ጣቢያዎች ውስጥ በሚሰሩ የጤና ባለሙያዎች ስለጤና መረጃ አያያዝ ስርዓት ያላቸውን የእውቀት ደረጃ፣ አመለካከትና አተገባበራቸውን ለማጥናት የተዘጋጀ መጠይቅ፡፡

ክፍል 1፡ ስለ ዲሞግራፊያዊ፣ ማህበራዊና ኢኮኖሚያዊ ጠቋሚ ጥያቄዎች

መመሪያ: **እባክዎ ከዚህ በታች ለተጠየቁት ጥያቄዎች ትክክለኛውን መልስ ይስጡ፡፡**

ተ.ቁ	ጥያቄ	ለመመለስ የተሰጡ አማራጮች	ወደሚቀጥለው ይለፉ
101	እድሜ	---------- በሙሉ ዓመት	
102	ጾታ	1. ወንድ 2. ሴት	
103	የጋብቻ ሁኔታ	1. ያላገቡ 2. ያገቡ 3. የተፋቱ 4. የሞቱባቸው 5. የተለያዩ	
104	ሐይማኖት	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ሌላ ከሆኑ ይጥቀሱ	
105	ጎሳ	1. ኦሮሞ 2. አማራ 3. ሌላ ከሆኑ ይግለጹ	
106	የሙያ አይነት	1. ጤና መኮንን 2. ነርስ ዲግሪ 3. ነርስ ዲፕሎማ	

		4. ላቦራቶሪ ዲግሪ 5. ላቦራቶሪ ዲፕሎማ 6. የመድሃኒት ባለሙያ ዲግሪ 7. የመድሃኒት ባለሙያ ዲፕሎማ 8. አዋላጅ ነርስ ዲግሪ 9. አዋላጅ ነርስ ዲፕሎማ 10. ጤና ረዳት	
107	የወር ገቢዎ በብር	1. 500 እና ከዚያ በታች---------- 2. ከ501-1000---------- 3. ከ1001-1500---------- 4. ከ1501-2000---------- 5. ከ2000 በላይ----------	
108	የአገልግሎት ዘመን በዓመት	1. 5 ዓመትና ከዚያ በታች---------- 2. ከ6-10 ዓመት---------- 3. 11-15 ዓመት---------- 4. 16 ዓመትና ከዚያ በላይ----------	
109	በአሁኑ ጊዜ በሃላፊነት የሚሰሩበት ክፍል	1. የአዋቂ ህክምና ክፍል 2. የህጻናት ህክምና ክፍል 3. ክትባት የህጻናትናእድገት ክትትል ክፍል ቤተሰብ ምጣኔ ክፍል 4. ቅድመ ወሊድ ክትትል 5. ኤች.አይ.ቪ ምርመራና ምክር አገልግሎት ክፍል 6. የሳንባ ሥጋደዌና ክፍል 7. ላቦራቶሪ ክፍል 8. መድሃኒት ክፍል 9. ጸረ ኤች.አይ. ቪ ህክምና ክፍል 10. ሌላ ከሆነ ይጥቀሱ	

