Baseline Drug Use Study IN   NIFAS SILK LAFTO SUB CITY W-01 HEALTHE CENTER

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Abstract:
Background-systematic method to assess the drug use practice and provide information on issues and gaps. On this point of view, this research is review the drug use situation in NIFAS SILK LAFTO SUB CITY W-01 HEALTHE CENTER (NSLSCW-01HC) by using WHO recommended drug use indicators. These selected drug use indicators enable the facility to evaluate its performance in terms of prescribing, dispensing and patient care. However, the drug use indicators do not measure all dimensions of the appropriateness of the pharmaceutical care, so this research serve as first line measures, to stimulate further questioning and to guide subsequent action.

Objective- To assess the drug use pattern at NIFAS SILK LAFTO SUB CITY W-01 HEALTHE CENTER   using WHO drug use indicators

Methods-Information on the prescribing practice was collected retrospectively from prescriptions dispensed through the general outpatient pharmacy. Prescriptions dispensed during 2016 Ethiopian Fiscal Year (MAY 1/2015 to MAY 5, 2016 E.C) were considered in the study. Information for patient care and facility indicators were collected prospectively through structured observation and exit interview.

Results-The average number of drugs prescribed per encounter obtained from this study was 1.88. The value is lower and encourage able than national average value (ND = 2) obtained in 2003 and other health facility (JHC = 2.24) in Ethiopia. On the other view this study result and national data shows Ethiopia has appreciable value with compare to other country (Nigeria = 3.4) because the value nearest to standard. This value indicates relatively there are low level of poly pharmacy practice in prescription pattern and less risk to ADR due to poly pharmacy.

Antibiotics were prescribed in 71.2% of patient encounters. This result obtained using the formula =Total number of encounters with one or more antibiotics (427) divided by total number of encounters (600) x100. This value was very higher than those obtained from national survey (national average data in 2003 = 58%) and some health facilities in Nigeria (average of three hospitals in Nigeria = 35.5) even its value with compare to one study in Ethiopia health facility (JHC = 23.4). However, it is not surprising because higher than this value was found in one research in Nigeria-public hospital (75%).

Percentage of the drugs from the study were prescribed by generic name is 96.6%. This value is relatively good and closer to the WHO recommendation-100%. In one research in Ethiopia shows that drugs were prescribed by generic name was 75.6% and national data was 87.3%. Drugs should be prescribed by Generic name, International Non-proprietary Name. Prescribing by non-generic name is a form of irrational prescribing (prescribing a more costly brand when cheaper and equally effective alternatives are available).

The study result revealed that 94.12% of prescribed drugs were dispensed. This value (94.12%) was good and encourage able with compare to other researches done in Jimma (77.77%) and Nigeria (80.3%).This shows that the facilities' health workers prescribing based on their essential drug list and DTC works strongly to avail those drugs.

Conclusion- There was very high antibiotics usage pattern (71%) with compare to WHO standard (20-25%).In this study the three most prescribed antibiotics were identified-Amoxicillin, Doxycycline, Ciprofloxacillin   account 50% of all antibiotics prescribed. It was observed that not only number of prescription that contain antibiotic is high but also more than one antibiotic per prescription frequently seen. This indicates that prescriber should reduce antibiotic use and improvement the pattern of their prescribing by developing and following protocols and guidelines unless this may cause antimicrobial resistance and treatment failure over the community.

I. INTRODUCTION

1.1 Background

Though prevention is the primary objective of primary health care services, treating the existing diseases is also equally important. For treatment access and use of medicine is the obvious and can never be ignored. Therefore it becomes more important that utilization of the drugs should be rational (1). Worldwide more than 50% of all medicines are prescribed, dispensed, or sold inappropriately, while 50% of patients fail to take them correctly. Moreover, about one-third of the world's population lacks access to essential medicines, with this figure rising to over 50% in the poorest parts of Africa and Asia (1, 2, and 3). This is more so in developing countries where health budgets are small and 30 – 40 % of the total health budget is spent on drugs. A quarter of the world's population is concentrated in these countries and has access to only a small proportion of the world's drug production (4). On the other hand, those who do have access to essential medicines often receive the wrong medicine, the wrong dosage, or a quantity insufficient for their needs. Even when patients and consumers receive the correct medicine, half do not consume it correctly (5).Because availability of drugs alone does not ensure rational prescribing, dispensing or appropriate patient use (6).

In 1985 WHO convened a major conference in Nairobi on the rational use of drugs. Since that time efforts have increased to improve drug use practices (7). In 2004, the second ICIUM was held in Thailand. All the evidence presented at the conference made it clear that the misuse of medicines continues to be widespread and has serious health and economic implications, especially in resource-poor settings (1).

