

Investigating the Factors Affecting Utilization of Health Information: In the Case of Jimma University Specialized Hospital

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How to cite this article:

Demitu Gemechu, M Natarajan / Investigating the Factors Affecting Utilization of Health Information: In the Case of Jimma University Specialized Hospital. *IJLib Inf Sci* 2020;14(3):145-153.

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Abstract

Background: Health information is a system that entails collecting, reporting and using in order to assist the health professionals for better decision making. In case the health records are not maintained properly it affects the patient's healthcare. Therefore, this study was to investigate the factors affecting the utilization of health information in case of Jimma University specialized hospital.

Materials and Methods: A cross sectional study design was employed with both the quantitative and qualitative data collection methodology. The sample size was selected using simple random sampling technique. Quantitative data were entered and analyzed using SPSS version 20.0, while qualitative data was transcribed, categorized into themes for easy interpretation and analysis.

Results: A total of 167 health professionals were participated with the response rate of 87%. The experience ranged between 6-10 years (50%) and the JU hospital has engaged only 40% of health professionals as fulltime employees and hence there were lack of records / reports about the health information. Most of them are not satisfied on the current status of health information and also they are not motivated properly.

Conclusions: The research found that most of the respondents are not happy with the existing health information. Utilization of health information is low and it is attributed to the system quality by the health professionals. The factors that are to be reinforced like lack of confidence, motivational factors, health professionals engagement levels, lack of resources and consensus between seniors and user departments. It is recommended to have more resources with more openings and periodic training.

Keywords: Health information; Jimma University; WHO; Health care professionals.

Introduction

Health information refers to demographic information, medical history, test and laboratory results, insurance information and other data that is collected by a health care professional to identify an individual and determine what type of care that individual should receive or to determine appropriate care. Health information

is likely to allow health facility managers and service providers to document, analyze and use information to improve coverage, continuity and quality of health care services at all levels by better planning, monitoring and evaluating of health facility services.¹ Health information refers to information that is related to health and it is highly required in the processes of improving the quality of health care services. As healthcare is a field of



high developmental priority and the wealth of a nation depends on the health of its population, appropriate information and Health Information Systems are seen as crucial to strengthen the health system especially in developing countries.² Health information is collected daily on the basis of patient visits to the hospital and they are not maintained properly. However, from the records the health information is collected whenever the patient is visiting again and again. The extent to which the application possesses a desired combination of quality attributes such as usability, performance, reliability and security indicates the success of the design and the overall quality of the application.³ Some factors that are looked into to ensure systems quality include: i) Accuracy, ii) Accessibility, iii) Comprehensiveness, iv) Consistency, v) Current, vi) Validity and vii) Timeliness to make necessary decisions.⁴ Information about diseases or use of health services can help to build up a picture of the health needs of a local population. Such kind of information gives a picture of a population's health but without comparing at national or regional level, this was incomplete use in planning health services. If health services are to respond to the changing health needs of their local populations, then planners and managers need useful and timely information about the health status of these populations. Some of this information can come from routine data sources or may be collected from large population studies. Some information can be obtained from community surveys.⁵ Many factors may influence this response, including characteristics of the individual and their ability to access the type of resources they may need in their quest to deal with their ill health. Starting from the premise that access to relevant information and knowledge is critical to the delivery of effective healthcare services.⁶

Statement of the Problem

Use of health information by health professionals is very necessary for carrying out the hospital activity. It is highly required in the processes of improving the quality of health care services. Expanded utilization of Health information is expected in the coming years, but this information must be used effectively to meet objectives; this is entirely dependent on health professionals' use of Health information in their daily tasks. Studies in similar settings show that that lack of basic knowledge of computers and software on the part of health professionals is a main factor in failure of Health systems. Therefore, before expanding health information, it is necessary to know the

current knowledge and utilization habits of health professionals so that effective prior planning can take place.⁷ The reason for investigating the factors affecting utilization of health information in the case of Jimma University specialized hospital (JUSH) is currently they do not maintain proper health information and the use at lower level is very poor. Furthermore, the continuous effect of parallel reporting mechanisms with programmatic creates multiple reporting formats and an increased administrative workload. It is characterized by burdensome and uneven, inadequate staff skill and the information flow is also fragmented and characterized by parallel reporting system with no integration among the various subsystems. In order to carry out the research the following objectives are framed:

Objectives of the Study

The main objective of study is to investigate the factors affecting utilization of health information: in the case of Jimma University specialized hospital (JUSH) and the specific objectives are:

1. To find out the current status of health information in Jimma University specialized hospital.
2. To find out the extent of use of health information regarding transmission disease by health professionals in Jimma University specialized hospital.
3. To find out the motivational level for the use of health information in Jimma University specialized hospital.
4. To find out the benefits of using the health information on the disease in Jimma University specialized hospital.
5. To find out the challenges of using health information in Jimma University specialized hospital.

Scope of the Study

The study is specially focusing on investigating the determinants of effective utilization of health information by health professionals in Jimma university specialized hospital.

Significance of the Study

The study act as an eye opener for the private health facilities on the relevance of health information for the purposes of decision making, planning

and evaluation. The study is useful for health professionals to know the relevancy of installing health information relevant for better information in health sector. The study has changed the intention of health facilities from the behavior of profit aiming to better and improved service delivery in maximizing profits. The study was unveiling the different determinants for effective utilization of health information as available in the health facilities. The study can assist the Health and other relevant health authorities in finding ways of ensuring that private health facilities and clinics effectively utilize health information using the recommendations that was put forward at end of the study.

Literature review

The literature review discusses the issues that are relevant to the topic of the study, starting with defining basic concepts and ideas that are related to Health information, Utilization of Health Information management information system, Utilization of Health Information in Jimma University specialized hospital and Health professional and their role. Health information in Ethiopia and related researches undertaken by different authors at different areas are also discussed. There are various efforts invested on improving health care services globally. Improving quality of health service for instance, is a major component of millennium Development Goals (MDGs). Among the efforts made to an effective health information service, one is improving the HI of the facilities.

Health information

Health information plays major role on making evidence based decision for a better health of a nation.⁵ Anasi⁸ discussed that African countries are faced with a number of daunting health challenges. These include maternal mortality, child and infant mortality, malaria, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), cholera, and so on. At such a time, Africans need access to health information. Unfortunately, access to and dissemination of health information in Africa is still at its lowest ebb. This article, therefore, examines the benefits of access to health information and the different methods adopted by African countries for the dissemination of health information. The article contends that the synergy between health and information professionals and the adoption of best strategies for the dissemination of health information will help to reduce Africans' disease

burden. Health information can be exchanged through regional health information organizations (RHIO). A RHIO is a multi-sided platform; on one side, health care organization, which usually includes laboratories and radiology centers along with major hospital systems and pharmacies, join the platform and upload their patients' data to the RHIO's database. On the other side, medical providers query RHIO's database and download the available medical information. The RHIO provides IT infrastructure and manages patient privacy and data transactions between the members.⁹ Health information system provides the underpinnings for decision-making and has four key functions: data generation, compilation, analysis and synthesis, and communication and use. It collects data from health and other relevant sectors, analyses the data and ensures their overall quality, relevance and timeliness, and converts the data into information for health-related decision-making.¹ It is sometimes equated with monitoring and evaluation but this is too reductionist a perspective. In addition to being essential for monitoring and evaluation, the information system also serves broader objectives, such as providing an alert and early warning capability, supporting patient and health facility management, enabling planning, underpinning and stimulating research, permitting health situation and trends analyses, orienting global reporting, and reinforcing communication of health challenges to diverse users. Information is of little value if it is not available in formats that meet the needs of multiple users, i.e. policy-makers, Planners, managers, health-care providers, communities and individuals. Dissemination and communication are therefore essential attributes of the health information system.¹

Health Professionals and their role

Health Professionals are described as 'gate keepers' of health in the community are found to be effective in dialoging with the households on actions for health since they shared a common situation and experience. The Health Professionals had been selected by the community using the guidelines with a strong emphasis on the willingness and ability to work as volunteers.¹⁰ Health Professionals are expected to be mature, responsible and respected members of the community, men or women chosen by the community to provide basic health care. Their main role is to promote good health by:

- Teaching the community how to improve health and prevent illness by adopting healthy practices.

