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## RESEARCH ARTICLE

### Family Medicine Trainees' Knowledge about Topical Corticosteroids in Jeddah, Saudi Arabia

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#### Abstract:

##### Background:

Topical corticosteroids (TCS) are used to treat a variety of dermatological conditions. The fear of side effects sometimes affects the adherence to treatment. The aim of this study was to assess the knowledge and the attitude of family medicine residents under training for the use of TCS.

##### Methods:

Family medicine trainees attending an educational session were surveyed *via* live electronic questionnaires.

##### Results:

A total of 89 (out of 100 who attended the event) people responded to the questionnaire. Undergraduate teaching was the main source of information about TCS. Most of the respondents advised the use of TCS sparingly or using finger-tip unit amount. More than half of them thought TCS can be absorbed and it should not be used to some body areas such as eyelids. Majority of the respondents did not think that TCS use can lead to infections, weight gain or obesity, damage the skin if used for a few weeks, negatively affect health or lead to asthma. More than 40% thought that it is better to stop TCS treatment as soon as possible in atopic dermatitis patients.

##### Conclusion:

Family medicine trainees have some fears and misconceptions regarding TCS use. There is a need to increase the knowledge about TCS in undergraduate and postgraduate teaching.

**Keywords:** Topical corticosteroids, Family medicine trainees, Knowledge, Infections, Dermtologists, Dermatological conditions.

#### Article History

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## 1. INTRODUCTION

Topical corticosteroids (TCS) are used to treat different dermatological conditions. They are the mainstay treatment options in some conditions such as atopic dermatitis. The side effects of TCS are mainly topical [1] and they are rare if used properly. The fear of the side effects of TCS can lead to inadequate treatment of skin diseases such as atopic dermatitis [2, 3]. TCS are prescribed by dermatologists and other specialties. General physicians and family medicine practitioners are among them. The attitude and knowledge of the physician prescribing these will affect the way the patients use TCS. A recent study from Riyadh showed that the knowledge about TCS is inadequate among practicing primary care physicians

[4]. Australian general practitioners' advice given to parents about TCS, has been shown to possibly carry unintentional risk messages contributing to non-adherence to treatment of paediatric atopic dermatitis [5]. TCS phobia is the main cause of non-adherence to treatment [6] and treatment failure in atopic dermatitis patients and carers of patients. TCS phobia has been shown to improve with patients' education [7]. Physicians (non-dermatologists) have concerns about using TCS more than dermatologists [8]. Additionally, pharmacists (from France and Australia) have low levels of confidence regarding the use of TCS [9, 10]. It is important for general physicians to have detailed knowledge about TCS in order to be able to give good advice to patients.

The aim of this study was to assess the knowledge and the attitude of family medicine residents under training toward TCS. In addition, TCS phobia was assessed as well.

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## 2. MATERIALS AND METHODS

### 2.1. Setting and Participants

Participants were family medicine residents attending an educational event about common skin problems in a primary health care practice. The levels of residents were: the first and second years (R1 and R2) in their training program comprising 4 levels. Some of them had some experience before joining the program and some of them recently graduated from medical schools. This is a regular educational activity and it includes different specialties in each session. They were invited to answer an anonymous questionnaire about topical corticosteroids using an online program (mentimeter). They were only asked to log in to the site with a special code number.

**Table 1. Knowledge questions responses by family medicine trainees about TCS.**

Questions	No. (%)
<b>Source of Information about Topical Corticosteroids</b>	
Taught at undergraduate level	42 (47.19)
General practice journals	4 (4.49)
Dermatological journals	1 (1.12)
From web based educational activities	14 (15.73)
From pharmaceutical companies	1 (1.12)
Reference books	8 (8.99)
Postgraduate educational activities	9 (10.11)
Others (specify in next slide)	4 (4.49)
Missing	6 (6.74)
<b>Topical Corticosteroids come in Different Formulations</b>	
Yes	76 (85.39)
No	2 (2.25)
Not sure	3 (3.37)
Missing	8 (8.99)
<b>How would you Advise Patients to use Topical Corticosteroids?</b>	
Sparingly or the smallest amount possible	27 (30.34)
Generously	2 (2.25)
Based on finger -tip unit advise	38 (42.7)
Not sure or did not think about it	14 (15.73)
Others	1 (1.12)
Missing	7 (7.9)
<b>The Most Common Side Effect of Topical Corticosteroid</b>	
Stinging/ itching	2 (2.25)
Hypopigmentation or hyperpigmentation	22 (24.72)
Thinning of skin (atrophy)	40 (44.94)
HPA suppression	0 (0)
Growth retardation in children	1 (1.12)
None of the above if used appropriately	13 (14.61)
Not sure	5 (5.62)
Missing	6 (6.74)