Like other developing countries, irrational use of drugs has been perceived to be a major problem in the Ethiopian health care system for a long time (8)

Drugs should only be prescribed when they are necessary, and in all cases the benefit of administering the medicine should be considered in relation to the risks involved. However, the patterns of drug prescription are often inappropriate and the need for registration of these patterns is essential in an effort to improve prescribing standards (9). It is often assumed that once the appropriate drug is chosen, the prescription correctly written and the medication correctly dispensed, that it will be taken correctly and treatment will be successful. Unfortunately this is very often not the case, and physicians overlook one of the most important reasons for treatment failure—poor adherence (compliance) with the treatment plan (6)

Irrational medicines dispensing practices is common in Ethiopia like any other developing country. The dispensing of prescription-only medicines at partial doses and without prescription, poor labeling of the dispensed items, lack of patient counseling, incomplete compiling and recording of prescriptions, and charging patients unreasonably high prices for the dispensed items are some of the practices that reflect an irrational dispensing(10)

Generally, irrational drug use are numerous and complex involving the health system, prescriber, dispenser, patient and the community. Due to such worsened condition, it is now felt that the overall drug use situation needs to be assessed, problems identified and remedial intervention strategies to be implemented so as to check dangerous trends in drug utilization in Ethiopia (11).

Therefore, Drug and Therapeutics Committee (DTC) is responsible for many important pharmaceutical management activities; two of the most important ones are identifying medicine use problems and implementing strategies to alleviate these problems (12).

Hence, this study, on behalf of DTC, used a systematic method to assess the drug use practice and provide information on issues and gaps. On this point of view, this research is review the drug use situation in NIFAS SILK LAFTO SUB CITY W-01 HEALTHE CENTER (NSLSCW-01HC) by using WHO recommended drug use indicators. These selected drug use indicators enable the facility to evaluate its performance in terms of prescribing, dispensing and patient care.

However, the drug use indicators do not measure all dimensions of the appropriateness of the pharmaceutical care, so this research serve as first line measures, to stimulate further questioning and to guide subsequent action(7).

NSLSCW-01HC Drug and Therapeutics Committee (DTCs) revealed that there are some situations that show drug use problem in the hospital. However, the extent of the problem is not yet known. With this regard the following seven priority areas are selected to be investigated in this study:

- Prescribing practice
- Patient consultation time
- Dispensing time
- Medication Counseling time
- Packaging and labeling practice
- Patients' knowledge on dispensed medications
- Facility pharmaceutical performance

At the end of this study the following drug use indicators will be determined:

- Average number of drugs per encounter
- Percentage of drugs prescribed by Generic Name
- Percentage of encounters with one or more antibiotics prescribed.
- Percentage of encounters with one or more injection prescribed.
- Percentage of drugs prescribed from the facility's drug list or the national EDL
- Average dispensing time
- Average medication counseling time.
- Percentage of drugs actually dispensed.
- Percentage of drugs adequately labeled.

- ☐ Percentage of drugs with adequate knowledge in dispensed drugs.
- ☐ Average consultation time (by prescriber)
- ☐ Availability of facility essential drug list
- ☐ Establishment of DTC and DIC
- ☐ Development of SOP in five pharmaceutical care activities
- ☐ Percentage of key drugs available at the facility

. 2. OBJECTIVE OF THE STUDY

2.1 General objective

To assess the drug use pattern at NIFAS SILK LAFTO SUB CITY W-01 HEALTHE CENTER Hospital using WHO drug use indicators

2.2 Specific Objectives

- ☐ To determine pattern of the prescribing practice.
- ☐ To assess quality of the dispensing practice.
- ☐ To identify the major problems in the drug use process.
- ☐ Evaluate the performance of facility's pharmaceutical service

3 METHODOLOGY

3.1. Study Area and Period

The study was conducted in newly organized institution at Nifas Silk Lafto around lebu area, woreda- 01 health center, A.A city, Ethiopia   The study was conducted at the general outpatient of the hospital during MAY 1 to 30, 2016E.C.

3.2. Study Design

Information on the prescribing practice was collected retrospectively from prescriptions dispensed through the general outpatient pharmacy. Prescriptions dispensed during 2016 Ethiopian Fiscal Year (MAY 1/2015 to MAY 5, 2016 E.C) were considered in the study. Information for patient care and facility indicators were collected prospectively through structured observation and exit interview.

3.3. Sampling Technique and Sample Size

For the prescribing indicators, prescriptions dispensed through the general outpatient pharmacy during 2012 Ethiopian Fiscal Year (EFY) were retrieved and arranged chronologically based on the date of dispensing. Of these, a total of 600 prescriptions (WHO recommended least sample size) were drawn by systematic random sampling method. Prescriptions containing medical supplies and from in patient (prescriptions containing IV fluids) were excluded.

Data for patient care indicators were collected prospectively from 100 general outpatient encounters getting service in the outpatient examination/clinical consultation/ room and pharmacy. Data on consultation time, dispensing and medication counseling time were collected by observation. Labeling information and patient knowledge on dispensed drugs of the patients were collected by observation and interview immediately after dispensing. Specific code was provided to each patient so as to relate the information collected for a specific patient. The data were collected in five working days with about 20 patient encounters covered per day at peak working hours. Demographic information like age, sex, and educational background were not collected.

