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SELF-MEDICATION OF TOPICAL CORTICOSTEROIDS FROM DIFFERENT PHARMACIES OF DISTRICT NAUSHERO FEROZE, SINDH, PAKISTAN.

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Abstract

Background: Although dermatology patients frequently self-medicate in clinical settings, there are little studies on this topic. This research was done to determine how frequently topical corticosteroids are misused and what kinds of common issues arise from such usage.

Methods: This cross-sectional study was conducted on two days each week from December 2022 to May 2023 at renowned cosmetic shops and randomly selected pharmacies in District Naushero Feroze, Sindh, Pakistan. Direct interviews with participants were conducted through a questionnaire.

Results: The sample size for this study was 277 (27.7%) of the participants interviewed from various cities of district naushero feroze during the study period. The majority of participants bought betamethasone valerate 55 (19.1%) and combination creams 66 (23.8%). Among the participants who used the topical steroids for skin whitening and acne vulgaris, 52 (18.7% and 83 (29.9%) said they were using them for whitening skin and acne, respectively. Most of participants felt itching and skin irritation (68, 25.5%), as well as redness and dryness (49, 17.6%) as side effects.

Conclusions: The best and safest use of topical steroid requires stringent oversight by relevant agencies, public education, pharmacist education, and general practitioner education.

Key words: Self-medication, Topical corticosteroids, public education.

Introduction

Although dermatology patients frequently self-medicate in clinical settings, there are little studies on this topic [1]. Self-medication is the practice of using prescription drugs to treat illnesses or symptoms that oneself has identified. "The selection and use of medicines to treat self-recognized illness or symptoms" is how the World Health Organization defines self-medication. It may also be described as the ongoing use of prescription medication for illnesses that keep coming back [2]. The growing tendency of self-medication is caused by a number of factors, including the need for self-care, empathy for sick family members, a lack of health facilities, poverty, ignorance, false beliefs, widespread advertising, and the accessibility of pharmaceuticals outside of pharmacies [3].

People have always desired fair skin since it is thought to be a sign of beauty. The functional level of the epidermal melanin unit determines the color and variations of human skin, which are caused by the density of melanocytes, the quantity, size, and distribution of melanosomes transferred to epidermal keratinocytes, the type of pigment, and the rate of pigment degradation [4].

Since light skin is seen as more attractive than dark, many Asian nations, as well as some in the West, have a strong color consciousness and an obsession with fairness and pale complexion. This desire drives the usage of any substance to satisfy the craze, even if those agents have long-term negative effects. The most popular tool for this is TCs, which can be used on their own, in combination with other fairness creams, or as a mixture with bleaching chemicals and skin lightening treatments. This two-edged sword has made its users susceptible to an epidemic of rosacea, acne, hirsutism, telangiectasia, facial wrinkles, and steroid dependency [5].

This issue has been made worse in Pakistan by incorrect prescriptions and the accessibility of extremely potent TCs as over-the-counter medications. Because people are obsessed with pale skin for a variety of social reasons, abuse of TCs as a fairness cream is widespread in our color-conscious society. TCs, which are easily accessible over-the-counter and resemble fairness creams, are generally used as a depigmenting agent in combination with hydroquinone or mercury-based bleaching creams for conditions including acne, melasma, freckles, and, in some situations, just to enhance the dark complexion. [6]

Corticosteroids are produced by the adrenal cortex in the body naturally, and synthetic versions are sold commercially in a variety of dose forms for a range of uses from life-threatening anaphylaxis to topical irritation. Sulzberger and Witten brought topical corticosteroids (TCs) to the field of dermatological therapy around sixty-seven years ago. One of the most often utilized treatment techniques in contemporary dermatological practice is topical corticosteroids (TCs) [2]. TCs suppress symptoms and offer prompt relief. [7].

Numerous agents, ranging in potency from low to ultrahigh, have been added to the arsenal of topical corticosteroids since the first ones were introduced in 1952. Topical steroids are highly valued and a vital element in the dermatologist's toolbox. They are now dermatologists' primary therapeutic technique due of their excellent efficacy. Their anti-inflammatory, anti-proliferative, and immunosuppressive properties are what cause their therapeutic effects [8].
Due to its affordable and easy-to-get over-the-counter availability, strong topical corticosteroids have been abused by the general public, leading to several negative effects [9]. The most common side effects include purpura, acne, perioral dermatitis, striae, and atrophy. Less frequently occurring ones include worsening of skin infections, delayed wound healing, hypertrichosis, and changes in pigmentation [10]. Seeing dermatologists more often will result from this. Due to their affordable and easy access over-the-counter (OTC) in some countries, powerful TCs have been shown to be abused by the general public, with several negative consequences. [11].

This research was done to determine how frequently topical corticosteroids are misused and what kinds of common issues arise from such usage.

Methodology

Place and duration of study: This study was conducted on two days each week from December 2022 to May 2023 at renowned cosmetic shops and randomly chosen pharmacies in District Naushero Feroze, Sindh, Pakistan.

Inclusion criteria: Those participants who are purchasing topical corticosteroids by himself or herself for certain skin problems and made the main complaint about at least one of these medications' negative effects. both educated male and female participants are included in this study.

