Research Article

Assessment of Patients' Knowledge to Their Dispensed Medications in Pharmacies

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ABSTRACT

Background: 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. Inadequate knowledge of medication use may directly lead to overuse of drugs or patient noncompliance with a drug regimen, and result in serious outcomes. **Objective:** The aim of this study was to assess the patient knowledge on dispensed medications in pharmacies of Gondar town. **Method:** A cross-sectional study design was used and data was collected by interviewing patients using well structured questioner. Stratified sampling techniques were employed to sample from private, governmental and community pharmacies. **Results:** A total of 600 patients were participated in this study. Of the 600 patient interviewed, 309 were males and 291 were females. Regarding their educational status, 178(29.7%) had no any education and 28(4.7%) could read and write, 172(28.7%) completed elementary school, 129(21.5) completed high school and 93(15.5) completed higher education. The percent of patients who knew the correct dosage of their medication were ()19%. The patients educational level was significantly associated with patient knowledge (*P*=0.000). Percent of patients who knew their dosage correctly was significantly higher in private pharmacies ()(31.3%) as compared to those from community pharmacies () (14%) and public health center pharmacies (19.1%) (*P*=0.000). Patients who are health professionals had significantly higher knowledge (100%) than non health professionals (15.9%) (*P*=0.000). Patients who received one, two and three drugs had percentage knowledge of 28.8%, 14.9% and 10%, respectively and it has a significant association on patients knowledge of their dispensed medication (*P*=0.000). The average dispensing time was 49.06 seconds and the average dispensing counseling time was 17.24 seconds. Dispensing times and dispensing counseling times were higher in private pharmacies (66.3 and 24.38 seconds) than in community (48.18 and 10.95 seconds) and public pharmacies (43.18 and 18.52 seconds) (*P*=0.000). **Conclusion:** The result revealed that the percent of patients who knew the correct dosage of their medication was very low. The dispensing time in all pharmacies was too short to give adequate drug information for the patient. Both the percentage of patients' knowledge to correct dosage and dispensing time were relatively better for private pharmacies than community and public health center pharmacies. All pharmacies should give due attention to patients coming to get service from them. Dispensers also should have special concern to low level educational status patients and patients receiving more than one drug.

Keywords: Patient knowledge, Dispensing time, dispensing counseling time.

INTRODUCTION

Drugs are important components of health care system and play a crucial role in saving life. 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 health care system[1-2]. One of the essential prerequisites for patient compliance is good patient knowledge of the medicines prescribed. Inadequate knowledge of medication use may directly lead to overuse, or patient noncompliance with a drug regimen, and result in serious outcomes [6]. The dispenser is in a position to reinforce patient knowledge about the drugs dispensed. Any error or failure in the dispensing process can jeopardize the care of the patient[3, 5]. According to WHO set standards of core drug use indicators, patients with correct dosage indicator is used to measure patients' knowledge for their dispensed medications[20]. In the measurement of patient knowledge of medication; the name and purposes of the

medication, the dose, frequency of dosing, duration of treatment and sometimes side effecting are viewed as essential for safe and appropriate use[5, 8]. Therefore, assessment of patients' knowledge of their dispensed medication is very important to act accordingly. This study is aimed to assess the patient knowledge of their dispensed medications in Pharmacy facilities found in Gondar town.

METHODS

Study design

A cross-sectional prospective study design was used to assess patients' knowledge to their dispensed medications in pharmacies found in Gondar town during the period of March 17-30, 2014. This research was approved by the Research and Ethics committee of the School of Pharmacy, University of Gondar.

Study population

Patients who collected their dispensed medicines during the data collection period were involved. The target population was those patients who came to five private pharmacies, two public health center pharmacies and one community pharmacy were included. Informed verbal consent was taken from each patient before conducting the interview.

Sampling method and sampling size

Proportionate, stratified sampling technique was employed to get enough sample size. The total number of private, governmental and red-cross pharmacy was grouped in to three strata. The primary study showed the patient flow per day at private, governmental and red-cross pharmacies was 150,125 and 400 respectively. The total average patient flow per day at all the selected pharmacies was 800. The number of samples drawn was 112, 188 and 300 patients from private, public and community pharmacies, respectively and a total of 600 sample volume was decided.

Study instrument

Standardized questionnaire were prepared for patient, and brief description about the questionnaire to patient or client was given. The patient was also reminded that the study is conducted to assess the percentage of patients with correct dosage. The data was collected by filling the questionnaires using well trained data collectors. In pharmacies where the patient flow is less than 30, data was collected from all the patients in a single day.

