

Patient counselling at dispensing of medicines in health care facility outpatient pharmacies of Bahir Dar city, Northwest Ethiopia

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Abstract: Background: Patient medication counseling on dispensing of medicines should give the patient clear and complete instructions on how to take or use drugs. The way drugs are taken by the patient is often influenced by the way drugs are dispensed and the type of information given during dispensing. The objective of this study was to assess and compare patient medication counseling in health care facility outpatient pharmacies of Bahir Dar city. Methods: A cross sectional study was conducted from August 5 to 20, 2013 at selected health care facilities in Bahir Dar city. Simple random sampling technique was used to select health facilities. A total of 400 patient-dispenser interactions were selected using systematic random sampling technique from a randomly selected health care facility outpatient pharmacy. The data collection tool was adapted from WHO structure observation form and was modified according to the objectives of the study. Data were collected by non participatory observation of dispensing encounters using checklist. Data was coded, entered into EPI Info (version 3.5.2) and analyzed using SPSS version 16.0. Bivariate and multivariate logistic regression analysis was computed to test the strength of association and level of significance. Finally, P-value <0.05 was considered as statistically significant. Results: A total of 400 dispensing encounters were observed and the overall percentage of satisfactory counseling was 32.8%. The highest percentage of satisfactory counseling score was found in Bahir Dar health center (64.9%) and Adinas higher clinic (46.8%). The most frequent drug information given to patients at the time of counseling were unit dose (99.2%), frequency of administration (96%) and duration of therapy (74%). Differences in dispenser work experiences (AOR = 2.99, CI: 1.67 – 5.37), patient load (AOR = 2.87, CI: 1.83-3.69), average consultation time (AOR=3.42, CI: 1.64-7.13), level of health facility (AOR = 4.31, CI 1.94 – 9.59) and type of health facilities (AOR = 4.29, CI 1.72 – 10.66) were found to be associated factors for satisfactory counseling score. Conclusion: The process of medication counseling at dispensing encounters in health care facilities of Bahir Dar City is not satisfactory. Dispenser work experiences, patient load at dispensary, average consultation time, level of health facility and type of health facilities were found to be significant factors for satisfactory counseling score. Therefore, attention should be given to strong skill development, increasing manpower and implementation of regular monitoring for the application of dispensing ethics to improve patient medication counseling at dispensing encounters.

Keywords: Patient Counseling, Dispensing, Medicines, Health Care Facility, Bahir Dar City

1. Introduction

1.1. Introduction on Historical perspectives of Pharmacy in Ethiopia

The introduction of Pharmaceutical products to the Ethiopian community dates back to the early 16th century. Historical accounts put this time to the rein of King Libnedingil (1520-1526). Every white man was considered as a Physician and hence referred to as Hakim which

literally means “a healer”. Travelers like James Bruce who came to Ethiopia following the course of the Blue Nile were considered by much of the then rural Ethiopians as medical practitioners because they used to distribute different drugs to the community. Drugs like Epsom Salt (laxative), Epecacuahna (inducer of emesis), were distributed to complaints of every intestinal distress [1].

The establishment of retail outlets of modern drug products however took the stage at considerably latter times during the reign of king Minilik II (1889-1913). Until the eve

of the Italian occupation in 1935, very few such modern drug retail outlets had been operational only in some parts of the capital Addis Ababa; notably around and dedicated to the inner circles of the royal families. Most of the owners of these early drug retail outlets were foreigners and Pharmacia La Georgie, owned by Dr Mareb, a Georgian and one of the private Doctors of the King, is historically credited as the first modern Pharmacy opened in Ethiopia [2].

There were however court Pharmacies up in the Palace of King Minilik II before they were opened in the downtown of the then flourishing Addis Ababa. Richard Pankhurst in his brief account entitled "Ethiopia's Historic Quest for Medicine" wrote the following on the King's Palace Pharmacies: "Besides giving moral support to the Italians, and later to the Russians, Menilek had his own medical facilities, situated at the palace" [2, 3].