3.4. Data Collection

The data on prescribing indicator were collected by the principal investigators and members of DTC of the hospital using the attached format (Annex I). Medical supplies were not counted as drugs and anthelmintic and antiprotozoal were not counted as antibiotics. Abbreviations of drugs such as TTC for tetracycline and CAF for chloramphenicol were considered as generic names. Class names such as antacid and cough syrup were considered as generic name. In counting the number of drugs per prescription, known combination therapies like triple therapy for H. Pylori were not be counted as 3 and diuretic, ACEI and spironolactone for cardiac failure were not counted as 3 in recording the number of drugs per prescription.

In addition to the data required to calculate the prescribing indicators, completeness of information on each of the sampled prescription were assessed. That is whether the prescriptions contained information on patient name, age, sex, card number, diagnosis, drug name and dosage, prescriber's name, qualification and signature. The appropriateness of the prescription form itself ware also be assessed.

Data on consultation time, dispensing time, medication counseling time, drugs prescribed and dispensed, adequacy of labeling, and patient knowledge on dispensed drugs were collected by trained data collectors with proper orientation on the process using formats (Annexes II, III, IV and V) and supervised by principal investigators/ pharmacists. For each drug dispensed to a patient, labeling information should include patient name, drug name, strength, dose, frequency, and duration or total quantity.

For each drug the patient's knowledge was judged as good knowledge if and only if the patient knows the drug name, dose, frequency, and duration of administration of the drug, adequate knowledge if and only if the patient knows the dose, frequency, and duration of administration of the drug and moderate knowledge if and only if the patient knows both dose and frequency of administration of the drug.

The same applies to labeling. Label of each drug was scored as adequate label if and only if it contains six information: patient's name, drug name, strength, dose, frequency, and duration or total quantity of the drug, fair label if and only if it contains at least four information: drug name, strength, dose, frequency, under label if it contains three or less information from the fair label requirements.

The number of drugs prescribed and those dispensed to each of the patients were also recorded.

Data on facility performance to avail key drugs, development of formulary list/essential drug list, development of SOPs for pharmaceutical care and establishment of DTC and DIC were collected by data collectors using structured format (Annex VI). The data scored by observation of the above requirements.

3.5 Data quality control

Data collectors were selected with great care and proper orientation was provided. The principal investigators closely supervised the data collection process so as to ensure collection of quality data. The collected data was appropriately coded, recorded, stored and processed.

The collected data was aggregated using excel spread sheet so as to calculate each of the indicators. Values of the indicators obtained were compared with international standards, WHO, and results of other similar studies.

The following formulas were used to calculate the core drug use indicators:

1. Average number of drugs per encounter
= Total number of drugs prescribed/total number of encounters

2. Percentage of encounters with an antibiotic prescribed
=Total number of encounters with one or more antibiotics/total number of encounters x100

3. Percentage of encounters with an injection prescribed
= Total number of encounters with one or more injection/total number of encounters x100
4. Percentage of drugs prescribed by generic name
= Number of drugs prescribed by generic name/total number of drugs prescribed x100

5. Percentage of drugs prescribed from EDL or the facilities medicines list
= Total number of drugs prescribed from the facilities list/Total number of drugs prescribed x100

6. Average dispensing time
=Total time for dispensing drugs to a series of patients/total number of encounters observed

7. Average consultation time
=Total time for consultation to a series of patients/total number of encounters observed

8. Average dispensing counseling time
= Total time for medication counseling to a series of patients/ total number observed

9. Percentage of drugs actually dispensed
= Total number of drugs actually dispensed/Total number of drugs prescribed for interviewed patients x100

10. Percentage of drugs adequately labeled
= Number of drug packages containing at least patient name, drug name, dose, frequency and duration or total quantity/total number of drug packages dispensed x100.

11. Patients' knowledge of correct dosage

=Percentage of patients who can adequately report the dosage schedule (dose, frequency, duration) for all of their drugs/total number of patients interviewed x 100

12. Availability of copy of essential drugs list or formulary
=This indicator reads either yes or no, for the facility as a whole. No calculation needed
13. Establishment DIC and DTC and development of SOPs for pharmaceutical services.
=This indicator reads either yes or no, for the facility as a whole. No calculation needed

14. Percentage of availability of key drugs
=Add the column for the number of key in stock, divide by the total of key drugs surveyed
, and multiply by 100 to get a percentage. Expression will be done without decimal

3.6 Ethical consideration

Approval was secured first from NIFAS SILK LAFTO SUB CITY W-01 HEALTHE CENTER to conduct the study. The principal investigators were work very closely with DTC committee of the hospital and all information collected was kept confidential.

3.7. Dissemination Plan

Results of the study were communicated to the DTC and management of the Health center and by far will be given for sub city pharmacy head and Addis Ababa health bureau and submit for publication to make it accessible to a larger audience.

