

## Skin Lightening Practices Among Women Living in Lahore; Its Prevalence, Effects, Determinants and Awareness

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Original Article

### ARTICLE INFORMATION

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### ABSTRACT

**Objective:** The objective of my study was to assess the prevalence, determinants, impacts, and awareness of skin whitening product usage among women in Lahore.

**Study design:** It was a cross-sectional observational study design.

**Place and duration of study:** The study was conducted from August 2024 to December 2024 at Superior University, University of Lahore, University of Management and Technology (UMT), Emporium mall and Packages mall Lahore.

**Material and Methods:** The research is based on survey-based questionnaire. Participants were selected through simple random sampling technique to avoid biasness. A 26-point structured questionnaire was constructed to record background data and to assess perceptions, attitudes, and experiences towards skin lightening.

**Results:** Among 295 participants, 66.8% reported using skin lightening products, 35.9% experienced adverse effects, and 66.4% checked ingredients before purchasing products 35.6% purchased them by the advice of physician. Results reveal limited awareness 44.4% of harmful ingredients and the physician advice has the most influence on product use. Correlation analysis indicated significant associations ( $p < 0.05$ ) between product usage and adverse effects, awareness, and determinants.

**Conclusion:** The study concluded that most women in Lahore use skin lightening products, which can cause adverse effects like skin irritation, eczema, and dryness due to unawareness of the ingredients. The study suggests educational efforts, regulatory measures, and psychological and cultural driving studies.

### Introduction:

Skin bleaching culture is widespread in Asia because people have traditionally associated light skin with riches, beauty, and high ranking (1, 2). Traditionally, blacks have been associated with weakness, and whites with strength and nobility, so that there is societal favoritism for the whites (3). Skin lightening or skin bleaching refers to the deliberate process of minimizing melanin production through creams, injections, skin peeling, laser treatment and pills (4,5). Cosmetic whitening products are widely used globally incorporating Korea, Malaysia, the Philippines, Nigeria and India with 50%, 77%, 61% and 4% of the nation respectively and also other African states. However, research shows that there is low health literacy concerning the different practices associated with practice health outcomes.

Eumelanin and pheomelanin, and in neurons neuro-melanin is present that mainly dictates the color of the skin, hair, and eyes (6). Some of the most widely-used agents in skin lightening products include; hydroquinone, mercury, glutathione, Vitamin C, kojic acid and arbutin. The measures, however, differ; for instance, while the FDA has banned some products like hydroquinone though it allows it to be used in concentrations not exceeding 2%; on the other hand, Vitamin C remains freely usable (8). Hydroquinone a super-oxide oxidant that has been considered the gold standard in the U.S., is however not available in several countries because of its side effects such as neuropathy, exogenous ochronosis and

leukoderma (9,10). Likewise, there is corticosteroids that theoretically inhibit melanin production, but at the same time comes with dangers of doing systemic effects plus thinning of the skin on long term usage. Mercury though quite useful is very poisonous acting on the nervous system and on the kidneys as well (11). These were supposedly replaced with safer ingredients including Vitamin C, kojic acid and arbutin in the modern generation skincare products.

Now, beauty is still measured by having a fair skin and with this comes status labeled as having a good job and being able to secure a better spouse (12). Skin's color has become an essential trend through media and advertisements by setting standards of how people should look like. Similarly findings shows that these pressures compel wide use of skin lightening techniques with dangers (13). Ways that do worsen the skin's complexion and caused other problems related to pigmentation also include chronic Ultraviolet radiation exposure and therefore such products are in demand (14).

There is little known about skin-lightening in Pakistan: incidence, knowledge, and perceptions. The existing literature exhaustively established that there are research gaps with regards to the determinants and risks of using skin lightening products in Lahore. Objectives of this study are:

- To determine the prevalence of skin-lightening product usage among women in Lahore.

2. To identify societal, cultural, and economic factors influencing these practices.
3. To evaluate the adverse effects experienced by users.
4. To assess awareness levels regarding the risks of skin-lightening products.