Exclusion criteria: All uneducated participants and of age below 10 years were excluded from this study.

Study design: The cross-sectional study approach was used to conduct participant interviews. Direct interviews with participants were conducted using an anonymous questionnaire. Age, sex, education level, length of topical corticosteroid treatment, drug type and formulation (lotion, cream, ointment, etc.), frequency of application, and purpose of use were among the topics covered in the questionnaire.

In addition, participants were asked if the patient, a friend, family member (i.e., over the counter), a pharmacy, paramedical staff, a doctor or general practitioner, another specialist, or a dermatologist had prescribed or advised the treatment. We inquired whether the participants were aware of the medication's negative effects. They were also questioned about their knowledge of the appropriate dosage—the quantity of medication to apply to each bodily part. Every participant gave their agreement, and the interview was conducted in accordance with the questionnaire.

Sample Size: The sample size was calculated using the Raosoft® online sample size calculator using a 50% response distribution, a 95% confidence level, a population size of 980, and a 5% margin of error. After entering the data, the suggested sample size for this study was 277.

Results

Of the 980 participants interviewed from various cities of district naushero feroze during the study period, 277 (27.7%) had self-medicated topical corticosteroids. 110 (39.8%) males and 167 (60.2%) females were present. This study included a diverse range of volunteers from various age groups. Thirty-nine percent of participants were between the ages of 39 and 50 (Table 1). Of the participants, 83 (29.9%) had only completed their primary education, while only 28 (10.1%) had a degree in medicine. Nobody declined to take part in the research.

Table.1 Demographic information (n=277)

Name of City	**Number**	**Percentage %**
Mehrabpur	70	25.2
Moro	33	11.9
Naushero feroze	58	20.9
Kandiaro	47	16.9
Halani	40	14.4
Bhirya city	29	10.4
Education level	**Number**	**Percentage%**
Primary school	83	29.9
Secondary school	43	15.5

H.Secondary school	72	25.99
Bachelor	58	20.9
Other	21	7.5
Occupation	**Number**	**Percentage%**
Studying	47	16.9
Employed	64	23.1
Un-Employed	98	35.3
Other	68	24.5
Net household income	**Number**	**Percentage%**
5000	5	1.8
5000-10000	32	11.5
10000-30000	107	38.6
>30000	133	48.0
Degree in healthcare	**Number**	**Percentage%**
Yes	28	10.1
No	249	89.9
Gender	**Number**	**Percentage %**
Male	110	60.2
Female	167	39.9
Age group	**Number**	**Percentage %**
10-19	33	11.9
20-29	85	30.6
30-39	42	15.1
39-50	57	20.5
> 50	60	21.6

Table 2 lists the primary topical corticosteroids that are utilized. The majority of individuals bought betamethasone valerate 55 (19.1%) and combination creams 66 (23.8%). When asked how they obtained the knowledge, many participants 102 (36.8%) said they got it from friends, family, and themselves, and 65 (23.4%) said they got it from cosmetic shopkeepers. Many participants 52 (18.7%) and 83 (29.9%) said they were using topical corticosteroids for skin whitening and acne vulgaris, respectively, when asked why they were using them.

Table 2. list of drugs, source, and reason for purchasing the topical steroidal drugs. (n=277)

Name of Drug	**Number**	**Percentage %**
Betamethasone valerate	53	19.1
Betamethasone Dipropionate	42	15.2
Fluticasone Propionate	19	6.8
Clobetasol Propionate	28	10.1
Hydrocortisone	40	14.4
Mometasone Furoate	08	2.8
Flucinolone acetonide	21	7.5
Mixed creams	66	23.8
Source of drug information	**Number**	**Percentage %**
Health care professionals	52	18.7
Drug sellers	21	7.5
Self, family, and friends	102	36.8
Media (internet/TV/radio/newspaper etc.)	10	3.6
Patient information leaflet or package insert	27	9.7

Cosmetic shopkeeper	65	23.4
Reasons for using corticosteroids	**Number**	**Percentage %**
Skin whitening	52	18.7
Psoriasis	37	13.3
Wrinkles	46	16.6
Acne vulgaris	83	29.9
Skin dryness	12	4.3
Dermatitis/ Skin redness	19	6.8
Scabies	08	2.8
Skin rashes	20	2.7

Following topical corticosteroid application, the majority of participants felt itching and skin irritation (68, 25.5%), as well as redness and dryness (49, 17.6%), as shown in Table 3..

Table 3. Dermatological abnormalities reported by participants after using topical corticosteroids. (n=277)

Name of side effect	**Number**	**Percentage%**
Itching or irritation	68	24.5
Redness and dryness	49	17.6
Hyperpigmentation	38	13.7
Thinning of skin	16	5.7
Facial hypertrichosis	10	3.6
Sweating	37	13.3
Skin infection	12	4.3
Wrinkles	47	16.9

Discussion

Various topical corticosteroids with different potency are easily available in our country. One can easily purchase variety of topical steroids available in the market with different brand names from various pharmaceutical companies. Topical formulation and any other medicine can be easily purchased almost from any medical store without prescription this all is because of negligence of Drug regulatory authorities. In Sindh's rural districts, particularly in the District of Naushero Feroze, there aren't nearly enough dermatologists to serve the enormous population. Thus, District Naushero Feroze, Sindh, Pakistan suffers from a worse scenario because to the simple availability of TC and limited access to dermatologists, which leads to TCs misusage.