3.8. Operational definitions

•   Adequate Labeling: label bearing the Patient name, drug name, strength, dosage (frequency and dose), quantity/ duration of treatment of the drug dispensed (7).

•   Adequate Knowledge: Knowledge about the drug constitutes ability to tell dose, frequency of administration and length of therapy/duration fully (7).

•   Antibiotics: Drugs belonging to the following categories in the 4thedition of the Lists of Drugs for Ethiopia (sep. 2010) were considered as antibiotic: Penicillin (AI 101), Other anti bacterial (AI 102), Topical anti-infective that are similar to the drugs in the previous two groups (DE100), and ophthalmic antibacterial (OP300)(look index.1)

•   Injection: any encounters in which one or more injections was counted:(including immunizations-TAT and injectable contraceptives) (7).

•   Dispensing time: the time interval between the patients giving the prescription to dispenser and leaving the dispensary. Total time used for processing of pricing/payment, collecting and labeling of drug, documentation and counseling about the drug.

•   Dispensing/Medication counseling time: It is the time used for advising and delivering information to the patient. It is the time interval between counseling started and patient leaving the dispensary (7).

4   FINDING AND INTERPITATION OF THE RESULTS

Study of drug use patterns in health facilities is used to describe treatment practices and to assess performance of health care providers. This allows healthcare planners, managers and researchers to make basic comparisons between health facilities and also evaluate situations at different times in a particular health facility following interventions and improvement.

4.1. PRESCRIPTION REVIEW

A total of 600 prescriptions were included in the review that means 50 samples from each month over one year (MAY 1/2015 to MAY 5, 2016 E .C). The data on prescription review, which were generated during the study, are summarized in table 1 below and discussion on each indicator follows.

TABLE 1: WHO PRESCRIBING INDICATORS

S/N	INDICATORS	NSLSCW-01HC	JHC	N D(2003)	NRH	REF. STD
1.	Average number of drugs per encounter	1.88(1130d)	2.24	2	3.4	1.6-1.8
2	% of encounter with an antibiotic pres.	62.5(375e)	23.4	58	35.5	20- 25.4%
3.	% of encounter with an injection prescribed	9.7(58e)	9.9	23	22.4	10.0-17.0%
4.	% of drugs prescribed by generic name	96.8(1094d)	75.5	--	67	100%
5	% of drugs prescribed from EDL	100(1130d)	90.8	--	87	100%

NSLSCW-01HC= NIFAS SILK LAFTO SUB CITY W-01 HEALTHE CENTER, JHC = Jimma Health centre (11), ND(2003) = National Data in 2003 pharmaceutical sector survey(13) , NRH = Nigeria Referral Hospital(4), REF.STD. = Reference standard of WHO (4). Nd = actual number drugs, Ne= actual number of encounter

TABLE 2: NUMBER OF DRUGS PRESCRIBED PER PRESCRIPTION TO OUTPATIENT IN, NSLSCW-01HC, MAY 1/2015 to MAY 5, 2016 E.C.

Number of drugs per prescription	Frequency of prescription	Percent
One	225	37.5
Two	245	40.8
Three	105	17.5
Four	25	4.2
Total	600	100

The average number of drugs prescribed per encounter obtained from this study was 1.88. The value is lower and encourage able than national average value (ND = 2) obtained in 2003 and other health facility (JHC = 2.24) in Ethiopia. On the other view this study result and national data shows Ethiopia has appreciable value with compare to other country (Nigeria = 3.4) because the value nearest to standard. This value indicates relatively there are low level of poly pharmacy practice in prescription pattern and less risk to ADR due to poly pharmacy.

This, lower number of drugs prescribed per encounter, may have a very positive effect on therapeutic outcome in patients. Among the likely positive effects are low incidences of side effects, drug-drug interactions, confusion where aged patients are involved, enhancing compliance by the patients as a result of the lower number of drugs to be taken at a time (4). However, this value still needs to be lowered and laid in the range (1.6-1.8) that the WHO recommended as reference.

TABLE 3: TYPE OF ANTIBIOTICS PRESCRIBED FOR OUTPATIENT IN, NSLSCW-01HC, MAY 1/2015 to MAY 5, 2016 E.C

S. No.	Antibiotics	Number	Percent
1	Amoxacilin	109	23.4
2	Doxycyclin	64	13.7
3	Ciprofloxacin	58	12.5
4	Metronidazole	40	8.6
5	Cotrimoxazole	38	8.2
6	Amoxacilin + clavulinic acid	31	6.7
7	Erytromycin	26	5.6

8	Chloramphenicol	23	4.9
9	Norfloxacilin	21	4.5
10	Cloxacilin	21	4.5
11	Tetracycline	14	3.0
12	Ceftriaxone	13	2.8
13	Gentamycin	3	0.6
14	Ampicilin	2	0.4
15	B.Pencilin	2	0.4
16	Cephalexin	1	0.2
	Total antibiotic prescribed	466 for 427 patients	100

Antibiotics were prescribed in 71.2% of patient encounters. This result obtained using the formula =Total number of encounters with one or more antibiotics (427) divided by total number of encounters (600) x100. This value was very higher than those obtained from national survey (national average data in 2003 = 58%) and some health facilities in Nigeria (average of three hospitals in Nigeria = 35.5) even its value with compare to one study in Ethiopia health facility (JHC = 23.4). However, it is not surprising because higher than this value was found in one research in Nigeria-public hospital (75%) (14).This high value indicates, therefore, one of the problems in this facility is overprescribing of antibiotics and by in large it is common in Ethiopia because all the values in the country are higher than the range given by WHO (20%-25.4%).

