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The misuse of topical creams among females in Saudi Arabia 2020

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ABSTRACT

Background: Topical creams (TC) are agents used for the skin to treat many problems such as; wrinkles, acne, blemishes and much more. They are used commonly worldwide mostly among females but there are a few studies that concentrated on the severity of overusing or misusing these agents. *Objective:* This study aimed to measure the knowledge of females towards the usage of topical creams. *Methods:* A self-administered questionnaire was distributed among females in Saudi Arabia. The data were collected using Google forms and all statistical analyses were performed using SPSS version 21. *Results:* The most commonly misused TC was intended for acne (69.7%). More than one third (34.7%), bought TC due to the influence of social media. The knowledge of women regarding side effects and contraindications were found among 65.7%. *Conclusion:* Although there was a moderate knowledge regarding the side effects and contraindications of TC however, the misuse of topical facial cream and the influence of social media in buying TC were evidently clear in this study. Women who were using TC for the treatment of acne had better outlook than the others.

Keywords: Topical cream, misuse, females, side effects, Saudi Arabia

1. INTRODUCTION

Topical facial creams are agents used for the skin to treat many problems such as wrinkles, acne, blemishes, and much more. They are used commonly worldwide, mostly among females, especially in India and Africa, but there are a few studies that concentrated on the severity of overusing or misusing these agents (Thomas et al., 2020). Topical creams are widely available in pharmacies around Saudi Arabia. They are prone to misuse without the dermatologist's prescription, which increases the side effects due to the lack of awareness about the contraindications and side effects (Dey, 2014). Females around the country use topical creams following the misconception that they give magical fairness and an anti-acne effect (Zakaria et al., 2010; Khalifa et al. 2021). The benefit of this investigation is to try to increase awareness about the use of topical facial creams and their side effects among females. Not only this but also to know the commonly used creams and for what reason. Moreover,

if there is a need to implement a health program to restrict these creams' selling in the pharmacies without prescriptions. There are a high number of cases using unprescribed topical creams. Furthermore, the female's awareness about the contraindications and side effects is low. This study proposes that there'll be an evident decrease in side effects if females are more aware of the contraindications. In this study, we are aiming to measure the knowledge of females towards the usage of topical creams.

2. MATERIALS AND METHODS

The study area was Saudi Arabia. The duration of this study was 4 months from July to October 2020. The sample in this study considered 803 females randomly selected in KSA. The samples contained females around KSA ranging the age from 15-50 years old. All participants voluntarily participated in this study. The data was collected by an online Google form survey and distributed to females around Saudi Arabia. Self-administered, pre-coded, pre-tested online questionnaires devolved mainly for this study after consultation from literature and an epidemiologist containing data pertaining to (age group, marital status, place of residence, educational level, current job, monthly income, and social media effect) this questionnaire will be subjected to test for validity and reliability. Research's main outcome is to measure the knowledge of females towards the usage of topical cream. The questionnaire will be online distributed among 803 females in KSA. Four demographic questions were asked: age group, marital status, place of residence, and educational level. Then nine questions will be added to measure females' attitude and awareness towards the use of topical creams. If six or more questions were answered as yes, then the outcome of our study is negative, and if six or more questions were answered as no, then the outcome of our research is positive. The data was collected by research conductors: developing a Google form questionnaire that was sent to females around Saudi Arabia. They answered until we attained an appropriate response rate, and then we analyzed the data. Descriptive statistics are elaborated using counts and proportions (%). The relationship between the knowledge about tropical cream side effects among the socio-demographic, TC usage, and social media influence had been conducted using Chi-square test. A multivariate regression analysis was also performed to determine the independent significant factor associated with the knowledge toward side effect and contraindication of using TC. P-value of <0.05 was considered as the significance level for all statistical tests. All statistical analyses were carried out using Statistical Packages for Software Sciences (SPSS) version 21 Armonk, New York, IBM Corporation. The permission was taken from the participating females to participate by answering the questionnaire. Data will be used only for the purpose of the study, confidentiality and privacy will be maintained.