Misuse of topical corticosteroids has also been seen in other Asian and African nations. Developed nations such as the United States are not immune to this issue. Few research have been published in India, despite the problem's widely acknowledged immensity [12]. In the present study, mostly young group of having the age of 20-29 misused the topical steroids 30.6%. Whereas Deena K Al-Samman et al carried out the study on misuse of topical corticosteroids in Mousal city in this age participants who most frequently misused the topical corticosteroids belongs to the age group of 20-29 (38.1%) [13].

In this study most of the participants who use the topical corticosteroids were in the mixed cream formulation the purpose behind that was whitening of skin (18.7%) and acne vulgaris (29.9%). Sohail Shaheen et al conducted the study on use of topical corticosteroids in mixed cream formulation at Bhawalpur this study confirms that The commonest indication for use of TCs was found out to be treatment of acne (27.5%) and (7.1%) for fairness purpose [5].

Bhawna Saini et al [14] carried out a study on the overuse of topical corticosteroids in the outpatient department of a tertiary care hospital in India, and found that burning and itching sensations were the most prevalent morphological types of adverse drug reactions (53%) compared to about the same 68% in our study.
Simon M. Müller et al [15]. carried out the study on Topical Corticosteroid Concerns in Dermatological Outpatients in this study he concludes that 30.3% of participants who misuse the topical corticosteroids get the information from there family members whereas in our study the percentage of participants who misused the topical corticosteroids is 38.6%.

Conclusion

Topical corticosteroids are frequently misused, leading to a number of problems. The best and safest use of corticosteroids requires stringent oversight by relevant agencies, as well as public education, pharmacist education, and general practitioner education. Pharmacists are crucial in this as well; they should refrain from giving out prescriptions for drugs and must give clear advice on how to use topical corticosteroids.

References

1. Mahajan, S.A., S.S. Deshmukh, and J.R. Rawal, *Observational cross-sectional study to evaluate the effects of self-medication with topical agents used by patients for superficial fungal skin infection at tertiary care hospital in Mumbai.* International Journal of Basic & Clinical Pharmacology, 2020. 9(5): p. 796.
2. Salam, A., et al., *Parental Self-Medication with Antibiotics in Pakistan.* Pakistan Journal of Medical & Health Sciences, 2023. 17(04): p. 228-228.
3. Khavane, K.B., et al., *SELF MEDICATION: A SYSTEMATIC REVIEW.* 2021.
4. Thappa, D.M. and M. Malathi, *Skin color matters in India.* Pigment International, 2014. 1(1): p. 2-4.
5. Shaheen, S., et al., *Use of topical corticosteroids and mixed creams over the face among female medical students of Quaid-e-Azam Medical College, Bahawalpur.* Journal of Pakistan Association of Dermatologists, 2020. 30(1): p. 143-150.
6. Shakeel, S., et al., *Pharmacists' Insights and Behaviors in Preventing the Misuse of Topical Corticosteroids in Pakistan: A Mixed-Method Study.* Cosmetics, 2021. 8(3): p. 72.
7. Ansari, M., et al., *The use of topical clobetasol among the women in hail region, Saudi Arabia: A cross-sectional study on knowledge and practice.* Journal of Pharmaceutical Research International, 2019. 31(6): p. 1-7.
8. Sharma, R., S. Abrol, and M. Wani, *Misuse of topical corticosteroids on facial skin. A study of 200 patients.* Journal of dermatological case reports, 2017. 11(1): p. 5.
9. Dey, V.K., *Misuse of topical corticosteroids: A clinical study of adverse effects.* Indian Dermatol Online J, 2014. 5(4): p. 436-40.
10. Hengge, U.R., et al., *Adverse effects of topical glucocorticosteroids.* Journal of the American Academy of Dermatology, 2006. 54(1): p. 1-15.
11. Mahar, S., et al., *Topical corticosteroid misuse: The scenario in patients attending a tertiary care hospital in New Delhi.* Journal of clinical and diagnostic research: JCDR, 2016. 10(12): p. FC16.
12. Chaudhary, S., *Misuse of topical corticosteroids and attitude towards self-medication: A rising alarm.* Int J Res Dermatol, 2017. 3: p. 485-8.
13. Al-Samman, D.K., et al., *The Effect of Misuse of Topical Corticosteroids on Skin.* Iraqi Journal of Pharmacy, 2019. 14(1): p. 63-75.
14. Saini, B., et al., *Topical corticosteroid misuse: observational study to evaluate pattern of abuse and adverse drug reactions.* Int J Basic Clin Pharmacol, 2019. 8(9): p. 2064.
15. Müller, S.M., et al., *Topical corticosteroid concerns in dermatological outpatients: a cross-sectional and interventional study.* Dermatology, 2016. 232(4): p. 444-452.