

## Knowledge and Practice Regarding Topical Corticosteroids Among Dispensers in Community Pharmacies of Kathmandu Valley: A Cross-Sectional Survey

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### ABSTRACT

#### Introduction

Topical corticosteroids (TCS) abuse and misuse are constantly rising in an alarming proportion, the main reason for this being free availability of such drugs over the counter (OTC) and pharmacists are one of the major prescribers of TCS. The present study was thus conducted to address the gap in information regarding the knowledge and practice of using corticosteroids among dispensers in community pharmacies.

#### Methods

A descriptive cross-sectional survey was carried out among the dispensers in community pharmacies inside Kathmandu valley from March 2020 to March 2021. A survey was conducted with a questionnaire which included questions to assess the knowledge and practice regarding TCS among dispensers in community pharmacies. Microsoft Excel 2010 and Statistical Package for Social Science (SPSS) 16 were used for data analysis.

#### Results

Among 209 participants, 83.73% of the participants had education related to pharmacy. They had good knowledge about brand names, generic names, and side effects of steroids. Maximum number (40.19%) of the participants responded that while coming to buy steroid creams, the patients come without prescription but with the name or cover of medicine. Majority of participants (66.51%) responded that they encounter 1-5 patients per day with recurrence of skin problems after stopping the application of creams.

#### Conclusion

The dispensers at community pharmacies reported having good knowledge about TCS. However, there is a need to strengthen the knowledge regarding indications of TCs including ethical and rational use of TCs among the dispensers in community pharmacies.

#### Keywords

*Knowledge, pharmacies, practice, topical corticosteroids*

## INTRODUCTION

Topical corticosteroids (TCS) are among the most commonly prescribed medications in dermatology. According to their potency, British National Formulary (BNF) has divided topical steroids into four groups whereas the American system has classified them into seven classes, with class one corresponding to the very potent, super potent or ultra-high potent and class seven corresponding to the least potent topical steroid.<sup>1</sup>

While prescribing TCS it is important to consider not only the diagnosis but also patient's age, the potency of TCS, vehicle, site of lesion, frequency of application, duration/severity of disease and adverse effects of steroid.<sup>2,3</sup>

Over the past few years dermatologists have noticed that TCS abuse and misuse are constantly rising in an alarming proportion leading to serious local, systemic and psychological side effects.<sup>4</sup> They are being misused in conditions like tinea infections, melasma, acne, skin infections and as a fairness or whitening cream.<sup>5-18</sup>

The main reason for such misuse in country like ours is free availability of such drugs over the counter (OTC) and in many studies conducted in India and Nepal, it has been found that pharmacists are one of the major prescribers of TCS.<sup>6-11,17,18</sup> The present study was thus conducted to address the gap in information regarding the knowledge and practice of using corticosteroids among dispensers in community pharmacies.

## METHODS

A descriptive cross-sectional survey was carried out among the dispensers in community pharmacies inside Kathmandu valley from March 2020 to March 2021. Prior to the study, ethical clearance was taken from the Nepal Medical College Institutional Review Committee (Ref. No. 031-076/077). Informed verbal consent was taken from the dispensers and only those who gave consent were asked to fill the questionnaire.

A questionnaire was developed which included questions to assess the knowledge and practice regarding topical steroids among dispensers in community pharmacies. The questionnaire was developed in Nepali language. Assuming the knowledge of TCS is 50%, using the formula  $n = Z^2 \times p(1-p)/d^2$  where  $Z = 1.96$  for 95% confidence interval,  $p = 50\%$  and  $d$  (margin of error) = 7%, sample size was calculated to be 196. Assuming a 5% non-response rate, the total required sample was 206 but we received response from 209 participants so we have included them all. Once the survey questionnaire was developed, it was pilot tested among 10% of the total sample size, i.e., 20 individuals. Necessary changes were made and the

final survey questionnaire was used in the study sample.

The questionnaire had one section dealing with basic demographics – age, gender, qualification and work experience as dispenser followed by the second section covering the questions related to knowledge about generic names, different strengths of topical steroids and possible adverse effects. The third section covered questions to assess the practice of prescribing medicines in patients with dermatological problems. A convenience sampling method was used and the questionnaires were distributed to a convenient sample of pharmacists dispensing medicines in community pharmacies located in different parts of Kathmandu, Nepal.

