

# Awareness and Knowledge about Tropical Steroid among Population in Arar, Saudi Arabia

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## ABSTRACT

**Aim** To investigate the awareness and attitude among the general population regarding TS in Arar city, Northern Border Province, Saudi Arabia.

**Methods:** Cross sectional questionnaire study was designed and distributed randomly in WhatsApp and Facebook groups in Arar.

**Results:** Four hundred participants [252 (63%) females and 148 (37%) males] have participated in the study with age range from 16-62 years. Among participants 96 persons (24%) had reported previous use for TS. Topical steroids were mainly used for dermatological diseases; acne and eczema (among 27.1% and 22.9% of the participants, respectively). Sixty-six of participant who reported TS use [66/96 (68.25%)] revealed that their use of TS was following a medical prescription. Awareness questions revealed that, acne was the most known side effect among participants (reported by 74.5%), while Only 8 participants (2%) have thought that TS may have systemic side effects. The awareness level is significantly affected by their gender, ages, educational levels and professions (p-values 0.0009, 0.0005, <0.0001, <0.0001, respectively). Regarding the concept of participants about the safety of TS, 228 (57%) participant reported that TS are unsafe due to the local skin complications and systemic absorption. The remaining believe that TS are safe specially if used under medical supervision.

**Conclusion:** The pattern of use of TC in Arar is generally accepted as they are mostly used after prescription, while most participants were unaware about the risk of systemic effects of TS. Hence, more education programs are recommended about TS side effects.

**Keywords:** Steroids, Topical steroids, Over the counter drugs, eczema, dermatitis.

## INTRODUCTION

Corticosteroids are naturally produced steroid hormones in the adrenal cortex of vertebrates<sup>1</sup>. They are classified into two major which are known as glucocorticoids and mineralocorticoids, with a wide range of physiological processes<sup>2</sup>. They are essential for stress response, response, inflammation, and metabolism<sup>3</sup>. Synthetic steroid drugs have corticosteroid-like effects with a very wide range of therapeutic uses which extend from serious brain tumors to the simplest skin diseases including many inflammatory, allergic, immunologic, and malignant disorders<sup>4,5</sup>.

Corticosteroid drugs are administered by different routes including inhalation, oral use, injections and topical preparations<sup>1</sup>. Systemic steroids are highly effective, but their use was accompanied with multiple side effects especially with their chronic repeated long therapeutic courses. Adverse effects of steroids include hyperglycaemia, hypertension, osteoporosis, cataract, muscle weakness and neuropsychiatric manifestations<sup>6,7</sup>.

Topical steroids (TS) are the topical preparations of steroids which are the most widely prescribed medications for rash, eczema, and dermatitis. Different topical steroid products<sup>8</sup>. Are available with different efficacy in their anti-inflammatory properties, concentrations, bases and prices. Topical use of steroids was considered a major advantage as it was expected to get the beneficial therapeutic effect with lower incidence of the systemic side effects<sup>9</sup>. However local and systemic

adverse effects was reported with these topical preparations as topical steroid damaged facies (TSDF) including acne, skin atrophy, steroid rosacea, telangiectasia, and perioral dermatitis. Systemic effects are mainly reported among children due to their thin skin and more systemic absorption with the topical use<sup>10,11</sup>.

Regarding TS, two major problems were raised. Firstly, their abuse and misuse among the public as a magic treatment for the different forms of the medical complains. Even They were considered by some users as fairness or cosmetic creams<sup>12,13</sup>. Secondly, lack of awareness of the public that they may be serious as the systemic steroids. Hence the idea of this work was conducted to investigate the awareness among the general population regarding the topical steroids and their hazards in Arar city, Northern Border Province, Saudi Arabia.

## METHODOLOGY

A cross-sectional study was conducted to evaluate awareness of Arar city general population about the topical steroids. Mobile based questionnaire was designed and distributed randomly via links in different social WhatsApp and Facebook groups for Arar habitants in October 2018.