These were described over the years by at least three foreign observers. The first was the French traveler Jules Borelli. Describing the situation in 1894, he noted that Menilik had several portable pharmacies, as well as a set of surgical instruments presented to him by the Italian, Dr Traversi. The second description was in a Russian report of 1897. It confirms that the palace contained a fairly extensive court pharmacy, where each medicine was carefully labeled with its Latin name, translated into Amharic characters. The third account of the palace pharmacy was written almost two decades later by an Italian physician Dr Lincoln De Castro. He noted in 1915 that the Emperor had been supplied by the foreign missions with every kind of medicine. They were jealously guarded by the official in charge, and each bottle or container had, he confirms, an Amharic label stating the contents, as well as a note on its use, e.g. cough medicine, medicine for tapeworm, medicine for dysentery, for syphilis, scabies, etc [2].

After the end of the brief Italian occupation that lasted for some five years, all the foreign-owned pharmacies were confiscated by the then government of Ethiopia and some Italians were employed to work in these Pharmacies afterwards [1].

Recently, drug distribution and retailing activities in Ethiopia are carried out by a combination of public sector, private sector, city councils and the Ethiopian Red Cross Society (ERCS). There were some 375 drug shops (run by pharmacy Diploma graduates) 275 pharmacies (run by pharmacy Degree graduates), and 1783 rural drug vendors (run by nurses or health assistants or pharmacy technicians) in the country in 2004. Most public and private health care facilities have their own medicine retail outlets. By the same year, there were 37 medicine wholesalers, 54 importers and 13 local manufacturers operating in Ethiopia. Currently, there are more than a dozen of pharmaceutical institutions in Ethiopia (private and public) which perform different pharmaceutical activities at different levels [3].

1.2. The Commencement of Pharmaceutical Education in Ethiopia

Ancient Ethiopians relied on traditional and herbal

medications and modern drugs were unknown to them until the turn of the 19th century. Earlier, education was under the monopoly of the church and medical practices were characterized by ritual healings. The pharmacy profession has evolved to the point where clinical pharmacy with patient-focused practice is no longer the exception but the rule for most pharmacists. However, traditionally, Ethiopia carries a track record of product-oriented pharmacy practice. Recently, there is a shift in trend towards patient-focused practice after a 5-year Bachelor of Pharmacy (B. Pharm) with a 1-year clerkship program was developed [1-3].

The first auxiliary medical training in Ethiopia was launched by the then Ministry of Interior in Minilik II hospital in 1943 in which some 12 students are known to have been enrolled [3]. The requirements for entrance has never been clear but the students enrolled had some ability of foreign languages and those completed (only 4) were awarded "Hospital Dispensary Certificates". Few other attempts were also made then after, which took a bit longer time to complete and had a clearly known entrance requirements. The 1947 one year long training coordinated by the then Imperial Medical Research Institute can be the case in point. In this training, students were required to complete 6th grade and also pass an English entrance exam. Basic sciences and some Pharmacy courses were given to the 11 students admitted to the program who were awarded a "Pharmacy Assistant Certificate" after completion. All the courses were offered by only one Swedish man who was a diploma holder in the field [1, 2].

The Ethiopianization of the modern Pharmaceutical education was however heralded by the establishment of a Pharmacy Technicians School in the compound of the Current Minilik II hospital. Completion of 9th grade was the requirement for entrance and the school thought all the important Pharmacy and other basic sciences courses like Physiology for two years. In the mid-20th century, the country established higher learning institutions which started teaching pharmacy and other sciences at tertiary levels. The curriculum was however the so called "product-centered" which until recently remained to be the guiding principle of the country's pharmaceutical education. In 1961, the School of Pharmacy, Addis Ababa University was launched as one academic unit of the University and after four years, the first batch was graduated with B.Pharm Degree [3].

Currently, there are many academic institutions in Ethiopia (private and public) which train students in Pharmaceutical education at different levels. Most of these institutions have recently tried to institute some sorts of revisions to their respective academic curricula amid the dynamic changes under way in the Pharmaceutical education and practices nationally as well as globally. The trend in global context of pharmacy education and practice has been changing with the adoption and extension to a much more "patient-centered" philosophy. The recent organized move by most public-funded Pharmacy Schools and Departments in the country has witnessed some changes on their curricula which aimed at producing

pharmacists with better clinical expertise [1-3].

