

Assessment of the degree of adherence to health facility indicators related to rational drug use in Selected Health Facilities of Amhara Region, Northwest Ethiopia

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ABSTRACT

Purpose: The purpose of this study was to assess the degree of adherence of health care facility to World Health Organization health facility indicators in selected health care facilities of Amhara Region, Northwest Ethiopia.

Methods: A cross sectional study was conducted among randomly selected health care facilities of Amhara region from March 01 to 15, 2014. Data was collected by interview and observation using structured questionnaire and check list respectively. Ethical clearance was obtained from the ethics review committee of Amhara regional state health bureau. The data was checked for completeness and consistency, cleared, coded, and entry and analysis was done by using SPSS (version 16).

Results: The percentage availability of key essential drugs was found to be 73.05%, availability of Essential Drug List (EDL), Standard Treatment Guidelines (STG), drug formulary and average stock out duration were 75%, 87.5% 75% and 34 days respectively.

Conclusion: The study revealed that evaluation of the patterns of drug use based on World Health Organization (WHO) facility indicators was not satisfactory. So there is a need for managerial and educational intervention to improve rational drug use and thereby need to improve' availability of essential drug list, standard treatment guidelines, drug formulary in order to access unbiased information for health care providers and also to prevent stock out of key essential drugs.

Key words: Rational drug use, facility indicators, selected, Health facility, Amhara region

1. Introduction

Drug use evaluation is a system of ongoing, systematic, criteria-based drug evaluation that ensures the appropriate use of drugs. Drugs are very vital and essential tool for the health care delivery system to provide preventive, curative and rehabilitative health care, however, the number and type of drugs needed is constantly increasing, while the financial resources for health care services in general, remain limited [1].

The limited information on drug use throughout the world indicates that drugs are not optimally used. This inappropriate use has serious health and economic consequences for the success of national health care system. The irrational use of drugs becomes the world wide problem than the absence of drugs information. Drug use is complex subject involving the physician, the patient and the dispenser. Each of these is influenced by many factors that are often difficult to measure and quantify. Despite complexity of drug use, a number of indicators have been developed, standardized and evaluated by World Health Organization [2, 3].

The availability and affordability of good quality drugs, coupled with rational use is fundamental to the effectiveness of health care delivery system in any country. The rational use of medicine requires that patients receive medications appropriate to their clinical needs, in a correct dosage, for an adequate period of time, at the lowest cost to the patient/ community [2].

In a bid to improve drug use practices globally, the World Health Organization (WHO) developed a set of objective indicators for measuring health facility drug use practices in outpatient settings. The best way to investigate drug use in health facilities is by the usage of indicators created and validated by the World Health Organization [3, 4].

The following WHO Core indicators are used globally to evaluate the degree of adherence to health facility indicators related to rational drug use [3]:

a. Availability of EDL/Formulary and STG: The purpose is to indicate the extent to which copies of the national essential drugs list or local formulary are available at health facility.

b. Availability of Key Drugs: The purpose is to measure the availability at health facilities of key drugs recommended for the treatment of some common health problems. Access to essential drugs is one of the basic requirements for delivery of proper health care.

c. Stock out duration: To measure the historical availability of essential drugs, a retrospective survey was undertaken by reviewing the stock cards of the facilities covering a period of six (6) months.

The ability to prescribe and dispense drugs rationally is influenced by many features of the working environment including the availability of health facility indicators. An adequate supply of essential drugs and access to unbiased information about the drugs are particularly important. Without these it is difficult for health personnel to function effectively. At least a copy of each should exist at health facilities which help to access unbiased information.

These indicators enable health care planners, managers and researchers to compare situations in different facilities and/or at different times [3, 5].

The limited information on drug use throughout the world indicates that drugs are not optimally used. Due to an increasing both in number and types of drugs available today in the world makes rational drug use is a complex issue which needs an integrated action of prescribers, dispensers and users/ patient's and also administrators and policy makers. The irrational drug use becomes the world wide problem, however, in developing countries have rather worsened condition. Likewise, irrational drug prescribing, dispensing and inappropriate use of drugs by patients is common in Ethiopia [6, 7, 8].