Our questionnaire was composed of four parts. The first part collected the demographic data of the participants including, age, gender, educational level and employment. While the second part was designed to ask whether participant have used steroids before or not and what was the indication? The third part of the study have designed to

evaluate the awareness of the participants regarding the hazards of use and abuse of TS through ten close-ended questions. While the last question was considering the attitude of the participants towards TS whether dangerous or not? The questionnaire was revised and validated by staff members of pharmacology department, Northern Border University. No incentives were given.

**Statistical analysis:** Data was statistically analyzed by GraphPad Prism (GraphPad Software Inc., San Diego, CA). Fisher exact and chi-square were used for the nominal data analysis, while t-test and one-way ANOVA with Post Hoc Tukey's test were used for the numerical data whenever appropriate. A *p*-value of <0.05 was considered statistically significant.

**RESULTS**

Four hundred participants have submitted complete questionnaires and participated in the study. Demographic data of the participants are shown in table (1). Among participants 96 persons (24%) had reported previous used for TS. Age, gender, educational level and type of employment did not show a significant effect on TS use among the participants (figure 1). Topical steroids were used for different medical causes which were mostly dermatological (table 2). Acne was the commonest

indication followed by eczema (among 27.1% and 22.9% of the participants, respectively).

Most of participant who reported TS use [66/96 (68.25%)] revealed that their use of TS was following a medical prescription from the general practitioners of specialized physicians. The remaining have used steroids after a recommendation from pharmacists, relatives or friends.

Regarding awareness about TC side effects among the participants, acne was the most known side effect among participants as it was reported by 74.5% of the participants, while hair folliculitis was the least common dermatological side effects (9.25%). Only 8 participants (2%) have thought that TS may have systemic side effects. (Table 3). The awareness of the participants about TS side effects is significantly affected by their gender, ages, educational levels and professions (*p*-values 0.0009, 0.0005, <0.0001, <0.0001, respectively).

Regarding the concept of participants about the safety of TS, 228 (57%) participant reported that TS are unsafe their main causes were the local skin complications [204 participants (51%)]. While some reported that TS are unsafe due to their own fears from all hormonal medications [24 participants (6%)]. On the other hand, 172 participants (43%) have reported that it is safe as they are topical specially if they are used after prescriptions and for short courses.

Table 1. Demographic data of the participants

Ages	Gender		Education		Employment		Total
	Male	Females	Low	High	Medical	Non-medical	
<20 years	18 (4.5%)	38 (9.5%)	40(10%)	16(4%)	32(8%)	24(6%)	56(14%)
20-29 years	68 (17%)	98 (24.5%)	34 (8.5%)	132(33%)	68(17%)	98(24.5%)	166(41.5%)
30-39 years	28 (7%)	62 (13%)	16 (4%)	74(18.5%)	9(2.25%)	81(20.25)	90(22.5%)
≥ 40 years	34 (8.5%)	54 (16%)	21 (5.25%)	67(16.75)	6(1.5%)	82(20.5%)	88(22%)
Totals	148 (37%)	252 (63%)	111(27.75%)	289 (72.25%)	115(28.75%)	285(71.25%)	400(100%)

Figure 1: The effect of age, gender, educational levels, and type of employment on the pattern of use of topical steroids.