ክፍል 2፡ እውቀትን በተመለከተ

መመሪያ: ለሚከተሉት ጥያቄዎች ከተሰጡት አማራጮች ውስጥ እንዲሁም እንዲጽፉ ለተጠየቁት ጥያቄዎች ትክክለኛውን መልስ ይስጡ፡፡

ተ.ቁ	ጥያቄ	ለመልስ የተሰጡ አማራጮች	ወደ ሚቀጥለው ይለፉ
201	HMIS ምን ይገልጻል?	_____ _____	
202	በጤና ጣቢያ ደረጃ ጥሬ መረጃ ለውሳኔ መወሰኛ ከማገልገሉ በፊት ወደ ምን መቀየር አለበት?	1. ወደ ተሰላ መረጃ 2.ወደ እውቀት 99. አላውቀውም	
203	የጤና መረጃ አያያዝ ስርዓትን የሚገልጸው የትኛው ነው	1. የጤና ምርምር መሳሪያ 2. የጤና አስተዳደር መሳሪያ 99. አላውቀውም	
204	የጤና መረጃ አያያዝ ስርዓት የመጨረሻ ግብ የትኛው ነው?	1.ህብረተሰብን ጤና ማሻሻል 2.በጀትን መመደብ 3.ውሳኔን መወሰን 4. አላውቀውም	
205		1. ስታንዳርዳይዜሽን 2. ግልጽ ማድረግ 3. ማቀናጀት 4. አላውቀውም	
206	ከተሰጡት አማራጮች መካከል የጤና መረጃ አያያዝ ስርዓት ቀዳሚ የመረጃ ምንጭ ሊሆን የሚችለው የቱ ነው?	1. የጤና አገልግሎት ምዝገባዎች 2. የተዘጋጁ መመሪያዎች 3. የምርምር ግኝቶች 4. SጽHፍ 99. አላውቀውም	
207		1. የማያስፈልጉትን ማስወገድ 2. የተመዘገቡ መረጃዎችን ማስቀመጥ 3. የተመዘገቡ መረጃዎችን መተንተን 99. አላውቀውም	
208	በእያንዳንዱ የጤና አገልግሎት ደረጃ የጤና መረጃ አያያዝ ስርዓት ቀዳሚ አላማ የሆነው የቱ ነው?	1. የጤና መረጃን ባለበት መስሪያ ቤት መጠቀም 2. ምጣኔ ሐብትን ማሻሻል 3. የስራ ሪፖርትን ወደ ሚመለከተው ክፍል መላክ 99. አላውቀውም	
209	አንድ ህመማን ከሌላ የጤና ድርጅት የካርድ ቁጥር ይዞ ቢመጣና መታከም ቢፈልግ በተሻሻለው መረጃ አያያዝ ስርዓት መሰረት ምን	1. አዲስ የካርድ ቁጥር አይሰጠውም በያዘው ቁጥር መሰረት ካርድ ወጥቶለት ይታከማል፡፡ 2. አዲስ የካርድ ቁጥር ይወጣለታል፡፡ 3. ህመምተኛውን ጨርሶውኑ	

	ያደርጋሉ?	እንዲታከም መቀበል አይቻልም 99. አላውቀውም	
210	የተሻሻለው የጤና መረጃ አያያዝ ሥርዓት መረጃ ጠቋሚ ከዚህ ቀደም ከነበረው የጤና መረጃ ጠቋሚ በቁጥር ምን ይሆናል ብለው ያስባሉ?	1. እኩል ነው፡፡ 2. ያንሳል 3. ይበልጣል 99. አላውቀውም	
211	በጠቅላላው የጤና መረጃ አያያዝ ስርዓት ጥቅሞች ምንድናቸው?	1. ግብአትን ለመመደብ 2. ውሳኔ ለመወሰን 3. የህብረተሰብ ጤና አገልግሎት 99. አላውቀውም	
212	በጤና ጣቢያ ደረጃ የጤና ባለሙያዎች ኃላፊነት የሆነው የቱ ነው?	1. መረጃ መሰብሰብና ማቀናጀት 2. መረጃ ማጠራቀም 3. መረጃ መተንተን 4. የጤና አገልግሎት መረጃን ማሰራጨት 99. አላውቀውም	
213	በተሻሻለው የጤና መረጃ አያያዝ ስርዓት መሰረት በህመምተኛ ካርድ ላይ የተመዘገበ መረጃ ንብረትነቱ የማነው?	1. የጤና ባለሙያው 2. የጤና ድርጅቱ 3. የህሙማኑ 99. አላውቀውም	
214	የህክምና መረጃ የሚመዘገበው በቀዳሚነት የሚጠቅመው	1. ለህመምተኛ 2. ለጤና ድርጅት 3. ለጤና ባለሙያው 99. አላውቀውም	
215	በጤና ጣቢያ ደረጃ ለጤና መረጃ አያያዝ ስርዓት ሃላፊነት ያለባቸው የጤና ባለሙያዎች ብቻ ናቸው፡፡ ለሚሰጡት መልስ ምክንያቱን በአጭሩ ይግለፁ፡፡	1. እውነት 2. ሐሰት 99. አላውቀውም	
216	ማስተር የህሙማን አመልካች ሲባል ሰምተው ያውቃሉ	1. አዎ 2. አላውቅም	▼217
217	የጤና መረጃን ለምን ይጠቀሙበታል? ሁለት ምክንያቶች ባጭሩ ይጻፉ	----------	
218	በህመምተኛ ካርድ ውስጥ ሰነዶች የሚያዙት በቅደም ተከተላቸው ነው፡፡	1. አይ 2. አይደለም 99. አላውቀውም	
219	የተመዘገበ የህመምተኛ የህክምና መረጃ በጤና ድርጅት በእድሜ ልክ ሊቀመጥ ይችላል	1. አይ 2. አይደለም 99. አላውቀውም	
220	ትሬሰር ካርድ ሲባል ሰምተው ያውቃሉ?	1. አዎ 2. አላውቅም	►221

