

## Original Research Article

# Misuse of topical corticosteroids in women in Hail region Saudi Arabia

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## ABSTRACT

**Background:** A lot of women seek to get beautified. Consequently, some of the women often resort to using the products contained corticosteroids (CS) and other kinds of cosmetics, and this significantly increased with year 2018, due to the influence of social media. Despite the benefits, that excessive use of corticosteroids leads to serious side effects.

**Methods:** 769 electronic questionnaires were completed by women for using corticosteroids in Hail, Saudi Arabia. Statistical comparison was done using SPSS (ANOVA test) was used to compare the answers given by the participants and P values less than 0.05 were considered significant.

**Results:** 769 women responded. More than 30.3% of the patients were in the age group 31 to 40 years. The main reason for using the topical corticosteroids was to lighten skin color and reduce wrinkles.

**Conclusions:** Misuse of topical corticosteroids is widely spread among women in Hail city, and this due to various reasons, the most important of which is to get bleaching and get rid of skin blemishes.

**Keywords:** Skin, Topical corticosteroid, Misuse, Women

## INTRODUCTION

Topical corticosteroids are widely used to treat dermatological problems. They are used to ameliorate inflammation and for other purposes. They come in different formulations and different potencies. Mild formulations are usually used for children and for sensitive areas. Although topical steroids are used for many skin diseases, they are contraindicated in some diseases and might cause side effects if used inappropriately. If they are used for prolonged periods of times, they can cause side effects.<sup>1</sup> Topical steroids misuse can cause numerous side effects.<sup>2</sup>

One of the common topical side effects of topical steroids is whitening of the skin. Unfortunately, this side effect is being used by some people to lighten skin

pigmentations or to lighten their natural colour or to lighten hyper-pigmentations.<sup>3-5</sup> This phenomenon was also found to be used in Saudi for the same purpose.<sup>6</sup>

The objective of our study is to assess the misuse of topical corticosteroid on the face among the women in Hail.

## METHODS

This survey begins in December 2018 and ends in March 2019, it was conducted on 769 women in Hail, Saudi Arabia.

An online questionnaire has been sent by social media to women from Hail, Saudi Arabia through electronic questionnaire. Also, the questionnaire has been sent

through the Deanship of Preparatory years in Hail to female students.

The questionnaire included demographic questions about the women (age, educational level and Occupation); followed by a question about from where they heard about topical corticosteroid, then asked if they have used any topical steroid. Next question, from where they got the corticosteroids (prescription by a doctor, pharmacy without prescription, beauty centres and online stores) and what is the purpose of using corticosteroids. If they used a corticosteroid mixed with other products and if they knew that it contained steroids.

In our selection criteria, we only targeted the women those from middle school and above, also we targeted all the social state of the women (single, married and widow), also we targeted the women's town and women's village. And we excluded male and elementary age.

### Data collection

All data were exported from questionnaire program to SPSS.

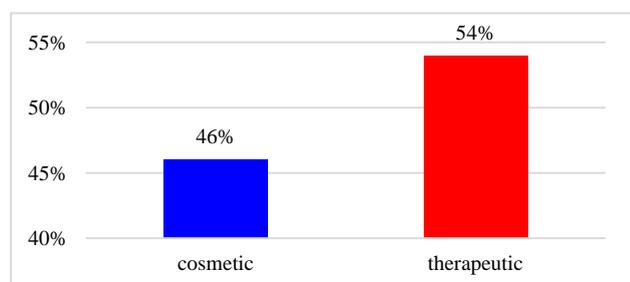
### Statistical analysis

All collected data were analyzed statistically using SPSS software. The observations for each question are tabulated. Statistical comparison was done using SPSS (ANOVA test) was used to compare the answers given by the participants and p values less than 0.05 were considered significant.