As the participation was voluntary and no personal data was collected, consent was not taken. The study protocol was approved by the Unit of Biomedical Ethics Research Committee at King Abdulaziz University Hospital (Reference number 875-18).

### 2.2. Questionnaire

The first part of the questions included some respondents' characteristics: gender and the residency level of respondents (R1, R2 and others).

The second part included questions about knowledge of TCS and the sources of information about topical corticosteroids;

- If TCS come in different formulations, how to advise patients when prescribing TCS?
- Most common side effects of TCS.

The last part included questions modified from the topical corticosteroid phobia in atopic dermatitis (TOPICOP) questionnaire [11, 12]: there were 9 questions in the format of a sentence followed by options of "Yes", "To some extent", "No", and "Not sure". These were:

- A significant amount of TCS are absorbed into the bloodstream
- Use of topical corticosteroids in eczema can lead to infections
- Topical corticosteroids can lead to weight gain or obesity
- Use of topical corticosteroids for a few weeks usually damage the skin
- Topical corticosteroids will affect the future health negatively
- Topical corticosteroids can lead to asthma
- Topical corticosteroids cannot be used on certain skin areas such as eyelids
- It is better to wait as long as you can before treating atopic dermatitis patients with topical corticosteroids
- It is better to stop topical corticosteroids treatment as soon as you can in atopic dermatitis patients.

### 2.3. Statistical Analysis

Descriptive statistics were used to represent responses to questions. The analysis was conducted using SPSS 16.0 (SPSS, IBM, Armonk, NY).

## 3. RESULTS

### 3.1. Respondent Characteristics:

A total of 100 physicians attended the event. Of these, 89 answered at least one question (89% response rate). They were 49 females, 32 males and 8 missing responses. There were 46 at R1 level, 32 at R2 level, 4 others at a different level and 7 missing responses.

### 3.2. Topical Corticosteroid Knowledge

Responses of family medicine trainees to questions about TCS are shown in Table 1. Nearly half of the respondents had information about TCS from undergraduate level teaching (47.19%). Other sources included web-based educational activities, postgraduate educational activities, reference books, general practice books and others. Only one responder's source of information was dermatology journals and pharmaceutical companies.

The majority of the respondents knew that TCS come in different formulations (85.39%). Two responders were of the opposite view while 3 were not sure about it.

Regarding how patients were advised when TCS were prescribed, more than 40% gave the advice based on fingertip unit. About 30% advised to use TCS sparingly or in the smallest amount possible. Fourteen respondents (15.73%) were not sure or did not think about it and only 2 responders advised using TCS generously.

Less than half of the respondents (44.94%) believed that thinning of the skin (atrophy) is the most common side effect of TCS. Hypopigmentation and hyperpigmentation were the second most common side effects reported (24.72%). Thirteen respondents (14.61%) believed that TCS do have any side effect if used appropriately. Only one believed that growth retardation is the most common side effect of TCS and 2 reported stinging/itching while some were not sure (5.62%).

