Prescribers Adherence to the Basic Principles of Prescription Orders Writing in South West Ethiopia

Sadikalmahdi H Abdella[1], Nasir T Wabe[2]

[1] Pharmaceutics Unit, Pharmacy Department, College of Public Health and Medical Science, Jimma University, Jimma, Ethiopia

[2] Clinical Pharmacy Unit, Pharmacy Department, College of Public Health and Medical Science, Jimma University, Jimma, Ethiopia

Correspondence to:

Sadikalmahdi H Abdella

(sadhussen@yahoo.com)

ABSTRACT

Background: A prescription is an instruction from a prescriber to a dispenser. The prescriber is not always a doctor but can also be a paramedical worker, such as a medical assistant, a midwife or a nurse. Thus, the most important requirement is that the prescription be clear, legible and indicate precisely what should be taken. Therefore, in order for a patient to have the best treatment, rational drug prescription should be the habit of every prescriber.

Aims: To assess prescribers adherence to the basic principles of prescription order writing in Jimma health center.

Materials and methods: A retrospective study design was conducted. One year prescription papers were collected and essential elements of a prescription were checked. The data was filled in well-structured questionnaire and analyzed using SPSS for window version16.0.

Results: Average drugs per prescription were 2.13. Among these, prescriptions with two drugs account (54.9%) and three drugs (27.9%). Age, sex and card number was written on 81.8%, 76.3% and 39.8% of prescription respectively. Name of the patient was written on all prescription. Most drugs were written in generic name (88.5%).

Conclusion: This study shows good adherence for some variables and poor adherence for other variables. In-service training should be provided to prescribers to promote rational prescription.

KEY WORDS: Prescriptions, adherence, prescription paper, rational drug use, Ethiopia

INTRODUCTION

Drugs are an essential component of health care delivery. When used rationally, they produce the desired effect of improving patient's ailments. Their irrational use on the other hand leads to prolongation of the illness, development of adverse effects, and unnecessary expense.[1]

A prescription is an instruction from a prescriber to a dispenser. The prescriber is not always a doctor but can also be a paramedical worker, such as a medical assistant, a midwife or a nurse. Similarly, dispenser is not always a pharmacist, but can be a pharmacy technician, an assistant or a nurse. The most important requirement is, therefore, the prescription to be clear, legible and indicate precisely what should be given.[2]

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. Bad prescribing habits lead to ineffective and unsafe treatment, exacerbation or prolongation of illness, distress and harm to the patient, and higher cost.[2]

Medication error can occur due to illegible hand writing, use of abbreviation, incomplete directions, or lack of appropriate information. These conditions lead to interpretation of the order in different forms.[3]

All prescription order should be legible, unambiguous, dated and signed clearly for optimal communication between prescriber and pharmacist. Furthermore, a good prescription should contain sufficient information to permit the pharmacist to discover possible errors before the drug is dispensed or administered. Different forms of error may occur. The common ones are omission of needed information, poor writing perhaps leading to errors of drug dose or timing; and prescription of drugs that are inappropriate for the specific situation.[4]

Overprescribing leads to many undesired effects. The patient receives unnecessary treatment, or drugs may lose some of their potency. Unnecessary side effects may occur. Moreover, the quantity available may enable the patient to overdose which may lead to drug dependence and addiction. On the other hand, under prescribing is also serious. This is because the treatment is not effective and more aggressive or expensive treatment may be needed later.

Irrational use of medicines is a major problem worldwide. WHO estimates that more than half of all medicines are prescribed, dispensed or sold inappropriately, and that half of all patients fail to take them correctly. The overuse, underuse or misuse of medicines results in wastage of scarce resources and widespread health hazards.[5] In simplest words rational use means "prescribing right drug, in adequate dose for the sufficient duration & appropriate to the clinical needs of the patient at lowest cost.[6]

The assessment of medicine utilization is important for clinical, educational and economic purposes. Rational prescribing forms the cornerstone of successful implementation of the rational drug use.[7] Generally, inappropriate use of pharmaceuticals due to prescription order writing is commonly observed in health care systems across the world, especially in developing countries like Ethiopia.[8]

This study will show the scope of the problem in the study area and information gathered from this study will provide baseline data for further study. Furthermore, this study will provide baseline data to assist policy makers in developing appropriate evidence-based strategies to promote rational prescribing

The aim of this study was to assess prescriber's adherence to the basic principles of prescription order writing.

MATERIALS AND METHODS

Study Setting
The study was conducted in Jimma town (at JHC) which is located 346 km far from Addis Ababa, south west Ethiopia. The health center has 39

staffs: 4 Health officers, 7 Nurses, 1 Midwife, 1 Pharmacist, 1 Druggist, 3 Laboratory technicians and 22 supportive staffs. The health center serves around 18,480 patients per year. The study was conducted from January 21 to Mar 28, 2010.

Study design

A retrospective study design was used to collect information on prescription sheet in Jimma health center. Sample was taken from one year prescription paper. Sample size was determined taking the following assumptions; since there was no previous study in the area, the estimated prevalence rate to be 50%, confidence interval of 95%, margin of error 5%. The minimum sample size, therefore, was 384. Then the sample was divided into 12 months to get 32 prescription sheets per month. From each month 32 prescription paper were selected randomly. The data collection format mainly contains information about prescribers, patients and drugs. Data obtained from prescription paper were filled in well-structured questionnaire by principal invigilator.