1.3. Patient Counseling Perspectives

Patient counseling has become an integral and a vital component of pharmaceutical service delivery. Counseling often involves the giving of advice and making certain that the advice is understood after listening to the patient's doubts, problems or viewpoints. Patient better understanding of medicines received at the pharmacies is critical to their health recovery and adherence to therapy. Therefore, in pharmaceutical service delivery, adequate advice and counseling during dispensing of pharmaceutical products can encourage patient compliance, thereby leading to improved therapeutic efficacy and the patient's well-being [4-6].

Medicines dispensing is a constituent of pharmacy practice, and its degree of complexity has evolved by increasing responsibilities to patients. Pharmacists are usually the final link between the medication and the patient [7]. Patient counseling is a key component of pharmaceutical care process. Drug dispensers should provide appropriate, understandable and relevant information to patients about their medication [8]. The dispensers should also check whether or not the information was received as intended and that the patient understands how to use the information to improve the therapeutic outcomes [9]. The pharmacy professional should appropriately educate patient on the name and description of the medication, duration of therapy, special directions and precautions for preparing of drugs, common side effects, therapeutic indication and contra-indications, proper storage, refill information and appropriate actions to be taken in case of missed dose, when dispensing prescribed and non prescribed drugs, when patient counseling on discharge medication or when providing recommendation about management of specific drug related problem [9, 10]

Counseling should be verbal and accompanied by written information for patient to refer to at home. The counseling process properly implemented and consistently maintained will result in improvement in patient understanding about medication; improve adherence to drug therapy and pharmacist-prescriber relationships [11]. Dispensing is often overlooked by health planners during the development of health care delivery. It is usually considered of a secondary importance to diagnosis, procurement, inventory control and distribution. This oversight is unfortunate, since inappropriate dispensing can undo many of the benefits of the health care system [7]. Rational drug use requires that patients receive medication appropriate to their medical needs, in doses that meet their own individual requirement, for an adequate period of time and at the lowest cost to them and their community. Worldwide more than 50% of all medicines are prescribed, dispensed or sold inappropriately [12, 13]. Inappropriate use of drugs can lead to wastage of resources and also causes significant patient harm in terms of poor patient outcomes and adverse drug reactions [12-14]. Although

providing patients with adequate and clear information on drugs is one of the basic services expected to be rendered by the pharmacist, it seems that it has received little attention in Ethiopia. It is presumed that shortage of qualified personnel, lack of preparedness of the practicing pharmacist, and community perception towards practicing pharmacist have significantly contributed to the existing several problems in the practice of pharmacy in general and patient counseling in particular [15, 16].

In order to improve patient health care and reduce the number of medication related errors, a greater emphasis must be placed on pharmacists' patient counseling. Especially, in situations where pharmacy man power can not satisfy the demands of increased prescription volume, more time needs to be spent on counseling patients in order to give better patient care. The objective of this study was to assess patient medication counseling offered by drug dispensers and to identify associated factors in health care facility outpatient pharmacies in Bahir Dar city. This study may provide information about patient medication counseling (PMC) in Bahir Dar city, North West Ethiopia which may help local regulatory authorities to make plan and take interventions accordingly [15, 16].

2. Participants and Methods

2.1. Study Area and Period

The study was conducted in health care facility outpatient pharmacies of Bahir Dar City, North West Ethiopia which is located 565kms from Addis Abba, capital of Ethiopia. The data was collected from July 20 to 30, 2013. The population is 239, 721 projected from 2007 census [21]. Public health facilities in the City are one Governmental Referral Hospital, 2 private hospitals, 10 health centers, 22 private clinics (3 higher private clinics, 7 special private clinics and 12 private medium clinics), 14 pharmacies, 32 drug shops and 8 rural drug vendors [21]. The health care facilities selected were Felegehiwot Referral Hospital, Han health center, Bahir Dar Health Center, Abay Health Center, Gamby Teaching General Hospital, Kidane mihiret, Adinas and Alemsaga higher clinics. The study was conducted in the outpatient pharmacies of the above selected health facilities.

