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KNOWLEDGE AND AWARENESS ABOUT ADVERSE EFFECTS OF TOPICAL STEROIDS: A CROSS SECTIONAL STUDY IN SAUDI ARABIA

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ABSTRACT

Topical steroids (TS) are commonly used anti-inflammatory medications in patients with dermatological conditions, such as eczema and psoriasis. If topical steroids are administered improperly or extensively, serious side effects may result. According to numerous papers conducted, the misuse of topical steroids is a widespread issue worldwide. This study aims to assess the knowledge and awareness level in Saudi Arabia regarding the adverse effects and complications of TS. This study is a cross-sectional study conducted in Saudi Arabia, using an online survey from 2023 to 2024. The questions of the survey analyze the basic knowledge and awareness of the adverse effects of using topical steroids. The study included 461 participants, 69.6% of whom were females. A majority of the respondents have not used topical cortisone, with 59% indicating that they haven't used it. Among those who have used topical cortisone, the most common reason for usage is for eczema and dermatitis, accounting for 49.2% of responses. This is followed by acne at 26.5% and psoriasis at 13.8%. 34.9% of participants had poor knowledge of the adverse effects of topical steroids, 56.4% had moderate knowledge, and only 8.7% had good knowledge. In conclusion, the study shows that the Saudi general population had inadequate knowledge and awareness about the adverse effects of topical steroids. This is a critical issue that needs to be addressed through targeted education and awareness campaigns.

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Introduction

Topical steroid (TS) is an artificial form of the biological corticosteroid, which is synthesized in the adrenal gland, specifically in the cortex [1]. For many skin-related conditions, topical steroids are the primary option of treatment because they efficiently minimize localized symptoms such as inflammation and itching [2]. In dermatology, topical steroids have a wide range of applications [3]. The history of dermatology was permanently altered by Sulzberger who wrote the discovery of topical steroids in 1952. Topical steroids are now the most frequently prescribed medication for a variety of conditions such as

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papulosquamous, inflammatory, and immunologic conditions. In a Bangalore-based investigation, the predominance of topical steroid application reached 61.2% [4]. According to numerous papers conducted in India, China, Nigeria, and Madagascar, the misuse of topical steroids is a widespread issue worldwide [3]. Several studies have been conducted in Saudi Arabia to investigate the level of knowledge and awareness of the various side effects of topical steroids among patients treated with them for various dermatological indications [5, 6]. It has been established that females are more prone to use and misuse these topicals even without a prescription [7]. Though the knowledge and awareness of the specific side effects such as skin inflammation, atrophy, and hyperpigmentation, were limited in this group only 1.6% [8]. However no consistent correlation has been established between the educational level of the patient and the level of knowledge of topical steroid use, there is a small study that states otherwise [6, 9]. Moreover, the age of the patient is found to be negatively correlated with the level of knowledge the patient possesses [10]. The purpose of the study is to evaluate Saudi Arabians' degree of knowledge and awareness of the risks associated with topical steroids. The value of doing this study, as well as determining the information gaps and their relevance, is influenced by several factors:

Impact on People's Health: Abuse and misuse by the general people as a miracle cure for various medical complaints. Some people even saw them as cosmetic or fairness lotions. Public health can benefit from a greater understanding of topical steroids' safe use and associated side effects. The burden on the healthcare system can be reduced, and patients' quality of life can be enhanced, by lowering the incidence of negative consequences brought on by incorrect use [11].

Promoting Evidence-Based Practice: Medical choices should be supported by reliable data and research. By carrying out this study, researchers can add to the body of information concerning Saudi Arabians' degree of understanding of the risks associated with topical steroids. The development of suggestions and actions that are supported by research can then be aided by this knowledge.

Healthcare Implications: For many dermatological diseases, including eczema, psoriasis, and allergic responses, topical steroids are often recommended treatments. Stretch marks, dermatitis brought on by steroids, and skin thinning can all result from their abuse or overuse. Promoting the safe and effective use of these treatments and avoiding avoidable health risks requires an understanding of the population's awareness of these potential side effects [12].

Lack of Complete Information: These topical steroid medications are available in at least a few formulations at every pharmacy. The fact that these pharmaceuticals are being sold without a prescription is due to the medical authorities' insufficient oversight of the medical stores. The general population might not have access to detailed information regarding their possible drawbacks. This study can point up knowledge gaps so that healthcare providers can clear up misunderstandings and give appropriate information [13]. The present study intends to evaluate the Saudi population's awareness and attitude about topical steroids' adverse effects and complications.