Table 3 shows that 50% of antibiotics prescribed are three drugs-Amoxicillin, Doxycycline, and Ciprofloxacin. According the data collected that the average number of antibiotics per encounter with antibiotics is 1.1(466Antibiotics/427encounter). High rate of antibiotic prescribing has a number of implications. Firstly, it can result to non-compliance when unaffordable antibiotics are prescribed (4). Secondly, inappropriate and excessive use of antibiotic that may lead to increased antibiotic resistance (15, 16).

The prescription rate for injections from this study (9.6%) was lower than that from some previous studies and WHO standard range. For instance, in a study was done by Muligeta et al (2011) in selected health facilities in southwest Ethiopia the rate of injection prescribing was 9.9 % in Jimma health center. This relatively low utilization of injection is encouraged to decrease non-professional injection administration related hazards and infections such as HIV/AIDS, hepatitis and tissue necrosis decrease. This does not shows that there is low utilization of injections with in the hospital because there are other dispensers serving highly with provision of inject able. Researchers expect that the value decreased to this extent in outpatient pharmacy is due to other dispensaries like inpatient and emergency pharmacies and also recommended to maintain the pattern of outpatient in general hospital.

Percentage of the drugs from the study were prescribed by generic name is 96.6%. This value is relatively good and closer to the WHO recommendation-100%. In one research in Ethiopia shows that drugs were prescribed by generic name was 75.6% and national data was 87.3%. Drugs should be prescribed by Generic name, International Non-proprietary Name. Prescribing by non-generic name is a form of irrational prescribing (prescribing a more costly brand when cheaper and equally effective alternatives are available). Factors that have been identified as contributing immensely to this trend are the influence of drug promotional activities as well as pressure from pharmaceutical manufacturers' representatives or detail men on prescribers (4).

100% of drugs in this study were prescribed from the Essential drug list (EDL). The value from this study shows that the WHO benchmark (100%) has been attained in this respect. This is an indication that the prescribers have a good knowledge of the drugs in the essential drug list and have essential drug concept. It was observed that the pharmacy department had a copy of the EDL but none of the prescribers. For the next time the prescriber should have the copy of the facility essential drug lists for quick reference and updating.

TABLE 4: INFORMATION MISSED ON PRESCRIPTION IN OUTPATIENS OF , NSLSCW-01HC

Missed information on prescription	Number of prescription	Per cent
ICD code	147	24.5
Date of prescription	44	7.4
Name of the patient	1	0.2
Card number	93	15.5
Sex	66	11
Age	54	9
Prescriber name	107	17.8
Qualification of the prescriber	77	12.8
Signature of the prescriber	106	17.5

The study shows that there was missing of important information in the prescriptions. However FMHACA considering that prescription serves as a vehicle for communication from the licensed medical practitioner to the pharmacy professionals about the pharmaceutical care of the patient.

Before dispensing of the prescribed drugs details to be checked for completeness of the prescription mentioned as follow:

A. Seal of the health institution & header

B. Prescriber's details (Name of prescriber's, Qualification, Signature and Date)

C. Patient's details (Patient Name, Patient Address, Sex, Age, Weight and Diagnosis (ICD code))

D. Check the medicine details (10)

64 of 600(10.6%) encounters prescribed with non-standard prescription paper that may not contain important requirements of FMHACA. Lack of information that makes a given prescription illegal or incomplete, so prescription should be standard one and filled with all necessary information.

4.2. PATIENT CARE

It has been noted that patient care practices impact on the quality of health care delivered and appropriate use of time influences the health seeking behavior of clients (4). The data on patient care, which were generated during the study, are summarized in table 5 below and discussion on each indicator follows.