221	ለተራ ቁጥር 220 አዎ ካሉ ለምን ይጠቅመናል?	_____ _____	
222	በጤና ጣቢያ ውስጥ የጤና አገልግሎት መረጃዎች የሚፃፉት በእጅ ነው።	1. አዎ 2. አይደለም 99. አላውቀውም	
223	በጤና መረጃ አያያዝ ስርዓት መሰረታዊ መመሪያ የተሟላና በጊዜ የተገደበ የቀን ተቀንና የጤና አገልግሎትና አስተዳደራዊ የስራ ሪፖርት 80 ከመቶ ለማከናወን ነው።	1. እውነት 2. ውሸት 99. አላውቀውም	
224	ህመምተኛ የተመዘገበ የህክምና መረጃቸውን ሊቀዱ ወይም ሊያዩ ይችላሉ።	1. አዎ 2. አይችሉም 99. አላውቀውም	
225	የጤና መረጃ አያያዝ ስርዓትን ለመተግበር ችግር አለብዎት?	1. አዎ 2. የለም	▼226
226	ለተራ ቁጥር 225 አዎ ካሉ ምን አይነት ችግር? ከአንድ በላይ መልስ መመለስ ይቻላል።	1. እውቀት 2. ሪሶርስ 3. ሌላ _____	▶227
227	ተራ ቁጥር 226 ላይ ለጠቀሷቸው ችግርዎ ምን አይነት መፍትሔ ይመክራሉ? ይጥቀሱ።	_____ _____ _____	

ክፍል 3. **አመለካከት**

መመሪያ፡ **ቀጥሎ ለተሰጡት ጥያቄዎች በትይዩአቸው በተሰጠው የስምምነት ደረጃ ሳጥን ውስጥ የሚስማሙበትን ደረጃ ከወስኑ በኋላ የ✓ ምልክት ያድርጉ፡፡**