Materials and Methods

Study Design

The study is cross-sectional in design. It was conducted in Saudi Arabia, during 2023.

Study Setting: Participants, Recruitment, and Sampling Procedure

This study was conducted via an online survey created by Google Forms. It was distributed among the population of Saudi Arabia in various cities and regions, ages between 18 and 60, including both genders females and males, regardless of education level, occupation, and marital status. The survey was posted on the internet via social media for a while in 2023.

Inclusion and Exclusion Criteria

Inclusion criteria: Patients of either gender in KSA who use topical steroids regardless of the cause were included in this study.

Exclusion criteria: Patients who use other types of corticosteroids were excluded from this study.

Sample Size

Using the Raosoft calculator, the minimum sample size recommended for the study was 377, with a confidence level of 95% and a margin of error of 5%.

Method for Data Collection and Instrument (Data Collection Technique and Tools)

A self-administrated questionnaire was used in this study, it consisted of 24 questions. 4 sections were included (Socio-demographic data, Exposure to topical steroids complications, Understanding and knowledge evaluation about the complications that are caused by topical steroids and Knowledge evaluation about topical steroids). The questionnaire was distributed via social media to the targeted population.

Scoring System

Data scoring will involve quantifying and evaluating the responses gathered from participants regarding their awareness of the adverse effects associated with topical steroids. This process will entail assigning numerical values or codes to various response options or categories within the survey instrument. Each participant's responses will then be transformed into a numerical score, facilitating statistical analysis to reveal patterns, trends, and correlations in the data. The scoring methodology will

encompass Likert scales, where participants rate their awareness on a predefined scale. The subsequent analysis of these scores will provide a comprehensive understanding of the level of awareness about the adverse effects of topical steroids among the Saudi Arabian population, enabling informed conclusions and potential recommendations to enhance awareness and education about this important healthcare issue [14].

Pilot Test

The questionnaire was distributed to 20 people, and they were requested to complete it. This was done to assess the study's viability and simplicity. The results of the pilot study were excluded from the final data of the study.

Analyzes and Entry Method

Data was transferred into the Microsoft Office Excel 2016 Software after being collected using Google Forms. The 28th edition of the Statistical Package of Social Science Software (IBM SPSS Statistics 28) was used to analyze the data.

Results and Discussion

Table 1 showed that in terms of age, the majority of respondents fall within the 21-30 age range, accounting for 41.6% of the total. This is followed by the 51-60 age range, which makes up 18.9% of the respondents. When it comes to gender, the data shows that there are more female respondents (69.6%) than male respondents (30.4%). In terms of location, most respondents are from the East (49%), followed by the West (35.6%). The education level of the respondents varies, with the majority holding a Bachelor's degree (59.2%) and a significant portion having completed high school (18.7%). There are also respondents with postgraduate qualifications (11.9%). In terms of occupation, the data shows a varied distribution with a significant number of students (32.5%) and employees (26.2%) participating in the survey. There are also retired individuals (17.1%), unemployed individuals (15.6%), and those in private jobs (8.5%) represented in the data. The annual income distribution shows that the majority of respondents have an income of less than 5,000 Saudi Riyals (43.8%), with smaller percentages falling into the 5,000-10,000 (20.6%), 11,000-15,000 (14.1%), and over 15,000 (21.5%) income brackets. In terms of marital status, the data shows a fairly even distribution between married (49.2%) and single (47.1%) respondents, with smaller percentages of divorced (2.2%) and widowed (1.5%) individuals. Finally, the place of residence data indicates that the majority of respondents live in civilized cities (92.4%), with a smaller percentage residing in villages or the countryside (7.6%).