2.2. Study Design

A Cross-sectional study was conducted by using interviewer administered questionnaire and observation checklist. Contents of the questionnaire are socio-demographic details of the dispensers/pharmacy professionals and Patient Medication Counseling information. The patient medication counseling information included in this study were how much and how often to take the medicine, when to take the medicine (e.g., before or after meals), how long the treatment is to last (e.g., why the entire course of an antibiotic treatment must be taken), how to take the medicine (e.g., with water, chewing or swallowing), how

to store the medicine (e.g., avoid heat, light and dampness), not to share medicines with other persons, types of foods and beverages should avoid while taking the medicine, keep medicines out of reach of children, demonstrate to the patient on how to administer the dispensed medications in case of inhaled administration, eye drops and suppository application, inform patients not to stop treatment when side effects occur or in the absence of response without consulting the prescriber or dispenser and check whether patients have understood the information provided. All of dispensers that work in health institution outpatient pharmacies in Bahir Dar City were included in the study.

2.3. Sampling Technique, Procedure and Data Collection Process

The sample size was determined using single population proportion formula. By taking 50% proportions of satisfactory counseling on dispensed medicines, 95% confidence level and 5% maximum tolerable error [22]. Considering non-response rate of 10% and design effect of 1.5, a final sample size of 403 dispensing encounters was included. Accordingly, from all health care facilities one governmental and one private hospital, three private higher clinics and three health centers were selected. The sample size was then distributed to each health care facility using proportional allocation to their population size. Systematic sampling technique was used to select a sample of 403 dispensing encounters from selected health care facilities outpatient pharmacy department (OPD-pharmacy) dispensary. Accordingly, observation of dispensing process was carried out by pharmacists who are not working in the selected health facilities. A structured questionnaire/observation checklist adapted from World Health Organization (WHO) was used to collect the information on patient medication counseling [4-6]. Then the questionnaire and observation checklist was given to the data collectors to fill it at the dispensing encounter. The dependent variable was labeling of dispensed medicines. Age, sex, education status, experiences of dispensers, consultation time, dispensing time, type of health facility based on ownership and level of health facility, work load and on job training of professional involved in dispensing of medicines were the independent variables. In order to assure the quality of collected data, all observers/pharmacists were instructed not to interfere with the consultations or dispensing process. Data collectors were trained for one day by the principal investigator. Supervision, data clearing and checking of consistency was done on daily basis. Maximum care was taken to avoid dispenser's bias.

2.4. Operational Definitions and Calculation of Scores

Dispensing encounter: is a face-to-face contact between patient/client and dispenser who exercises independent judgment in the provision of services to the individual.

Client counseling about dispensed medicine(s):- is a process of giving adequate information in the form of verbal instructions to ensure that the patient has an unequivocal understanding of the instructions for use, and any distinct characteristics or requirements of the medicine.

Satisfactory counseling: - dispensing encounters that fulfill at least counseling on drug dosage schedule [frequency of administration (when to take) or unit dose (what quantity)], how to take their drug and checking back the instruction given to clients.

Failure to counsel any one or more on drug dosage schedule [frequency of administration (when to take) or unit dose (what quantity)], how to take their drug and checking dosage instruction regarded as unsatisfactory counseling.

Consultation time: the time from which a dispenser starts transferring information to the patient up to leaving the dispensing table/room.

2.5. Data Management and Analysis

Data were coded, entered into EPI Info (Epidemiological information. version 3.5.2) and analyzed using Statistical Package for the Social Sciences (SPSS) version 16.0. Descriptive statistics were used to express counseling score and other variables. Bivariate analysis was computed to test whether there is association between dependent variables and independent variables. Factors associated with counseling at bivariate analysis were identified and the variables with p-value of 0.2 and less were taken to multivariate analysis and the model was built with backward stepwise elimination (backward LR). Finally, P-value ≤ 0.05 was considered as statistically significant.

