Assessment of Drug use Practices among Outpatients Visiting Dermatology Department at a Hospital in Pokhara, Nepal

Sujata Bhandari,¹ Gulam Muhammad Khan¹ ¹School of Health and Allied Sciences, Pokhara University, Kaski, Nepal

ABSTRACT

Introduction: Skin is the part of integumentary system that constitutes the largest organ of human body and thus it is exposed to injury by various extrinsic factors such as environmental, chemical, infectious agents as well as intrinsic factors such as metabolic, genetic and immunological. These are the major contributors of disease burden in society.

Methods: A prospective observational study was conducted in the outpatient department of Green Pastures Hospital.

Results: Total 246 patients were included where 135 were females and 111 were males. The most common skin disease seen in the age group of 19-29 (39.4%). The major skin disease seen in the study were Tinea skin infections (21.1%), Urticaria (11.8%), Eczema (11.1%), Dermatitis (10.6%) followed by Acne (8.1%) and so on. Antihistamines (33.38%), Antifungals (30.03%), Corticosteroids (27.1%) were majorly prescribed drugs. An average number of drug prescriptions per encounter was 2.66. Drugs prescribed by their generic name were (11.2%) and those prescribed from National essential medicines list of Nepal were (22.4%) and those prescribed from WHO list of essential medicines were 21.6%.

Conclusion: In this study, generic prescribing of drug was low compared to brand prescription. WHO core drug-use indicators have been used as a measure of performance of drug use practice. Periodic prescription audit can be a key in rationalizing the prescription, reducing errors and thus enhancing cost-effective medication.

Keywords: Dermatology, core prescribing indicator, Drug use Practice

INTRODUCTION

Dermatology is the science of the skin and its appendages; it is directly in contact with the environment and can alter the skin physiology either intrinsic (genetic and metabolic process) or extrinsic way (chemicals and pathogens).¹ Skin diseases are common in clinical practice accounting for up to two percent of outpatient department consultations in general practice worldwide.² The most prevalent dermatological conditions include scabies, dermatitis, urticaria, pyoderma, fungal skin infection, acne, alopecia and less common are eczematous disorder such as psoriasis, skin cancer and cutaneous adverse drug reaction.³ Skin diseases in developing countries have a serious impact on people's quality of life due to the presence of physical symptoms as they can cause anxiety, depression, anger and embarrassment which leads to social isolation and absenteeism at work and public places. Skin diseases are wrongly diagnosed and treated, so the continuous monitoring is needed to evaluate the drug use practices in contemporary situation. Hence, to evaluate drug use pattern in dermatology department drug utilization studies are need of the hour.4

As per WHO, drug utilization studies or research are tools that deals with the marketing, distribution and prescription pattern of drugs and helps to assess the subsequent impact of these on medical and socio-economic status of patients.² Thus, this type

of study helps in the understanding of prescription pattern as well as the quality of prescription in terms of rationality, drug interactions and financial burden of disease to the individual. Drug use practices changes with time period, physician disease conditions and population so, the appropriate drug utilization studies are needed for evaluating proper utilization of drugs for efficacy, safety, convenience and economic aspects.² WHO in collaboration with the International Network for the Rational Use of Drug (INRUD) developed core indicators (average number of drugs per encounter, percentage of encounters with an antibiotic prescribed, percentage of drugs prescribed from WHO essential drug list, percentage of fixed drug combination from WHO essential drug list.5,6 Commonly used drugs for treatment of dermatological conditions include antibiotics, antiseptics, corticosteroids, antifungals, antivirals, anti-histaminic, local anesthetics, emollients, keratolytic, anti-parasitic, vitamins and so on. Irrational drug combinations, over use of multivitamins, emollients, unnecessary use of antibacterial in fungal infections and prescribing drug from same class led to the unnecessary skin diseases.7

Correspondence: Sujata Bhandari, Master in Pharmaceutical Sciences (Clinical Pharmacy), Pokhara University, E-mail: bhandarisujata4@ gmail.com

METHODS

The study was a prospective observational study which was conducted in the outpatient department of Green Pastures Hospital, Nayagaun, Pokhara. Patients of all gender and age 18 years above, who attended the outpatient dermatology department and hospital pharmacy for purchasing medicine were included in this study with written consent.