Prior research has established that many people have no clue that skin-lightening products come with adverse health consequences for users. For example, only 32% of the participants in the previous study knew that corticosteroids can lead to diabetes, hypertension, and obesity (15). Skin lighting in Nigeria is anticipated concerning beauty and social status, although the dangers related to it are not very well understood (16). Self-192 marketing, labeling, and media assert reinforce the use of these products and sometimes force people to adhere to particular aesthetic tastes (17).

A survey done in one of the school in Saudi Arabia revealed that they practice hair removal at 56.2 percent different practices being influenced by socioeconomic and psychological factors (Saad et al., 2019). Likewise 52% of Somaliland female health science student used these products Out of these 60% were not aware of the ingredients used in the products (Mukhtar et al., 2019). In Tanzania, family and peer pressure made 56.5% of the women useskin bleaching agents (Owusu-Agyei et al., 2020). A qualitative study by Masood (2022) in Pakistan revealed that both media and peer pressure influenced young women’s decision to use skin lightening products which is linked with the every young woman’s low self-esteem and desire to fit in society. In South Asia, whiten skin remains linked to the modern social and economic growth process meaning that in the family and in the media people are expected to look like the increasingly white pressing. According to Ayesha Khan et al. (2024) said that media campaigns take advantage of these preferences to portray fairness as vital for a better social status and marriageable age. The purpose of this research will be to establish the current position regarding skin-lightening practices; as well as the factors involved and the risks incurred by women of Lahore to encourage awareness of the phenomenon and the need for enforcing laws.

**Materials and Methods**

A cross-sectional observational study was carried out from August to December. 2024 in schools, colleges and markets of Lahore city. In the context of this study, the objectives were to determine the level of prevalence; factors influencing the use of skin-lightening products; and the risk factors for skin complications among women in the city of Kermanshah. The women were selected conveniently during their antenatal clinic appointments using an available sampling technique based on the previous 12 months requirement of 295 women aged between 18 and 45 years. Questionnaire survey was adopted in this study with a descriptive 26-item questionnaires that contains questions on demography, usage, awareness and bad effects of the products

**Data Collection and Analysis**

A set of detailed questions concerning their utilization profiles, the reasons for utilization and their familiarity with products used in skin-lightening. As for the side effects, the questionnaire collected the information from the users. Data were analyzed using Statistical Package for Social Sciences version 26 of IBM. In the current study, t-tests, frequencies, chi-square tests, and Pearson’s correlation coefficients studies were used with an aim of establishing a relationship between demographic characteristics, usage and awareness of the product.

**Analysis and Results:**

Out of all the patients that were recruited into the study, 295 were female. The age distribution of the participants is as follows:

- 170 of the participants (57.6%) were in the age range of 18 and 26 years.
- 74 participants (25.1%) were in the 27-35 years age group.
- 51 participants (17.3%) were within 36-45 years old.

Regarding the education level, the following distribution was observed:

- 2.0% of the participants had education below Matric.
- 5.7% had completed Intermediate
- 1.4% had completed Matric
- 26.1% had Postgraduate education
- 64.7% had Undergraduate education

Regarding income levels, the participant’s distribution was as follows:

- 41% had no income (0 Rs)
- 18.6% had an income of 1000 Rs – 30000 Rs.
- 17.6% of respondents had an income between 31000-60000 Rs.
- 16.3% of them had an income ranging between 61000-90000 Rs.
- 6.4% had the income ranging between 121000–150000 Rs.

The marital status of the participants was as follows:

- 15.3% were married
- 84.7% were unmarried

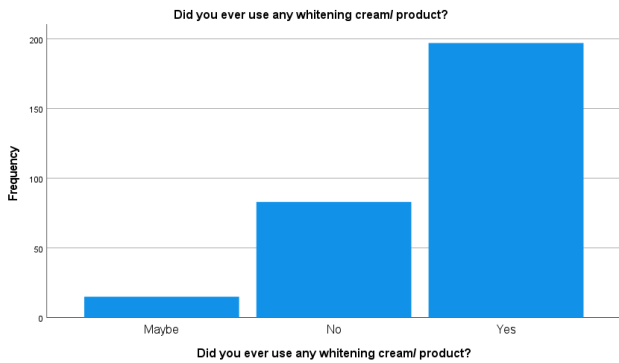
Regarding the usage of skin-lightening products:

- 66.8% of the participants said they use whitening creams or products.
- 28.1% of participants reported that they were not using any whitening products.
- 5.1% of participants were unsure or responded that they may be using whitening products.