Statistical Analysis

Descriptive statistics are elaborated using counts and proportions (%). The relationship between the knowledge about tropical cream side effects among the socio-demographic, TC usage, and social media influence had been conducted using the Chi-square test. A multivariate regression analysis was also performed to determine the independent significant factor associated with the knowledge toward side effect and contraindication of using TC. P-value of <0.05 was considered as the significance level for all statistical tests. All statistical analyses were carried out using Statistical Packages for Software Sciences (SPSS) version 21 Armonk, New York, IBM Corporation.

3. RESULTS

Of the 804 women we approached, 277 were not using over the counter TC and had been excluded from the study. The remaining 577 were representatives of our study population, giving an overall response rate of 71.8%. Table 1 presented the socio-demographic characteristics of 577 women. The most common age group was 21 – 25 years (30.7%) with more than half were single (54.9%). Furthermore, the most frequently mentioned region was Central region (47.1%) and Eastern region (28.4%). With respect to their education, the majority of them had a university degree (72.8%), with 40.4% were students while more than a half (51.8%) were less earners (<3000 SAR per month). The most common age group when they started using TC was 15 – 20 years old (55.3%) (Table 1).

Table 1 Socio demographic characteristics of women (n=577)

Study variables	N (%)
Age group in years	
15 – 20 years	109 (18.9%)

21 – 25 years	177 (30.7%)
26 – 30 years	73 (12.7%)
31 – 35 years	63 (10.9%)
36 – 40 years	47 (08.1%)
41 – 45 years	46 (08.0%)
46 – 50 years	24 (04.2%)
>50 years	38 (06.6%)
Marital status	
Single	317 (54.9%)
Married	232 (40.2%)
Divorced or widowed	28 (04.9%)
Residence region	
Central region	272 (47.1%)
Southern region	32 (05.5%)
Northern region	(03.1%)
Eastern region	164 (28.4%)
Western region	91 (15.8%)
Educational level	
Primary	02 (0.30%)
Intermediate	10 (01.7%)
Secondary	127 (22.0%)
University degree	420 (72.8%)
Postgraduate	18 (03.1%)
Occupational status	
Student	233 (40.4%)
Business profession	72 (12.5%)
Medical profession	48 (08.3%)
Social worker	16 (02.8%)
Unemployed	(27.6%)
Others	49 (08.5%)
Monthly income (SAR)	
<3,000	299 (51.8%)
3,000 – 5,000	71 (12.3%)
5,001 – 7,000	(06.1%)

7,001 – 10,000	61 (10.6%)
10,001 – 15,000	57 (09.9%)
>15,000	54 (09.4%)
Age when first started using topical creams	
15 - 20 years	319 (55.3%)
21 - 25 years	136 (23.6%)
26 - 30 years	56 (09.7%)
31 - 35 years	26 (04.5%)
36 - 40 years	18 (03.1%)
41 - 45 years	11 (01.9%)
46 - 50 years	(01.4%)
>50 years	03 (0.50%)

Table 2 and figure 1 showed the assessment of TC usage, its side effect, and social media's influence in using TC. Following the results, it was found that the proportion of women who were using TC for wrinkles, dark circles, whitening, acne, and burn scars were 11.1%, 34%, 47%, and 69.7%. Furthermore, nearly two-thirds of them (65.7%) reported knowing the side effects and contraindications of TC, while 27.9% indicated that they experienced a bad effect after using TC without counseling a doctor. We also noted that 34.7% had chosen the TC because of an influencer on social media, while 47.7% reported that social media affects their decision to buy TC (Table 2). It presented the Chi-square test for the relationship between the knowledge about the side effects and different variables representing socio-demographic characteristics. Based on the results, the knowledge about side effects significantly influenced age group in years ($X2=17.410$; $p=0.001$) and educational level ($X2=8.600$; $p=0.003$) while other variables did not ($p>0.001$) (Table 3). The knowledge about side effects showed a significant relationship with the use of TC for dark circles ($X2=13.360$; $p<0.001$), for whitening ($X2=5.221$; $p=0.022$), for acne ($X2=8.131$; $p=0.004$), choosing specific cream from an influencer in social media ($X2=16.998$; $p<0.001$) and social media impact in buying TC products ($X2=13.122$; $p<0.001$) (Table 4 & figure 2).

