

Knowledge and Attitude of Health Professionals Towards Clinical Pharmacy Services in Selected Hospitals in West Shoa Zone, Ethiopia

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Abstract: Clinical pharmacy services are patient oriented services developed to promote the rational use of medicines by maximizing therapeutic effect of medicines in individual patients. The service is at the infant stage in Ethiopia and there is no adequate information about it in the country. Therefore, the aim of this study was to assess the knowledge, attitude & practice of health professionals towards clinical pharmacy services in selected public hospitals in West Shoa Zone, Oromia Region, Ethiopia. A facility based cross sectional survey was conducted from April 2 to April 16, 2018. The study used a quantitative method of data collection. A total of 150 health professionals were involved in the study; and convenience sampling techniques was used to collect the data. Data was collected using structured and self-administered questionnaires and it was analyzed by using SPSS version 23. Descriptive statistics including frequency, mean, percentage and table was used to present the data. 128 (92.1%) of health professionals were heard about clinical pharmacy services in Ethiopia. 104 (74.8%) strongly agreed & agreed that they appreciated the presence of pharmacist in the ward all the times important for patient care. However, 67 (48.2%) of respondents said the performance of the pharmacists in practicing clinical pharmacy in the hospital was poor. Generally, majority of health professionals had adequate knowledge and positive attitudes towards clinical pharmacy services but their practice with clinical pharmacists was found poor. It is recommended that collaborative working relationship should be established among health professionals in order to optimize and monitor drug use problem in the hospitals.

Keywords: Knowledge, Attitude, Clinical Pharmacy, Health Professionals

1. Introduction

The World Health Organization (WHO), define a health system “consists of all organizations, people and actions whose primary intent is to promote restore or maintain health”. Current WHO Framework for Action on health systems describes six clearly defined Health System Building Blocks that together constitute a complete system. one of the building block of a health system is Service delivery which includes effective, safe, and quality personal and non-personal health interventions that are provided to those in need, when and where needed (including infrastructure), with a minimal waste of resources [1].

Hospital is a health care institution, which pools together

all the health professionals, the diagnostic and therapeutic facilities & the physical facilities in to a coordinated system for delivering health care service to the public [2].

Pharmaceutical services are an essential component of hospital care and clinical pharmacy services are patient oriented services developed to promote the rational use of medicines and more specifically to maximize therapeutic effect, minimize risk, minimize cost and respect patient choice and decisions there by ensuring the safe, effective and economic use of drug treatment in individual patients [3, 4].

The mission of the pharmacist is to provide pharmaceutical care [5]. Pharmaceutical care is the direct responsible provision of drug therapy for the purpose of achieving definite outcomes that improve patient's quality of

life. It refers the process through which a pharmacist cooperates with a patient and other professionals in designing, implementing, and monitoring a therapeutic plan that will produce specific therapeutic outcomes for the patient. These outcomes are cure, remission, or prevention of a disease [6].

The positive impact of pharmaceutical care services on clinical, economic and humanistic outcomes has been demonstrated in numerous studies in the North America and United Kingdom. Despite this, there is much variability between / among countries in the practice and implementation of clinical pharmacy. Pharmaceutical care practice is still in its early stages, in developing countries & even in most European countries. It is intended to meet a need in the health care system that has arisen due to the increase in complexity of drug therapy and the significant level of drug-related morbidity and mortality associated with drug use. Therefore, the introduction of pharmaceutical care is required in developing countries to aid in the resolution of medication-related problems [7].

Clinical pharmacy practice is at the infant stage in Ethiopia. The Ethiopian health authorities have sought to implement clinical pharmacy service within the nation's health-care system in order to improve patients' quality of life and drug use [8]. Therefore, the aim of this study is to evaluate the knowledge, attitude & practice of health professionals towards clinical pharmacy services in selected public hospitals in West Shoa Zone, Oromia Region, Ethiopia.

