



A Questionnaire Survey for Prevalence of Medication Use in Dehradun District of Uttarakhand, India

**Anuj Nautiyal^{1*}, N. V. Satheesh Madhav¹, Samir Bhargava¹, Abhijeet Ojha¹,
Harish Chandra¹, Rajeev Kumar Sharma¹, Sugandha Varshney¹, Kirti Singh¹,
Deepika Raina¹ and Vishakha Jaiswal¹**

¹Faculty of Pharmacy, DIT University, Dehradun-248009, Uttarakhand, India.

Authors' contributions

This work was carried out in collaboration between all authors. Authors AN and NVSM designed the study, wrote the protocol, and the manuscripts were drafted by authors AO and RKS. Authors SB and HC managed the literature searches, analyses of data in the study. The survey work was conducted by authors SV, KS, DR and VJ along with other authors. All the authors read and approved the final manuscript.

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ABSTRACT

A questionnaire survey was conducted among 200 medical store (drug-retailer working in authorized drug stores) for investigating the prevalence of use of medication in Dehradun district of Uttarakhand. Study revealed that, 32.6% patients could show the prescription from a qualified doctor or a dentist. Less than ten percent prescriptions came from dentists. Ninety-two (57.14%) drug retailers answered that a number of patient insisted them to advice on medications for their diseased conditions. Ayurvedic physicians were prescribing allopathic drugs, as reported by ninety-eight (60.8%) drug retailers. Qualified physicians were prescribing herbal drugs, as reported by fourteen (8.6%) drug retailers. Antibiotics were the highest sold 62% followed by tonics 26%,

*Corresponding author: Email: anujnautiyal@rediffmail.com;

antacids 8% and other drugs 4%. Only eighteen (11.1%) heard about Essential Drugs and twenty eight (17.31%) knew the generic name of some medications. Prescriptions which are not easily readable were reported by fourteen (30.43%) drug retailers. The prices of drugs are increasing was answered by 161(100%) drug retailers. These results concluded that the drug controlling body of the government should take steps to improve the medication use in the community and ensure proper dispensing of medications with legal prescription by only registered pharmacist.

Keywords: Questionnaire; medical store; antibiotics; prescriptions.

1. INTRODUCTION

Prevalence of medication use is an important parameter that can give us some idea regarding the status of health care of a country [1]. Regulation for implementation on rational use of medications, types of prescription from a medical practitioner and the way of use of prescription by a person could provide some understanding the health care status of a country [2].

Previous study reported that patients have failed to obtain their prescribed medication because of the cost factor, on the other hand, they may buy few unwanted medication with the money which they have earned to buy food items [3-5]. Irrational or improper use of herbal drugs, which sometimes may contain some allopathic medications (in name of herbal drugs and ethics cures), is also a common factor in many of the developing countries and some of the developed countries [6]. Lack of knowledge of the concept of essential drugs among drug retailers dispensing both Ayurvedic and allopathic medications in a single prescription are considered as the known parameter of irrational use of drugs in a community [7]. Highest consumption of antibiotics and health tonics has also been observed as unfavorable situation of health care system. The pattern of drug use in small sized city like Dehradun in Uttarakhand state located in northern part of the country in India could be considered as a sample representing the situation which is prevailing in our country. Similar study was also conducted in Mangalore by Choudhury AD et al. [8] which revealed that 30.6 percent patients showed prescription from a qualified doctor or a dentist. Fifteen-percent of the prescriptions were from dentists. Ayurvedic practitioners were prescribing allopathic drugs, as it was reported by 53.3 percent responders. Antibiotics were sold in more, followed by tonics, antacids and other drugs 5percent. Only 14 responders (7.1percent) heard about Essential Drugs. And 75percent responders could not easily read the prescription. All the responders reported that the prices of drugs were increasing [8]. The outcome perhaps

represents the situation elsewhere in India. In regard of this situation, a questionnaire was structured, tested and then finally implementation was done for collecting the facts on pattern of use of medication in a given area of India. The purpose of our study was to understand the conditions with regard to the rational use of medications aimed at improving the unfavorable factors.

2. MATERIALS AND METHODS

A total of 200 medical stores were selected for the study. They were mainly run by retail person who were non-pharmacy. A pre-tested questionnaire comprising of 12 questions was introduced among the drug retailer for determining and understanding the facts about the medication use in and around the Dehradun district with an area of 300 square kilometers and a population of 578,420. The questionnaire was explained to the retailer by pharmacy students who were trained to collect necessary and unbiased information from the drug retailers. For carrying out the questionnaire survey, informed consent was taken from the drug retailers. Out of 200 drug retailer working in 200 medical stores in this survey region, only 161 drug retailers had participated in the study without any hesitation, resulted in a 80.5% respond. It was observed that the retail person were running the medical store who were non-pharmacy and only 26 medical stores were run by registered pharmacist working.