- Treating common ailments and minor injuries, as first aid, with the support and referring cases to the nearest health facilities.
- Promoting care seeking and compliance with treatment and advice and also
- visiting homes to determine the health situation and dialogue with household members to undertake the necessary action for improvement.

Utilization of Health information

Using Andersen's behavioral model they have examined the factors associated with health services.¹¹ They collected Korea Health Panel data between the years 2010 and 2012 from the consortium of the National Health Insurance Service and the Korea Institute for Health and Social Affairs, and analyzed the data to determine the outpatients and inpatients of health services utilization. Health services utilization was more significantly explained by predisposing and need factors than enabling factors. The outpatients were examined more specifically; sex, age, and marital status as predisposing factors, and chronic illness as a need factor were the variables that had significant effects on health-services-utilization experience. The inpatients were examined more specifically: sex, age, and marital status in predisposing factors; education level, economic activities, and insurance type in enabling factors; and chronic illness and disability status in need factors were the significant variables having greater effects on health-services-utilization experience. This study suggested the practical implications for providing health services for outpatients and inpatients. Moreover, verifying the general characteristics of outpatients and inpatients by focusing on their health services utilization provides the baseline data for establishing health service policies and programs with regard to the recently increasing interest in health services.

Utilization of Health information is an information in the domain of health, which is the collection of people, procedures and equipment designed, constructed, operated and manipulated to collect, record, process, store, retrieve, disseminate and use information concerning health. The study conducted by Al Johara¹² determined the factors affecting utilization of dental health services among intermediate female school students in Riyadh, in addition to assessing their satisfaction with the dental care received during the last dental visit. Self-administered questionnaires were distributed

among students attending eight public and four private schools, that were selected randomly and 600 questionnaires were distributed out of which 531 were completed that were suitable for analysis. Satisfaction with dental care was found to be significantly associated with high quality of dental care, convenient appointment, friendly staff, modern dental clinics and clinics recommended by friends. It is found that the quality of dental care, reasonable fees for dental services and close location of dental clinics to students' homes are encouraging factors for utilization of dental services. Application of information in health care service directs to what is referred to as Health Information (HI) which is defined as sets of components and procedures organized for the sake of generating information to improve health care management decisions. The Utilization of HI serves wide ranges of users for wide ranges of purpose. It is used for the generation of information enabling decision-makers at all levels of the health sector, identify health related problems and needs, make evidence-based decisions, make optimal allocation of scarce resources.⁵

Utilization of Health Information in Jimma University specialized hospital

Jimma university specialized hospital is characterized by lack of integration and are disjointed and widely dispersed, with no effective central co-ordination to ensure that the information which they contain is readily available to those who need it. Health information systems and services can best be conceptualized as a heterogeneous network comprising of people (medical professionals, information professionals, health managers, planners, donor communities etc.) artifacts (computers equipment's, hardware, computer applications, electronic information resources, databases, data collection and reporting etc.) and social, political structures. Conceptualized in this way, access to health information by medical professionals is emphasized as something more than just a technical issue; it includes the interests of various stakeholders, artifacts like computers equipment's and applications relating to health information systems, the practices of people and organizational routines. The emphasis on the multiplicity of stakeholders help to place focus on their different rationalities and the challenges, developing a strategy for the district health service, monitoring the health problems that occurred in the district, and coordinating the activities of all health care providers in the district.⁷

Methodology

A cross sectional survey was used for the study, since the researcher has to contact different types of health professionals.

Population of the study

The population is from Jimma University Specialized hospital's health professionals numbering to 770 (Sourced from Director JUSH). Because, it is difficult to collect data from all, it was restricted by simple random sampling technique. To calculate the following sample technique, researcher took the number of the Sample size of the health professionals of Jimma University specialized hospital as 192 (Kothari, 2004). Therefore, the researcher identified that sample size for Jimma University specialized hospital staffs 192.