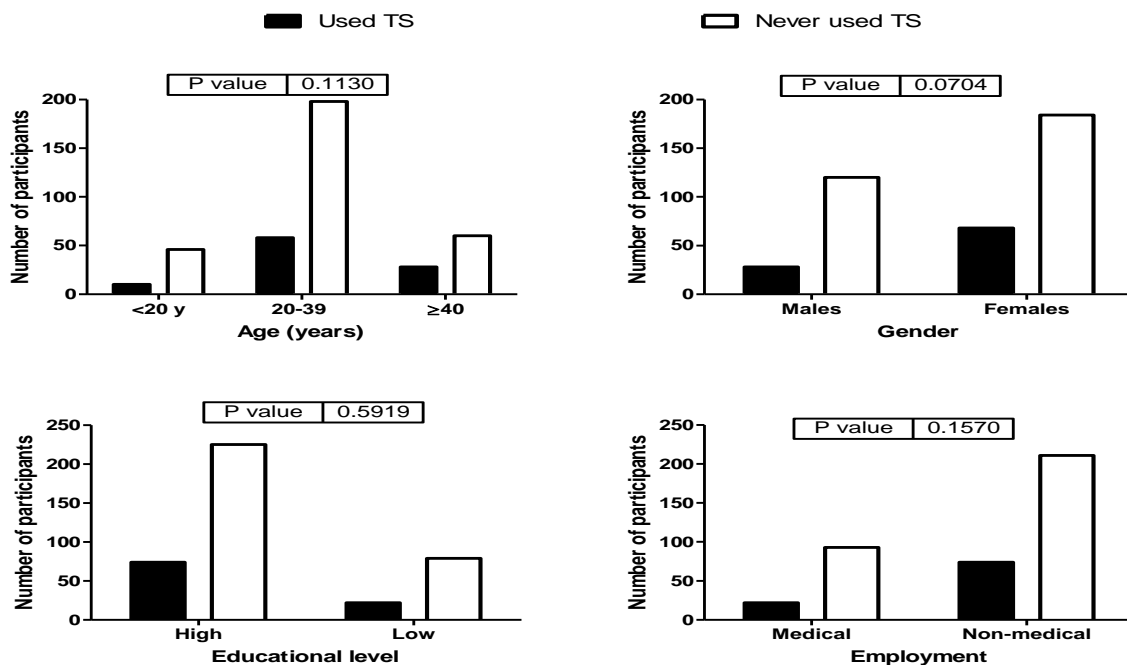


Table 2. Indications to use topical steroids among participants.

Medical indications	n	%age
Acne	26	27.1
Allergy	12	12.5
Arthritis pain	5	5.2
Eczema	22	22.9
Itching	11	11.4
Planter warts	5	5.2
psoriasis	6	6.25
Trauma	6	6.25
Undetermined	3	3.15
Total	96	100%

Table 3. Awareness about the side effects of topical steroids among participants

Side effect	Known by	Gender		Age			Educational level		Profession	
		Males	Females	<20	20-39	≥40	high	Low	Medical	Non-medical
Acne	298 (74.5)	142 (95.9%)	156 (61.9%)	44 (78.6%)	177 (69%)	77 (87.5%)	100 (90%)	198 (68.5%)	102 (88.6%)	196 (68.8%)
Bacterial and fungal infections	169 (42.25)	84 (56.8%)	85 (33.7%)	38 (67.8%)	89 (34.8%)	42 (47.4%)	94 (84.6%)	75 (25.9%)	101 (87.8%)	68 (23.8%)
Fixed vasodilatation	123 (30.75)	50 (33.8%)	73 (28.9%)	24 (42.8%)	65 (25.4%)	34 (938.6%)	89 (80.1%)	34 (11.7%)	92 (80%)	31 (10.8%)
hirsutism	49 (12.25)	17 (11.5%)	32 (12.6%)	7 (12.5%)	18 (7%)	24 (27.3%)	41 (36.9%)	8 (2.8%)	33 (28.7%)	16 (5.6%)
Photosensitivity	102 (25.5)	40 (27%)	62 (24.6%)	21 (37.5%)	42 (16.4%)	39 (44.3%)	74 (66.6%)	28 (9.6%)	85 (73.9%)	17 (5.9%)
Purpura	56 (14)	15 (10%)	41 (16.3%)	15 (26.8%)	29 (11.3%)	12 (13.6%)	31 (27.9%)	25 (8.9%)	32 (27.8%)	24 (8.4%)
Skin atrophy	143 (35.75)	54 (36.5%)	89 (35.3%)	31 (55.3%)	72 (28.1%)	40 (45.4%)	91 (81.9%)	52 (17.9%)	79 (68.6%)	64 (22.5%)
Skin folliculitis	37 (9.25)	16 (10.8%)	21 (8.3%)	5 (8.9%)	18 (7%)	14 (15.9%)	21(18.9%)	16 (5.5%)	19 (16.5%)	18 (6.3%)
Skin pigmentation	201 (50.25)	63 (42.6%)	138 (54.8%)	48 (85.7%)	102 (39.8%)	51 (57.9%)	146 (90.9%)	55 (34.6%)	98 (85.2%)	103 (36.1%)
Systemic effects	8(2)	3 (2%)	5 (1.9%)	1 (1.7%)	6 (2.3%)	1 (1.1%)	6 (5.4%)	2 (0.7%)	7 (6%)	1(0.35%)
I do not know	16(4)	11(7.4%)	5(1.9%)	9 (16%)	3 (1.2%)	4 (4.5%)	7(6.3%)	9 (3.1%)	1 (0.9%)	15(5.3%)
P-value		P=0.0009*** X <sup>2</sup> =29.89, 10		P=0.0005*** X <sup>2</sup> =47.78, 20			P=<0.0001**** X <sup>2</sup> =128.2, 10		P=<0.0001**** X <sup>2</sup> =130.4, 10	