## RESULTS

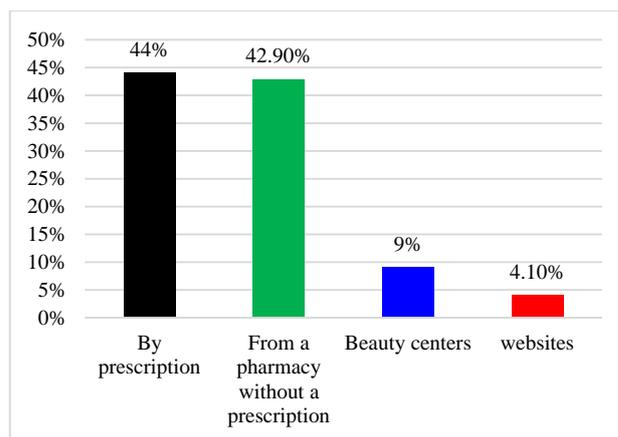
### General information about the participants

In a total of 769 women had responded to the questionnaire. 131 (17%) of women responded to the questionnaire were 20 years or less. From 21 to 30 years were 206 (26.8%), from 31 to 40 were 233 (30.3%) and 40 years and over 199 (25.9%) of the total sample as shown in Table 1.



**Figure 1: Reason of uses of corticosteroids by the participants.**

Values were expressed as frequency percentages (p\*\*<0.006) which is highly significant.



**Figure 2: Sources of uses of corticosteroids by the participants.**

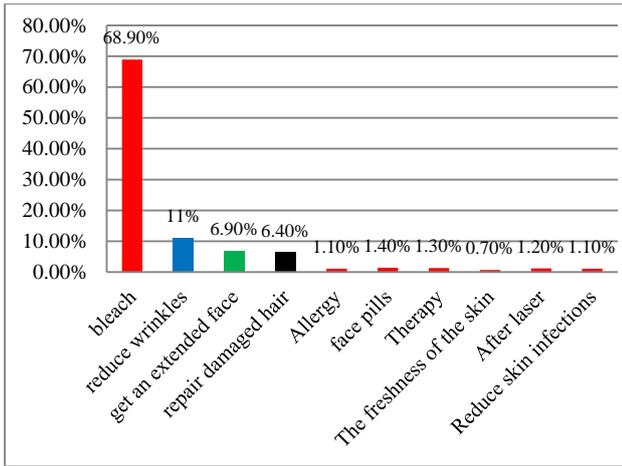
Values were expressed as frequency percentages (P\* < 0.029) which is significant. \*(p\* > 0.05); is significant †(p\*\* > 0.001) is highly significant.

**Table 1: General information about the responders.**

	Number	Percentage (%)
<b>Age (in years)</b>		
20 years or less	131	17
From 21 to 30 years	206	26.8
From 31 to 40 years	233	30.3
40 years and over	199	25.9
<b>Social state</b>		
Single	281	36.5
Married	450	58.5
Divorced	26	3.4
Widow	12	1.6
<b>Educational level</b>		
Primary	17	2.2
Intermediate	29	3.8
Secondary	177	23
University and higher	546	71
<b>Domicile</b>		
Town	686	89.2
Village	83	10.8
<b>Occupation</b>		
Student	217	28.2
Employee	378	49.2
Unemployed	174	22.6

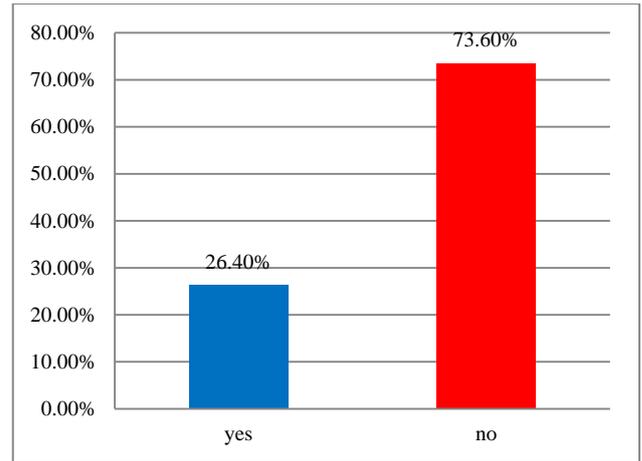
Only 281 (36.5%) were single women, married women were 450 (58.5%), divorced women were 26 (3.4%) and widow were 12(1.6%) of the total sample as shown in Table 1.