Percentage of patients with correct dosage

The purpose of this indicator is to measure the effectiveness of the information given to patients on the dosage schedule of the drugs they receive. It is calculated by dividing the number of patients who can adequately explain back about the dosage schedule for all drugs they received by total number of patients interviewed, multiplied by 100. Patients are evaluated on their knowledge of when and in what quantity the drug should be taken, and more specifically, they are evaluated on drug(s) name, dose, frequency and duration/quantity of the whole dosage. This will be evaluated for each medication actually dispensed to the patient. Failure to know any of these four attributes about any of the drugs dispensed will result in patients' knowledge being scored inadequate[20].

Data Analysis

Data was complete and analysis by using Statistical Package for Social Sciences (SPSS) windows version16. Correlation coefficients and Chi-square tests were used to determine the relationship between dependent and predictor variables. In assessing the quality of labeling and patient knowledge of the administration of medicines, a scoring system were employed by awarding a point for each variable write and stated by the patient. The 0.05 level of significance was used as a cut-off for statistical significance.

RESULTS AND DISCUSSIONS

Socio-Demographic characteristics

A total of 600 patients were interviewed for patient knowledge assessment from different pharmacy facilities. Among the total of respondents, 309(51.5%) were males and 291(48.5%) were females, and the majority were within age group of 18-45 years (Table 1).

Table 1: Socio-demographic characteristics of patients interviewed for patient knowledge assessment, Gondar town, 2014

Characteristics		Frequency (%)
Sex	Male	309(51.5)
	Female	291(48.5)
Age	<18	36(6.0)
	18-45	438(73.0)
	45-65	94(15.7)
	>65	32(5.3)
Educational level	Illiterate	178(29.7)
	Read and Write	28(4.7)
	Elementary	172(28.7))
	High school	129(21.5)
	Higher education	93(15.5)
Profession	Health related	21(3.5)
	Non health related	579(96.5)

Percentage patient knowledge of correct dosage

This study indicated that the percent of patients who knew the correct dosage of their medication were 19% [Table 2]. This finding is very low as compared with study done in Cambodia (55%) [11], Ethiopia (79%) [19], Pakistan (24%) [12] and India (31%) [13].

The study also indicated an increase of percent patient knowledge with increase of educational status. The percentage of patients knowing their medication were 6.7%, 10.7%, 13.4%, 25.6% and 45.2% for patients who are illiterate, can only read and write, complete only elementary, complete high school and complete higher education, respectively. This shows the patient educational level was significantly associated with patient knowledge (p=0.000). Studies conducted in Ghana and Ethiopia also indicated that knowledge of patients to their medications was significantly associated with educational status (p-value of 0.000 and 0.005, respectively) [19].

The percentages of patients knew their medication from community pharmacy, public health center pharmacy and private pharmacy were 14%, 19.1%, and 31.3%, respectively. This shows patients knew their dosage correctly from private pharmacies than from community pharmacy and public health center pharmacy (p=0.000). The difference of the percent knowledge was found to be highly significant between the private and other type of pharmacies (p=0.000). This may be due to that private pharmacies provide better dispensing services to patients to attract clients. These are evidenced by higher mean dispensing time and dispensing counseling times (66.3 and 24.38 seconds) in private pharmacies than in community (48.18 and 10.95 seconds) and public pharmacies (43.18 and 18.52 seconds). However, the overall dispensing times from all the private (90.68 seconds), community (59.13 seconds) and public health center (61.70 seconds) pharmacies are still lower than recommended value by WHO.

Patients with a health professional background found to know their dosage (100%) significantly higher than those with non-health professional background (15.9%) (p=0.000). This is justifiable that patients with more knowhow of drugs will have more understanding of their medication use.

Patients who received one, two and three drugs were found to have percentage knowledge of 28.8%, 14.9% and 10%, respectively and a strong association was found (p=0.000). This indicates percent of patients knowing their dosage accurately decreases with the number of drugs received. This could be obvious that as the number of drugs dispensed for the patient increase, it poses difficulty for the patient to recall all the information given for all the drugs.

Table 2: Patients' knowledge of correct dosage schedule to their drugs received at pharmacies in Gondar town, 2014

Characteristics		Number of patients	Patients with knowledge of correct dosage	Statistical test	
				Chi-square	p-value
Sex	Male	309	61(19.7)	1.927	0.749
	Female	291	52(17.9)		
Age	<18	36	3(8.3)		
	18-45	438	88(20.1)	18.84	0.092
	46-65	94	15(15.9)		
	>65	32	7(21.9)		
Education level	Illiterate	178	12(6.7)		
	Read and write	28	3(10.7)		
	Elementary	172	23(13.4)	1.066	0.000
	High school	129	33(25.6)		
	Higher education	93	42(45.2)		
Pharmacy	Public HC pharmacy	188	36(19.1)	1.06	0.000
	Private pharmacy	112	35(31.3)		
	Community pharmacy	300	42(14)		
Profession	Health related	21	21(100)	93.78	0.000
	Non health related	579	92(15.9)		
Average number of drugs dispensed per encounter	1	219	63(28.8)		
	2	241	36(14.9)	37.499	0.000
	>3	140	14(10)		