Irrational use of medicines can stimulate inappropriate patient demand and lead to reduced access and attendance rates due to medicine stock outs and loss of patient confidence in health care system. Selection of essential drugs are important to fulfill the real need of the majority of the population in diagnostic, prophylactic, therapeutic and rehabilitative services using criteria of risk benefit ratio, cost effectiveness, quality practical administration as well as patient compliance and acceptance [9].

Rational drug use practice is often overlooked by health planners and considered as secondary importance to diagnosis, procurement, inventory control, and distribution. This is unfortunate, because poor or uncontrolled dispensing practices can have a very detrimental impact on the health care delivery system. All of the resources required to bring a drug to the patient may be wasted if dispensing practice does not ensure that the correct drug is given to the right patient in an effective dosage and amount, with clear instruction, and in packaging that maintains the integrity of the drug. The quality of dispensing is affected by lack of knowledge, skills, independent information, unrestricted availability of medicines, overwork of health personnel, inappropriate promotion of medicines and profit motives from selling medicines [10-15].

. However, there was no recent study has been found in the study area to assess the degree of adherence to facility indicators related to rational drug use. Therefore, the aim of this study was to assess degree of adherence to facility indicators related to rational drug use practices based on WHO indicators and associated factors among health care facilities of Amhara region, North West Ethiopia. This study was found to be essential and intended to assess how the health care facilities are adhered to WHO indicators to improve rational drug use. The study is also used as a base line to initiate further studies.

2. METHODS AND MATERIALS

A cross sectional study was conducted among randomly selected health facilities in Amhara region, Northwest Ethiopia from March 01 to 15, 2014. Health facility indicators observation was performed to ensure the availability of essential guidelines, drug formulary, essential drug list, key drugs in the stock and average stock out duration.

Multistage sampling technique was used to select health facilities. All health care facilities in Amhara region were stratified in to two groups. From all health care facilities in Amhara region, all Governmental health care facilities and those private clinics and Hospitals which have their own outpatient pharmacy was considered in the selection of health care facilities. From each stratum four (4) health care facilities were selected randomly

Facility indicators were EDL Availability, formulary availability, STG availability, key drugs availability. Essential drug list (EDL) or Formulary or Standard Treatment Guideline (STG) availability was checked by saying yes or no, per facility after observation. Key drugs availability was calculated by dividing the number of specified products actually in stock by the total number of drugs on the checklist, multiplied by 100.

Data was collected by using pretested questionnaires (observation checklists) adopted from WHO designed criteria based data collection formats.

Data were coded, checked for completeness and consistency. Then the data were entered and analyzed using SPSS version 16.0 statistical soft ware program. Ethical clearance was obtained from Amhara regional state health bureau research and ethics review committee. Verbal consent was obtained health facility administrators and health professionals before data collection.

3. Results

The finding of this study showed that of the eight health facilities included in the study, 6 (75%) of health facilities had Ethiopian essential drug list (EDL), 7(87.5%) had a standard treatment guideline and 6 (75%) of the health facility had a copy of drug formulary; however others have not any essential reading materials listed above during the study period [Table1].

Table 1: Health facility indicator results among health facilities in Amhara region, Northwest Ethiopia, March 01 to 15, 2014.

Ser No	Availability of indicators	Health facilities								Total No (%)
		FHRH	BHC	HHC	AHC	ADHC	ALHC	KMHC	GTGH	
1	Standard treatment guideline	1	1	1	1	1	1	0	1	7(87.5)
2	Essential drug list	1	1	0	1	1	1	1	0	6 (75)
3	Dug formulary	0	1	1	1	1	1	1	0	6 (75)
4	Reference books	1	1	0	0	0	1	1	1	5(62.5)
5	Tablet/capsule counting tray	0	0	0	0	1	1	1	1	4 (50)
6	Tablet cutter	0	0	0	0	1	0	1	1	3(37.5)
7	% availability of key essential drugs	9 (69.2)	11 (84.6)	8 (61.5)	9 (69.2)	10 (76.9)	11 (84.6)	10 (76.9)	8 (61.5)	73.05
8	Average stock out duration (days)	72	19	41	7	8	20	22	83	34

Note: In table 4 above 1= Yes, 0=No. FHRH = Felegehiwot Referral Hospital, GTGH = Gamby Teaching General Hospital, AHC = Abay Health Center, BHC = Bahir Dar health center, HHC = Han health center, KMHC = Kidane Mihiret higher clinic, ASHC = Alem Saga higher clinic and Adinas higher clinics.