TABLE 5: WHO PATIENT CARE INDICATORS VALUE IN NSLSCW-01HC

S/N	PARAMETER	NSLSCW-01HC	JHC	MHC	NRH
1.	Mean Consultation time (mins)	4.54	6.39	3.26	11.5
2.	Mean dispensing time (mins)	20.7	1.25	2.2	5.0
3.	Mean Revenue time(mins)	17.76	--	--	3.5
4.	Mean drug counseling time (secs)	19.3		-	-
5.	Percentage of drugs actually dispensed	94.12%	77.77 %	--	80.3%

As table 5 shows that the mean consultation time was 4.54 minutes. The result obtained in this study was acceptable when compared with one research done in karla matu revival hospital, but not adequate for making appropriate diagnosis because in other research in Nigeria this value higher than 10minutes/encounter. An important factor that affects consultation time is the number of patients to attend to the room. Adequate consultation time is an indication of adequate clinical care for the client which directly impacts positively on patients' satisfaction (4)

Dispensing time is as important as consultation time for patients' satisfaction. Grosse dispensing time calculated was 20.7minutes/encounter. However, real dispensing time is very low because the revenue time was nearly equal-17.76minutes/encounter. As research in other country shows that the revenue time (3.57minutes/encounter) was very lower than this study (17.76minutes/encounter).Therefore, the actual dispensing time-prescription processing(20.7-17.76 =3minutes/encounter) and drug counseling(19.3sec/encounter), becoming faster to lower the patient time spent to get pharmaceutical care. This by itself affects the patient-dispenser communication and patients' care.

The study result revealed that 94.12% of prescribed drugs were dispensed. This value (94.12%) was good and encourage able with compare to other researches done in Jimma (77.77%) and Nigeria (80.3%).This shows that the facilities' health workers prescribing based on their essential drug list and DTC works strongly to avail those drugs.

Quality of labeling of drugs

According WHO a label to be adequate it should contain at least patient name, drug name, strength, dosage (dose and frequency) and duration/quantity of the drug. Table 6 and 7 show the quality of the labeling by counting number of drugs dispensed that contains required information per 100.

TABLE 6: QUALITY OF LABELING OF DRUGS DISPENSED

		Type of information in present in dispensed drugs					
No. of drug labeled of 100		Patient name	Drug name	Strength	Dose	frequency	Duration/ total qty.
	Single inf.	0	100	96	25	20	21
	two inf. contained		96			20	
	Four inf.		18				

TABLE 7: NUMBER OF DRUGS DISPENSED WITH RESPECT TO LABELED INFORMATION

maximum number of information labeled

	< =3(under label)	At least 4(fair)	6(adequate)
Number of drugs dispensed	82	18	0

Adequate label if and only if it contains six information: patient's name, drug name, strength, dose, frequency, and duration or total quantity of the drug, fair label if and only if it contains at least four information: drug name, strength, dose, frequency, under label if it contains three or less information from the fair label requirements.

There was no drug labeled adequately; the major reason is lack of patients' name on dispensed package. As the result revealed that almost all drugs dispensed (96%) contain both drug name and its strength. This high value includes the label of the primary package of manufacture and hand writing on the repacked medicinal envelops. However, the labeling result has been decline to 18% when considering the Drug name, strength, dose and frequency to be taken. This implies that 78 of 96(81.5%) of the drug dispensed contains only drug name and its strength. This shows that 78 of 96(81.5%) drugs dispensed can be taken correctly if and only if the patient understood well and not forget his/her medicine/s dosage schedule advised.

Therefore, the number of label fairly labeled is 18% even if they missed the patient name and duration/quantity. During the study observed that almost all drugs packed in primary packaging like strips and bottles that contain drug name and strength are not dispensed with additional labels-this could be 78 of 96 drugs dispensed. 4 of 100 drugs (4%) dispensed missed the strength of the drug-these are repacked drugs and dispensed without written information.

Patients' knowledge about their medications

According to WHO definition adequate knowledge of the medication: when patient ability to tell dose, frequency of administration and length of therapy/duration fully. Table 8 shows 119 patients' knowledge based on their response during interviewing by using structured WHO recommended format (208 drugs dispensed).

TABLE 8: RESPONDENTS' KNOWLEDGE OF DISPENSED MEDICATIONS

S.No.	Parameter	Percentage	NSLSCW-01HC
1	Knowledge of names of dispensed medications	49/208	(23.56%)
2.	Knowledge of correct dosage(dose and frequency) of dispensed medications	198/208	(95.2%)
3.	Knowledge of duration of dispensed medications	104/208	(50%)

TABLE 9: NUMBER OF RESPONSES ABOUT EACH DRUG DISPENSED ASSESSED

Patients' Knowledge of drug	A patients' number of response/drug dispensed				
	0(lack)	1(under)	2(moderate)	3(adequate)	4(good)
No of drugs dispensed	9/208	1	198/208	104/208	38/208
No. encounter	5/119	1	114/119	49/119	17/119
Percentage expression-drug(pt.)	4.3(4.2)	0.5(0.8)	95.2(95.8)	50(41)	18.3(14.3)

Important information that the patient expected to respond are: (4 information- good knowledge) Name of the drug, Dose, frequency and duration/quantity, (at least 3 information- adequate knowledge) Dose, frequency and duration/quantity, (at least 2 information- moderate knowledge) Dose and frequency, (at least 1 information-under knowledge) either dose or frequency, (0 information-lack of knowledge) neither dose nor frequency and all others.