## DISCUSSION

The current study had conducted to evaluate the awareness among the general population of Arar about TS. Four hundred participants [252 (63%) females and 148 (37%) males] have participated in the study with age range from 16-62 years. Among participants 96 persons (24%) had reported previous used for TS. Topical steroids were mainly used for dermatological diseases; acne and eczema (among 27.1% and 22.9% of the participants, respectively). Sixty- six of participant who reported TS use [66/96 (68.25%)] revealed that their use of TS was following a medical prescription. Awareness questions revealed that, acne was the most known side effect among participants (reported by 74.5%), while Only 8 participants (2%) have thought that TS may have systemic side effects. Regarding the concept of participants about the safety of TS, 228 (57%) participant reported that TS are unsafe due to the local skin complications and systemic absorption. The remaining believe that TS are safe specially if used under medical supervision.

Most of applications of TS in the studied population were due to dermatological disease. This is in accordance with the previous data as TS were reported to be the most commonly used medication in dermatology worldwide<sup>14-16</sup>.

Acne was the commonest cause followed by eczema which is in line with other studies from India<sup>9, 17</sup>, and Iraq<sup>18</sup>.

Around 69% of TS users in the current study had used them after a medical prescription and under a medical supervision. This percent is higher than what was reported by other studies as Saraswat *et al.* (2011)<sup>9</sup> and Nagesh and Akhilesh (2016)<sup>17</sup> who reported that only about 40 % and 50% of their studies participants, respectively, had a medical prescriptions for the used TS<sup>9, 17</sup>.

Awareness questions revealed that, skin side effects were the most known side effect among participants while Only 2% have thought that TS may have systemic side effects. The participants' answers are going with the reported incidence of the TS complications<sup>19,20</sup>. These findings showed that these participants awareness regarding TS side effects is mainly based on their personal experience or observations. Hence, the level of awareness among females as females are more interest with the skin care and diseases which is essential for their beauty<sup>21</sup>. Also awareness level is higher among participants about 40 years' age. As by years they are more likely to use TS for various indications as well as their personal and friends experience is gained and improved by aging<sup>22</sup>. Also higher

level of awareness is expected with higher level of education and medical health care staff<sup>23</sup>.

Although the majority of the participants did not know about the possibility of systemic complications of TS, 57% of them reported that TS are unsafe. This may be explained by the general concept among the public that any hormonal therapy must be taken caution. Also skin complications were sufficient to a big proportion of the participant to consider TS as unsafe. The remaining believe that TS are safe specially if used after a medical prescription and under medical supervision.

## CONCLUSION

Topical steroids are widely used medications, mainly for dermatological diseases. In Arar, TS are mainly used following medical prescription. People are mostly aware that TS can cause skin complications. However systemic side effects are not known to the public. TS are mostly considered unsafe by about 60% of the population and the remaining reported it is safe is used under medical supervision. Degree of awareness and pattern of use of TS is generally accepted in Arar, but mostly it is based on personal experience and observations. Hence educational programs are recommended and it should target the public. These programs should be based on General practitioners and pharmacists who are often the first point of contact between most patients and TS.

**Conflict of interest:** No conflict of interest

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