2. Methods

A facility based cross sectional survey was conducted on health professionals found in Gudar, Ambo General and Referral Hospitals from April 2 to April 16, 2018. The study used a quantitative method of data collection. All health professionals found in the selected health facilities were the source population and sampled health professionals were included as study population. The sample size to be included in the study was calculated based on standard formula, and a total of 150 health professionals were involved in the study. convenience sampling techniques was used to collect the data. A structured questionnaire was used to gather data on back ground information of the facility and pharmacy case team, while a self-administered questionnaire used to collect information on knowledge, attitude and rate of satisfaction of health professionals towards the current clinical pharmacy practice in the facility. After the data was manually checked for completeness and consistencies, it was entered and analyzed by using SPSS version 23. Descriptive statistics including frequency, mean, percentage and table was used to present the data. Ethical approval was obtained from the head department of Pharmacy, Ambo University and from the respective health facilities. Besides, a verbal consent was obtained from all participants before starting the actual data collection. Confidentiality and anonymity of information was

maintained throughout the data collection and analysis period by not linking personal identifiers in the data presentations.

3. Results

Socio-demographic characteristics of respondents

A total of 150 self-administered questionnaire were distributed to health professionals found in the study health facilities; from these 139 questionnaires were completed and returned to the investigator resulting in the response rate of 92.7%. The mean age of the respondent was 32.6 years (SD = 3.78). The minimum age was 21 and the maximum was 48. Professionally, 26 (18.7%) of respondents were physicians; 22 (15.8%) were Pharmacists & druggists; 72 (51.8%) were nurses and 8 (5.8%) were midwiferies. Most of the respondents, 71 (51.1%) were having 5-7 years of work experience as shown in Table 1.

Table 1. Socio demographic characteristics of health professionals working in the selected public health facilities in West Shoa Zone, Ethiopia, April 2018 (n=139).

Socio-demographic Profile		Number	Percentage
Sex	Male	88	63.3
	Female	51	36.7
Age	20-29	97	69.8
	30-39	35	25.2
	≥ 40	7	5.0
	Specialist	4	2.9
Profession	General Practitioner	26	18.7
	Pharmacy	22	15.8
	Nurse	72	51.8
	Laboratory	4	2.9
	Midwifery	8	5.7
	Anesthesia	2	1.4
	Physiotherapy	1	0.7
Level of education	Diploma/ Level IV	34	24.5
	Bachelor/ First	105	75.5
	Degree		
Work experience	<5 years	62	44.6
	5-10 years	71	51.1
	> 10 years	6	4.3

Knowledge of health professionals towards the clinical pharmacy services

The 139 health professionals were asked if they heard about clinical pharmacy services in Ethiopia, and the response of 128 (92.1%) health professionals were yes and the remaining 11 (7.9%) health professionals said no. Majority of the respondents 121 (87.1%) knew that there were clinical pharmacists in their institution and the 18 (12.9%) of health professionals didn't know that the presence of clinical trained pharmacists in the institution. 125 (89.9%) of health professionals knew that clinical trained pharmacists are integral part of medical team, improve the patients' health related quality of life, and their involvement reduce adverse drug reaction & health care costs (table 2).

Table 2. Knowledge of health professionals towards clinical pharmacy services in the selected public health facilities in West Shoa Zone, Ethiopia, April 2018 (n=139).

Statements	Yes (%)	No (%)
I have heard about clinical pharmacy services in Ethiopia	128 (92.1)	11 (7.9)
I know that there are clinical pharmacists in our hospital	121 (87.1)	18 (12.9)
I know that clinical pharmacists are integral part of medical teams	125 (89.9)	14 (10.9)
I know that clinical pharmacists attend ward round	111 (79.8)	28 (20.1)
I know that clinical pharmacists attend morning session	107 (77)	32 (23.0)
I know that clinical pharmacists improve the patients' health related quality of life	97 (69.8)	42 (30.2)
I know that clinical pharmacists are capable of offering primary care to the patients	85 (61.2)	54 (38.8)
I have the information about clinical pharmacists role in ambulatory ward	46 (33.1)	93 (67.9)
I have the information about clinical pharmacists role in intensive care unit	41 (29.5)	98 (70.5)
I know that involvement of clinical pharmacists can reduce adverse drug reaction	118 (84.9)	21 (15.1)
I know that involvement of clinical pharmacists can reduce health care costs	112 (80.6)	27 (19.4)