2.6. Ethical Consideration

This study was approved by the Ethics Committee of Amhara Regional State Health Bureau. Verbal consent was obtained from each participant during data collection. The confidentiality of the data obtained was assured.

3. Results

3.1. Socio Demographic Characteristics of Dispensers

A total 400 dispensing encounters were observed and 30 dispensers were participated in the study. Of which 18 (60 %) were from government health facilities. Twenty (67%) of the dispensers were males whereas 28 (93.3%) were orthodox by religion. Concerning the professional status of dispensers working in outpatient pharmacy, 18 (60%) were druggists (diploma holders in pharmacy profession) and 12 (40%) were pharmacists (degree holder in pharmacy profession). The majority of dispensers (83.3%) were in the age group of thirty and below (≤ 30). In terms of marital status of dispensers, majorities (56.7%) were married [Table 1].

Table 1. Socio-demographic characteristics of drug dispensers among health care facilities of Bahir Dar City, North West Ethiopia, 2013.

Ser. No	Socio demographic characteristics of dispensers (N=30)	Category	No (%)
1	Sex	Male	20 (67)
		Female	10 (33)
2	Age	≤30	25 (83.3)
		31-40	5 (16.7)
3	Educational qualification	Pharmacist	12 (40)
		Druggist	18 (60)
4	Religion	Orthodox	28 (93.3)
		Other	2 (6.7)
5	Marital status	Married	17 (56.7)
		Single	13 (43.3)
6	Work experience (years)	≤4	16 (53.3)
		5-9	10 (33.3)
		≥10	4 (13.4)
8	Working sector	Private	12 (40)
		Government	18 (60)

3.2. Patient Counseling Activities

According to this study thirteen counseling activities were assessed among eight health care facilities. Eleven counseling activities were assessed. The maximum number of patient counseling activities performed by a single dispenser was eight, while the minimum was one”

The most frequent drug information's given by dispensers to clients were unit dose (99.2%), frequency of administration (96%) and duration of therapy (74%). But few of the dispensers informed their client on storage condition and sharing of drugs [Table 2].

Table 2. Patient counseling activities given by drug dispensers among health care facilities of Bahir Dar City, North West Ethiopia, July20-August 20/2013.

Ser No	Patient counseling activity	Number	Percent
1	Tell drug unit dose (N=400)	397	99.2
2	Tell frequency of administration	384	96
3	Tell duration of therapy	296	74
2	Tell common drug-drug interaction (N=197)	70	35.5
3	Inform drug food/drink interaction (before, after or with meal) (N=400)	241	60.25
4	Demonstrate how to administer / apply for suppository / pessary, lozenge and eye drops (N=135)	42	31.1
5	Inform /counsel on major side effects (N=192)	29	15.1
6	Counsel means /ways of administration (how to administered) (N=400)	166	41.5
7	Tell shake well before use for suspension (N=134)	62	46.3
8	Tell storage place at home (N=400)	18	4.5
9	Inform don't share your drugs to other person (N=400)	8	2.0
10	Inform don't discontinue drugs without consulting health care provider (N=400)	37	9.2
11	Check patient understanding by asking to repeat back (N=400)	202	50.5

3.3. Counseling Score

The overall percentage of satisfactory counseling was 32.8%. The highest percentage of satisfactory counseling

score was found in Bahir Dar health center (64.9%) followed by Abay health center (52.2%) and Adinas higher clinic (46.8%) (Table 3).

Table 3. Distribution of counseling score among health facilities of Bahir Dar City, North West Ethiopia, 2013.