The overall percentage availability of key essential drugs was 73.05% in public health facilities. The percentage availability of key essential drugs was 71.5% and 75% in government and private health facilities respectively [figure 1].

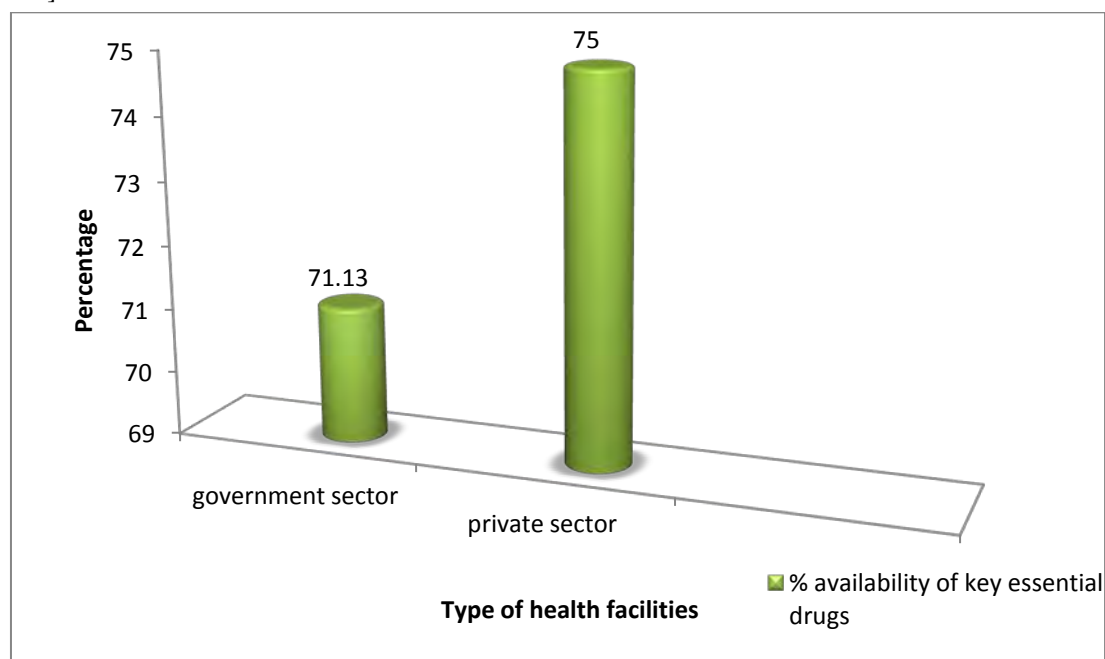


Figure 1: percentage availability of key essential drugs by type of health facilities

The four levels of public health facilities were also compared [Figure 2] and average availability was found to be 69.2%, 61.5%, 71.8% and 80.4% in government hospital, private hospital, government health centers and private higher clinics respectively. But, the mean variation was insignificant ($P > 0.05$). The result indicates comparatively highest availability of essential drugs in higher clinics but lowest availability in private hospital [figure 2].