The data were collected from July 2019 to October 2019. The study was approved by Institutional Review Committee (IRC), Pokhara University Research Centre Kaski, Nepal (Ref. No.8/076/077) and data collection approval were obtained from IRC of Green Pastures Hospital, Pokhara, Nepal (102/076/077). Data were collected in a structured pro forma, which include the patient's demographic details, list of skin diseases and drugs used. The world Health Organization (WHO) prescribing indicators were assessed. All the data were entered and analyzed using Statistical Package for the Social Science version 22.

RESULTS

Socio-demographic Characteristics among Study Participants

The overall mean and SD of age was 38.82 ± 17.84 years. Majority of the patients were in the age group 19-29 (39.4%) followed by age group 30-39. Along with gender distribution female patients (54.9%) were more in comparison with male patients (45.1%). Agriculture was found to be main family source of income. Most of the patients were having basic education grade (53%), followed by secondary school education (26%).

Table1: Socio-demographic characteristics among study participants

Variables	Category	Frequency	Percentage
variables	Category	(n)	(%)
Age (years)	Mean ± SD: 38.82±17.84 Max:9	1, Min: 19,	
	19-29	97	39.4
	30-39	53	21.5
	40-49	29	11.8
Age Interval	50-59	27	11
	60-69	21	8.5
	> 70	19	7.7
Gender	Male	111	45.1
	Female	135	54.9
	Agriculture	73	29.7
	Family Business	44	17.9
Source of	Remittance	40	16.3
Income	Private/Gov Job	21	8.5
	Labor/Daily wages	24	9.8
	Pension	44	17.9
Family	Nuclear	114	46.3
Туре	Joint	132	53.7

Education Level	Basic education grade (1-8)	131	53
	Secondary School Education (9-10)	65	26
	Illiterate	24	10
	Undergraduate & above	20	8
	Informal Education	6	3

Table 2: Gender and Prevalence of Disease Conditions

In this Study, 14 dermatological diseases were diagnosed, among them tinea skin infections were found to be the highest prevalence in female compared to male.

Disease Name	Frequency	Male	Female
Tinea skin infections	52	25	27
Urticaria	29	11	18
Eczema	27	11	16
Dermatitis	26	12	14
Acne	20	9	11
P. Versicolor	18	12	6
Psoriasis	14	6	8
LSC	11	4	7
Pruritis	11	3	7
SLE	8	4	5
Scabies	8	6	2
Melasma	8	-	8
PMLE	7	4	3
Vitiligo	7	4	3

Prescribing Frequency of Therapeutic Classes



Figure 1: Prescribing Frequency of therapeutic Class

Number of Medicine Prescribed:

Most of the patients were taking 3 medicine followed by 2 and least were taking 6 medicines.

Table 3: Number of Medicine Prescribed

Number of Medicines Prescribed	Frequency	Percentage	
1	24	9.8	
2	85	34.6	
3	97	39.4	
4	31	12.6	
5	7	2.8	
6	2	2.8	

Polypharmacy

Table 4: Evaluation of Polypharmacy

Prescribing Pattern using WHO Core Indicators

The drug usage was assessed as per WHO core drug use indicators.⁶ A total of 656 drugs were prescribed in 246 encounters.

Table 5:	Prescribing	Pattern	using WHO	Core	Indicators

	Average number of drugs per prescription		
Prescribing indicators	Percentage of drugs prescribed by generic name	11.2%	
	Percentage of encounters with an antibiotic prescribed	13%	
	Percentage of prescribed drugs featuring in National Essential Drugs list or Formulary (NLEM 2016) of Nepal	22.4%	
	Percentage of drugs prescribed by FDCs	13.7%	
	Percentage of drugs prescribed from WHO list of essential lists, 2019	21.6%	
	Percentage of encounters with steroid prescribed	72.35%	
Patient care indicators	Average consultation time	9.52 minutes	
	Average dispensing time	4.50 minutes	
	Percentage of drugs actually dispensed	87%	
	Patient knowledge of correct dosage	96%	
	Percentage of drugs adequately labelled	92.19%	
Health facility indicators	Availability of copy of essential drugs list or formulary	No	

DISCUSSION

In this study, female number (54.9%) was slightly higher than male number (45.1%) as already been observed in various study of⁹ where male to female ratio was 0.88 and¹⁰ where female patients were 50.1%. According to the¹¹study conducted at western Nepal 58.2% of female were suffered. It showed females have high prevalence of dermatological problems with possible factors like hormonal change in female, cosmetics use, genetic makeup and stress.