3. RESULTS

3.1 Prescription Varieties

On an average, a medical store sells medication to 109 patients per day (Table 1). According to One hundred and two responders (63.35%) of drug store only 15-30% patients produced a prescription from a qualified doctor or a dentist. Thirty eight responders (23.60%) indicated that less than 15% patients could actually produce a prescription, while 21(13.04%) responders said that more than 30% of the patients produced a

prescription from a qualified doctor or a dentist (Table 1). Sixty four drug retailers (39.75%) informed that they waived prescriptions, containing both the allopathic and ayurvedic drugs. Fifty-four (33.54%) retailer found no combined drugs in prescriptions (Table 3). Among the total product sold, antibiotics (62%) were the major portion followed by multivitamin tonics (26%), antacids (8%) and other drugs 4 % (Table 2). Table 3 indicates that Ayurvedic practitioners were prescribing both Ayurvedic and allopathic drugs in the same prescription, a fact reported by 98(60.8%) of the retailers, whereas on other hand, 14(8.6%) reported that doctors and dentists prescribed both the drugs in same prescription. It was interesting to note that there was no prescription from qualified allopathic practitioners (i.e., physician or dentist) who prescribed only the Ayurvedic medications in their prescription. Ninety six retailers (59%) indicated that most of the patients insisted on getting an advice on medication to be taken for their illness (Table 4). Eighty seven (54%) of the retailers detailed that most of the patients did not buy full course of medications (Table 4).

3.2 Knowledge of Essential Dug Concept and About the Generic Names of Medications

Only 18 (11.1%) of the drug retailers had heard about the concept of essential drug of world

Health Organization (Table 4). Out of 161, only 28(11.1%) retailers had the knowledge of generic name of few drugs (Table 4). It was interesting to note that a significant number of prescriptions from doctors or dentist were not readable; it was reported by 49(30.43%) drug retailers (Table 4). The prices of drugs are increasing as reported by 161(100%) of the retailers (Table 4). One hundred twenty three retailers reported that prescription from dentists were less than 10% of the total prescriptions (Table 3).

Table 1. Prescription based drug sales

Number of medical shops*	Prescription
102 (63.35%)	15-30%
38 (23.60%)	<15%
21 (13.04%)	>30%

*Medical shops are those retail people who answered the questionnaire; Prescription means prescription written by qualified practitioners who are qualified MBBS doctors or BDS dentists

Table 2. Drug categories in terms of percent of total medicine sold

Drug categories*	% Of total medicine sold
Antibiotics	62
Tonics	26
Antacids	8
Others	4

*Drug categories indicates different generic group of medicines as written in prescriptions by the practitioners

Table 3. Profile of prescription indicating the allopathic and ayurvedic medicine reported by medical retail person

Practitioners	Types of medicine prescribed		
	Ayurvedic medicine (%) only	Both drugs (%)	
Medical doctors	0(0%)	14(8.6%)	
Ayurvedic practitioners	23(14.28%)	98(60.8%)	
Prescription from Dentists	Percent	% Medicine retailer responded	
	< 10%	98	
	10-50%	12	
Response on	Yes (%)	No (%)	Unclear
Prescription had both the medications	64(39.75%)	54(33.54%)	78(48.44%)

Table 4. Indicate knowledge and understanding about concept of essential drug and prescription

Questions	Response		
	Yes	No	Ignored
What do you know about essentail drugs of WHO?	18(11.1%)	143(88.81%)	0
Can you tell me the generic name of common drugs?	28(17.31%)	93(57.76%)	40(24.84%)
Does the prices of drugs getting high?	161(100%)		
Do you able to read the prescription?	112(69.56%)	49(30.43%)	0
Does any patient take advice on medications?	92(57.14%)	51(31.67%)	18(11.18%)
Does the patients buy the complete course of medications	46(28.57%)	104(64.59%)	11(6.8%)

Table 5. Questionnaire used for conducting the survey on medication used

Questions	Answers
Q1.How many patients on an average buy medications from your medical store.	Ans 1.
Q2. Which medications are mostly sold	Ans 2. 10- 20%/ 10- 30%/ more than 30%
Q3.How many of the patients donot have prescription from a qualified doctor or dentists?	Ans 3.
Q4. Have you found prescriptions including both allopathic and Ayurvedic medications?	Ans 4. Yes/ no
Q5.Who are prescribing in a single prescription the allopathic and Ayurvedic medication?	MBBS/ BDS/Ayurvedic practitioner
Q6.Have you heard request for advising the patient about medications on their diseased conditions.	Ans 6. Yes/ No
Q7.If the answer is yes, what is the percentage approximately?	Ans7. Yes/No
Q8.Have you ever noticed Ayurvedic practitioners prescribing the allopathic medications.	Ans 8.Yes/No
Q9.Does the patient take full course of medications?	Ans 9.Yes/No
Q10.Have you ever heard the concept of essential drugs.	Ans 10. Yes/No
Q11.What percentage of prescription are coming from dentist?	Ans11. < 10%, 10- 20%, > 20%
Q12.Do the prices of medications going high.	Ans 12. Yes/ No