ተ.ቁ	ጥያቄዎች	በጣም እስማማለሁ(5)	በመጠኑ እስማማለሁ (4)	በአንዱም አልስማማም(3)	በመጠኑ አልስማማም(2)	በጣም አልስማማም(1)
301	ተቆጣጣሪዎ መጥቶ በጤና ጣቢያችሁ ያለው የጤና መረጃ አያያዝ ስርዓት የጥሬ መረጃችሁ ብዛት በጣም ከፍተኛ ነው ቢልዎት በየትኛው የመስማሚያ ደረጃ ይስማማሉ					
302	የጤና መረጃ አያያዝ ስርዓት በጤና ጣቢያ ለመተግበርና ለመጠቀም ቀላል ነው፡፡					
303	የጤና መረጃ አያያዝ ስርዓት ለመተግበር የጤና ባለሙያዎች አመለካከታቸውን ሊለውጡ ይገባቸዋል፡፡					
304	አሁን ባለው የጤና ጣቢያ የሰራተኛ ስብጥር መሰረት የጤና መረጃ አያያዝ ስርዓት ትልቅ ጥቅም ሊያመጣ ይችላል፡፡					
305	በጤና ጣቢያችሁ የጤና መረጃ አያያዝ ስርዓት ቢቋቋም ይስማማሉ					
306	በአሁኑ ወቅት በጤና ጣቢያችሁ የሚገኘው የመረጃ መሰብሰቢያ መሳሪያ ጥራት100% ጥሩ ነው ቢባል ምን ያህል ይስማማሉ					
307	የጤና መረጃ አያያዝ ስርዓትን ስራ ለመስራት በቂ ጊዜ አለዎት					

ክፍል 4- **አተገባበርን በተመለከተ**

መመሪያ፡ ከዚህ በታች ለተሰጡት ጥያቄዎች ከተሰጡት አማራጮች ይምረጡ።።

ተ.ቁ	ጥያቄዎች	አማራጮች	ወደሚቀጥለው ይለፉ
401	በባለፉት 3 ወራቶች ውስጥ በተቆጣጣሪዎ ስንት ጊዜ ቁጥጥር ተደርጎአል?	1 ጊዜ 2ጊዜ 3ጊዜ 4ጊዜ ከ4 ጊዜ በላይ 6. ምንም	
402	ከወረዳ ጤና ቢሮ በጤና ጣቢያዎ በሚሰሩበት ክፍል በየስንት ጊዜ ምላሽ አስተያየት ይደረግልዎታል?	1. በየወሩ 2. አንዳንድ ጊዜ 3. አልፎ አልፎ 4. ተደርጎ አያውቅም	
403	በወር ውስጥ ወርሃዊ ሪፖርት የሚያደርጉት ወር በገባ በስንት ነው?	1. ከ14ቀን በፊት 2. ከ14-18 3. ከ18 ቀን በኋላ	
404	በአማካኝ በጤና መረጃ አያያዝ ስርዓት ሥራ ላይ በወር ስንት ሰዓት ያውላሉ? በተዘጋጀው ቦታ ላይ ይጻፉ።።	----------	
405	የወርሃዊ ሪፖርት መረጃን ይተነትናሉ፣ ያጠናቅራሉ፣ ይተረጉማሉ፣ በአግባቡ ያስቀምጣሉ?	1. አዎ 2. የለም → 406	
406	ለጥያቄ ቁጥር 405 አዎን ካሉ የት ነው የሚያስቀምጡት? ካልሆነስ ለምን? በአጭሩ ይግለጹ	----------	
407	በጤና ጣቢያዎ በጤና መረጃ አያያዝ ስርዓት ላይ ሙሉቀን የሚሰራ ሰራተኛ አለ?	1.አዎ 2.የለም → 408	
408	ለጥያቄ ቁጥር 407 የለም ካሉ ማነው ለጤና መረጃ አያያዝ ስርዓት ሃላፊነት ወስዶ የሚሰራው? ባጭሩ ይግለጹ	_____	
409	በጤና መረጃ አያያዝ ስርዓት የስራ ሂደት ውስጥ የጤና መረጃ ጠቋሚን ይጠቀማ?	1.አዎ 2.የለም	
410	ለተራ ቁጥር 409 አዎ ካሉ ሁለቱን ይጥቀሱ።።	_____	
411	ከጤና ጣቢያዎ ሰራተኞች ጋር የጤና ጣቢያውን የጤና መረጃ አያያዝ ስርዓትን ውጤታማነት ለመገምገም ተወያይተው ያውቃሉ?	1.አዎ 2.የለም → 411	
412	ለጥያቄ ቁጥር 411 አዎን ካሉ በዓመት ስንት ጊዜ? በተዘጋጀው ቦታ ላይ ይጻፉ	_____	
413	በጤና ጣቢያዎ እቅድን ለማቀድ መረጃ	1.አዎ	