Table 2 Assessment of topical cream usage, its side effects and the influence of Social Media among female TC users (n=577)

Statement	Yes (%)
Do you use topical facial creams for wrinkles?	64 (11.1%)
Do you use topical facial creams for dark circles?	196 (34.0%)
Do you use topical facial creams for Whitening?	271 (47.0%)
Do you use topical facial creams for Acne?	402 (69.7%)
Do you use topical facial creams for Burn scars?	192 (33.3%)
Do you know what are the side effects and contra indications of the cream that you use?	379 (65.7%)
Have you noticed any bad effects after using the product without counseling a doctor?	161 (27.9%)
Did you choose this specific cream from an influencer on social media?	200 (34.7%)
Does social media affect your decision of buying products?	275 (47.7%)

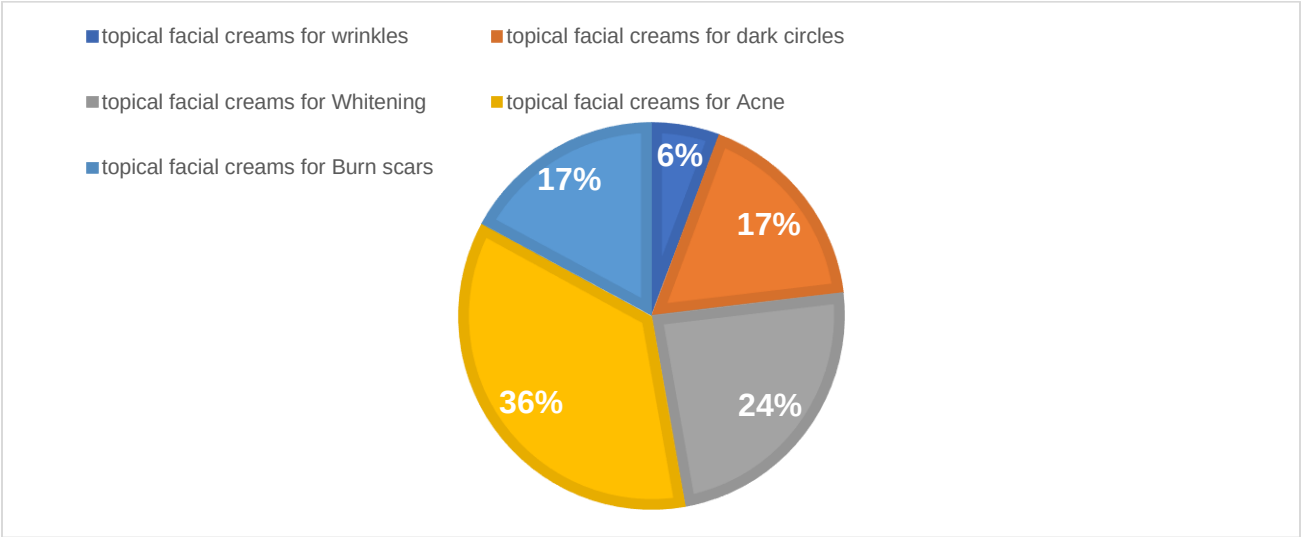

Figure 1 Topical cream usage

Table 3 Relationship between the knowledge about the side effects and contraindications while using TC in relation to the socio demographic characteristics of women (n=307)

