

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



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**2023-2025**

## **UNDERTAKING BY STUDENT**

I am Nimra Noreen Regd. No. SU91-MSAHW-S23-065 declare that the contents of my research synopsis entitled “Skin Lightning Practices among women living in Lahore; It’s Prevalence, Effects, Determinants And Awareness” are based on my own research findings and have not been taken from any other work except the references and has not been published before.

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## **SUPERVISOR CERTIFICATE**

This is to certify that I have thoroughly reviewed the synopsis of Student Name: Nimra Noreen Reg No. SU91-MSAHW-S23-065 for Degree MS AHS (Aesthetic and Cosmetology) Session (2023-2025) on the topic “Skin Lightning Practices among women living in Lahore; Its Prevalence, Effects, Determinants And Awareness.”

I found it satisfactory for final submission.

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Synopsis entitled as “Skin Lightning among women living in Lahore; Its Prevalence, Effects, Determinants and Awareness.” Submitted by Nimra Noreen, Roll No. SU91-MSAHW-S23-065has been approved for research work.

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## ABSTRACT

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

**Study design:** It was a cross-sectional observational research 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 chosen through a simple random sampling technique to avoid biasness. A standardized questionnaire with 26 points was created to gather background information 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. Significant correlations ( $p < 0.05$ ) were found via correlation analysis 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 negative consequences 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.

**Keywords:** Skin lightening, skin whitening, Skin bleaching, Lahore, women, lightening products

# Chapter 1

## INTRODUCTION

Skin lightening is one of the most prevalent practices in Asia, which is associated with the wealth and desirability (1). The colonial remains of British control in South Asia were the origin of their desire for fairer skin, which has spread around the world. This historical background has influenced the perception that white skin is superior since it represents strength and status in the elite class (2). Aiming for a generally paler skin tone or lighter skin in darker areas of the body by a variety of procedures is known as skin lightening or skin bleaching (3).

Numerous countries have recorded cases of skin whitening, including half of the population in Malaysia, Korea, and the Philippines used the skin lightning treatments, 77% of the Nigerian women frequently used skin lightening agents, while SLPs account for 61% of the Indian skincare market (4). The practice has grown in popularity throughout South Asia, especially in Pakistan, as a result of media representations, colonial past and societal beauty standards.

According to a study global market of the skin lightning was projected to reach at \$8 billion in 2020 and is predicted to increase at \$11.8 billion within next six years till 2026. A regular use of skin lightening cosmetics is recorded by women in Mali, Nigeria, Togo, Senegal, and South Africa, where the percentages are 25%, 77%, 59%, 27%, and 35%, respectively (5). According a study in Pakistan many of dermatologists reported that 90% of their patients are women in the 25–40 age range who seeks for the skin whitening treatments (6).

Skin-lightening techniques work by lowering the amount of melanin produced or concentrated in the skin. Melanocytes, which produce and store melanin, are found in the basal layer that divides the dermis from the epidermis. A procedure that use chemicals to diminish melanin within the skin, hence eliminating dark patches. This has become a standard procedure among women because of the belief that skin fairness signifies attractiveness or elevated social status (8). Melanocytes naturally produce melanin, which are pigment molecules. This pigment provides skin its color and aids in sun protection. Melanin has the ability to act as sinks for free radicals and are strong cation chelators. The number of melanocytes is largely comparable across the various races (9).

Eumelanin has further two types which are brown and black. The dark colours in skin, eyes, and hair are caused by eumelanin. A person's eumelanin content varies depending on whether their hair is brown or black. Blonde hair occurs from a little quantity lacks black eumelanin and has brown eumelanin. While pheomelanin gives pigmentation to your lips, nipples, and other pinkish parts of your body. People who possess an equivalent ratio of eumelanin and pheomelanin have red hair. Neuromelanin determines the color of your neurons, while eumelanin and pheomelanin regulate the colors of objects you can see, such as hair, skin, and eyes (10).