Result

Questionnaires

A detailed questionnaire (Annexure 1) has been prepared for health professionals of Jimma University specialized hospital for collecting data and it was distributed to 192, but however only 167 have returned as the usable questionnaire for analysis.

Interview

Interview is a method of collecting in-depth information from the study area. Interview was conducted with the Director of Jimma University specialized hospital, that helped to gather some vital data that is not provided from the questionnaire. Sample interview questions are attached. This study was focused on the qualitative and quantitative data collecting mechanisms. Both of them were analyzed by using different types of data analyzing techniques. Preparing tables, graphs and charts based on collected data, was part of this analyzing technique. Statistical package for social science (SPSS) software version 20.0 was used for analyzing purpose.

Data Analysis

For the study on investigating the factors affecting of utilization of health information by Jimma University specialized hospital, as per the objective the data collection has been done. The collected questionnaires from the 167 (87%) respondents are analyzed using Tables and Graphs and data interpretation is done below:

Table 1: Distribution of respondents based on the gender.

Gender	Frequency	Percentage
Male	94	56.28
Female	73	43.72
Total	167	100

The above Table 1 indicates that, 94 (56.28%) respondents were male and 73 (43.72%) was female, from the total number of 167 (100%). This implies that most of the respondents were male who were working in Jimma University specialized hospital.

It was also requested in the questionnaire about the age range of the respondents. The collected data has been tabulated below in Table 2:

Table 2: Distribution of respondents based on the age.

Age range of respondents	Frequency	Percentage
25-30	45	30.0
31-35	51	36.0
36-40	47	24.0
Above 40	24	10.0
Total	167	100

From the Table 2, it is found that 45 (30.0%) of the respondents were in the age group of between 25-30 years, 51 (36.0%) of the respondents were between 31-35 years, 47 (24.0%) were between 36-40 and 24 (10.0%) were above 40 years. It is found from the data that most of the respondents were between 31-35 ages, respondents from the total of 167 (100%). It is also requested in the questionnaire about the educational qualifications of the respondents. The collected data has been shown below as in Figure 1:

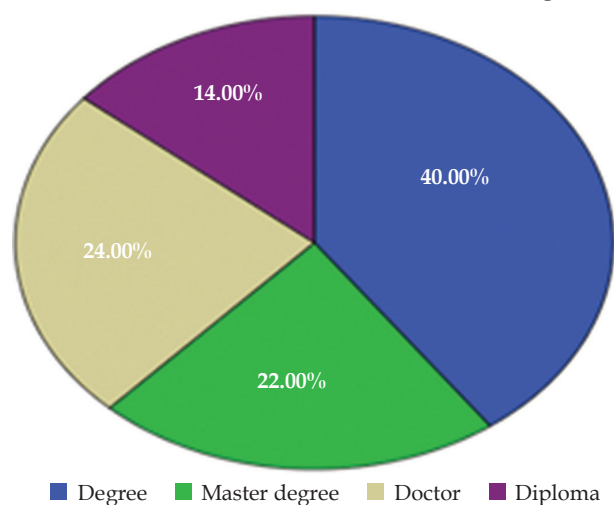


Fig. 1: Educational qualifications.

From the above pie chart (Figure 1), it is found that 67 (40.0%) respondents possess Degree, 37

(22.0%) respondents have master degree, 40 (24.0%) have Doctors degree and 23 (14.0%) were with diploma from 167 (100%) respondents. This implies that most of the respondents were degree on the existences of educational qualification.

The collected data about the work experience of the respondent's data has been given as bar diagram in Figure 2:

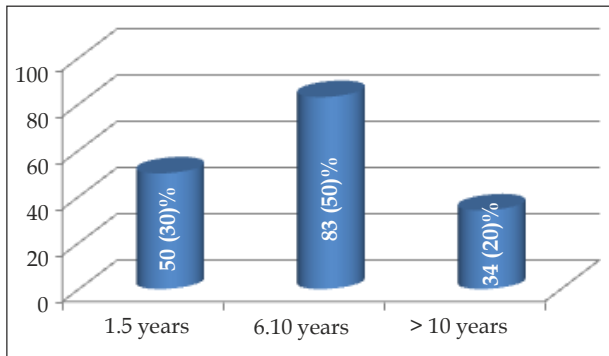


Fig. 2: Work experience.