Data processing was done using Excel 2010 and analysis by using SPSS 16 (Statistical Package for Social Science). Descriptive statistical measures (i.e. frequency table with percentage, mean and standard deviation) were used.

## RESULTS

Among 209 participants, 129 were male (61.72%) and 80 were female (38.28%). Mean age of the participants was  $30.73 \pm 8.71$  years. Maximum number of participants belonged to the age group 26 – 35 years (Table 1).

Maximum number (83.73%) of the participants had education related to pharmacy (either Diploma,

Table 1. Demographic profile of participants (n=209)

Characteristics	Frequency (%)
Sex	
Male	129 (61.72)
Female	80 (38.28)
Age in years	
Mean $\pm$ SD	30.73 $\pm$ 8.71
25	63 (30.14)
26 - 35	101 (48.33)
36 - 45	30 (14.35)
>45	15 (7.18)
Education	
Pharmacy	175 (83.73)
Non-pharmacy	34 (16.27)
Education level	
SLC	4 (1.91)
Diploma	115 (55.02)
Bachelor	83 (39.71)
Master	7 (3.35)
Experience in years	
5	125 (59.81)
6 – 15	53 (25.36)
16 – 25	23 (11)
>25	8 (3.83)

Table 2. Knowledge about topical steroids

Knowledge	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
I know the ingredients of the topical creams sold at my pharmacy	62 (29%)	121 (57.89%)	19 (9.09%)	6 (2.87%)	1 (0.48%)
I have knowledge about steroid creams	47 (22.49%)	142 (67.94%)	16 (7.66%)	4 (1.91%)	0 (0%)
I know the generic names of steroid creams	71 (33.97%)	118 (56.46%)	17 (8.13%)	3 (1.44%)	0 (0%)
I know the brand names of the creams containing steroid	70 (33.49%)	117 (55.98%)	20 (9.57%)	2 (0.96%)	0 (0%)
Topical steroid creams are available in different potency	84 (40.19%)	107 (51.20%)	16 (7.66%)	1 (0.48%)	1 (0.48%)
Topical steroid creams are used depending upon its potency	76 (36.36%)	109 (52.15%)	21 (10.05%)	3 (1.44%)	0 (0%)
Different potency of steroid creams are used in different parts of body	86 (41.15%)	97 (46.41%)	20 (9.57%)	5 (2.395)	1 (0.48%)
Use of steroid creams can aggravate some skin problems	80 (38.28%)	100 (47.85%)	23 (11%)	5 (2.395)	1 (0.48%)
Steroid creams have adverse effects	65 (31.1%)	108 (51.67%)	31 (14.83%)	4 (1.91%)	0 (0%)

Bachelors or Masters in Pharmacy). Among 209 participants, 59.81% had work experience of less than 5 years, whereas only 3.83% had experience of more than 25 years.

We aimed to assess their self-perceived knowledge about ingredients, generic names, brand names, potency of topical steroids, use of topical steroids according to potency, use of different potencies of topical steroids in different sites, contraindications and side effects of using topical corticosteroids. Details regarding the response to questions related to knowledge about topical corticosteroids are given in Table 2.

Nine questions were asked related to the practice of dispensing topical corticosteroids in their day to day work at their pharmacies. Maximum number

(40.19%) of the participants responded that while coming to buy steroid creams, the majority of patients come without prescription but with the name or cover of medicine. 31.1% of participants responded that majority come with a doctor's new prescription, 18.18% reported that majority come with the doctor's old prescription and 10.53% noted that majority ask for the pharmacist's opinion and prescription just by explaining the skin problem to them.

Number of people who visit the pharmacy with above characteristics per day is shown in Figure 1. Maximum number of participants (68.90%) said that only 0 to 4 patients come with doctors' old prescriptions daily to buy topical steroids whereas 4.31% of the participants said more than 15 patients come daily with old prescriptions.