Tyrosinase, a crucial enzyme in this process, makes it easier for tyrosine to be converted to melanin. Skin-lightening products function by either decreasing the formation of melanin or blocking tyrosinase activity. Common mechanisms of action include: **Inhibition of Tyrosinase, Exfoliation, Mercury and Corticosteroids** (11). There are many ways for skin lightening such as, IV like glutathione Injections, oral medications, chemical peels, lasers, sun block, and the topical creams, serums, moisturizer, lotion or bleaching agents for immediate results (12). Mostly in these procedure medications like hydroquinone, glutathione, Licorice extract, Soy proteins, Vitamin C, Retinol, Arbutin, Niacinamide, Tranexamic acid, azelaic acid, kojic acid, or mercury are frequently used as agents that suppress the synthesis of melanin in order to lighten skin. Commonly utilized substances include mercury, hydroquinone, corticosteroids, and natural substances such arbutin and kojic acid. In skin care products, the permitted amounts by FDA of skin lightening agents are 2 percent for the hydroquinone, < 1 mg/g for the mercury, 2% for ascorbyl glucoside, 2% for the kojic acid, no limit for ascorbic acid, and 7% for the arbutin (13). However, Hydroquinone is the gold standard in United States because it is an extremely reactive oxidant that reacts with oxygen quickly but is also banned in some countries because of its adverse effects (14).

The FDA suggested that the amount of hydroquinone is an active component in the over-the-counter skin-bleaching medications should not be more than 1.5-2.0%. Safety of the hydroquinone in relation to a number of medical disorders, including neuropathy, leukoderma, and exogenous ochronosis, with the frosting like depigmentation with prolonged exposure, was taken into consideration while making

this choice (15).

Corticosteroids are anti-inflammatory drugs that inhibit melanocyte function, however long term use of these medications can result in systemic problems and skin thinning. While mercury is extremely toxic and can cause neurotoxicity and nephrotoxicity, despite its effectiveness. On the other hand Natural Substitutes: Vitamin C, kojic acid, and arbutin are regarded as safer substitutes and are becoming more popular in contemporary skincare products. Topical corticosteroids and fairness creams represent a serious risk to the public's health due to their negative side effects. In Pakistan, the preference for pale skin is greatly influenced by social and cultural factors (16).

The primary side consequence of the inorganic mercury found in skin whitening the soaps and lotions is renal injury. Mercury present in the skin lightening agents can result in scars, rashes, and discoloration in addition to a decline in the skin's resistance against bacterial and the fungal infections. Other consequences included peripheral neuropathy, psychosis, and depression or anxiety. Phenyl mercuric salts can, however, be used as a preserving agent in the eye makeup products at concentrations of 0.007% or less by weight (17). Mercury in soaps, lotions, and other cosmetic goods eventually ends up in wastewater. After entering the environment, mercury undergoes methylation before becoming a highly hazardous form of methyl mercury in fish. Methyl mercury is passed to the growing fetus when pregnant women eat seafood that contains it, which can cause neurodevelopmental problems in the offspring (18).

The notion of beauty can encompass a variety of attributes that appeal to the aesthetic senses, particularly sight, such as form, color, and shape. Although everyone's concept of beauty is different, fair skin is a key factor in determining what makes a woman beautiful. People frequently associate women with pale skin with money and attraction. People believe that having white skin is linked to societal advantages including greater employment and marriage opportunities. Regarding the health effects of skin-whitening creams, consumers are not particularly concerned. Cost and ingredients are the two most crucial considerations for consumers when choosing products. Although consumers are aware of the potential negative effects, they continue to use the same products (20).