In this study, highest numbers of patients were seen in age group of 19-29 (39.4%) which resembled the study carried out by¹² where highest number of 125 (25%) of patients were in age group of 20-29 years. Also, from¹³ showed that majority were between the age group of 20-59 years. From¹⁴ also maximum number of patients 26.5% found in age group 31-40 years, followed by 23.5% of patients in the age group of 21-30 years. This suggests that skin diseases are highly prevalent below 30 years. In present study 10% were illiterate, 3% were having informal education, 8% were undergraduate and above level, 53% fall under basic education grade (1-8), 26% were attending secondary school education. A study conducted by¹⁵ where 11% were illiterate while 14% were post graduate. Only 4% of patients among study population were found to be graduate and above. The study conducted by⁷ majorly skin diseases were seen in illiterate people i.e., 62%. Though, most of the patients lies under having basic education grade, they have knowledge on sanitation and hygiene. There is more preponderance of skin disease in this education level of patients. The most common skin disease in present study was Tinea skin infections (21.1%), among 246 patients followed by Urticaria 11.8%, Eczema (11.1%), Dermatitis 10.6%, Acne vulgaris 8.1% and so on. Study conducted by¹⁵ among the dermatological diseases diagnosed Tinea Corporis was found to be the highest prevalence (29.17%) followed by other fungal infection (20.84%), acne vulgaris (18.79%), and Scabies (10.42%) found to be least prevalent. Other study conducted by¹⁶ the most common disease was infectious in nature of which tinea was the most common (22.69%) which was similar to our study. Our results were also similar with the study conducted by¹⁷ where the most common skin diseases pattern seen was primarily tinea 15.25%. Also, the results are different with¹⁰ reported eczema (23.10%), pyoderma (14.29%), fungal infection (14.24%) as the major skin disease. The common fungal infections were dermatophytosis e.g. tinea cruris, tinea capitis, tinea corporis. This may be due to sweating, high humidity and poor personal hygiene.

WHO Core Prescribing Indicator

In our study, average number of drugs prescribed per patient per encounters was 2.66 which is slightly higher than that of 2.28, the value obtained in the study of.¹⁸ Average number of drugs per prescription was nearly equal to 3.27, the value obtained in the study of.¹⁹ Average number of drugs per prescription was 3.73 in the study of²⁰ which is higher than what was observed in our study. Average number of drugs prescribed per patient encounter is high in comparison to optimal value in the range of 1.6-1.8²¹ and hence our study suggests that the number of drugs prescribed per patient is more than what suggested by WHO.

Percentage of medicines prescribed by generic name was 11.2% which was lower than study carried out by,¹⁸ 15.07%),¹⁹ (31.1%) and²⁰ (84.18%). Lower prescribing of generic names is reflecting inclination and preference of prescribers towards branded drugs. Prescribing by generic name is essential for economical cost-effective utilization of drug. The optimal value for generic prescribing is 100% which shows that irrational practice is being followed as generic prescription was found to be 9.6%²² showed that generic prescribing of drug was 0% which is very much less than this study.

In this research, percent encounters with an antibiotic prescribed were 13%. Similar data was found in study of¹⁹(11.07%) where it was higher than our study¹⁸(28.61%). Antibiotics were most commonly prescribed class of drugs^{22,5} and.⁴ The result of the study regarding percent encounter with an antibiotic prescribed (13%) is within the range of WHO.²² Hence the prescription of antibiotics is found rational.

Percentage of medicines prescribed from the²³ National essential drug list (NLEM) or formulary 2016 of Nepal 2019 was 22.4% which was slightly lower than study carried out by¹⁹ (44.2%). However, there is ample of scope for improvement and need to encourage dermatologist to prescribe from National essential drug list first. The WHO emphasizes the prescribing of medicines as much as possible from the essential medicine list or hospital formulary, as medicines are selected for this list with regard to disease prevalence and to the evidences of efficacy, safety and the cost.

CONCLUSION

Skin disease was highly prevalent among the female patients under 30 among which Tinea skin infection was the most common. The average number of drugs prescribed per patient was slightly higher to WHOs range. Medical practitioners preferred Brand-Name instead of Generic-Name for drug prescription whose rectification, towards generic-name practice, can highly aid to the rational use of drugs and cost-effective medication system.

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