Overall, these findings give the demographic and behavioral characteristics of skin-lightening utilization among the female population in Lahore.

**Table 1 Frequency Distribution of Demographics**

Age	n=295	Education	n=295	Monthly Income (PKR)	n=295	Marital status	n=295
18-26 Years	170	Below Matric	9	0 Rs	121	Married	45
27-35 Years	74	Intermediate	14	1000-30000 Rs	55	Unmarried	250
36-45 Years	51	Matric	4	31000-60000 Rs	52		
		Postgraduate	77	61000-90000 Rs	48		
		Undergraduate	191	121000-150000 Rs	19		
<b>Total</b>	<b>295</b>	<b>Total</b>	<b>295</b>	<b>Total</b>	<b>295</b>	<b>Total</b>	<b>295</b>



**Figure 1 Frequency Distribution of Using any Whitening cream/product**

Figure 3 showed the frequency distribution of using any whitening cream/ product. Showed that 37.6% of participants were using whitening cream/ product, 53.6% participants were not using any whitening cream/ product and 8.8% participant maybe using any whitening cream/ product.

**Table 2 Frequency Distribution of adverse effects, checking ingredients and usage of whitening products**

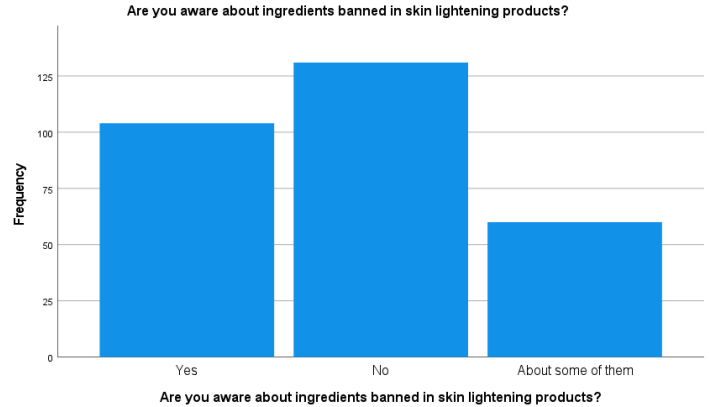
Variables	Yes	No	Maybe
Did you ever use any whitening cream/product	197	83	15
Ever encountered any adverse effects after using skin lightening products	106	136	53
Do you check ingredients while purchasing	66.4	25.8	7.5

Table 2 showed the frequency distribution variables Table showed that 66.8% participants were using whitening cream/ product, 28.1% participants were not using any whitening cream/ product and 5.1% participants maybe using any whitening cream/ product. 35.9% encountered adverse effects, 46.1% not encountered any adverse effect and 18% maybe or may not encountered any adverse effect. 66.4% check ingredients, 7.5% may check, 25.8% don't check and .3% may not check ingredients.



**Figure 2 Frequency Distribution of Skin Lightening Product**

Frequency Distribution of Skin Lightening Product Use: 26.1% used for less than 6 months, 13.6% for less than a year, 10.2% for more than a year, and 50.2% for various periods.



**Figure 3 Frequency distribution about awareness of banned ingredients in skin lightening products**

Figure 3.3 showed the frequency distribution about awareness of banned ingredients in skin lightening products, 44.4% were not aware, 35.3% were aware and 20.3% were aware of some ingredients that are banned in skin lightening cream/ product.