### 3.3. Topical Corticosteroid Phobia

Responses of family medicine trainees to the questions of TCS phobia are shown in Table 2. More than half of the respondents believed that a significant amount of TCS can be absorbed or it can be absorbed to some extent (16.85% and 49.44% respectively). An equal number of respondents did not think that a significant amount of TCS can be absorbed or were not sure (12.36% each). Less than half of the respondents believed that the use of TCS in eczema will not lead to infections (43.82%). On the other hand, around a quarter of the respondents (24.72%) thought that TCS can lead to infections and a similar percentage (23.6%) of the respondents were not sure. More than half of the respondents did not believe that TCS can lead to weight gain or obesity (76.4%), or using TCS for a few weeks can damage the skin (56.18%). Additionally, a similar percentage of the respondents neither thought that TCS will affect future health negatively (74.16%), nor these can lead to asthma (91.01%).

**Table 2. Family medicine trainees TCS phobia questions responses.**

Questions	No. (%)
<b>A Significant Amount of Topical Corticosteroids can be Absorbed</b>	
Yes	15 (16.85)
To some extent	44 (49.44)
No	11 (12.36)
Not sure	11 (12.36)
Missing	8 (8.99)
<b>Use of Topical Corticosteroids in Eczema can Lead to Infections</b>	
Yes	11 (12.36)
To some extent	11 (12.36)
No	39 (43.82)
Not sure	21 (23.6)
Missing	7 (7.87)
<b>Topical Corticosteroids can Lead to Weight Gain or Obesity</b>	
Yes	7 (7.87)
To some extent	5 (5.62)
No	68 (76.4)
Not sure	2 (2.25)
Missing	7 (7.87)
<b>Use of Topical Corticosteroids for Few Weeks Usually Damage the Skin</b>	
Yes	12 (13.48)
To some extent	10 (11.24)
No	50 (56.18)
Not sure	10 (11.24)
Missing	7 (7.87)
<b>Topical Corticosteroids will Affect the Future Health Negatively</b>	
Yes	5 (5.62)
To some extent	6 (6.74)
No	66 (74.16)
Not sure	5 (5.62)
Missing	7 (7.87)
<b>Topical Corticosteroids can Lead to Asthma</b>	
Yes	1 (1.12)
To some extent	0 (0)
No	81 (91.01)

(Table 2) *contd....*

Questions	No. (%)
Not sure	1 (1.12)
Missing	6 (6.74)
<b>Topical Corticosteroids can Lead to Asthma</b>	
Yes	61 (68.54)
To some extent	2 (2.25)
No	8 (8.99)
Not sure	13 (14.61)
Missing	5 (5.62)
<b>Topical Corticosteroids can not be Used on Certain Skin Areas such as Eyelids</b>	
Yes	7 (7.87)
To some extent	2 (2.25)
No	69 (77.53)
Not sure	7 (7.87)
Missing	4 (4.49)
<b>It is Better to Wait as Long as you can Before Treating Atopic Dermatitis Patient with Topical Corticosteroids</b>	
Yes	37 (41.57)
To some extent	11 (12.4)
No	18 (20.22)
Not sure	17 (19.1)
Missing	6 (6.74)

More than half of the surveyed (68.54%) people believed that TCS cannot be used on certain skin areas such as eyelids. The rest thought “to some extent” (2.25%) or “cannot” (8.99%) or were “not sure” (14.61%).

On questioning if it is better to wait as long as possible before treating atopic dermatitis patients with TCS, majority (77.53%) answered no. On questioning if it is better to stop TCS treatment as soon as possible in atopic dermatitis patients, less than half of the respondents answered yes (41.57%), 12.4% “to some extent”, 20.22% “no” and 19.1% were “not sure”.

The missing data were partly due to the interruption of internet connection and partly due to unwillingness of the respondents to answer.

#### 4. DISCUSSION

Topical corticosteroids (TCS) are an important modality of treatment in different skin problems. Their proper use is essential to avoid the suboptimal therapeutic effect. Although there are side effects known to the use of TCS, they are mostly topical side effects and usually will not appear unless their prolonged use or high potency in a vulnerable area is exposed. The fear of the use of TCS by patients is described and has been studied in different areas of the world. In this study, the knowledge and the attitude of family medicine residents under training toward TCS through an electronic survey were assessed during an educational activity. The responders were in their first phase of the training program (first and second year of training).