Health professionals' attitude towards clinical pharmacy services

Concerning the attitude of health professionals towards clinical pharmacy service, majority of the respondents had a positive attitude to most of attitude related given statement. No health professionals had highly negative attitude towards the involvement of clinical trained pharmacist in ward round, their role in patient education and counseling, provide relevant drug information to health care professionals and detect and prevent medication use error. 79 (56.8%)

participants said that they felt confidence when there is clinical pharmacist in the ward/outpatient and 83 (59.7%) strongly agreed & agreed that they appreciated the presence of clinical pharmacist in the ward all the times important for patient care.

Only 23 (16.5%) of health professionals working in medical ward strongly agreed that the current set up (infrastructure and environment) of their hospital is appropriate for the provision of clinical pharmacy services (table 3).

Table 3. Attitude of health professionals towards clinical pharmacy services in the selected public health facilities in West Shoa Zone, Ethiopia, April 2018 (n=139).

Given statements of attitude	Frequency of level of attitude				
	Strongly agree (%)	Agree (%)	Neutral n (%)	Disagree n (%)	Strongly disagree (%)
Do you think that Clinical pharmacists' involvement in ward round is desirable?	50 (36.0)	54 (38.9)	31 (22.3)	4 (2.8)	0 (0)
Do you think that Clinical pharmacist can play important role in patient education and counseling?	55 (39.6)	73 (52.5)	7 (5.1)	4 (2.8)	0 (0)
Do you think that Clinical pharmacist can monitor patient response to drug therapy from toxicity/side effects perspective?	64 (46.1)	67 (48.2)	5 (3.6)	2 (1.4)	1 (0.7)
Do you think that Clinical pharmacist can monitor patient response to drug therapy from effectiveness perspective?	38 (27.3)	60 (43.3)	36 (25.9)	4 (2.8)	1 (0.7)
Do you think that clinical pharmacist can involve in drug selection (drug, dosage form) based on patient and drug factors?	74 (53.3)	34 (24.5)	19 (13.7)	9 (6.5)	3 (2.2)
Do you think that Clinical pharmacist can provide relevant drug information to health care professionals?	40 (28.8)	80 (57.4)	16 (11.5)	3 (2.2)	0 (0)
Do you think that Clinical pharmacist can detect and prevent medication use errors?	49 (35.3)	54 (38.8)	33 (23.7)	3 (2.2)	0 (0)
Do you think that Clinical pharmacy services enhance patient's satisfaction?	26 (18.7)	45 (32.5)	49 (35.3)	16 (11.5)	3 (2.2)
Do you think that Clinical pharmacist should take patient's medication history at admission?	34 (24.5)	21 (15.1)	58 (41.7)	24 (17.3)	2 (1.4)
Do you think that Clinical pharmacists should have access to patient's chart and have a place to document their services?	19 (13.7)	34 (24.5)	66 (47.5)	18 (12.9)	2 (1.4)
Do you think that Clinical pharmacist analyzes patient treatment and suggest changes of therapy when necessary?	25 (17.9)	30 (21.6)	45 (32.5)	36 (25.9)	3 (2.2)
Do you think that Pharmacists should also focus on patient care not only drug products?	28 (20.1)	53 (38.1)	49 (35.3)	8 (5.8)	1 (0.7)
Do you think that The current set up (infrastructure and environment) of your hospital is appropriate for the provision of clinical pharmacy services?	5 (3.6)	18 (12.9)	43 (30.9)	51 (36.7)	22 (15.8)
Do you think that Clinical pharmacy service implementation is desirable in health care system?	30 (21.6)	72 (51.8)	33 (23.8)	4 (2.8)	0 (0)
Do you think that Clinical pharmacists can improve over all patient outcome/quality of patient care?	26 (18.7)	88 (63.3)	17 (12.3)	6 (4.3)	2 (1.4)
Do you appreciate the presence of clinical pharmacists in the wards all the times important for patient care?	29 (20.9)	54 (38.9)	25 (17.9)	22 (15.8)	9 (6.5)
Do you feel confidence when there is clinical pharmacist in the ward/OPD?	24 (17.3)	55 (39.7)	31 (22.3)	25 (17.9)	4 (2.8)