Factor	Knowledge about side effects		X2	P-value §
	Yes N (%) (n=379)	No N (%) (n=198)		
Age group				
≤20 years	61 (16.1%)	48 (24.2%)	17.410	0.001 **
21 – 30 years	173 (45.6%)	77 (38.9%)		
31 – 40 years	85 (22.4%)	(12.6%)		
>40 years	60 (15.8%)	48 (24.2%)		
Marital status				
Never been married	200 (52.8%)	117 (59.1%)	2.099	0.147
Been married	179 (47.2%)	81 (40.9%)		
Residence region				
Inside Central region	179 (47.2%)	93 (47.0%)	0.004	0.953
Outside Central region	200 (52.8%)	105 (53.0%)		
Educational level				
Secondary or below	77 (20.3%)	62 (31.3%)	8.600	0.003 **
University of higher	302 (79.7%)	136 (68.7%)		

Occupational status				
Student	149 (39.3%)	84 (42.4%)	5.396	0.067
Employed	114 (30.1%)	(35.9%)		
Unemployed	116 (30.6%)	43 (21.7%)		
Monthly income (SAR)				
<3,000	189 (49.9%)	110 (55.6%)	1.685	0.194
≥3,000	190 (50.1%)	88 (44.4%)		
Age when first started using topical creams				
≤20 years	202 (53.3%)	117 (59.1%)	1.765	0.184
>20 years	177 (46.7%)	81 (40.9%)		

§ P-value has been calculated using Chi-square test.

** Significant at p<0.05 level.

Table 4 Relationship between the knowledge toward the side effects and contraindications in regard to the tropical cream usage and the influence of social media among female TC users (n=577)

Factors	Knowledge about side effects		X2	P-value §
	Yes N (%) (n=379)	No N (%) (n=198)		
Use of topical facial creams for wrinkles	38 (10.0%)	26 (13.1%)	1.271	0.260
Use of topical facial creams for dark circles	109 (28.8%)	87 (43.9%)	13.360	<0.001 **
Use of topical facial creams for Whitening	165 (43.5%)	106 (53.5%)	5.221	0.022 **
Use of topical facial creams for Acne	279 (73.6%)	123 (62.1%)	8.131	0.004 **
Use of topical facial creams for Burn scars	123 (32.5%)	69 (34.8%)	0.336	0.562
Experienced bad effects after using the product	98 (25.9%)	63 (31.8%)	2.297	0.130
Choosing specific cream from an influencer	109 (28.8%)	91 (46.0%)	16.998	<0.001 **
Social media effect on buying TC products	160 (42.2%)	115 (58.1%)	13.122	<0.001 **

§ P-value has been calculated using Chi-square test.