The necessity of rigorously avoiding the sun both during and after treatment is one of the most crucial factors to take account when using skin-lightening solutions (21). The effectiveness of skin lightening is dependent upon the proper usage of sunscreen. Following treatment, the discoloration and hyperpigmentation may quickly return if the patient goes back into the sun. UV exposure can cause post inflammatory hyperpigmentation, which can lead to epidermal inflammation, the generation of reactive oxygen species, and the activation of melanocytes. Chronic UV exposure results in hyper-pigmented spots called solar lentigines (Also referred to as actinic lentigines, liver spots, or aging spots) that eventually show on the skin's surface (22). In Pakistan all the cosmetics are considered safe if they are FDA approved and are in the specific concentrations allowed by FDA. Pakistan has its own cosmetic authority which is Pakistan General Cosmetic Authority who passed its Act on October 30, 2023.

Fair skin is portrayed in the pharmaceutical and advertising sectors as a factor that promotes success in both personal and professional spheres, including employment and marriage opportunities (24). Advertising plays a significant role in influencing product selection for skincare as branding of skin care products has a significant impact on customer behavior, as consumers often Buy items that claim to make anyone look as gorgeous as the model on the label. (25).

There is a lack of research on the cosmetic procedures in Pakistan, especially concerning the skin lightening practice and awareness. This study set out to evaluate skin whitening practices as well as attitudes, perceptions, and levels of knowledge regarding these practices.

## **OBJECTIVES**

- To determine prevalence of the skin-lightening product usage among women in Lahore.
- To identify societal, cultural, and economic factors influencing these practices.
- To evaluate the adverse effects experienced by users.
- To assess awareness levels regarding the risks of skin-lightening products.

## **Chapter 2**

## **LITERATURE REVIEW**

A study was done by this author (Saad F, et al., 2019) to evaluate the traits, determinants, preferences, and the adverse effects of the usage of skin lightening products between Saudi female students and their link with the mental health. A self-administered pre validated questionnaire, was conducted which contained the demographic data, and two questions were about the knowledge of skin lightening products, 8 questions regarding the views of the fair skin, and 3 proxy scales for the mental health as depression, post-traumatic stress disorder. Participants' ages ranged from 29 to 9.6 years old on average ( $\pm$  standard deviation). Of those that responded, 427 (56.2%) utilized skin lightening products out of 760. All of them were women with the relatively light skin. The results showed Skin-lighteners were utilized by the participants for both medical and cosmetic purposes. 17.5% and 67.2%, in that manner. Thus research concluded that use of skin lightening products is highly prevalent among Saudi Female students who are less wealthy and have some mental health issues are more likely to misuse skin lightening products (26).

A study was done by this author (Zara William, et al., 2024) to figure out adults, knowledge, convictions, and the practices of skin bleaching in the north-eastern Nigeria. The study type was cross sectional descriptive study and then conducted data analysis by using SPSS. It was noticed that the skin bleaching was quite common practice in northeastern Nigeria and nearly half of respondents were not aware of the long-term adverse effects or the consequences, as well as the ingredients in the skin bleaching agents. The study concluded that many of the people in communities use skin bleaching products because they really want to look good, be attractive, and have a high social standing on the basis of their complexion. Even though it can be dangerous because of not knowing enough about it and having incorrect beliefs. Thus government and other authorities should take action and protect the public from hazardous skin bleaching agent through education, legislation or other possible ways (27).

A study was done by this author (Masood 2022) it was a cross-sectional study reported on 499 patients to assess the frequency of the skin lightening products and levels of self-esteem where levels of self-esteem were measured by Rosenberg self-esteem scale. The study was held for a duration of 12 months. Only 9.3% (n=47)

participants were having the low self-esteem. Out of that only 115 patients used skin lightening products. The majority of university students in this sample population had high self-esteem, and the incidence of skin lightening products was determined to be low. They found no relation between complexion and self-esteem (28).