Satisfaction of health professionals towards clinical pharmacy services and their practice

Regarding the current practice of clinical trained pharmacists in the hospital, 67 (48.2%) health professionals said the performance of the pharmacists in practicing clinical pharmacy in the hospital was poor. More than 50% of the health professionals responded the practice of clinical pharmacists in dose adjustment for pediatrics and patients with impaired renal and/or liver function, counseling patients during discharge, document their services in patient care and

their participation in bedside discussions to assist clinicians on therapeutic care plan and drug selection were unsatisfied.

Concerning the overall level of satisfaction towards the current clinical pharmacy services in the hospital; 72 (51.8%) health professionals were poorly satisfied by the services while 31 (22.3%) of respondents said they were fairly satisfied.

Table 4. Attitude of health professional towards practice of clinical pharmacy services in the selected public health facilities in West Shoa Zone, Ethiopia, April 2018 (n=139).

Clinical pharmacists activity	Frequency of the respondent n (%)				
	Excellent (%)	v. good (%)	Good (%)	Satisfactory (%)	Poor (%)
Clinical pharmacists present in the ward	8 (5.8)	18 (12.9)	22 (15.8)	24 (17.3)	67 (48.2)
Clinical pharmacists actively participate in ward rounds with the health care team	12 (8.6)	26 (18.7)	18 (12.9)	19 (13.7)	64 (46.1)
Clinical pharmacists provide timely information on drug availability	9 (6.5)	17 (12.2)	20 (14.4)	24 (17.3)	69 (49.6)
Clinical pharmacists provide information on appropriate route of drug administration	10 (7.2)	23 (16.6)	31 (22.3)	33 (23.7)	45 (32.5)
Clinical pharmacists participate in preventing, detecting and resolving any drug interaction	7 (5.0)	15 (10.8)	25 (17.9)	36 (25.9)	56 (40.4)
Clinical pharmacists involve in side effect prevention and management	10 (7.2)	23 (16.6)	17 (12.2)	32 (23.0)	57 (41.0)
Clinical pharmacists counsel patients regarding the safe & appropriate use of medications	12 (8.7)	16 (11.5)	28 (20.1)	29 (20.8)	54 (38.9)
Clinical pharmacist counsel patients during discharge	7 (5.0)	16 (11.5)	19 (13.7)	34 (24.5)	63 (45.3)
Clinical pharmacists document their services in patient care	7 (5.0)	16 (11.5)	16 (11.5)	34 (24.5)	66 (47.5)
Clinical pharmacists participate in dose calculation for patients	7 (5.0)	11 (7.9)	25 (17.9)	30 (21.6)	66 (47.5)
Clinical pharmacist identify and report adverse drug reaction	20 (14.4)	32 (23.0)	20 (14.4)	22 (15.8)	45 (32.5)
Clinical pharmacists provide information on alternative drug regimen	15 (10.8)	25 (17.9)	32 (23.0)	23 (16.6)	44 (31.7)
Clinical pharmacists advise on cost effective medications	7 (5.1)	10 (7.2)	22 (15.8)	43 (30.9)	57 (41.0)
Clinical pharmacists participate in dose adjustment for pediatrics and patients with impaired renal and/or liver function	7 (5.1)	10 (7.2)	22 (15.8)	33 (23.7)	67 (48.2)
Clinical pharmacist actively participate in bedside discussions to assist clinicians on therapeutic care plan and drug selection	1 (0.7)	10 (7.2)	25 (17.9)	31 (22.3)	72 (51.9)
Overall level of satisfaction towards the current clinical pharmacy services in your setting	1 (0.7)	10 (7.2)	25 (17.9)	31 (22.3)	72 (51.9)