**Table 0 Correlation of skin whitening products and consequences**

Variables	P Value
skin whitening products and their consequences	<.049
skin whitening products and their awareness	<.015
skin whitening products and their adverse effects	<.03
skin whitening products and their consequences	<.04

Table 3 showed Correlation of variables between skin whitening products and their consequences in Pearson's and Spearman Correlation is <0.049 and <0.045. While the correlation between skin whitening products and their awareness is <0.015 and <0.041 and the correlation between skin whitening products and their adverse effect is <0.03 and <0.04. P value is less than 0.05 that shows that results are significant.

**DISCUSSION**

The present study explores key aspects of skin-lightening product usage among women in Lahore, including motivations for use, types of products, adverse effects, and influencing factors. The findings indicate diverse motivations for using these products:

19.7% of participants used them for hyperpigmentation disorders

- 23.1% used them to improve their complexion
- 27.1% used them for both reasons
- 29.8% used them for other unspecified reasons

Media advertisements significantly influenced these decisions, suggesting that advertisements could serve as platforms for educating the public about the risks of unregulated skin-lightening products (Liu et al., 2019). A similar study conducted in Malaysia with 104 students found significant differences in skin-lightening practices and a negative relationship between these practices and educational attainment. The products most commonly used in that study included cleansers, moisturizers, toners, masks, anti-aging creams, and sunscreens (Lartey et al., 2017). In this study, the most commonly reported products included:

- Creams/Bleach (20.3%)



- Cleansers/Moisturizer (43.0%)
- Table (2.0%)
- Other (Sunblock/serums) (34.5%)

Adverse effects were commonly reported, with 36.6% of participants experiencing acne, 26.4% reporting skin irritation, 4.1% developing eczema, and 27.7% facing other skin issues. In total, 46.1% of participants experienced adverse effects, while 35.9% reported no adverse effects and 18% were uncertain about their experiences. These findings underscore the potential health risks associated with these products.

A significant gap in product safety awareness was observed, with many participants unaware of the harmful chemicals in the products they were using. This highlights the need for targeted educational campaigns aimed at promoting awareness about product ingredients and encouraging self-acceptance. The economic burden of purchasing these products is concerning, especially for lower-income groups, as many women allocate a large portion of their income to skin-lightening products, often at the expense of essential needs. The introduction of affordable and safe alternatives could help alleviate this financial strain.

Physician's advice emerged as the most influential factor in product selection. This emphasizes the role of healthcare professionals in guiding consumers toward safe and effective choices. However, the lack of standardized guidelines for dermatologists in Pakistan complicates efforts to ensure consumer safety. Thus, the establishment of standardized guidelines and educational campaigns is essential to mitigate the adverse effects and financial burdens associated with skin-lightening practices.

#### Conclusions:

This study concluded that a significant proportion of women in Lahore use skin-lightening products. A positive correlation was found between the usage of these products and adverse effects such as acne, skin irritation, eczema, and skin dryness. Furthermore, many participants were unaware of the harmful ingredients in the products they purchased, which poses a risk to skin health.

#### Recommendations:

Future studies should focus on promoting self-acceptance and challenging the cultural beauty standards that favor skin whitening. Educational programs should aim to raise awareness of the risks associated with skin-lightening products, especially those containing harmful ingredients like mercury and hydroquinone.

Public awareness campaigns should emphasize the importance of informed decision-making when purchasing skin-care products and the need for safer alternatives.

More research is needed to investigate the psychological, cultural, and economic factors influencing the use of skin-lightening products. Long-term studies evaluating the effects of interventions on behavior and awareness should also be conducted.

#### Limitations:

Participant's reluctance to provide sensitive information and ethical restrictions may have affected the depth of the data.

The cross-sectional design of the study limits causal inferences regarding the relationship between product usage and adverse effects.

The long-term psychological and health effects of using skin-lightening products were not assessed in this study.

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**CONFLICT OF INTEREST**

Authors declared no conflict of interest, whether financial or otherwise, that could influence the integrity, objectivity, or validity of their research work.

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**DATA SHARING STATEMENT**

The data that support the findings of this study are available from the corresponding author upon reasonable request



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