Table 1. Sociodemographic characteristics of participants (n=461)

Parameter		No.	Percent
Age	18_20	50	10.8
	21_30	192	41.6
	31_40	60	13.0
	41_50	49	10.6
	51_60	87	18.9
	more than 60	23	5.0
Gender	Male	140	30.4
	Female	321	69.6
Location	East	226	49.0
	Middle	27	5.9
	North	2	.4
	South	42	9.1
	West	164	35.6
Education Level	Primary	1	.2
	Medium	4	.9
	high school	86	18.7
	diploma	42	9.1
	Bachelor's degree	273	59.2
	Postgraduate	55	11.9
Occupation	private job	39	8.5
	employee	121	26.2
	Retired	79	17.1
	student	150	32.5

	Unemployed	72	15.6
Monthly Income (in Saudi Riyals)	Less than 5,000	202	43.8
	5,000 - 10,000	95	20.6
	11,000 - 15,000	65	14.1
	Over 15,000	99	21.5
Marital Status	Married	227	49.2
	Single	217	47.1
	Divorced	10	2.2
	Widowed	7	1.5
Place of residence	Villages or countryside	35	7.6
	Civilized cities	426	92.4

According to **Figure 1**, most respondents rely on social media and pharmacists for information, with 67.4% and 69.8% respectively. Family and friends also play a significant role, with 58.1% seeking information from them. Additionally, the relatively low percentage of individuals seeking information from books (11.6%).

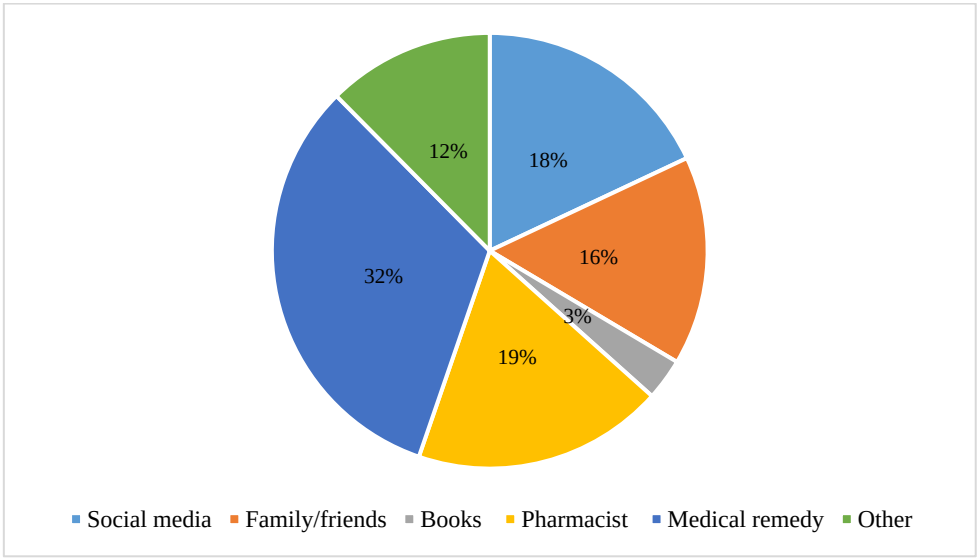

Figure 1. Participants' source of information about topical steroids

The data provided in **Table 2** showed the usage and preferences of topical cortisone among a group of individuals. It is interesting to note that a majority of the respondents have not used topical cortisone, with 59% indicating that they haven't used it. Among those who have used topical cortisone, the most common reason for usage is for eczema and dermatitis, accounting for 49.2% of responses. This is followed by acne at 26.5% and psoriasis at 13.8%. In terms of frequency of usage, it is evenly distributed with 28% using it twice daily and another 28% using it once daily. It is also worth noting that 55% of respondents follow up with a dermatology consultant to monitor the effect of topical cortisone. It is also interesting to see that 50.8% of respondents are still using topical cortisone, while 49.2% have stopped using it. Among those who have stopped using it, the majority (60.8%) reported that they did not use anything else after stopping. 29.6% of respondents reported that the problem still exists after stopping the use of topical cortisone, while 11.6% experienced persistent side effects. In terms of obtaining topical cortisone, the majority (77.2%) reported using it with a prescription from their doctor, indicating a responsible approach to their skincare treatment. However, it is worth noting that 22.8% reported using it without a prescription, with the most common sources of information being social media and family/friends.