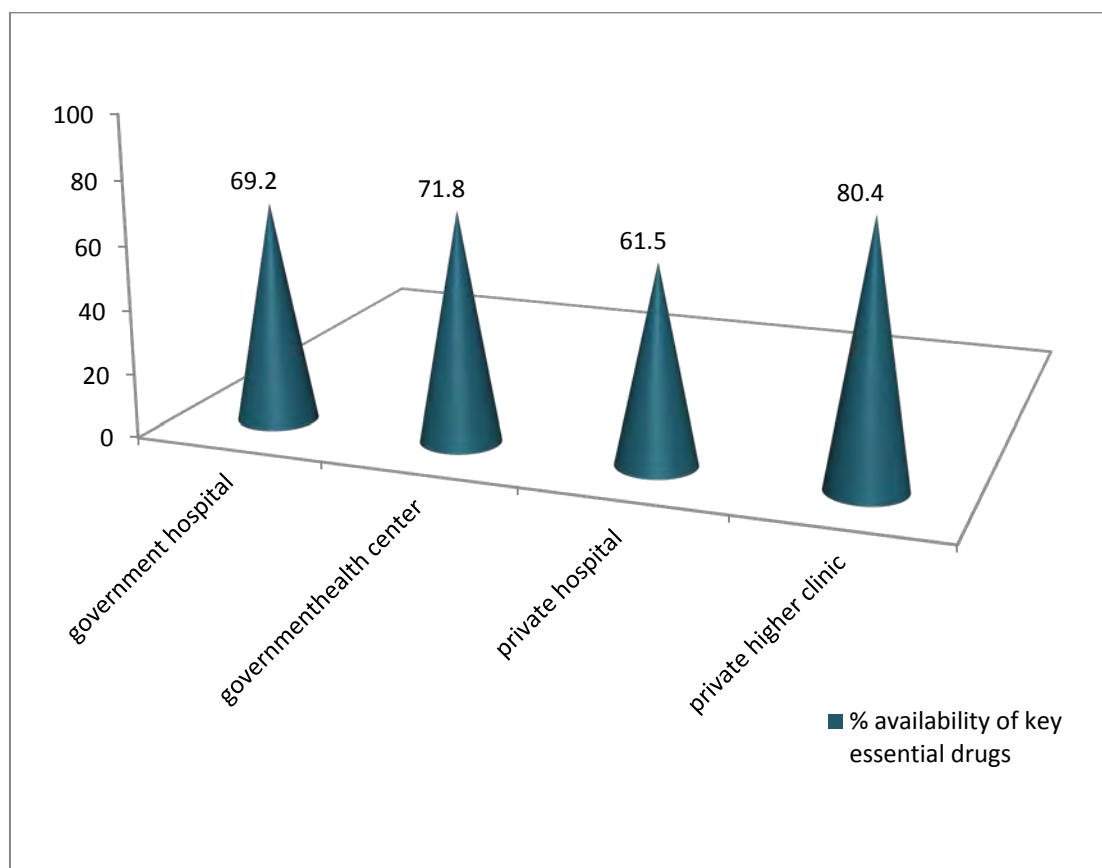


Figure 2: percentage availability of key essential drugs by level of health facilities

The finding of this study revealed that some key essential drugs like ferrous salts with folic acids, mebendazole tablets and tetracycline eye ointments were not available in ADHC and AHC during the study period. Amoxicillin and benzoic acid plus salicylic acid were not available in FHRH and GTGH on the day of the study where as procaine penicillin injection and chloroquine were not available in FHRH, BHC, HHC, ALHC and GTGH during the study period [Table 2].

Table 2: Distribution of availability of key drugs among health facilities in Amhara region, North West Ethiopia, March 01 to 15, 2014

Ser. No	Key essential drugs in the stock	Health facilities							
		FHRH	BHC	HHC	AHC	ADHC	ALHC	KMHC	GTGH
1	Oral rehydration salts	1	1	0	1	1	1	1	1
2	Cotrimoxazole tablets/suspension	1	1	0	1	1	1	1	1
3	Procaine penicillin injection	0	0	0	1	1	0	1	0
4	Amoxicillin (capsule, suspension)	0	1	1	1	1	1	1	0
5	Chloroquine (tablet, syrup)	0	1	0	1	1	1	0	0
6	Arthemether-lumifantrine	1	1	1	1	1	0	1	1
7	Ferrous salt + folic acid	1	1	1	0	0	1	0	0
8	Mebendazole	1	1	1	0	0	1	1	1
9	Tetracycline eye ointment	1	1	1	0	0	1	1	1
10	Denatured alcohol	1	1	1	1	1	1	1	1
11	Iodine/gentian violet	1	0	0	1	1	1	0	1
12	Benzoic acid + salicylic acid	0	1	1	1	1	1	1	0
13	Paracetamol/salicylic acid	1	1	1	0	1	1	1	1
14	% availability of key essential drugs	9 (69.2)	11 (84.6)	8 (61.5)	9 (69.2)	10 (76.9)	11 (84.6)	10 (76.9)	8 (61.5)