Dispensing time and dispensing counseling time

In this study, the overall average dispensing time was 49.06 seconds. The average dispensing time in public HC, private and community pharmacies were 48.18, 66.3 and 43.18 seconds, respectively (Table 3). This overall average dispensing time is much less than recommended by WHO that a pharmacist should spend at least 3 minutes during dispensing with his patient to provide adequate pharmaceutical orientation[8] and it was short compared to other findings from Cambodia (3.92 minute) [11], Pakistan (88.5 seconds) [12], India (4 minutes 4 seconds) [13] and Ethiopia (130.2 seconds) [18].

Table 3: Average dispensing time and dispensing counseling time in public, private and community pharmacies of Gondar town, 2014

Parameter	Public HC pharmacy	Private pharmacy	Community pharmacy	Statistical test
Average dispensing time	48.18 sec	66.30 sec	43.18 sec	P=0.000
Average dispensing counseling time	10.95 sec	24.38 sec	18.52 sec	

The average dispensing counseling time was 10.95, 24.38 and 18.52 seconds for public HC, private and community pharmacies, respectively. The total mean dispensing counseling time was 17.24 seconds (Table 3) and it was very short compared with studies in Iran (1.4 min)[14] and Ethiopia (29.2 seconds)[18]. However, the mean dispensing time and dispensing counseling time were significantly better in private pharmacy than public HC and community pharmacy (p=0.000).

Patient knowledge on dosage attributes

Among the respondents, 159 (27%) were recalled the names of their drugs, 537(90%) knew the frequency of administration of their medication, 287(48%) knew the duration of administrations and 553(92%) recalled the dose of the dispensed drugs (Fig. 1).

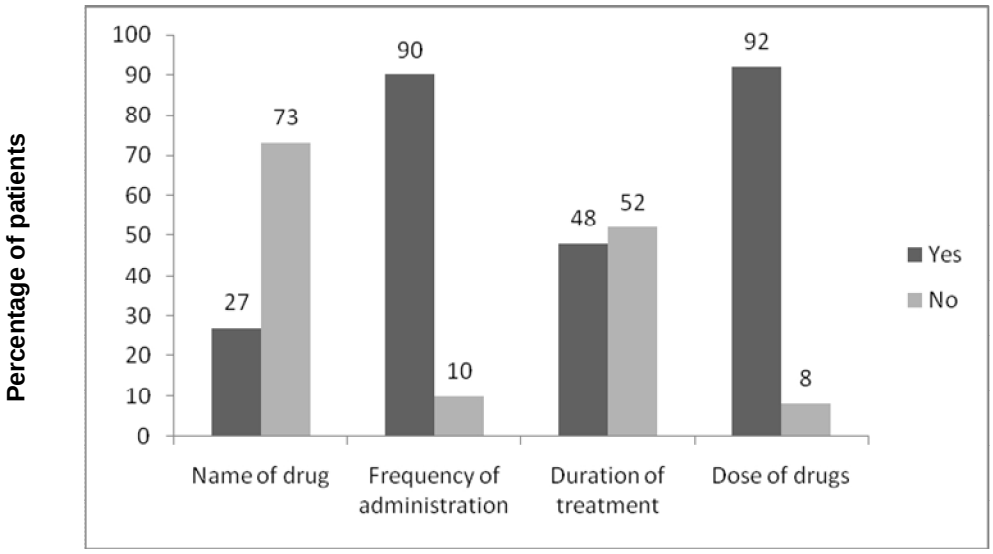

Fig. 1: Percentage of patients for knowledge of dosage schedule attributes in pharmacies of Gondar town, 2014

CONCLUSION

The percent of patients who knew the correct dosage of their medication was very low. The dispensing time and dispensing counseling time was very short to give adequate drug information for the patient. Both the percentage of patients' knowledge to correct dosage and dispensing time were relatively better for private pharmacies than community and public health center pharmacies. However, the percentage of patients' knowledge to correct dosage and dispensing time are still very much lower than the WHO standards for the private pharmacies too. Educational level and number of drugs dispensed for the patient were strong predictors of patient knowledge. Dispensers should give special concern to patients with low educational level and patients receiving more than one drug. Community and public health center pharmacies should work strongly to improve the poor current performances. Private pharmacies should still strive to reach the standards.

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