From the Figure 2 indicates that 50 (30.0%) of the respondents were having their working experience between 1-5 Years, 83 (50.0%) respondents were with work experience between 6-10 Years, 34 (20.0%) were with working experience as more than 10 years, out of 167 from the total population; this shows most of respondents were having experience between 6-10 years.

It was also requested in the questionnaire about the engagement as full time of respondents. The collected data has been tabulated below in Table 3:

Table 3: Are you engaged as full time health professional.

Response	Frequency (No. of respondents)	Percentage
Yes	67	40.0
No	100	60.0
Total	167	100

Table 3 indicates that 67 (40.0%) respondents are engaged full time as health professionals and the others 100 (60%) are not engaged as full time health professionals. It indicates that the JU major specialized hospital hasn't engaged many people as full time health professional.

It was also requested about the extent of use of reports as a health professional of the respondents. The collected data has been given as line diagram below in Figure 3:

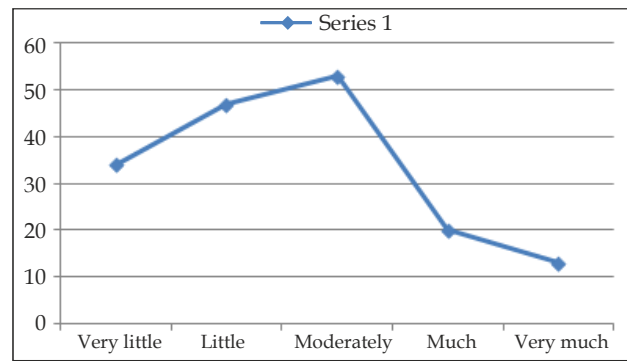


Fig. 3: Extent of reports use by health professionals.

Figure 3 indicates that the reports used by 34 (20.0%) respondents as very little, 47 (28.0%) respondents as little, 53 (32.0%) as moderately, 20 (12.0%) informed as much and 13 (8.0%) respondents as very much, from the response of 167 (100%) health professionals of the Jimma university specialized hospital.

It is also requested in the questionnaire about assisting the job of the respondents. The collected data has been shown below as graph in Figure 4.

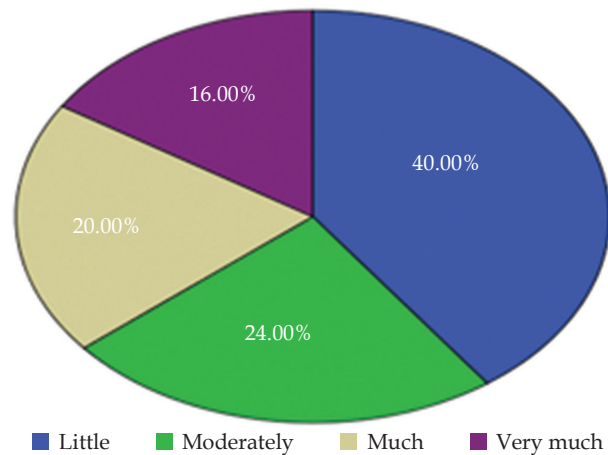


Fig. 4: Assistance extended by the office with your job.

Figure 4 indicates that 67 (40.0%) respondents were given little support, 40 (24.0%) respondents were given moderately, 33 (20.0%) respondents were given much, and 27 (16.0%) respondents were given very much. This shows that only little support is extended by the office, in assisting with their job. It is also requested in the questionnaire about the challenges experienced on using information of the respondents. The collected data has been shown below as chart in Figure 5.