The educational level of women who responded the questionnaire primary were 17 (2.2%) intermediate were 29 (3.8%), secondary were 177 (23%) and University and higher were 546 (71%) of the total sample as shown in Table 1.



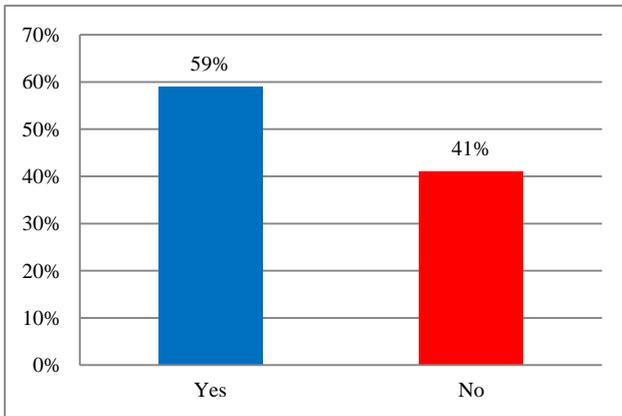
**Figure 3: The purpose of using cortisone in the field of cosmetics.**

Values were expressed as frequency percentages ( $p < 0.001^{**}$ ) which is highly significant.



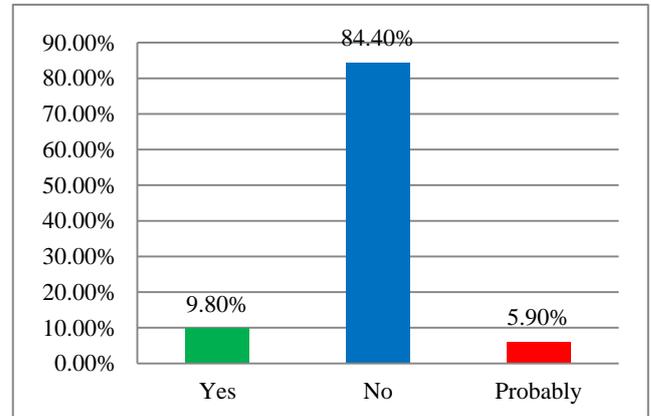
**Figure 6: The experience of side effects after using cortisone.**

Values were expressed as frequency percentages ( $p^* < 0.05$ ) which is significant.



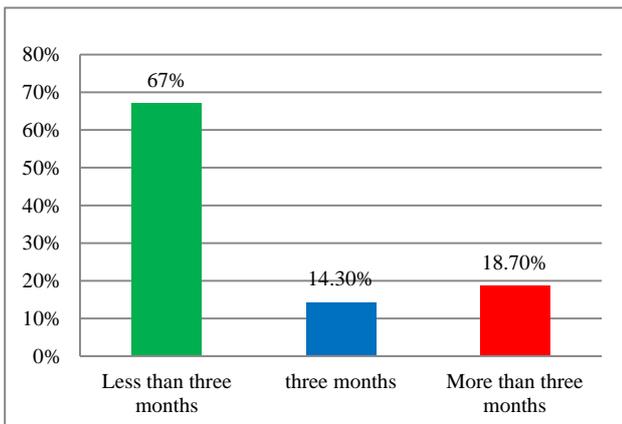
**Figure 4: Knowledge about cortisone mixed with other products.**

Values were expressed as frequency percentages ( $p < 0.025^*$ ) which is significant.



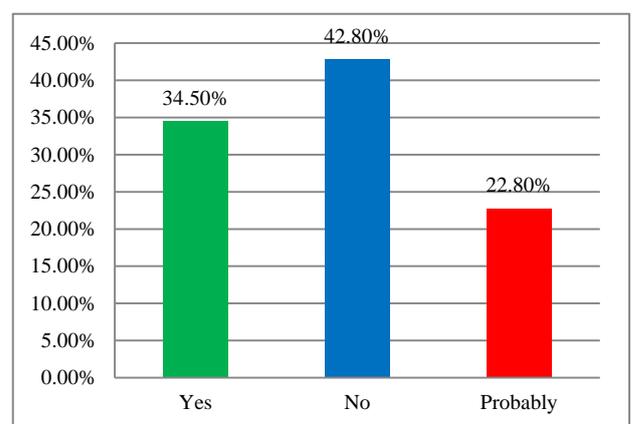
**Figure 7: The experience of side effects after using corticosteroids.**

Values were expressed as frequency percentages ( $p^* < 0.05$ ) which is significant.