Table 2. Participants practice toward topical steroids (n=461)

Parameter		**No.**	**%**
What type of topical cortisone is used?	Betamethasone	23	5.0
	Mometasone	25	5.4
	Hydrocortisone	42	9.1
	Fucidin acid/betamethasone	61	13.2
	I haven't used it	272	59.0

	Other	38	8.2
Why do you use topical cortisone?	Acne	50	26.5
	Psoriasis	26	13.8
	For eczema and dermatitis	93	49.2
	Whitening	21	11.1
	Freckle	4	2.1
	Other	37	19.6
How often do you usually use it?	Twice daily	53	28.0
	Once daily	53	28.0
	every two days	17	9.0
	Every three days	16	8.5
	Once a week	9	4.8
	every two weeks	13	6.9
	Other	28	14.8
What type of topical cortisone do you use?	Moisturizing cream	91	48.1
	Ointment	87	46.0
	Other	11	5.8
How often do you use topical cortisone on your skin?	From one to two months	82	43.4
	From two to three months	35	18.5
	From three months to six months	31	16.4
	From six months to nine months	13	6.9
	More than nine months	28	14.8
Do you follow up with a dermatology consultant to monitor the effect of topical cortisone?	Yes	104	55.0
	No	85	45.0
Are you still using topical cortisone?	Yes	96	50.8
	No	93	49.2
Are you using topical cortisone with a prescription from your doctor?	Yes	146	77.2
	No	43	22.8
If you stopped using topical cortisone on the skin, what did you do after stopping?	Use another type	23	12.2
	Visit your doctor for side effects	26	13.8
	Nothing is used	115	60.8
	Other	25	13.2
Did you notice any changes after stopping use?	Persistent side effects	22	11.6
	Worsening of side effects	17	9.0
	The problem still exists	56	29.6
	There is no change in the result of treatment	94	49.7

Based on the data provided in **Table 3**, nearly half of the respondents (48.8%) indicated that they are aware of the side effects, while a smaller percentage (33.0%) admitted to not being aware, and 18.2% stated that they don't know. In terms of experience with side effects, 14.8% of respondents reported having side effects from using topical cortisone, while 61.2% stated that they did not have any side effects. It is important to note that 24.1% of respondents were unsure if they had experienced side effects. Of those who reported experiencing side effects, the most commonly reported symptoms included rash (7.6%), dehydration (8.7%), and hypersensitivity (6.9%). Other reported side effects included redness, skin atrophy, acne-like rash, burning sensation, flakes, skin stretching, irritation, and change in skin color. It is concerning that a large percentage (75.1%) of respondents indicated that they did not know or did not have any side effects. When asked if they were aware that the treatment used was topical cortisone, 39.5% of respondents answered yes, 30.6% answered no, and 29.9% answered that they didn't know. In terms of the long-term effects of topical cortisone on the skin, the majority of respondents (61.3%) agreed that it can cause side effects, while a smaller percentage either disagreed or were unsure. When it comes to the use of prescription topical cortisone, the majority of respondents (60.5%) agreed that it should be used, while smaller percentages either disagreed or were unsure. Finally, when asked if topical cortisone can be safely prescribed to anyone for which skin disease, the responses were more evenly distributed, with a significant percentage (20.6%) strongly disagreeing that it can be safely prescribed.

Table 3. Knowledge and awareness of participants about adverse effects of topical steroids (n=461)

Parameter		No.	%
Are you aware of the side effects of using topical cortisone?	Yes	225	48.8
	no	152	33.0
	I don't know	84	18.2
Do you have any side effects from using topical cortisone?	Yes	68	14.8
	no	282	61.2
	I don't know	111	24.1
If your answer to the previous question is yes, what side effects are you experiencing?	Rash	35	7.6
	Redness	30	6.5
	Dehydration	40	8.7
	Skin atrophy	26	5.6
	Hypersensitivity	32	6.9
	Acne-like rash	12	2.6
	Burning sensation	24	5.2
	Flakes	31	6.7
	Skin stretching	21	4.6
	Irritation	21	4.6
	Change in skin color	26	5.6
	Don’t know/don’t have	346	75.1
Were you aware that the treatment used was topical cortisone?	Yes	182	39.5
	No	141	30.6
	I don't know	138	29.9
Can topical cortisone in the long term cause side effects on the skin?	I totally agree	153	33.2
	I agree	134	29.1
	I agree to some extent	133	28.9
	I somewhat disagree	24	5.2
	I do not agree	9	2.0
	Strongly Disagree	8	1.7
Should prescription topical cortisone be used?	I totally agree	279	60.5
	I agree	111	24.1
	I agree to some extent	47	10.2
	I somewhat disagree	14	3.0
	I do not agree	6	1.3
	Strongly Disagree	4	.9
Can topical cortisone be safely prescribed to anyone for which skin disease?	I totally agree	46	10.0
	I agree	41	8.9
	I agree to some extent	91	19.7
	I somewhat disagree	83	18.0
	I do not agree	105	22.8
	Strongly Disagree	95	20.6

As illustrated in **Figure 2**, 34.9% of participants had poor knowledge of the adverse effects of topical steroids, 56.4% had moderate knowledge, and only 8.7% had good knowledge.