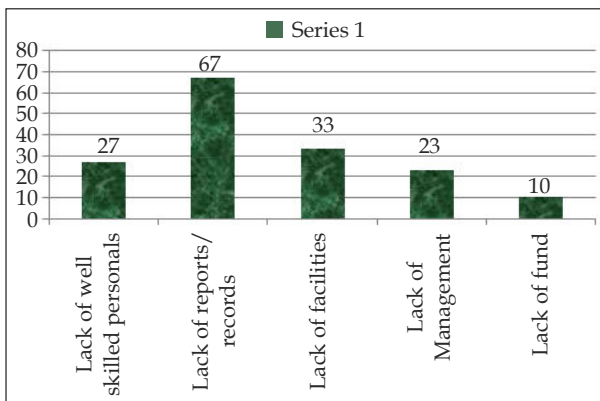


Fig. 5: Challenges experienced on using information.

The Figure 5 for the challenges experienced on using information indicates that 27(16.0%) respondents were lack of well-skilled of professionals, 67(40.0%) respondents felt that lack of records / reports, 33(20.0%) informed the lack of facilities, 23(14.0%) quoted as lack of management and the last 17(10.0%) informed as lack of fund from 167 (100%) respondents. This indicates that most of the respondents were facing challenges due to lack of records /reports on using information in specialized hospital.

Questionnaire about the types of health information used by the respondents were requested. The collected data has been given below as pie chart in Figure 6:

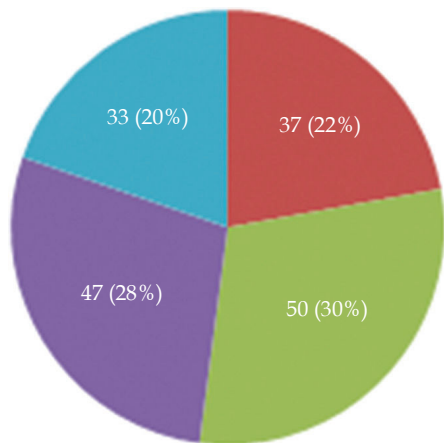


Fig. 6: Types of health information used.

Figure 6 indicates that 37 (22.0%) respondents were using patient age, 50 (30.0%) respondents use marital status, 47 (28.0%) uses earlier visit date, 33 (20.0%) respondents use types of disease and none (0%) used the earlier prescription from 167 (100%) respondents. This implies that most of the respondents were using the marital status on the existences of health information.

It is also requested in the questionnaire about the types of health information and satisfaction level by the respondents. The collected data has been tabulated below in Table 4:

Table 4: Current status of health information

Level of satisfaction	Frequency	Percentage
Very much satisfied	43	26
Satisfied	57	34
Not satisfied	67	40
Total	167	100

The Table 4, regarding the types of HI and satisfaction by health professionals indicates that 43(26.0%) respondents were very much satisfied, 57 (34.0%) respondents were only satisfied and 67 (40.0%) respondents were not satisfied from 167 (100%) respondents. It is clear that most of the respondents were not satisfied on the current status of the health information in Jimma University specialized hospital.

It is also requested in the questionnaire about the extent of use of health information. The collected data has been given below in Table 5:

Table 5: Extent of use of HI by HPs

Extent of use	Frequency	Percent
Not effective	54	32.0
Effective	60	36.0
Somewhat effective	53	32.0
Total	167	100

From the above Table 5 about the extent of use of HI, 54 (32.0%) of respondents said not effective and 60 (36.0%) responded as effective and 54 (36.0%) said it is only somewhat effective, from the total number of 167 (100%). This implies that most of the respondents were effectively using the health information in Jimma university specialized hospital. It is also requested in the questionnaire about the factor that motivates the utilization of health information. The collected data has been given below as line diagram in Figure 7:

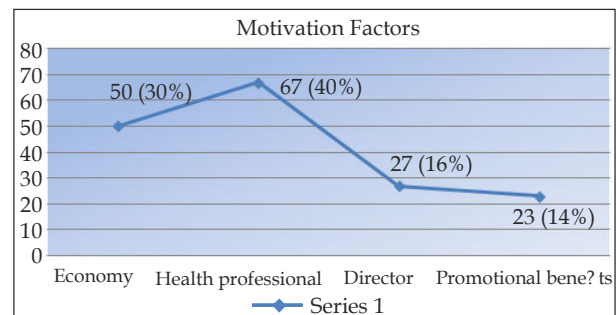


Fig. 7: Motivation factors for the utilization of health information

Figure 7 indicates the factors that motivates the respondents to the use of HI as 50 (30.0%) for economy, 67 (40.0%) respondents' informed as health professionals, 27 (16.0%) said as Director and 23 (14.0%) replied as promotional benefits from 167 (100%) respondents. This implies that most of the respondents were motivated by the factors of health professionals for the utilization of health information that exists in JUSH. From this, it is concluded that Jimma university specialized hospitals is accomplishing its' goal.

Interview Result

During the research for data collection, interview is also done to collect some more data. Interview has done with the Director of JUSH. The details are as follows:

The health professionals use the reports from the Health information about regarding transmitted disease to influence their day to day activities in the community. According to JUSH the health professionals are the most frequently mentioned users that the factors hinder accessing the health information like factors such as accessibility of information from the user, accuracy of the data, how current the data is.

Patient to access health information, the lack of internet access for health professionals, interest of health professionals to get health information, low prevalence regarding transmitted diseases and new cases. The health professionals are responsible and first to enjoy the fruits of well disseminated health information and if it is used extensively by them it will be a good career with an ease. That means to help any patients; they feel happy while helping those in need like the sick patients. Also the factors affecting the use of health information is the extent to which the health information is communicated among the health professionals and other stakeholders. The awareness of health community information is very much essential for the health professionals.

Findings and discussion

The study showed the following demographic characteristics of the HPs, 56% were male, the most populous age clusters was 31-35 years (36%) and 40% of the respondents were holding degree on the existences of educational qualification. 50% of respondents were under 6-10 years experience and speclized hospital have engaged full time as a health professional only 40%. The challenges faced

for using the HI is 40% due to lack of records / reports. 30% of the respondents use marital status on the existences of health information. 40% of the respondents were not satisfied on the current status of the health information about the disease of patients in Jimma University specialized hospital. Only 32% of the respondents were using effectively on the extent of use of health information in JUSH. The motivational factor for the effective utilization of HI is only 40% in JUSH.

Conclusions

Purpose of this study was to investigate the factors affecting the utilization of health information by health professionals in the Jimma University Specialized hospital for participated in the sample were 167 out of the 770 health professionals in the facility from JUSH. Most of the respondents were not satisfied on the current status of the health information and most of the respondent's motivational factors were effective on the extent of use of health information by health professional in JUSH. Overall there was lack of records / reports/ were also encountered in Jimma University specialized hospital. The findings found that there are number of factors affect HI utilization. As observed in the literature the challenges tend to fall heavily on process and people management. The hospital has adopted a number of patients in HI utilization. The study also noted that some practices are the cause of the observed factors or challenges. Utilization of health information is low and it is attributed to the system quality by the health professionals. At the JUSH are fully aware of the benefits of health information and in turn the benefits of helping them to achieve their goals in the respective Community. However as found from the findings, there are a few factors that need to be reinforced to ensure for the better.

Hhealth information. lack of confidence, mentors that champion uses of health information, motivational factors for the utilization of health information, health professional engagement levels, inaccessibility of the output information, lack of resources hinder the use of health information, lack of consensus between senior managers and user departments in hospital delays.

Recommendations

- More resources to the facility to improve health professionals. Participation i.e. Improve use of health information.

- Offer more openings to the health professionals. Who are not permanent in the facility to increase their involvement in the facility and to ensure they are retained in the facility.
- Have periodic training and retraining to utilize health information and the system for sustainability of the user.
- Look into the effect of adequate increase on utilization health information among the health professionals. .
- The study recommends that more studies should be done in other areas (outside JUSH) to establish if the same results will hold.

Further research on this topic is needed by including private health care providing facilities in the study area and on other regions to assess the situation and identify factors as well as to take action as a higher level collaboratively.

Acknowledgement

The authors would like to thank all of the health professionals, who participated for sharing their genuine personal experience. There is no fund used from any of the organization for this research.

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