No	Heath facility	Counseling score		Total number of encounters observed
		Satisfactory No (%)	Not satisfactory No (%)	
1	Felegehiwot referral hospital	4 (3.7)	105 (96.3)	109
2	Bahir dar health center	24 (64.9)	13 (35.1)	37
3	Han health center	14 (38.9)	22 (61.1)	36
4	Abay health center	12 (52.2)	11 (47.8)	23
5	Adinas higher clinic	22 (46.8)	25 (53.2)	47
6	Alemsaga higher clinic	20 (44.4)	25 (55.6)	45
7	Kinaemihiret higher clinic	19 (40.4)	28 (59.6)	47
8	Gamby teaching general hospital	16 (28.6)	40 (71.4)	56
Overall counseling score		131 (32.8)	269 (67.2)	400

3.4. Patient Counseling Score on Dispensed Medicines

Satisfactory counseling score was higher in private health facilities (39.7%) compared to government health facilities (26.2%) [Figure1]. Based on the level of health facilities, satisfactory counseling score was higher in health centers (51.5%) and lower in hospitals (12.1%) [Figure 2].

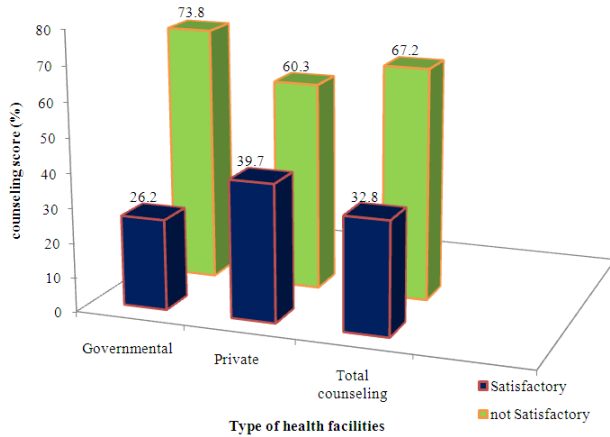


Figure 1. Distribution of counseling score on dispensed medicines according to the type of public health care facilities, 2013.

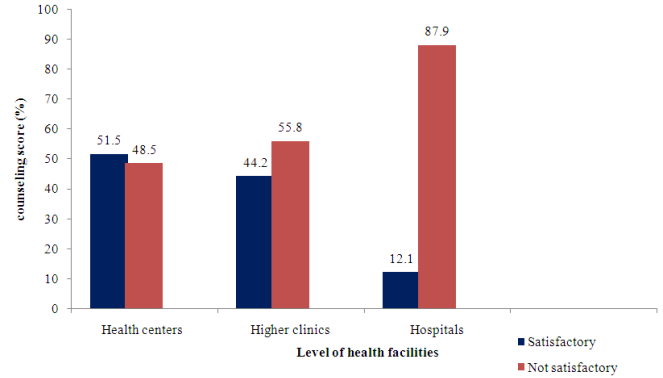


Figure 2. Distribution of counseling score on dispensed medicines by level of public health care facilities, 2013.

3.5. Barriers to Patient Counseling

Lack of knowledge on drugs (76.7%), lack of updated drug information (90%) and high patient load were the main factors that prohibit dispensers from counseling their patients. Absence of legal frame work to monitor and evaluate patient counseling practice at the time of dispensing and patient factors (patients do not need much talk, patients have low attitude towards pharmacy) were also other barriers assessed (Table 4).

Table 4. Factors that prohibit dispensers from counseling patients on their medication among dispensers in North West Ethiopia, 2013.

Barrier to counseling	Respondents				Total (N=30)	
	Pharmacist (N=14)		Druggist (N=16)		Yes	No
	Yes	No	Yes	No		
No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	
Lack of knowledge	10 (71.4)	4 (28.6)	13 (81.3)	3 (18.7)	23 (76.7)	7 (22.3)
Lack of updated drug information	13 (92.9)	1 (7.1)	14 (87.5)	2 (12.5)	27(90)	3 (10)
High patient load	11 (78.6)	3(21.4)	10 (62.5)	6 (37.5)	21(70)	9 (30)
Absence of legal frame work to monitor and evaluate patient counseling practice	9 (64.3)	5 (35.7)	8 (50)	8 (50)	17 (56.7)	13 (43.3)
Patient factors	2 (14.3)	12 (85.7)	4 (25)	12(75)	6 (20)	24 (80)
Other factors	2 (14.3)	12 (85.7)	5 (31.3)	11 (68.7)	7 (22.3)	23 (76.7)