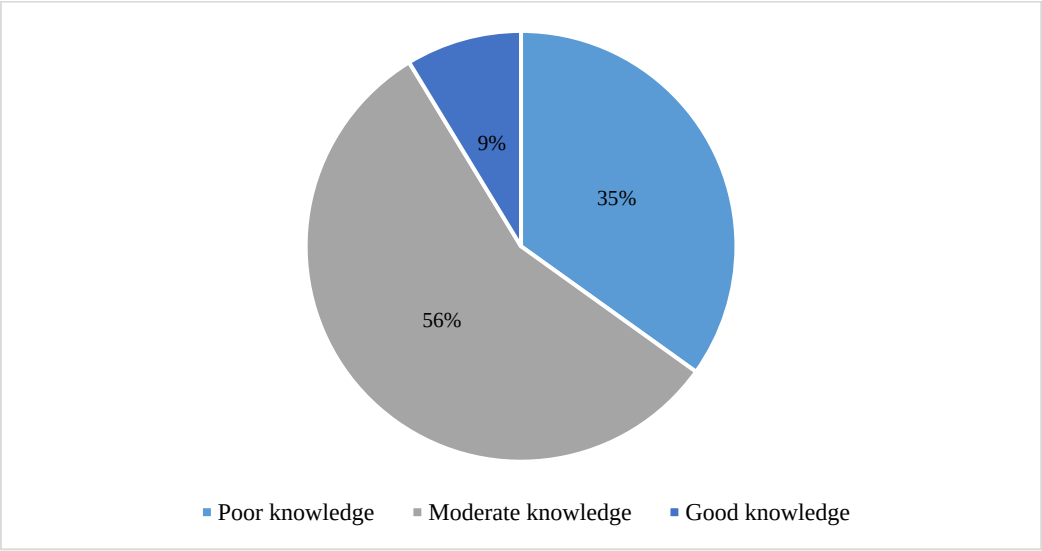

Figure 2. Participants knowledge scores of adverse effects of topical steroids

Table 4 shows that, in terms of age, the data shows that the majority of individuals in the 21-30 age group fall under the moderate knowledge category, while the 51-60 age group has the highest percentage of individuals with good knowledge. Marital status does not show a significant difference in knowledge score, with similar percentages across single, married, divorced, and widowed individuals. Gender also does not seem to have a significant impact on knowledge score, with a fairly even distribution of poor, moderate, and good knowledge among male and female respondents. Education level does not have an impact on knowledge score, with individuals holding a bachelor's degree having the highest percentage of good knowledge. Occupation doesn't influence knowledge score, with students having the highest percentage of good knowledge. Monthly income and residence didn't show variation in knowledge scores.

Table 4. Participants' knowledge scores in association with their sociodemographic characters (n=461)

		Knowledge score			Total (N=461)	P value
		Poor knowledge	Moderate knowledge	Good knowledge		
Age	18_20	26	24	0	50	0.049
		5.6%	5.2%	0.0%	10.8%	
	21_30	56	119	17	192	
		12.1%	25.8%	3.7%	41.6%	
	31_40	19	33	8	60	
		4.1%	7.2%	1.7%	13.0%	
	41_50	18	25	6	49	
		3.9%	5.4%	1.3%	10.6%	
	51_60	34	48	5	87	
		7.4%	10.4%	1.1%	18.9%	
	more than 60	8	11	4	23	
		1.7%	2.4%	0.9%	5.0%	
marital status	Single	72	126	19	217	0.274
		15.6%	27.3%	4.1%	47.1%	
	Married	84	126	17	227	
		18.2%	27.3%	3.7%	49.2%	
	Divorced	2	5	3	10	
		0.4%	1.1%	0.7%	2.2%	
	widow	3	3	1	7	
		0.7%	0.7%	0.2%	1.5%	
Gender	Male	50	76	14	140	0.740
		10.8%	16.5%	3.0%	30.4%	
	Female	111	184	26	321	