	ይጠቀማሉ?	2.የለም	
414	በጤና መረጃ አያያዝ ሥርዓት ሰልጥነው ያውቃሉ?	1.አዎ 2.የለም	
415	ለህብረተሰቡ ስለበሽታ ቅኝት መረጃ ይሰጣሉ?	1.አዎ 2 አልሰጥም	→416
416	ለጥያቄ ቁጥር 415 አዎ ካሉ ምን አይነት? ይፃፉ	_____ ----------	
417	በጤና ጣቢያዎ ውስጥ ስለጤና መረጃ ስርዓት የተዘጋጁ መመሪያዎች አሉ?	1.አዎ 2.የለም	→418
418	ለጥያቄ 417 አዎ ካሉ ምን አይነት? ይፃፉ	----------	
419	በጤና ጣቢያዎ ለሚሰጡት አገልግሎት እቅድ ትግበራውን ያሰሉታል?	1.አዎ 2.የለም	
420	ከህመምተኞች ካርድ በተጨማሪ መረጃ የሚመዘግቡበት መዝገብ በሚሰሩበት ክፍል ውስጥ አለዎት?	1.አዎ 2.የለም	
421	በቢሮው ውስጥ መረጃን በየቀኑ ያጠናክራሉ?	1.አዎ 2.የለም	→422
422	ለጥያቄ ቁጥር 421 አላጠናቅርም ካሉ ማን ያጠናክረዋል? ይጥቀሱ	_____	
423	በጤና ጣቢያዎ ውስጥ የጤና መረጃ አያያዝ ስርኣት እቅድ አለዎት?	1.አዎ 2.የለም	▶424
424	ለጥያቄ ቁጥር 423 አዎን ካሉ ምን አይነት ነው? ከአንድ በላይ መልስ መመለስ ይቻላል	1. አመታዊ 2. የስድስት ወር 3. የሩብ ዓመት 4. የወር	