3.6. Counseling Score and Predictor Variables

According to this study, differences in dispenser work experiences, type of health facility, level of health facility, patient load at dispensary and average consultation time were found to be statistically significant predictors for patient counseling. On multivariate analysis, those dispensers who had experience of five to nine years were two times more likely to achieve better counseling score compared to dispensers who had four and less years of experiences (AOR = 2.99, CI: 1.67 – 5.37). However, reduced counseling score was found among dispensers who had above ten (10) years of experience. Moreover, average consultation time was found to be statistically associated with satisfactory counseling. The dispensing encounters which spent on average more than 30 seconds for

consultation were three times more likely to have better counseling score compared to those encounters which spent 30 and less seconds on client consultation (AOR=3.42, CI:1.64-7.13). Patient load at dispensing encounters was found to be predictor variable of patient counseling on dispensed medicines (AOR = 2.87, CI: 1.83-3.69).

Private health facility had the highest proportion of performing better counseling when compared to government health facility (AOR = 4.29, CI 1.72 – 10.66). Moreover, health centers were four times more likely to have better counseling score as compared to the hospitals (AOR = 4.31, CI 1.94 – 9.59). However, statistically significant association was not found between differences in qualification and trained on short term training with counseling score [Table 5].

Table 5. Logistic regression analysis of factors independently associated with counseling score among health care facilities of Bahir Dar City, North west Ethiopia, August, 2013.

Variables	Satisfactory counseling score per dispensing encounter		OR (95%CI)	
	Yes	No	COR	AOR
Dispenser qualification				
Pharmacist	81	128	1.78 (1.14-2.66)	1.63(0.92-2.90)
Druggist	50	141	1	1
Dispenser work experiences				
≤ 4	48	116	1	1
5-9	29	111	0.63 (0.37-1.07)	2.99 (1.67-5.37)**
≥10	54	42	3.11(1.84-5.25)	1.59 (0.79-3.20)
Type of health facility				
Government	49	157	1	1
Private	82	112	2.35 (1.53-3.60)	4.29(1.72-10.66)**
Level of health facility				
Hospital	43	122	1	1
Health center	33	64	1.46 (0.85-2.52)	4.31(1.94-9.59)**
Higher clinics	69	69	2.84 (1.75-4.59)	1.65 (0.79-3.44)
No of drugs dispensed per patient				
One drug	77	121	1.167 (0.546-2.493)	2.16(0.87-5.34)
Two drugs	56	112	0.917 (0.423-1.986)	1.82(0.73-4.52)
Three drugs	12	22	1	1
Average consultation time				
≤ 30 seconds	35	111	1	1
31-60 seconds	76	110	2.19(1.36-3.54)	2.58 (1.47-4.52)**
>60 seconds	34	34	3.17(1.73-5.83)	3.42(1.64-7.13)**
Training of dispensers				
Not trained	96	150	1	1
trained	49	105	0.93(0.48-1.12)	0.69(0.43-1.13)
Patient load				
No	128	209	1.66 (0.91-3.01)	2.87 (1.83-3.69)**
Yes	17	46	1	1

* Statistically significant at $P < 0.05$. & ** Statistically significant at $P < 0.001$.

N.B: OR = Odds Ratio, AOR =Adjusted Odds Ratio, COR= Crude Odds Ratio, CI= Confidence Interval

4. Discussions

Patient counseling on dispensed medicines influences the patient's compliance and thereby therapeutic success or failure. It is the primary responsibility of the pharmacy professional to assure satisfactory counseling to patients receiving medicines. Therefore, satisfactory counseling is used to measure the degree to which dispensers' communicate essential information to patients on dispensed medicines [4, 5].