The main source of information about TCS was the undergraduate teaching (47.19%). Owing to the minimal teaching of dermatology, teaching in the undergraduate levels, this is reflected usually on the level of knowledge about topics related to diagnosis and treatments of skin diseases. This is an in-

ternational problem which led to proposals for improving this lack by searching undergraduate societies and performing other activities [13].

Most of the respondents knew that there are different formulations of TCS as part of clinical experience which is the true answer to this question. Few respondents did not know or were not sure about this information. More than 40% advised using TCS based on finger-tip unit, followed by using them sparingly or in the smallest amount possible. Only 2 responders advised the generous use of TCS. This reflect the cautious approach by family medicine trainees, similar to what is followed by Australian general practitioners and pharmacists [5, 10]. On the other hand, Australian dermatologists agreed that the label “use sparingly” should be removed from pharmacists’ labels on TCS prescriptions [14]. “The more appropriate advice on product labelling would be ‘apply enough to cover the affected areas’” as suggested by the dermatology working group guidelines [15]. This question reflects physician cautiousness or phobia regarding the amount of TCS to be used.

For the question of the most common side effects of TCS, the answer “none if used appropriately” would be the best response. More than 40% thought that thinning of the skin (atrophy) is the most common side effect of TCS, followed by pigmentation problems and only 14.6% thought that TCS will not cause side effects if used appropriately. Skin atrophy was thought to be the commonest side effect by one-third of general practitioners [5] and nearly half of the pharmacists as well [10] in Australia. In another study, among UK pharmacists, less than half of the respondents correctly answered as “no” to the question of side effects, such as skin thinning, that are common even when topical corticosteroids are used appropriately [16]. This is in contrast to the perspective of dermatologists in Australia who agreed that TCS do not cause skin atrophy when appropriately used [14]. Our family medicine trainees have

some misconceptions towards TCS. This might affect their advice to patients in need for TCS leading to patients concerns or phobia. Topical corticosteroids are sometimes misused to treat hyperpigmentation by nonmedical. Additionally, pigmentation problems as hyper- and hypopigmentation were reported to be the side effects of TCS when used inappropriately [17, 18]. This problem is seen sometimes in our society, although not reported, it might be the cause of being thought as one of the common side effects of TCS.

For the questions related to TCS phobia, "no" would be the most appropriate answer. The majority of the responders did not think that TCS use can lead to infections, weight gain or obesity, damage the skin if used for a few weeks, negatively affect health or lead to asthma. These facts are recognized by the trainees.

On the other hand, more than half of the respondents thought that TCS can be completely absorbed or absorbed to some extent and a large proportion of respondents thought that TCS cannot be used on certain skin areas such as eyelids. These reflect concerns and phobia towards TCS. Additionally, more than two-thirds of the responders responded as no when asked if it is better to wait as long as you can before treating atopic dermatitis patients with TCS. More than 40% thought that it is better to stop TCS treatment as soon as possible in atopic dermatitis patients and only 20 percent thought that this is not necessary. This reflects a very cautious approach towards TCS in treating atopic dermatitis patients by our trainees. In a Korean survey, one third of the respondents had TCS phobia [19]. Consistently delivering messages about TCS risks from pharmacists and general practitioners to patients/parents might lead to treatment non-adherence [20].

## CONCLUSION

In conclusion, family medicine trainees have some fears and misconceptions regarding TCS use. There is a need to increase the knowledge about TCS in the undergraduate teaching. Additionally, postgraduate educational activities aimed at family medicine and general practitioners to dermatology topics including topical corticosteroids are needed.

## LIST OF ABBREVIATIONS

TCS	=	Topical corticosteroids
TOPICOP	=	Topical Corticosteroid Phobia

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study protocol was approved by the Unit of Biomedical Ethics Research Committee at King Abdulaziz University Hospital (Reference number 875-18).

## HUMAN AND ANIMAL RIGHTS

No animals/humans were used for studies that are the basis of this research.

## CONSENT FOR PUBLICATION

As the participation was voluntary and no personal data was collected, consent was not taken.

## FUNDING

None.

## CONFLICT OF INTEREST

The author declares no conflict of interest, financial or otherwise.

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