ይህ የመጠይቁ መጨረሻ ነው፡፡ ይህን መጠይቅ ለመሙላት ላደረጉልን ትዕግስትና ትብብር በጣም እናመሰግናለን፡

አዲስ አበባ ዩኒቨርሲቲ
ህክምና እና ኢንፎርማቲክስ ፋካልቲ
የጤና ኢንፎርማቲክስ ፕሮግራም

አባሪ 9. ለጤና ጣቢያ ሃላፊዎች የተዘጋጀ የመረጃ መሰብሰቢያ መጠይቅ

የመጠይቁ ተሳታፊዎች አድራሻ

ክልል---------ዞን---------ወረዳ-------ቀበሌ----------ከተማ----------የጤና ጣቢያው ስም----------

መጠይቁ የተካሄደበት ቀን----------የመረጃ ሰብሳቢው ስም----------ፊርማ----------

የዚህ ጥያቄ መላሾች፡ በኦሮሚያ ክልል በሰሜን ሸዋ ዞን ስር በሚገኙ የተመረጡ የጤና ጣቢያ ኃላፊዎች ናቸው፡፡

መግቢያ፡ **እንደምን አደራችሁ/እንደምን ዋላችሁ:: እኔ ተገኝ ክፍሌ እባላለሁ የመጣሁትም ከአዲስ አበባ ዩኒቨርሲቲ ሲሆን የሁለተኛ አመት የጤና ኢንፎርማቲክ የማስተር ተማሪ ነኝ፡፡የመጣሁበትም ዋና አላማ የጤና ባለሙያዎችን እና የጤና ጣቢያውን ሃላፊ ስለ ጤና መረጃ አያያዝ ስርአት ያላቸውን እውቀት፣ አመለካከትና እንዴት እየተገበሩት እንዳሉ መረጃ ለመሰብሰብ ነው፡፡ በተለይም እርስዎ የጤና ጣቢያው ሃላፊ እንደመሆንዎ መጠን ማንኛውንም አሉታዊም ሆነ አዎንታዊ ሥለ ጤና መረጃ አያያዝ ስርዓት ሁኔታ የሚሰማዎትንና የሚያውቁትን ነገር እንዲሁም በአሁኑ ወቅት እንዴት እየተተገበረ እንደሆነ በጥልቀት አስተያየት መስጠት ይችላሉ፡፡ መረጃውን ስወስድ ጥራቱ እንዲጠበቅ ፍቃድዎ ከሆነ የሚሰጡኝን መረጃ በቴፕ እቀዳዋለሁ፡፡ የሚሰጡኝ መረጃ በሙሉ የሚውለው ለዚህ ጥናት አላማ ብቻ መሆኑንና በሚስጥር የሚጠበቅ መሆኑን ላረጋግጥልዎት እወዳለሁ፡፡ በጥናቱ ለመሳተፍ ፍቃደኛ ነዎት? ፈቃደኛ ከሆኑ መጠይቁን ልጀምር ነው፡፡**

ለፍቃደኝነትዎ አመሰግናለሁ፡፡

ጥያቄዎች

1. **የጤና መረጃ አያያዝ በጥሩ ሁኔታ ቢቋቋም ለጤና ጣቢያው ምን ጥቅም ያስገኛል ብለው ያስባሉ? ስለአግባብነቱስ?**
2. **ለጤና መረጃ አያያዝ ምን አይነት ስልት ቢነደፍ ይመክራሉ?**
   - **ከትግበራ በፊት እንደቅድመ ሁኔታ**
   - **በትግበራ ጊዜ**
   - **ቀጣይነት እንዲኖረው**

3.በጤና ጣቢያዎ ውስጥ ስለመረጃ መሰብሰቢያ መሳሪያዎች ጥራትና ስለ ጠቅላላ የጤና መረጃ አያያዝ ሂደት ምን ይሰማዎታል?

4.በጤና ጣቢያቸው የጤና መረጃ አያያዝ ስርዓትን ለመተግበርና ቀጣይነት እንዲኖረው ለማድረግ ምን አይነት ችግር ያጋጥማል ብለው ያስባሉ?

5.በጤና ጣቢያው ውስጥ የሚሰሩት የጤና ባለሙያዎች ስለጤና መረጃ አያያዝ ስርዓት በአሁኑ ጊዜ ያላቸውን አመለካከት እንዴት ያውቃል?

6. በአዲስ መልክ የተሻሻለው የጤና መረጃ አያያዝ ስርዓት በጤና ጣቢያቸው ቢተገበር ሃላፊነት መውሰድ የሚገባው አካል ማን ይመስልዎታል? የርስዎ ሚናስ ምን ይመስልዎታል?

7. ስለ ጤና መረጃ አያያዝ ስርዓት ሌሎች አስተያየቶች ነጥቦች ለማስቀመጥ የሚፈልጉት ጉዳዮች ካሉ መጨመር ይችላሉ፡፡

ቃለመጠይቁን ጨርሻለሁ፡፡

ይህን ቃለመጠይቅ ለማካሄድ ትዕግስት አድርገው ጊዜዎትን መስዋዕት ስላደረጉልኝ ከልብ አመሰግናለሁ፡፡

Annex 10. Declaration

1. Declaration of the investigator

I, the undersigned declared that this thesis is my original work in partial fulfillment of the requirement for the degree of Master of Science in health informatics. All the sources of the materials used for this thesis and all source people and organizations who gave me their support for this study are thoroughly acknowledged.

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Signature _____

Date: 5 July 2010

Place: Health informatics program, faculty of medicine and faculty of informatics, Addis Ababa University.

Date of submission: 5 July 2010

Approval of the primary Advisor

This thesis work has been submitted with my approval as the University advisor.

Name of Advisor: Dr.Fikru Tesfaye

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Date: 5 July 2010

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