

Effects of whitening cream: A Tertiary care study

Comment [PL1]: I would suggest the authors change their title to the following: «Effects of whitening cream: a cross-sectional study in a tertiary care setting»

ABSTRACT

Aim: To determine the side effects of skin whitening creams in a tertiary care facility setup.

Methodology: The current ~~cross-cross~~-sectional study was conducted at the department of dermatology, Peoples University of Medical & Health Science for Women Nawabshah (PUMHSW), Sindh, Pakistan ~~Peoples University of Medical and Health Sciences (PUMHSW) Nawabshah~~ from January 2019 to July 2019. A total of 140 consecutive patients were included in the study matching the inclusion criteria. All the demographic clinical variables and follow-up data ~~was-were~~ recorded on a ~~profarma-proforma~~ designed for the study, the data collected ~~was-were~~ statistically analyzed and the results were tabulated.

Results: In this study we observed various side effects in patients who used whitening creams. Redness showed in 81 patients (57.85%), flushing in 86 patients (61.42%), sensitivity in 99 patients (7.14%), acne in 52 patients (37.14%), thinning of skin in 77 patients (55%), pigmentation in 67 patients (47.85%), ~~Telangiectasia-ectasia in~~ 43 patients (30.71%), wrinkles in 33 patients (23.57%), and ~~hirsutism~~ in 44 patients (31.43%).

Conclusion: We concluded that whitening creams used in our ~~setup-facility~~ are strongly associated with ~~a-number-of-several~~ cutaneous side effects.

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Comment [PL3]: Is this the correct name of the institute? In writing a scientific journal, full name of the institute as well as the located country should be provided.

Comment [PL4]: The word «whitening» is misspelled many times. Please check the manuscript again.

Keywords: whitening cream, acne, pigmentation, wrinkles-

1. INTRODUCTION

Skin whitening creams act by inhibiting tyrosinase and thus decrease melanin formation. The active ingredients include niacinamide, glycolic acid, magnesium ascorbyl phosphate, and licorice extract ~~etc~~. Along with these, some harmful chemicals are also used to enhance the effect of these creams ~~i-esuch as~~ potent to super-potent corticosteroids, mercury, and hydroquinone^{1,2}. ~~Government-The government~~ regulatory authorities have banned the use of these chemicals ~~to-be used~~ in any cosmetics. Mostly these products are not showing their active ingredients, expiry date, or manufacturing place. As these products are used for an indefinite period of time and often ~~under-in~~ hot, and sunny climates which further increases the risk of side effects^{3,4}. ~~A+r~~Recent literature reviewing the side effect of whitening cream ~~revealed-showed~~ that the nature of additives and method of application made the complications more serious and complex⁵. Bleaching is a common custom in black Africans⁴.

~~Use-The use~~ of skin whitening creams is very common nowadays throughout the world. A study in Lagos, Nigeria, ~~gave a prevalence of~~ showed that 49.7% women and 27.6% men uses of whitening cream ~~to be~~ 49.7% in women and 27.6% in men⁶. Another study ~~of a~~ showed 53.3% of men and 71.9% of women uses whitening cream in a tertiary institutional ~~student~~ in Enugu, Nigeria, ~~gave a prevalence of~~ 53.3% in

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~~men and 71.9% in women~~⁷. Similar studies reported of prevalence of 26% in Senegal and 60.7% in Jordan⁸.

In Asian culture fairer skin is associated with beauty, power, and racial superiority. Further promoted by media, linking fair skin to sentiment, magnificence, and career success.⁹ Use of these creams is more common in tropical areas like Pakistan. People are using it for various reasons like fairness, malasma, & even in acne having no background knowledge about their composition and side effects. Skin problems are important because around 40% of Asian women have problems with facial skin spots and use facial whitening creams¹⁰ Skin whitening creams available in market containing a harmful combination of chemicals i.e steroids, hydroquinone and mercury. The side effects seen include both cutaneous and systemic. Corticosteroids use can lead to cutaneous side effects like hirsutism, acne, rosacea, skin atrophy, hypo and hyperpigmentation, infections, contact dermatitis and even systemic side effects like Cushing's syndrome, hypertension, HPA suppression². Mercury in these products can produce serious side effects like neuronal damage, renal damage and anxiety/depression and decrease skin resistance to bacteria and fungi.⁴ Hydroquinone can cause blue black pigmentation (ochronosis), liver damage and skin cancers¹¹. This is first ever study on this issue highlighting the side effects of use of skin whitening creams in our area/community. To create awareness in community about use of these harmful chemicals caring a huge potential of side effects and putting people into further problematic skin.