Data analysis

The validity of the questionnaires was assessed through in-depth discussion with experienced pharmacist. The collected data was cleared, categorized, and coded. All data collected were then analyzed using the Statistical Package for the Social Sciences (SPSS), version 16.0 software.

Ethics

A formal letter written from school of pharmacy, Jimma University to Student Research Program (SRP) and permission was obtained and given to registrar office of the university. . Strict confidentiality was assured through anonymous recording and coding of questionnaires and placed in safe place.

RESULTS

During the study period, a total of 818 drugs were prescribed in 384 prescriptions. Average drugs prescribed were 2.13 per prescription. Name of patient was mentioned in all

prescriptions .Age, sex and card numbers were included on 314(81.8%), 293(76.3%) and 153(39.8%) prescription papers respectively (Table 1)

Table-1: Percentage of patient information in prescriptions that was collected from JHC from March 21 to 31 2011GC

Characteristics	Number	Percentage
Name	384	100%
Age	314	81.8%
Sex	293	76.3%
Card Number	153	39.8%

Regarding inscription content, name of drugs were written on all prescription. Among the total prescription analyzed strength of drugs was mentioned for 239(62.2%), route of administration was mentioned for 259(67.4%) of drugs, dosage forms were mentioned in only 27.6% of drugs. Dose, frequency and duration of treatment were mentioned in 38.8%, 76.3% and 62.2% respectively (Table 2).

Table-2: Percentage and frequency of medication information in prescriptions which was collected from JHC from March 21 to 31 2011GC

Characteristics	Number	Percentage
Name of drug	384	100%
Strength	239	62.2%
Dose	149	38.8%
Dosage Form	106	27.6%
Route of Administration	259	67.4%
Frequency	293	76.3%
Duration of treatment	239	26.2%

Table-3: Number of drugs prescribed per encounter in prescriptions which was collected from JHC from March 21 to 31 2011GC

Drug per encounter	Number	Percentage
1	63	16.4%
2	211	54.9%
3	107	27.9%
4	3	08.%

More than half of the prescriptions contain 2 drugs per encounter .Prescription paper that contain single drugs were 63(16.4%). Less than

1% of the prescriptions contain 4 drugs per encounter. (Table 3)

About 81.2% of all prescription has legible hand writing and date on which the prescription was written was mentioned on 321(83.5%) prescription.

Prescribers name and signature appear on 16.40 % and 76.30% of all prescription papers respectively.

Regarding the name of drugs 88.5% drug were written in generic name while 11.50% were written in brand name.

DISCUSSION

Average number of drugs per prescription is 2.13. WHO has recommended that average number of drug per prescription should be 2.0.[4] Overprescribing was found in 28.7% of prescriptions. Relatively average number of drugs per prescription is better compared with the study done in India, where average number of drugs per prescriptions was found to be 3.01.[7] In this study age, sex and card number of patient were not mentioned in 18.2%, 23.7% and 60.2% prescription paper respectively. Age and sex were well included than studies done in Tikur Anbessa specialized hospital which shows age, sex and card number were not mentioned in 48.9%,41.8% and 7.5% respectively.[10] This study shows good adherence with age and sex but poor adherence with card number. It implies that majority of prescriber use name of the patient to prescribe drug than card number and the reverse holds true for Tikur Anbessa Hospital in Addis Ababa, Ethiopia.

Prescriber names and other identifying codes have been to improve the quality of prescriptions. This study shows prescriber name and signature were mentioned in 16.4% and 76.3% respectively. Comparing with the study done in Saudi Arabia, where prescribers name and signature were on 83.3% and 81.9% of prescriptions respectively.[12] The finding of this study shows poor adherence towards writing name of the prescriber and signature.

The incompleteness of drug related information (dose, frequency, route and duration of treatment) has been observed in the present study. From this study name of drug was written on all prescriptions, strength (62.2%), dose (38.8%), and dosage form (27.6%), route of administration (67.4%), frequency (76.3%) and duration of treatment (62.2%). It shows better level of adherence when compared with the study done in Wollo, Ethiopia where out of 1410 prescription, 738 prescriptions analyzed contain the patient address, 567 (40.2%) contained the correct strength and 548 (38.87%) have included the dosages form of the drug. 638 (45.2%) have given the frequency of the dosages and route of administration.[9]

In this study generic drug names were used in 88.5% of prescriptions. This figure shows good level of adherence compared with the study done in India which contains generic drug names only 27.3%.[13] Prescribing under generic name is considered as rational and economical. This variation may happen due to the fact that in India there may be many company representatives

CONCLUSION

Prescribers' adherence to the basic principles of prescription order writing in Jimma health center shows that prescribers had good adherence with some variables such as number of drugs per prescription, sex, age and generic name and poor adherence with some variables such as card number, prescribers name and signature and strength. In-service training should be provided to improve prescriber's adherence to basic prescription writing.

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