4. DISCUSSION

In this study, it was found that in most of the medical stores, the retail persons who were dispensing the prescriptions were non pharmacy persons but license of registered pharmacist was displayed in the medical store, a situation that is comparable to other countries in this region [9]. It was observed that each day a medical store was selling drugs to 109 patients. However, no similar studies were found to compare the situation on medication use in other cities of the countries. Sixty three percent drug retailers reported that only 15-30% patients bought medications on prescription given by qualified doctor or a dentist (Table1). This situation is not favorable, as there would be a possibility of indiscriminate use of medication which is similar to that prevalent elsewhere in Africa and some other Asian countries [10]. Data in Table 3 indicated that the prescriptions contained both the allopathic and Ayurvedic medications the similar situation was noticed elsewhere too [11]. The study also revealed that 60.8% of the drug retailer stated that most of Ayurvedic practitioners were prescribing both Ayurvedic and allopathic medications (Table 3), and such practice can lead to health problems, because the Ayurvedic practitioners lack of knowledge about the allopathic medications. As per the regulations [12], a qualified medical and dental practitioner

can only prescribe the allopathic medications, but in this study, it was observed that 8.6% of medical practitioners had also prescribed both allopathic and Ayurvedic medications, which is unethical and irrational use. So there should be regulation with proper implementations of the guidelines on prescription practice by Ayurvedic and medical practitioners.

Table 2 showed highest consumption of antibiotics followed by health tonics. This situation revealed that Indian community is spending big amount of money to buy health tonics and antibiotics. Many qualified physician were prescribing health tonics, it may be due to influence by medical representative of pharmaceutical companies. Moreover health tonics are being bought by the patient as over the counter medication. Results revealed that the antibiotics were sold at highest proportion 62%, is a situation in many countries of Asia, Africa and other developing countries [13,14]. As shown in Table 4, 92(57.14%) drug retailer explained that the patients for an advice about which drugs they should take since they were not possessing a prescription for any drugs. This situation is very common in many developing countries [15] and also evidenced in this study. As per Table 4 it was observed that 28(17.31%) drug retailer knew the generic name of few drugs like antibiotics and analgesics.

Ninety three (57.76%) drug retailers did not know the generic names of drugs, and explained that they never heard about “generic names of drugs”. Therefore, there is a possibility that a drug retailer may make a mistake during selection of proper medication or alternative branded-medication belonging to the same generic name. A drug retailer can do the substitution of the medication on the basis of generic name of a particular medication, provided that drug retailer should have the knowledge of the concept of generic name of that particular medication. For promoting the business some of the pharmaceutical companies are manufacturing and marketing useless medications to the consumers through the health care providers and sometimes through drug retailer of a medical store, which is factor that has to be identified for promoting the rational use of drugs [16,17]. So the drug administration department should have effective control over irrational production and promotion of useless or unwanted medication. At the same time, drug retailer should have better understanding the concept of essential drugs and knowledge of generic names of medications, which would definitely improve the health care condition, these initiatives were successfully taken elsewhere [18]. Again 49(30.43%) drug retailers stated that they were not able to read the prescriptions easily and this would lead to a mistake during dispensing a drug by a drug retailer; those facts were reported elsewhere in Africa and Asia [19]. The governmental authority should properly implement effective regulations for production of quality drugs by maintaining a good manufacturing practice (GMP), and at the same time ensuring the timely supply of medications on demand. Indian FDA is doing efforts to have pharmacists in every medical store in India. Maharashtra state Food and Drugs Administration (FDA) had made it mandatory for the presence of pharmacist in every chemist shop. And had been cracking down on medical stores not hiring full-time pharmacists as per Drugs and Cosmetics Act, 1940 [20]. The Food and Drug Administration (FDA) officials have cancelled licences of as many as 517 chemists in Pune division between January and April 2014 for violations including operating without a pharmacist, poor record keeping of sale bills, dispensing medicines without valid prescription and non-maintenance of records of drugs falling in schedule H1 that include sale of all types of higher antibiotics [21].

5. CONCLUSION

These results concluded that the Indian FDA are taking efforts to have pharmacist working in every medical store for improving the medication use in the community and ensuring proper dispensing of medications with legal prescription by only registered pharmacist as reported in Maharashtra. Such initiative should be taken by every state FDA of India to ensure working of pharmacist in every medical store. So that health outcome of patients can be improved.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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