** Significant at p<0.05 level.

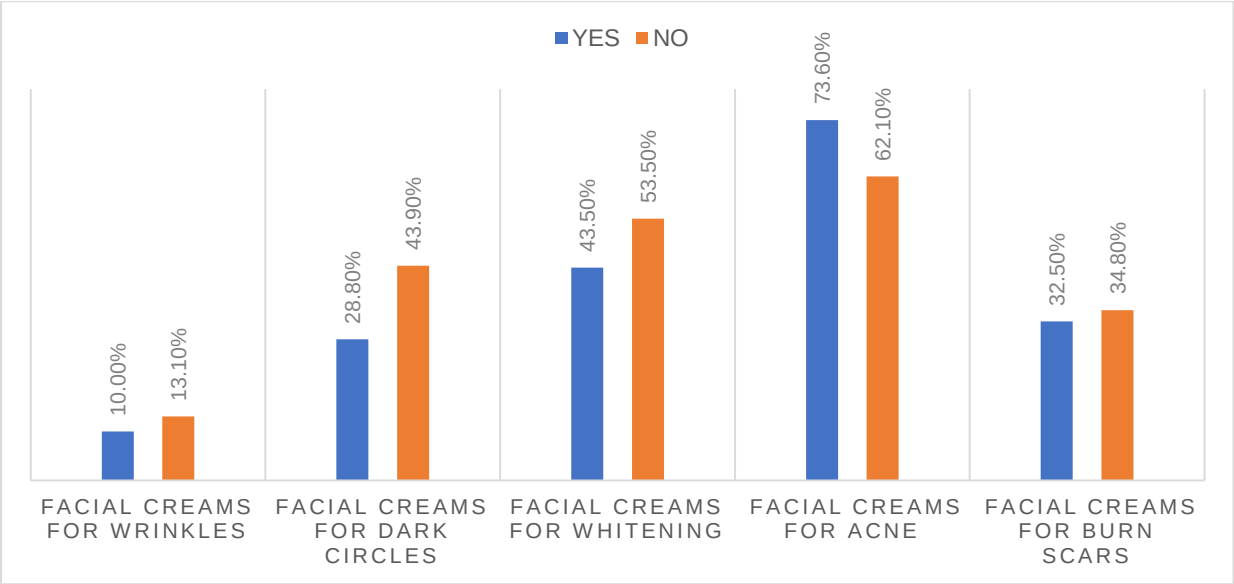

Figure 2 Relationship between the knowledge toward the side effects and contraindications in regard to the tropical cream usage

When conducting multivariate regression analysis to determine the independent significant factor associated with the knowledge toward the side effect of TC, it was found that participants who were more than 40 years old were more associated with the decrease in knowledge toward TC side effect (AOR=0.413; 95%CI=0.274 – 0.962; p=0.038). We also observed that participants who were using TC for acne were 1.738 times more likely to have increase knowledge than those who were not (AOR=1.738; 95% CI=1.123 – 2690; p=0.013) while the knowledge of women in choosing specific cream because of social media influencer (AOR=0.619; 95% CI=0.414 – 0.925; p=0.019) and those who had been affected by the social media on buying TC products (AOR=0.627; 95% CI=0.426 – 0.924; p=0.081) was significantly more likely to have a decreased knowledge toward the side effects of TC (Table 5).

Table 5 Multivariate regression analysis to determine the independent significant factor associated with the knowledge toward the side effects and contraindications in using TC (n=577)

Factor	AOR	95% CI	P-value
Age group			
≤20 years	Ref		
21 – 30 years	1.335	0.715 – 2.492	0.364
31 – 40 years	0.835	0.481 – 1.451	0.523
>40 years	0.513	0.274 – 0.962	0.038 **
Educational level			
Secondary or below	Ref		
University of higher	1.429	0.920 – 2.218	0.112
Use of topical facial creams for dark circles			
Yes	0.735	0.494 – 1.093	0.129
No	Ref		
Use of topical facial creams for Whitening			
Yes	0.746	0.510 – 1.089	0.129

No	Ref		
Use of topical facial creams for Acne			
Yes	1.738	1.123 – 2.690	0.013 **
No	Ref		
Choosing specific cream from an influencer			
Yes	0.619	0.414 – 0.925	**
No	Ref		
Social media effect on buying TC products			
Yes	0.627	0.426 – 0.924	**
No	Ref		

AOR – Adjusted Odds Ratio; CI – Confidence Interval; TC – Topical Cream.

** Significant at $p<0.05$ level.

4. DISCUSSION

Topical creams had been one of the foundations in the remedy of few dermatoses. Because it is easy to obtain from over the counter without the needed prescriptions, therefore, addressing misconceptions are very challenging among healthcare professionals, most especially among dermatologists. In most recent years, dermatologists are facing this problem in some parts of the world. Also, even when there is a prescription, the risk of some TC users taking TC for a longer period is inevitable, leading to potential adverse effects among patients who were using it. Many studies have investigated the misuse and the side effects of TC among its users, specifically in India and in Saudi Arabia. In this study, we aimed to investigate further women's misconceptions about TC and social media's role among its users. The results revealed that the most commonly known misuse of women in using TC was for the treatment of acne (69.7%), followed by using it for whitening (47%) and for dark circles (34%). Several papers documented that most TC users were using TC either to treat acne or for fair complexion. Other works of literature mentioned that some patients were used TC for the treatment of melisma.