		24.1%	39.9%	5.6%	69.6%	
Location	East	86	123	17	226	0.144
		18.7%	26.7%	3.7%	49.0%	
	Middle	5	21	1	27	
		1.1%	4.6%	0.2%	5.9%	
	North	0	2	0	2	
		0.0%	0.4%	0.0%	0.4%	
	South	16	19	7	42	
		3.5%	4.1%	1.5%	9.1%	
	West	54	95	15	164	
		11.7%	20.6%	3.3%	35.6%	
Education Level	Primary Medium	1	0	0	1	0.477
		0.2%	0.0%	0.0%	0.2%	
	high school diploma	1	3	0	4	
		0.2%	0.7%	0.0%	0.9%	
	Bachelor's degree	35	46	5	86	
		7.6%	10.0%	1.1%	18.7%	
	Primary Medium	17	19	6	42	
		3.7%	4.1%	1.3%	9.1%	
	high school diploma	91	156	26	273	
		19.7%	33.8%	5.6%	59.2%	
	Bachelor's degree	16	36	3	55	
		3.5%	7.8%	0.7%	11.9%	
Occupation	private job employee	13	22	4	39	0.141
		2.8%	4.8%	0.9%	8.5%	
	Retired student	44	59	18	121	
		9.5%	12.8%	3.9%	26.2%	
	Unemployed private job	25	48	6	79	
		5.4%	10.4%	1.3%	17.1%	
	employee Retired	30	39	3	72	
		6.5%	8.5%	0.7%	15.6%	
	student	49	92	9	150	
		10.6%	20.0%	2.0%	32.5%	
Monthly Income (in Saudi Riyals)	Less than 5,000	70	117	15	202	0.478
		15.2%	25.4%	3.3%	43.8%	
	5,000 - 10,000	26	58	11	95	
		5.6%	12.6%	2.4%	20.6%	
	11,000 - 15,000	28	32	5	65	
		6.1%	6.9%	1.1%	14.1%	
	Over 15,000	37	53	9	99	
		8.0%	11.5%	2.0%	21.5%	
Residence	Urban	18	13	4	35	0.056
		3.9%	2.8%	0.9%	7.6%	
	City	143	247	36	426	
		31.0%	53.6%	7.8%	92.4%	

Topical steroids are commonly used to treat various skin conditions such as eczema, psoriasis, and dermatitis. While they can be effective in reducing inflammation and itching, they also have the potential to cause adverse effects if not used properly [3].

According to our study results, 34.9% of participants had poor knowledge of the adverse effects of topical steroids, 56.4% had moderate knowledge, and only 8.7% had good knowledge. A large number of earlier research have assessed people's awareness and knowledge of corticosteroids. Consistent with our study results, a national poll carried out in South Korea revealed a significant incidence of false positives concerning how corticosteroids should be applied and when they should be used. However, respondents' general knowledge was found to be satisfactory [7]. A previous international survey also confirmed that participants know enough about the use of corticosteroids [15]. Steroid awareness and knowledge were noticeably inadequate in India, as seen by the 83% of participants who did not know anything about steroids or associated material [4].

In the current study, a majority of the respondents have not used topical cortisone, with 59% indicating that they haven't used it. The majority of participants in a different Saudi survey stated that they had used TCs [16]. In a similar vein, earlier research has revealed that TCs are the most widely prescribed dermatological drugs globally [17, 18]. The most common reason for using TCs was found to be acne, according to studies done in Saudi Arabia, Iraq, and Iran [11, 19-21]. According to Meena *et al*., half of the study's participants treated fungal infections using TCs. Furthermore, 85% of research participants utilized TCs to treat superficial fungal infections, according to Sheth *et al*. [22].

Among those who have used topical cortisone, the most common reason for usage is for eczema and dermatitis, accounting for 49.2% of responses. This is followed by acne at 26.5% and psoriasis at 13.8%. Nonetheless, allergies and eczema were the most frequent dermatological reasons for TC usage in a prior study. According to Elmorsy *et al*., 14% of research participants were aware that using TCs could cause purpura [11]. Remarkably, just 31% of survey participants were aware that using TCs may cause purpura as a side effect. According to a study done in Arar, Saudi Arabia, just 2% of participants knew that TCs could have systemic negative effects [11]. In a similar vein, Seo *et al*. found that only 2% of the 3000 respondents to their survey were aware of the possible systemic negative effects of using TCs [7]. In contrast, just 15.5% of the participants in our survey knew that using TCs could have systemic negative effects. Therefore, disseminating knowledge about the possible systemic side effects of TCs is essential to guaranteeing public safety when it comes to TC use [7].