Note: In table above 1= Yes, 0=No. FHRH = Felegehiwot Referral Hospital, GTGH = Gamby Teaching General Hospital, AHC = Abay Health Center, BHC = Bahir Dar health center, HHC = Han health center, KMHC = Kidane Mihiret higher clinic, ASHC = Alem Saga higher clinic and Adinas higher clinics.

The average stock out duration in public health facilities of Amhara region was found to be (n=8) 34 days (Min 7, Max 83) in Abay health center and Gamy teaching general hospital respectively. Average stock out durations by level of health care facilities were 78 days, 22 days and 17 days in hospitals (n=2), health centers (n=3) and higher clinics (n=3) respectively.

On the other hand, average stock out durations in public health care facilities were varied between 35 days (Government health sectors) and 33 days (Private health sectors) showing insignificant mean variation [Figure 3].

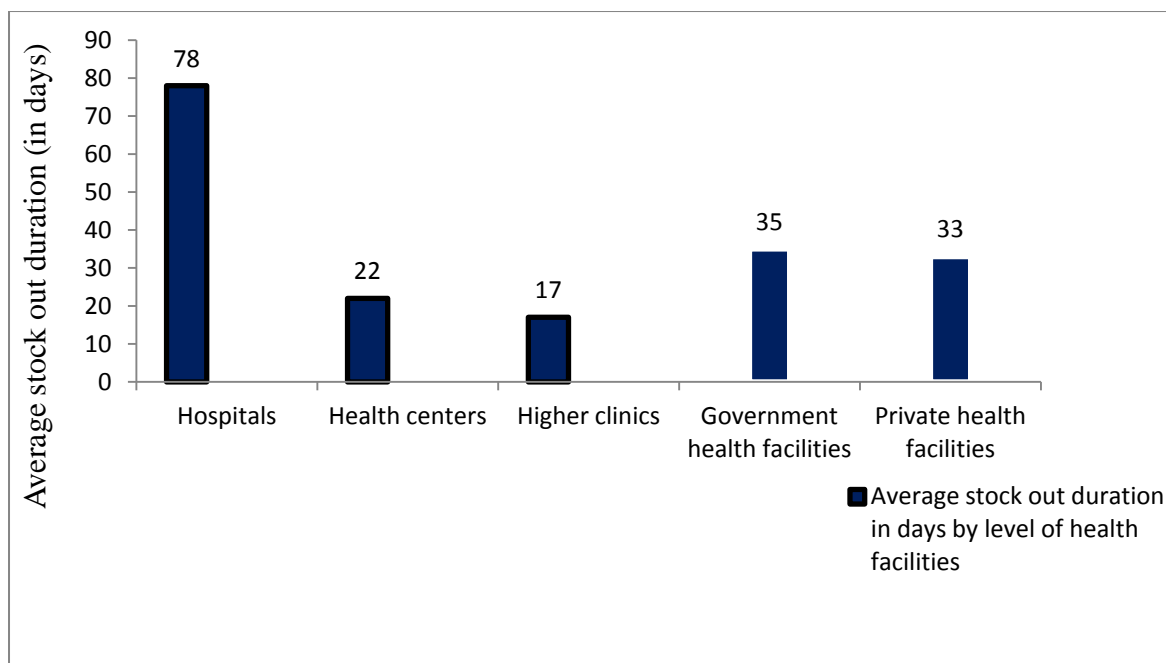


Figure 3: Average stock out duration of key essential drugs among health care facilities of Amhara region, North West Ethiopia, March 01 to 15, 2014.