The present study revealed that on average 131 (32.8%) of patients received satisfactory counseling at dispensing encounters which was better than a study done in Pakistan (3.1%) [18]. However, the present finding was lower as compared to a study done in South West Ethiopia and Botswana where 38.8% and 91% was reported respectively [19, 20]. World Health Organization's drug use indicators stated that the percentage of satisfactory counseling on dispensed medicines should be 100 [4, 5]. However, in the current study the level of satisfactory counseling is still very low compared to the optimal value. The probable reason for this difference might be due to over- load of patient at dispensary and shortage of man power for counseling and dispensing, dispensers' fail to adhere good dispensing standards, manuals and code of ethics for medication counseling at dispensing encounters.

According to the level of health facilities the average

percentages of satisfactory counseling were higher at health centers (51.5%) compared to hospitals (12.1%). The probable reason for this difference between hospitals and health centers might be due to low patient load at health centers relative to hospitals, so that dispensers have adequate time for counseling compared to hospitals. Regarding the type of health facilities based on ownership, the percentage of satisfactory counseling was higher in private facilities (39.7%) compared to government health facilities (26.2%). This might be due to the fact that private health facilities are more concerned on client attraction to promote and improve their market value.

Experiences of dispensers was found to be a statistically significant predictor variable for satisfactory counseling. Those dispensers who work five to nine years were two times more likely to achieve better counseling score compared to dispensers who had four and less years of experiences. The finding of this study was consistent with a study done in North West Ethiopia, Pakistan and Botswana [16, 18, 19].

In the present study, differences in patient load at dispensary area were found to be statistically significant predictors for counseling score. Medication counseling at the dispensing encounters with less number of patient loads was two times more likely to have better satisfactory counseling score compared to those encounters which have high patient load. This was comparable with the national study, a study done in North West Ethiopia and Pakistan [16, 18].

Moreover, private health facilities were four times more likely to practice satisfactory counseling compared to government health facilities. The reason for this difference might be explained by the fact that dispensers in private health facilities often spent more time in communicating clients to increase clients trust towards their health institution in order to promote their services and assuring continuity of care and enhances accountability for market value. The finding of this study was in line with a study done in Northwest Ethiopia [16]. According to the level of health facility, health centers were four times more likely to have satisfactory counseling score as compared to the hospital. The variation may be due to high client flow and heavy work load of dispensers at hospitals compared to health centers and higher clinics. This finding was similar with studies done in Pakistan and Botswana [18, 19].

The average consultation time was found to be significant predictor variable for satisfactory counseling score which was consistent with studies done in North West Ethiopia, Pakistan and Botswana [16, 18, 19].

Lack of knowledge and updated drug information, high patient load and Absence of legal frame work to monitor and evaluate patient counseling practice at the time of dispensing were found to be the main barriers to patient counseling in 76.7%, 90%, 70% and 56.7% of the dispensers respectively. This finding is supported by studies done in North West Ethiopia and Pakistan [16, 18]. Factors in this study are similar with others except patient factors that include patients do not need much talk with the pharmacy professionals. This might be pharmacy practice in Ethiopia is still less developed in which the community does not understand the need for drug information as explained by a study in Northwest Ethiopia [16].

The main limitation of this study was the risk of observer bias. However, this bias minimized by the visits of the team being unannounced and during the consultations and dispensing there was no interference by the survey team workers. In addition, the study was cross sectional and thus the seasonal variation was not evaluated. Furthermore, some of the health facilities may have heard rumors about the ongoing survey, anticipating a possible visit by the researcher and data collectors. This may be resulted in a more favorable outcome than otherwise would have been the case.

5. Conclusion

The findings of this study showed that patient medication counseling at dispensing encounters in health care facilities of Bahir Dar City is not satisfactory and very low compared to WHO standards (100%). Health centers have better performance of satisfactory counseling score than hospitals. According to this study dispenser work experiences, patient load at dispensary, average consultation time, level of health facility and type of health facilities were found to be significant factors for satisfactory counseling score. Therefore, attention should be given to strong skill development, increasing manpower and implementation of regular monitoring for the application of dispensing ethics

to improve patient medication counseling at dispensing encounters. Furthermore, further study on patient medication counseling services is needed in order to explore the underlying causes of non-satisfactory patient medication counseling and design specific policy interventions.

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Competing Interests

I declared that I don't have any competing interests.

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