In our study, most respondents rely on social media and pharmacists for information, with 67.4% and 69.8% respectively. Family and friends also play a significant role, with 58.1% seeking information from them. Additionally, the relatively low percentage of individuals seeking information from books (11.6%). According to a prior study, friends and family, medical professionals, and social media were the most frequently cited sources of knowledge about corticosteroid treatment, contributing 45.5%, 38.8%, and 28.8% of the total [23]. According to a previous study, people rely on friends and family for information more often than they do on doctors or chemists [7]. Conversely, past research has shown that, within interpersonal networks, doctors or chemists are typically the main suppliers of information about medications [24-27]. Furthermore, a previous study found that the majority of individuals got the majority of their information about corticosteroids from social media sites [15].

In our study, age was significantly associated with knowledge scores, but not educational level or gender.

Another study discovered that women were more conscious of the majority of adverse effects than men, which is consistent with the Arar study [8, 11]. This may be explained by the fact that women are often more interested in cosmetic skin care than males are.29 Subjects between the ages of 21 and 39 had the greatest level of age-related knowledge of the negative effects of TCs. On the other hand, an Indian study found that people under 25 (22%) knew the most about the negative effects of TCs [28]. The participants in the Arar study had the maximum awareness level when they were 40 years old [11]. The finding that people are more likely to use TCs to treat medical ailments as they get older could be one explanation for the age disparity in awareness. Knowledge is therefore acquired by exposure and experience [29]. Surprisingly, our study found no discernible correlations between the level of awareness and job or educational status and awareness; nonetheless, Alperstein and Peyrot noted that higher levels of education and medical staff would be expected to have higher levels of awareness [30].

It is important for individuals to be aware of these potential adverse effects and to use topical steroids under the guidance of a healthcare professional. It is crucial to follow the prescribed dosage and duration of treatment, as well as to carefully monitor for any signs of adverse effects. If any concerning symptoms develop, it is important to seek medical attention promptly.

Limitations

The study explores the level of knowledge and awareness of the adverse effects of topical steroids among individuals in Saudi Arabia, however, it has some limitations that may affect its generalizability and accuracy. One of the limitations of this study is the sampling method used. The study uses a convenience sampling method, which means that participants are selected based on their availability and willingness to participate in the study. This may lead to selection bias and limit the generalizability of the findings to the wider population. The sample size is also relatively small, which may affect the statistical power of the study and limit the ability to draw robust conclusions. Another limitation of the study is the reliance on self-reported data. The study collects data through a self-administered questionnaire, which is subject to recall bias and social desirability bias.

Future Implications

This study has significant implications for the future of healthcare in the region. The findings of this study shed light on the current level of knowledge and awareness about the adverse effects of topical steroids among the population in Saudi Arabia. This is crucial information as topical steroids are commonly used for the treatment of various skin conditions, and individuals need to be aware of the potential risks associated with their use.

One of the key implications of this study is the need for increased education and awareness campaigns regarding the adverse effects of topical steroids. The study found that a significant proportion of the population had limited knowledge about the potential side effects of these medications. This highlights the importance of providing comprehensive information to patients and healthcare professionals about the risks and benefits of using topical steroids, as well as the importance of proper usage and monitoring.

Furthermore, the findings of this study also have implications for healthcare providers in Saudi Arabia. Healthcare professionals need to be well-informed about the potential adverse effects of topical steroids to provide appropriate guidance and monitoring for patients using these medications. This study emphasizes the need for continuous education and training for healthcare professionals to ensure that they are equipped to effectively communicate the risks and benefits of topical steroids to their patients.

In addition, the implications of this study extend to the regulatory and policy-making aspects of healthcare in Saudi Arabia. The findings underscore the importance of implementing guidelines and regulations to ensure the safe and appropriate use of topical steroids. This includes measures such as proper labeling of medications, monitoring of prescriptions, and ensuring that patients are fully informed about the potential risks before starting treatment.

Conclusion

In conclusion, the study shows that the Saudi general population had inadequate knowledge and awareness about the adverse effects of topical steroids. This is a critical issue that needs to be addressed through targeted education and awareness campaigns. It is imperative that healthcare professionals and policymakers take proactive measures to ensure that individuals are well-informed about the potential risks associated with the use of topical steroids. By doing so, we can work towards improving the overall health and well-being of the population.

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