4. Discussion

The practice of pharmacy has changed significantly in recent years. This, invariably, will necessitate changes in procedures and training, and may require more resources, imaginative use of pharmacy skills, and involvement of clinical pharmacists at prescribing and dispensing stages [9]

In this study majority of health professionals had adequate knowledge and positive attitudes towards clinical pharmacy services but their practice with clinical pharmacists was found poor. This finding was in keeping with the results from a cross sectional study of attitudes and perceptions of healthcare providers and medical Students towards clinical pharmacy services in United Arab Emirates (UAE), in which the knowledge and attitude of most of the physicians were good because of most of them are recent graduate and they know the contribution of pharmacists well [10].

About 12% of the health professionals did not know the availability of clinical pharmacists in their hospital. Even though it is now more than five year since the clinical pharmacy services implemented in Ethiopia, no significant changes in increasing the awareness of other professionals were made by clinical pharmacists themselves, hospital drug and therapeutic committee or by the management, thus large

number of health professionals said that they do not know the presence of clinical pharmacists in their hospital.

Concerning the attitude of health professionals towards clinical pharmacy service, majority of the respondents had a positive attitude to most of attitude related given statement. This finding was in line with a study done in UAE reported that 75% medical students perceived that the clinical pharmacists are important part of the healthcare team. On the other hand, 82% believed that clinical pharmacists can help improve the quality of medical care in hospitals [11]. Furthermore, a study done by Gelaw et al revealed that general practitioners have a positive attitude towards pharmacists about their insertion into the primary health care panel and an expansion of their role in relation to medicines; however, there was small support for the thought of pharmacists undertaking screening and running therapeutic monitoring clinics [12].

In this study only 23 (16.5%) of health professionals working in medical ward strongly agreed that the current set up (infrastructure and environment) of their hospital is appropriate for the provision of clinical pharmacy services. This finding was similar with the study done in UAE in which 53% of the respondents reported that they did not have better setup for clinical pharmacy services in their

institutions. Nevertheless, there was substantial willingness among physicians and nurses to cooperate with clinical pharmacists [13].

In the present study, more than 50% of the health professionals responded the practice of clinical pharmacists in dose adjustment for pediatrics and patients with impaired renal and/or liver function, counseling patients during discharge, document their services in patient care and their participation in bedside discussions to assist clinicians on therapeutic care plan and drug selection were unsatisfied. However, other studies showed that high satisfaction of health professionals on clinical pharmacists' contribution to patient care in the hospitals by conducting ward rounds, monitor drug therapies and most importantly educate patient by the bedside. Moreover, they also perform a major role in provision of ambulatory clinical setups by providing intensive patient education and consultation to the prescribers [14]. This may be due to, in the developed countries, the improved interaction among physicians and pharmacist has resulted in a more cost effective and safe drug therapy [15].

Concerning the overall level of satisfaction towards the current clinical pharmacy services in the hospital; 72 (51.8%) health professionals were poorly satisfied by the services while 31 (22.3%) of respondents said they were fairly satisfied. This finding was inconsistent with another study conducted in the country in which physicians were satisfied role played by pharmacists with patients counseling concerning to safe and appropriate use of medication, involvement in side effect prevention and management, and preventing, detecting and resolving adverse drug reactions. Nevertheless, they were poorly satisfied with pharmacists' participation in ward rounds with other health care team, patient counseling during discharge, and documenting their services [12].

5. Conclusion

The study identified that majority of health professionals in selected public hospitals of west shoa zone had adequate knowledge and positive attitudes towards clinical pharmacy services but their practice with clinical pharmacists was found poor. It is recommended that collaborative working relationship should be established among health professionals in order to optimize and monitor drug use problem in the hospitals.

Competing Interests

The authors of this manuscript declare that they have no competing interests.

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