As the result in table 8 shows that 49 of 208 drugs dispensed were well known by their name. When this value expressed in percent equals 23.56% and much lower with compare to other study. In short it means 76.44% of drugs were not known by their name. Hence, the user identifies and will take the drug simply by their physical appearances and marks on the container. Know a day's certain manufacturers use similar type of primary packages for different drugs, so there will be a chance of miss administration due to their color and physical appearance. Therefore the health professionals especially the dispenser has responsibility to tell the name of the drug and label with the language that the patient can easily read and understand.

As table 9 shows that patients responded for 38 drugs (18.27%) correctly/good (knows the four requirements).On the other hand 17 of 119 patients has good knowledge (the four information) about their drugs. 104 of 208 (50%) drugs were adequately known/answered by the patient when considering encounters -49 of 119(41%) patients know adequately (at least three information) about their medications.

198 of 208(95.2%) drugs were at least known by their dose and frequency when considering encounters -114 of 119(95.8%) patients know adequately (at least three information) about their medications. On the other hand about 4.33% of drugs dispensed were not known how much and when to be taken. Fifty percent of drugs dispensed were known about their duration of therapy and the rest are simply will be taken as the patient needs or until the problem resolve. In this drug use study nine of dispensed drugs (4.3%) were not known in all respect by the patient and also 5 of 119 (4.2%) patients anything to know about their medication. It is difficult to expect therapeutic effect if drugs were not taken correctly. In turn these problems can be potential factors for lack of therapeutic outcome, adverse drug effect and drug resistance.

4.3 FACILITY PERFORMANCE

World health organization developed criteria to evaluate pharmaceutical care performance of the facility (7).In addition to these, criteria for drug/Medication use evaluation can be approved by medical staff of the facility or group of health care providers who are expected to apply in the care of their patients (17). Hence, in this drug use study some criteria were added to evaluate performance of the facility without excluding the WHO criteria. The results summarized in the table 10.

TABLE 10: PHARMACEUTICAL CARE PERFORMANCE OF THE FACILITY

S. No.	Criteria	Max value allocated	Result found
1	Presence of EDL (WHO recom.)	1	1
2	Established DTC and its term of reference(added)	1	1
3	Established facility DIC(added)	1	1
4	Established SOP for five pharmaceutical area(added)	10	10
5	Availability of key drugs (16 drugs) in the facility (WHO recom.)	16	16
	Total	**29**	**29**

WHO recom. = the criteria that the World Health Organization recommend, Added = the criteria that the health care provider added.

Table 10 reveals that the performance of the facility is 100%. However, the extent of functionality of the DTC, DIC and Established SOPs are yet not evaluated because these depend on the behavior of the members within the committee and administrative body. Therefore, these cannot be determined within short period of study

5. CONCLUSION AND RECOMMENDATION

The data on prescription review, which were generated during the study, showed that the pattern of prescribing is appreciable and nearly similar with WHO standard reference with regard to numbers of drugs prescribed per prescription 1.88 (WHO recommend 1.6-1.8) other countries like Sudan (1.4), Malawi (1.8), Bangladesh (1.4) drugs prescribed per prescription (18), percentage of injections prescribed 9.6% (WHO recommend 10-17%), prescribing by generic name 96.6%(WHO recommend 100%) and drugs prescribed from facility Essential Drug List 100% (WHO recommend 100%). The lack of poly pharmacy practice is revealed that there are highly skilled manpower such as doctors and pharmacists for qualitative healthcare delivery at grass roots. The use of injections is good. This show either there is good awareness and skill of prescriber on the usage of injections or the prescriptions were not considered from where the injections commonly prescribed. Whatever the case, usage of injections in the facility is good and encourage able with regard to outpatient care. The prescribers prescribe drugs by the generic name. This helps patients to get their medication in the lowest possible cost by reducing brand product promotion and allowance of generic substitution. There is good practice on the respect of prescribing drugs from facility essential drug list. This practice reduces drug adventure and focusing the treatment pattern to protocols and guideline to have good therapeutic out come and patient benefit. However, improvement should be made to attain the standard. It was observed that the pharmacy department had a copy of the EDL and but none of the prescribers.

There was very high antibiotics usage pattern (71%) with compare to WHO standard (20-25%).In this study the three most prescribed antibiotics were identified-Amoxicillin, Doxycyclin, Ciprofloxacillin account 50% of all antibiotics prescribed. It was observed that not only number of prescription that contain antibiotic is high but also more than one antibiotic per prescription frequently seen. This indicates that prescriber should reduce antibiotic use and improvement the pattern of their prescribing by developing and following protocols and guidelines unless this may cause antimicrobial resistance and treatment failure over the community. The link between drug use and the development of resistance is one that has been explored by many investigators (15)

In addition to WHO core drug use indicators the research also assessed some important issues in prescription patterns. The result shows that there was 64(10.6%) prescription out of 600 encounters dispensed without standard prescription. As a regulatory body proclamation that if any person in institution who fail to comply with DACA prescription standard shall be punishable by law in accordance with DACA proclamation number 176/1999(19). To follow the DACA proclamation the prescriber has to fill the prescription requirements/contents and also dispenser has to verify and validate the prescription before filling. Accordingly, the dispenser has to know the genuine signature of the prescribers to control dispensing to those unauthorized ones. Hence, the prescriber has to give their genuine signature to the dispensers in advance. The institution has to avail the standard prescription form to the prescribers at all the time.