**Figure 5: The period of using corticosteroid in form of cream.**

Values were expressed as frequency percentages ( $p < 0.037^*$ ) which is significant.



**Figure 8: Considering of skin blemishes a strong motivation to use corticosteroids.**

Values were expressed as frequency percentages ( $p < 0.019^{**}$ ) highly significant difference.

89.2% are from town and 10.8% are from village as shown in Figure 4 and Table 1. The occupation of the participant in the study student were 28.2%, employee was 49.2% and not employed and higher were 22.6% of the total sample as shown in Table 1.

116 (15.08%) of women hear about corticosteroids from their friends or colleagues, from their relatives were 151 (19.64%), from advertising and social media were 197 (25.62%), most of them heard about the corticosteroids from the doctors represents 225 (29.26%) and studies were 10.40% of the total sample. 341 (44.3%) of them used corticosteroids and 428 (55.7%) didn't use corticosteroids. 157 (46%) of women used corticosteroids for cosmetic purpose and 184 (54%) for therapeutic purpose as shown in Figure 1 ( $p < 0.006$ ).

The source of corticosteroids was 69 (44%) by prescription, 67 (42.9%) was without a prescription, 14

(9%) was from beauty centres and 7 (4.1%) was from websites as shown in Figure 2 ( $p < 0.029$ ).

The majority of using corticosteroids was for bleaching 108 (68.9%) while the rest was for reduce wrinkles which represents 17 (11%) and for getting an extended face represents 11 (6.9%) and repair damaged hair represents 10 (6.4%), allergy 2 (1.1%), for acne (face pills) 2 (1.4%), therapy 2 (1.3%), for the freshness of skin 1 (0.7%), after laser 2 (1.2%) and to reduce infection 2 (1.1%) ( $p < 0.001$ ) as shown in Figure 3.

The uses of mixed corticosteroids represent 93 (59%) and alone 64 (41%). Most of the women who were using CS were knowing that the products are containing CS, which represent 190 (55.8%). While 92 (27%) of women not know about their cream content, the rest said that probably contained CS ( $p < 0.025$ ) as shown in Figure 4.

**Table 2: Misuse of corticosteroids and participant.**

Question	Categories	Gender Town%	Village%	P value*
<b>Where did you hear about cortisone?</b>	Girlfriend or colleague	30.2	69.8	0.006
	Relatives	20.4	79.6	
	Advertising and social media	17.6	82.4	
	The doctor	25.2	74.8	
	studying	12.4	87.6	
<b>Have you used cortisone before?</b>	Yes	21.5	79.5	0.000
	No	14.3	85.7	
<b>What is the reason for your use of cortisone?</b>	Cosmetic	87.2	12.8	0.006
	Therapeutic	80.7	19.3	
<b>If it's cosmetic, what's the source you got?</b>	By prescription	19.4	80.6	0.029
	From a pharmacy without a prescription	22.9	77.1	
	Beauty centers	17.4	82.6	
	Websites	22.5	77.5	
<b>Did you know that the product you are using (like cream or other) of cortisone content?</b>	Yes	18.2	81.8	0.025
	No	17.6	82.4	
	Probably	21.4	78.6	
<b>What type / form of cortisone?</b>	Cream	18.6	81.4	0.037
	Pills	19.5	80.5	
	Injection	24.6	75.4	
	Sprayer	22.5	77.5	
	Cream and cereals	22.9	77.1	
	Others	24.3	75.7	
<b>What is the period used for Cortisone?</b>	Less than three months	22.9	77.1	0.004
	three months	24.3	75.7	
	More than three months	26.3	73.7	
<b>Did you take cortisone even after the treatment?</b>	Yes, for one to three months	23.9	76.1	0.029
	Yes, for more than four months	25.1	74.9	
	No	19.7	80.3	
<b>Do you expect that the use of cortisone without prescription is correct?</b>	Yes	22.9	77.1	0.019
	No	21.4	78.6	
	Probably	22.9	77.1	
<b>Do you have knowledge of the effects of cortisone?</b>	Yes	19.5	80.5	0.009
	No	13.4	86.6	