4. Discussions

The finding of this study revealed that the overall adherence to facility indicators was not satisfactory. The finding of this study showed that of the eight health facilities included in the study, 6 (75%) of health facilities had Ethiopian essential drug list (EDL), 7(87.5%) had a standard treatment guideline and 6 (75%) of the health facility had a copy of drug formulary and only one health facility (Felegehiwot Referral hospital) has their own essential drug list during the study period. In contrast, this study indicated that the availability of STG, EDL and drug formulary were better than other studies conducted in South West Ethiopia which was 50%, 50% and 25% respectively[11]. And the result also revealed that higher value as compared to the national survey which indicated that only 39% of the health facilities had STG and of all hundred eight (108) health facilities only one health facility had its own EDL [28] while the result of this study was very far from the WHO standard which has an ideal value of 100%.

The finding of this study showed that the percentage availability was found to be 69.2%, 61.5%, 71.8% and 80.4% in government hospital, private hospital, government health centers and private higher clinics respectively which was in line with a study done in South West Ethiopia [11].

This study indicated that comparatively highest availability of essential drugs in higher clinics but lowest availability in private hospital which was lower as compared to the national survey indicated that 88.3%, 76.8% and 66.7% in hospitals, health centers and Health stations respectively [28]. Based on the type of health facility the percentage availability of key essential drugs in private health facility was higher than government health facility which was 75% and 71.5% respectively. This finding revealed that relatively lower value was observed in private health facilities but similar in governmental health facilities compared with a study done in South West Ethiopia (70% & 91% in governmental and private health facilities respectively) [11]. According to this study, the percentage availability of key essential drugs among public health facilities of Amhara region was found to be 73.05% which was higher than a study done in Gondar University hospital (66%) but lower as compared to studies done in India and Brazil which showed 85% & 83.2% respectively [18, 21, 30]. According to the finding of this study, the percentage availability of key essential drugs among public health facilities still very far lower as compared to the WHO standard which have an ideal value of 100% [3,5].

To measure the historical availability of key essential drugs to treat common health problems, a retrospective survey was undertaken by reviewing the stock cards and Bin cards of the facilities covering a period of 6 months. The number of days for which key essential drugs were not available (when the stock was zero) within the review period were recorded in the standard survey format. The average stock out duration was then calculated using the standard formula at each facility, by type of health sector/facility and by the level of health facilities. The average stock out duration in public health facilities of Amhara region was found to be (n=8) 34 days (Min 7, Max 83) in Abay health center and Gamy teaching general hospital respectively. According to this study the average stock out durations were varied between 35 days (Government health sectors) and 33 days (Private health sectors) showing insignificant mean variation.

This study showed better improvements as compared to the national survey in Ethiopia and a study done in Gondar University Hospital which revealed that the average stock out duration in public health care facilities was 99.2 days and 103 days respectively [28, 30].

This significant stock out duration compared with the objective norm of no stock out duration shows either inadequate finance and/or poor drug supply management.

Average stock out durations by level of health care facilities were 78 days, 22 days and 17 days in hospitals (n=2), health centers (n=3) and higher clinics (n=3) respectively. The mean variation was also significant whereas the national survey in Ethiopia showed that the average stock out durations by level of health care facilities were 22.3 days, 58.7 days and 121 days in hospitals (n=3), health centers (n=11) and health stations (n=31), respectively [2].

5. Limitations of the study

The study was cross sectional and may not indicate the annual performances of the institutions. 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 have resulted in a more favorable outcome than otherwise would have been the case.

6. Conclusions

The findings of this study showed that the applications of facility indicators were very far low compared to WHO standards. The availability of essential drugs and up-to-date information sources (EDL, STG and Formulary) about drugs were not yet at the optimal level. There is a strong need to improve drug use practices and ensure availability of key essential drugs for the most common health problems and thereby avoid stock outs.

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Author's contribution

WD: conceptualized the research problem, designed the study, prepared the proposal, analyzed the data, prepared the report and drafted the manuscript for publication.

Computing Interests: The author declare that there are no any competing interests

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