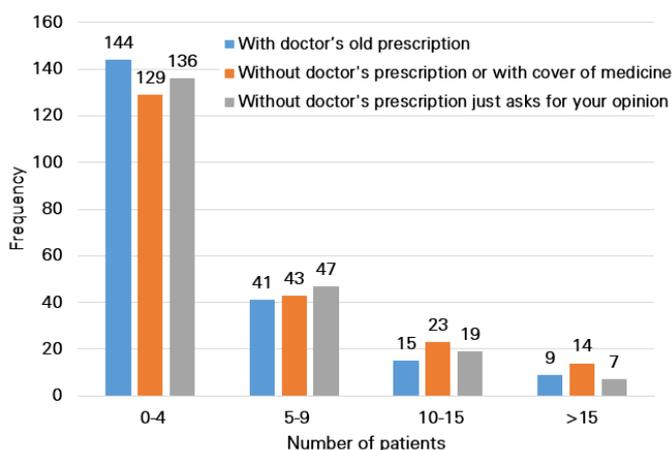


Figure 1. Number of persons who visit pharmacies to buy steroid creams per day with different characteristics

Table 3. Practice of pharmacists among patients who come to buy steroid creams

Characteristics	Category	Frequency (%)
Number of patients per day who complain of recurrence of skin problem after stopping application of the cream	None	26 (12.44)
	1 – 5	139 (66.51)
	> 5	44 (21.05)
Suggestion to patients who complain of recurrence of skin problem after stopping application of the cream	Change the cream	3 (1.44)
	Add an oral medicine to topical medicine	5 (2.39)
	Consult a general physician	10 (4.78)
	Consult a dermatologist	191 (91.39)
Response of a majority of patient after suggestion to meet the dermatologist	Agree to consult a dermatologist	113 (54.07)
	Disagree to consult a dermatologist and ask for over the counter cream	96 (45.93)
Reasons for not agreeing to meet the dermatologist	Thinks that skin problem is minor	42 (20.10)
	Absence of dermatologist nearby	51 (24.40)
	Long waiting period during consultations	53 (25.36)
	High consultation charges	63 (30.14)

Majority of participants (66.51%) responded that they encounter 1-5 patients per day with recurrence of skin problems on stopping the creams (Table 3). For such patients, 191 participants said they tell them to meet a dermatologist, 3 said they change and 5 said they add another medicine. Among the patients who were asked to meet a dermatologist, 54.07% agreed to do so but 45.93% refused and asked for the medicine to be dispensed as per the dispenser's judgment. High cost of consultation was the most common reason for not meeting the dermatologist.

Regarding the individuals who visit the pharmacy for skin problems without prescription, 34.93% reported majority were patients themselves showing their skin problems to the pharmacists, 31.10% of participants reported that majority of buyers were family or friends asking for medicine without the presence of patient with skin problem, 16.75% reported majority of buyers were patients asking for medicine without showing their skin

problems and 11.48% reported majority were family or friends asking for medicines after showing the picture of the skin issues to the pharmacists (Table 4).

## DISCUSSION

TCS misuse or abuse is one of the burning issues in many countries including Nepal and easy availability of TCS over the counter at the chemists shops without any valid prescription is the major cause of this abuse.<sup>5-9,12,14,17</sup> In addition, the patients tend to refill the prescriptions without instructions from the dermatologists and use for wrong indications. In a country like ours where TCS are easily available at a low cost over the counter, where patients lack awareness regarding drugs like TCS and people have easy accessibility to pharmacist in pharmacy than they have to a qualified specialist, it is not surprising that pharmacists are a key group of health professionals with a significant role in TCS abuse.<sup>9,19</sup> It thus seems straightforward that dispensers in the

Table 4. Characteristics of persons who usually come to pharmacy with skin problem without prescription

Knowledge	Majority of persons	Some persons	Few persons	Very few persons
Family member or friend ask for medicine without the presence of the patient with skin problem	65 (31.10%)	51 (24.40%)	47 (22.49%)	46 (22.01%)
Family member or friend show photos in mobile and ask for medicine	24 (11.48%)	73 (34.93%)	70 (33.49%)	42 (20.10%)
Patients explain the skin problem to the pharmacist and ask for the medicine without showing the skin problem	35 (16.75%)	69 (33.01%)	67 (32.06%)	38 (18.18%)
Patients explain and shows the skin problem to the pharmacist and ask for the medicine	73 (34.93%)	56 (26.79%)	43 (20.57%)	37 (17.70%)

community pharmacies are an important pillar in fighting this enormous challenge of topical steroid misuse in our population. Our study is hence an earnest attempt to assess the level of knowledge about TCS and practice of using TCS among the dispensers in community pharmacies.