The sample of the study was divided into six categories according to the form of corticosteroids used, cream was 75.3%, pills was 13.9%, injection was 5.5%, sprayer was 4.2%, cream and pills was 0.2% and others was 0.9% of the total sample. The period of CS using was less than three months were used by 228 (67%) of women, more than three months with 64 (18.6) women and within three months were used by 49 (14.3) women ( $p < 0.037$ ) as shown in Figure 5.

What if the problem recurs, will you use corticosteroids again? No, 175 (51.3%) of total cosmetic users said, 105 (30.7%) women said yes and the rest 61 (18%) said probably. 38 (11.2%) of women were continuing to use CS even after the finishing the treatment period for one to three months, 32 (9.4%) of women were continuing to use CS even after the finish the treatment period for more than four months, while the majority didn't.

The sample of the study was divided into two categories, yes was 26.4 % of the total sample and No was 73.6 % of the total sample according to experience of side effects as shown in Figure 6 ( $p < 0.05$ ).

The sample of the study was divided into three categories, yes was 9.8%, no was 84.4 % and probably was 5.9 % of the total sample according to the uses of corticosteroids without prescription as shown in Figure 7 ( $p < 0.019$ ).

The sample of the study was divided into three categories, yes was 34.5%, no was 42.8% and probably was 22.8 % of the total sample according to consider of skin blemishes a strong motivation to use corticosteroids as shown in Figure 8 ( $p < 0.019$ ).

## DISCUSSION

Topical corticosteroids are one of the oldest and commonly prescribed treatments for cutaneous disorders. The first topical steroid introduced was hydrocortisone in 1951, probably, since then they have been misused by patients/clients and medical practitioners.<sup>7</sup> Due to its varied mode of action, topical steroids has been a cornerstone in the treatment of a few facial dermatoses. Since topical steroids are widely and easily available over the counters, recommended by relatives, friends, colleagues and social media.

The reasons to use topical steroids were similar to reasons described in other communities. In our study, the main purpose to use steroids is for bleaching was (68.9%) and this is similar to the results (65.7%) found by and also by where it was used as fairness/general purpose or as after shave in (29%) of patients.<sup>8,9</sup>

In our study, (44%) women who had used the steroid had received the prescription from a doctor this matches the

result found by who found that (55.7%) of the patients had received the recommendation from a doctor and this different with the result (35.36%) by pharmacists found by and by the result that (55.5%) of cases by friends.<sup>9-11</sup>

In our study, the majority of women applied topical steroids for less than three months' durations (67%) and this is in agreement with the finding that (48.91%) for 1 week to 1 month.<sup>2</sup> In addition to that in other study the majority applied topical steroids was (46.3%) for 6 to 12 months.<sup>12</sup>

There are many side effects of topical cortisone which ranging from mild to severe effects. The side effects of topical cortisone were experienced by 90 (26.4%) in our study. A clinical study in India shows that acne and plethoric, puffy face with telangiectasia (steroid face) were the most common adverse effects noted.<sup>10</sup> The loss of connective tissue support for dermal vasculature results in erythema, telangiectasia, and purpura.<sup>13</sup> Systemic side effects like adrenal axis suppression, diabetes, hypertension etc. following topical application are reported only if applied to larger areas as in other diseases are rare with use on face.<sup>14</sup> Allergic dermatitis to TCS are reported.<sup>15</sup>

(63.7%) of women in our study was ware of adverse effects of topical steroids and this in contrary with another study, the majority (98.37%) of patients were unaware of adverse effects of topical steroids.<sup>2</sup>

## CONCLUSION

Misuse of topical corticosteroids is widely spread among women in Hail city, and this due to various reasons, the most important of which is to get bleaching and get rid of skin blemishes, also the awareness of the women in all ages are very low, most of them use it without medical prescriptions and that is why most of them suffered from the side effects.

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*Ethical approval: The study was approved by the Institutional Ethics Committee*

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