The patient care at clinical consultation/examination room is not adequate (4.54 minutes/encounter) with compare to other research values. For instance, in two researches the times taken to consult a prescriber (6.39 and 11.5 minutes/encounter) were higher than this health facility. To have good patient-health care provider interaction adequate time has to be spent. The impact of these consultations on health outcomes was not determined but likely contributed to improve patient care (15). An important factor that affects consultation time is the number of patients to attend to the room. Adequate consultation time is an indication of adequate clinical care for the client; which directly impacts positively on patients' satisfaction (1). It has been observed that there are consultation rooms at which patients cannot get service effectively. Conversely, in a few consultation rooms there are two or more health care providers serving a large number of clients.

Discussions with patients and discussions about specific patient cases should be held in private settings, such as consultation rooms or other private areas (20). Therefore, this facility has to arrange a number of consultation rooms and use prescribers effectively to serve in private setting to increase time of patient-prescriber interaction and privacy.

Simply, the time that the patient spent to get pharmacy serves is adequate. However, dispensing time and revenue time is not appropriately managed. What was observed in the study that out of total average time spent to get pharmaceutical care (dispensing process) 20.7minutes about 17.76 was taken to pay for medication (revenue time).Hence, the actual prescription processing time

averagely become 3 minute. In turn out of 3minutes dispensers used averagely 19.3sec. to counseling the patient about dispensed drug/s which was short period to have good interaction and counseling. Despite the quality of service that the patients get, they spent longer period around pharmacy.

The research in Botswana shows that mean counseling time was 25sec and in Nigeria 13sec. However, it still needs to be increased for improving patient drug knowledge (21). The result 19.3 sec. found in this result was neither encourage able nor surprising, but needs to be increased.

Accordingly, it was recommended that increasing number of cashers/money collectors and dispensers at pick working time to reduce the revenue time and increase prescription processing and drug counseling time. Ideally, converse with patients in private counseling or consultation rooms is preferred. If physically separate space is not available, converse in a space that is as private as possible (20).

Percentage of drugs actually dispensed 94.12% was good with compare to other two researches done in Jimma 77.77% and Nigeria 80.3%. This value is good and has to attain max value 100% for the next by availing and prescribing those drugs that the facility essential drugs list recommends.

11% drugs dispensed observed in this research were fairly labeled, irrespective of patient name; they contained drug name, strength, dosage (dose and frequency) and duration of therapy/total quantity. Bay far, this indicator with compare to national value (42.7%) was very low. Despite the fact that this value was expected to be 100%. If the WHO criteria strictly used all drugs dispensed were inadequately labeled due to they all lack patient name. Drug dispensed label has to have most impotent information to the patient such as patient name, drug name, strength, dosage (dose and frequency) and duration/total quantity. These labeling requirements have to be internalized and practiced by the pharmacy staffs to promote rational patient drug use and avoid non-compliance due to forger fullness and missed administration.

According to WHO criteria 38 (18.27%) drugs of dispensed were known by the user/patient with good scale and when considering encounter 17 of 119(14.3%) patient has good knowledge about their drug. In turn the number of drugs known by adequate scale was 104(50%) and when considering encounter 49 of 119(41%) patient has adequate knowledge about their drug. The national data shows that 67.4% of total encounters have adequate knowledge about their drug dispensed. However, it was expected to be 100%.The health care professionals (prescriber and dispenser) should educate and counsel all aspects of his/her medication. Therefore, there is potential for improving patient knowledge scores by increasing counseling time during dispensing (21). The knowledge of the patient promotes rational administration of drug and patient confidence on the health system and professional performance.

Pharmaceutical Performance of the facility is 100%. As the result reveals that the facility avail all key drugs, established DTC and DIC and also developed SOP for pharmaceutical cares. This EDL of the facility was segregated by their importance (VEN); but not considering ABC analysis. The facility, therefore, should update its essential drug list as WHO recommendations in 1982, at its third meeting, the Expert Committee modified the description of essential drugs to, "those that satisfy the health care needs of the majority of the population; they should therefore be available at all times in adequate amounts and in the appropriate dosage forms"(22) . The establishment of DTC and DIC and development of SOPs is promoting the facility pharmaceutical activities and rational drug use to come to the standard. However, the extent of functionality of the DTC, DIC and developed SOPs are yet not evaluated by this study because these depend on the behavior of the members within the committee and administrative body these could not be measured by this indicator. Hence, to determine the performance activity level there should be detailed criteria that can measure the behavior of the committee and detailed activity.

The overall picture of prescribing practice suggests that this facility is at the optimal level and should maintain the value, except in antibiotic usage practice that the facility needs interventions.

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