In a questionnaire based study by Lau and Donyai in UK community pharmacists, they found that they have some knowledge gaps in terms of the use and safety of TCS in atopic eczema but they had good understanding on the use of emollients in the same disease.<sup>20</sup> Another study conducted among pharmacists in Australia also showed that there was a significant knowledge gap regarding the safety and use of TCS among patients with pediatric atopic dermatitis and their advice to patients resulted in poor compliance. This study also concluded that this attitude is modifiable by adequate awareness programs preferably by dermatologists.<sup>21</sup> Another study conducted by Farrugia et al in Australia, conducted among 201 patients and parents revealed that there is a certain amount of corticosteroid phobia among the population, which was attributed to inadequate information. General practitioners and pharmacists were more or less of the same level of inadequacy in educating the patients, and at times their statements contradicted adding to the confusion. The study also reaffirmed that pharmacists' advice about corticosteroid use was very influential in patients' compliance.<sup>22</sup>

Ashique et al did a study to evaluate the knowledge, attitudes and behavior regarding topical corticosteroids in a sample of pharmacy students. They found that majority of the students were conversant of the fact that different classes of topical corticosteroids have different effects, topical corticosteroids can have significant cutaneous adverse effects, the important role pharmacist plays in preventing topical steroid abuse, and the need to dispense TCs on a prescription-only basis. However they found a significant gap in knowledge related to specific side effects and awareness of different classes of topical corticosteroids. They concluded that knowledge regarding the ethical and rational use of topical corticosteroids should be disseminated among pharmacy students, and the dermatologists should play a key role in this.<sup>19</sup>

The positive aspects of our study were that the majority of dispensers at community pharmacies reported having knowledge of the ingredients of the topical creams sold at their pharmacy, the generic name of topical steroid as well as brand name of steroid containing creams. Most of them were aware of the fact that steroid creams are available in different potencies, they are used depending upon their potency and different potencies of steroid creams are used in different parts of the body. Significant number of the dispensers also knew that

steroid creams can aggravate some skin problems and steroid creams have adverse effects.

Regarding the practice, in our study the majority of the dispensers said that the patients come without prescription but with the name or cover of medicine and very few come with a doctor's prescription. This shows the lack of knowledge about TCS among the general public due to which they tend to use them without specialist prescription and hence leading to TCS abuse.

Recurrence of skin problems on stopping the cream was reported by a significant number of participants. Though the majority of the dispensers advised these groups of patients to consult a dermatologist still 44% refused to consult a dermatologist and asked for over the counter cream. This again shows the ignorance of the public about the side effects of TCS. In a study done in Singapore by Choi et al among dermatology outpatients, it was found that the prevalence of TCS phobia was moderately high with women having more phobias. Misconceptions regarding side effects of steroids were also common due to which there was reduced compliance.<sup>23</sup> In contrast to this; our patients do not have knowledge about side effects of TCS due to which there is a tendency of not only using them inappropriately for themselves but also advising friends/family members to use them.

People with dermatological problems often visit pharmacies prior to making an appointment with specialists. The reasons include patients undermining the severity of their dermatological conditions, lack of time and resources to get an appointment from specialists, familiarity with the dispensers in pharmacies and the possibility of getting a referral to specialists from the pharmacies. In our study it has been found that people ask for over the counter medicines without the presence of the patient just by explaining the problem which again shows how people tend to downplay illnesses pertaining to skin. With the access to smartphones in most of the urban households, people have started to utilize the technology by bringing in photographs of skin problem to the dispensers at pharmacies and asking for medications.

The dispensers in pharmacies have some knowledge of skin conditions and their treatment, and hence attempt to help the buyers by dispensing commonly used medications. However, more often than not, these well-meaning pharmacy dispensers are unaware of the myriad of presentations of skin ailments and are inclined to give a trial of fixed drug combinations containing various combinations of topical steroids, antibiotics, antibacterial and salicylic acid.

The major limitation of the study is that we did not test the actual knowledge of the participants and it was self-perceived knowledge reported by the

dispensers. Illusion of the knowledge regarding TCS among the dispensers could not be ruled out. Besides, as this study was limited to Kathmandu valley we cannot generalize the findings across Nepal, though the situation is perceived to be far worse in the remote areas due to poor access to the dermatologists.

## CONCLUSION

In our study, while the dispensers reported being aware of the potency, utility and potential adverse effects of TCs, in practice there were a large number of people coming to them asking for treatment and management of skin diseases or coming to buy topical creams without prescription. The dermatology community should play a crucial role in empowering the pharmacy dispensers with knowledge of skin diseases and rational use of TCS and educating the general public.

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## CONFLICT OF INTEREST

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