2. MATERIAL AND METHODS

The current tertiary care study was conducted at ~~the Department of dermatology~~Dermatology, Peoples University of Medical & Health Science for Women Nawabshah Peoples University of Medical and Health Sciences (PUMHSW), Sindh, Pakistan Nawabshah from January 2019 to July 2019. A total of 140 consecutive patients of both gender, aged ~~15- to 40~~ Years-years and those using whitening creams for at least six months were included in this study while those patients who did not give consent, have natural history of acne, rosacea, PCOS, ~~e~~Cushinging's syndrome, ~~pregnant-pregnancy~~ and ~~those currently~~ on systemic steroid therapy were excluded. ~~from the study.~~ All the demographic clinical variables and follow-up data ~~was-were~~ recorded on a ~~profarma proforma~~ designed for the study. The study ~~was~~ approved by ~~the~~ ethical review committee PUMHSW Nawabshah Pakistan. Statistical analysis was performed using IBM SPSS Statistics 21.0 (SPSS Inc., Chicago, IL, USA).

3. RESULTS

Out of the 140 patients studied, all were female. Patients taken for the study were from 16 to 40 years of age. ~~Sixty-Sixty~~ five percent of patients (n=91) use whitening cream once a day while 35% of patients (n=49) use ~~it~~ twice a day. Most of the patients that use whitening cream (34.3%) ~~was~~ between the age of 26 ~~-and~~ 30 years. ~~Use-The use~~ of whitening cream in different age groups is shown in table 1.

Table 1: Application frequency of whitening cream

Application frequency	Age group (Years)	Total
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		16-20	21-25	26-30	30-35	36-40	
Once a day	N	20	17	30	20	4	91
	% age	14.28	12.14	21.43	14.28	2.86	65
Twice a day	N	11	13	18	4	3	49
	% age	7.86	9.28	12.86	2.86	2.14	35
Total	N	31	30	48	24	7	140
	% age	22.14	21.43	34.28	17.14	5	100

In this study, we observe various side effects after using whitening creams. Redness showed in 81 patients (57.85%), flushing in 86 patients (61.42%), sensitivity 99 (7.14%), acne 52 (37.14%), thinning of skin 67 (47.86%), pigmentation 77 (55%). Detail of side effects after using whitening cream in different age groups are shown in table 2.

Table 2: Side effects of using whitening cream

Side effects		Age group (Years)					Total
		16-20	21-25	26-30	30-35	36-40	
Redness	N	16	20	27	16	2	81
	% age	11.43	14.28	19.28	11.43	1.43	57.85
Flushing	N	19	18	29	17	3	86
	% age	13.57	12.86	20.71	12.14	2.14	61.43
Sensitivity	N	23	22	34	17	3	99
	%	16.43	15.71	24.29	12.14	2.14	70.71
Dryness	N	11	7	17	5	1	41
	% age	26.8	17.1	12.14	3.57	0.71	29.28
Acne	N	15	13	16	6	2	52
	% age	10.75	9.28	11.43	4.28	1.43	37.14
Hirustism	N	14	12	11	6	1	44
	% age	10	8.57	7.86	4.28	0.74	31.43
Thinning of skin	N	15	14	31	13	4	77
	% age	10.75	10	22.14	9.28	2.86	55
Wrinkles	N	13	4	11	4	1	33
	% age	9.28	2.86	7.86	2.86	0.74	23.57
Telangectasia	N	11	12	13	5	2	43
	% age	7.86	8.57	9.28	3.57	1.43	30.71

Pigmentation	N	16	14	25	9	3	67
	% age	11.42	10	17.85	6.43	2.14	47.86

4. DISCUSSION

The use of whitening cream for different cosmetic purposes is very common but often associated with many potential side effects. The rapid symptomatic relief in many dermatosis dermatoses making makes them ideal easy for the community to misuse these, resulting in arrange a range of adverse effects. Therefore these adverse effects are being faced by dermatologists in Pakistan as well as in many other countries. As shown in Table 2, the adverse effects in patients using WCs observed in our study as shown in Table 2, were dermatosis like included acne (52%), Pigmentation pigmentation in (67%), Telangectasia telangiectasia (43%), wrinkles (33%), Thinning of skin in 77, Hirustism in 44, flushing in 86 patients. Comparable results were seen with little variation in other studies too.^{4,9,11}

Skin whitening products are making 61% of the Indian cosmetic market and these products are containing toxic chemicals. WHO included Pakistan in those countries where mercury mercury-containing creams are being manufactured for farness purposes. Mercury results in many cutaneous complications like acne, dyschromia, striae, hypertrichosis, infections i.e fungal bacterial, scabies and contact dermatitis¹².

An Indian study concluded that 60% of cosmetics marketed for instant fairness and glow contain steroids which produce its side effects when used in judiciously⁴. A study at Saudi Arabia also reported presence of steroids, mercury and hydroquinone in samples they analyzed.¹³ A Mexican study conducted showed positive association between mercury poisoning and utilization of fairness creams containing mercury¹³. In USA they found increase excretion of mercury in urine in dark skin people who were using fairness creams and therefore endorsed these whitening creams as illegal and dangerous¹⁴.

4. CONCLUSION

The results of this study concluded that whitening creams used in our setup are strongly associated with a number of several cutaneous side effects.

CONSENT

All authors declare that written informed consent was obtained from the patient.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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Comment [PL8]: The abbreviations should be spelled out and mentioned upon the first mention in the manuscript.

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«side effect (%), side effect (%),...»

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