More than one-third of women (34.7%) in this study chosen to buy specific cream because of social media influenced, and nearly half of them (47.7%) declared that buying TC had been persuaded mainly by the internet, which suggested that the information taken by the women in using TC could be due to the influenced of social media either by advertisement or by reading the websites. There were conflicting reports with regards to the source of information in buying over the counter TC. For example, Jha et al., (2016) documented that patients were using topical corticosteroids by their self-knowledge and by the information given by their friends or their close family member. This is in accordance with the paper of Chohan et al., (2014) which indicated that among 200 patients with steroidal rosacea, their source of information regarding topical steroids was mostly coming from friends, relatives, and peers; only 16% reported that it came from healthcare practitioners. In Saudi Arabia, relatives and friends were also the most frequently mentioned source of information among women residing in Hail, and Jeddah, Saudi Arabia. However, this did not coincide with that of AlAfnan et al., (2019) as nearly 30% of women relied on their information about topical corticosteroids from the doctors.

Several papers reported that young people as early as ten years old up to 29 years old were the most common TC users. This report is consistent with our findings as nearly half (49.6%) of women in the age group of 15 – 25 years old were the most well-known TC users. As previously mentioned, these young people's reason for using TC was mostly due to treat acne or to have a fair skin complexion. This is quite alarming as the misconception toward TC could largely found in this group of women, which could lead to adverse effects for some of its users due to lack of information about the proper application of TC. Therefore, a physician or dermatologist consultation is necessary to obtain appropriate advice and prescription.

The knowledge about the side effects and contraindications is necessary to prevent the misconception of TC. In this study, nearly two-thirds (65.7%) of women reported having enough knowledge about the side effects of TC, and the rest were not aware of it (34.3%). The knowledge of women in this study was higher than that of Al-Dhalimi and Aljawahiry (2006). They reported that

patients' knowledge regarding the adverse effects of topical corticosteroids was detected among 26.4%. On the other hand, studies reported in Saudi Arabia and India indicated that most respondents were observed to have a low level of knowledge regarding its harmful effect, which was not consistent with our report.

Moreover, we also noted that increasing age was associated with the decrease in knowledge while choosing specific cream because of an influencer, and those who get affected by the social media on buying TC products had a negative effect on knowledge. On the contrary, the use of TC for acne treatment exhibited a positive impact on knowledge toward its side effect. Investigations on this type of association were not widely prevalent among studies and specifically in Saudi Arabia. Although there was one study published in the Hail region, Saudi Arabia indicated that the side effect experienced during use of the cream was significantly associated with frequent use. There were no other literatures that explain the association between the knowledge about the adverse effect and some of TC users' characteristics. Thus, more investigations are needed to examine the impact of having a better understanding about the side effect among other related characteristics of TC users.

5. CONCLUSIONS

Although there was moderate knowledge regarding the side effects and contraindications of TC however, the misuse of topical facial cream and social media's influence in buying TC was evidently clear in this study. Women who were using TC for the treatment of acne had a better outlook than the others. There is a need to educate women regarding the risk of buying over the counter topical facial cream. The education should be focusing more on the side effect and contraindications of using it without proper prescriptions. Proper consultation is needed to obtain the precise medication, and dosage and women should not be affected nor not be influenced by social media to buy over-the-counter topical facial creams.

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Author Contributions

Under supervision and guidance of Dr.Walid A Alghamdi and leadership of Medical student Nouf A Khalifah, authors Nouf A Khalifah, Hotoon S Al Shammari, Fatimah A Althamin, Batool A Althamin, Haneen H Alsultan all participated equally in Proposal writing, literature review writing, Introduction writing, Questionnaire writing, Manuscript (abstract) writing, Discussion and conclusion writing.

Ethical approval

This study was approved by the Local Research and Ethics Committee board of AlMaarefa University (ethical approval code: 3/201).

Conflicts of interest

The authors declare that they have no conflict of interest.

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Data and materials availability

All data associated with this study are present in the paper.

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