A study was done by this author (HPUV, et al., 2024) who put forward a research showing the review of knowledge, practices and attitudes on skincare routines of face and the cosmetic products in under-graduates students of universities and higher educational institutes. A highly organized questionnaire (N= 255) was employed in a descriptive cross-sectional research of the undergraduate students in the Western province who were between the ages of 18 and 30. 145 of participants were included with 21.18% were male participants and 78.82% were female participants. The results showed that most frequent used skincare items were the moisturizer 48.23% and face cleanser 82.53% and while buying face skincare products, students consider about a number of aspects, such as the brand 66.27%, the price 69.02%, ingredients 74.50%, the expiration date 65.10%, skincare benefits 73.72%, fragrance 31.37%, and the container 25.10%. Only 9.42% of the respondents favored synthetic elements thus this study revealed that some of undergraduates did not have an accurate awareness about the skincare routines, indicating a requirement for the further knowledge in this area (29).

Over a 12-month period, a cross-sectional study involving a suitable sample of the 499 students of both genders was carried out at the University of Karachi and Jinnah Medical and Dental College. Participants with scores below 15 reported low self-esteem in just 9.3% of cases. The self-esteem score was low for just 1% of people with dark skin, 5.4% of people with medium skin, and 2.8% of those with the light skin.

A study was done by this author (Farzana Rahiman, et al., 2021) it was a cross-sectional study to determine knowledge, the views and practice toward the skin lightening among the young adults. Participants in the study included 401 people in total, and the prevalence of skin-lightening among students was modest (12%). The participants agreed that the family and friends were most likely to affect this behavior and both of them the males and females were found to be equally likely to used skin lightening products, and those residing in urban settings are 10 times more

likely to engage in the practice compared with rural dwellers. The findings show how important social media and family are in encouraging people to use Skin Lightning Products. Also, the fact that both males and females are equally likely to use them indicates that more guys are starting to use Skin Lightning Products (30).

A study was done by this author (Mukhtar, et al., 2019) to ascertain the prevalence of use of the skin lightning products between women in health science students, opinions regarding these products and methods, and negative impacts experienced. This was cross-sectional study and total of the 400 students were taken out of which 265 completed the survey. Most students (94.2%) had a Fitzpatrick skin type of 3 or darker and were single. The mean of participant age was 21.1 years (standard deviation: 2.0 years). Of the participants, 52.2% acknowledged present use and 25.6% acknowledged former use. Over 60% of the participants weren't sure what stuff was in their skin lightening products. Just 9% said they didn't have any bad effects, while the rest mentioned a mix of local and body-wide bad effects. Most people understand that these products can lead to not-so-great systemic (89%) and local (92%) impacts. Thus the study concluded that Use of skin lightning products among female of health science students in the Somaliland was common, and induces negative systemic and cutaneous reactions (31).

A study was done by this author (Mariah, et al., 2020) to determine that the skin lightening practices between shoppers in chosen markets in the Kumasi Ghana, it was a cross-sectional study survey in three of the Kumasi's largest markets. An analysis was conducted and 331 completed surveys. A total of the 40.4% respondents stated that they have used the skin-lightening products either now or in the past. Of those, men, 26.6% reported using these products in the past, compared to women, 56.5%. Using skin-lightening products was substantially correlated with female sex. All of the participants have a high frequency of skin-lightening, which was associated to perceptions of highly affluence, attractiveness, self-worth, and beauty (32).

A study was done by this author (Jaqandeesan S, et al., 2020) it was a cross-sectional study that was based on the questionnaire among the female students of a campus to determine the bleaching and skin lightening practices. This study shows that out of 880 participants 34.77% had at least one "bleaching" experience. 40.5% were

unaware of the negative effects of “bleaching,” while 63.8% were unaware of the ingredients. Among of those who bleached, 60.06% reported adverse effects. Only 22.8% of the respondents had used the sunscreen, and just 2.3% went to a dermatologist. The major reasons people who bleached their faces were to get rid of facial hair (19.5%), to have a “fairer” complexion (15.1%), and to have “glow” before the event (15.2%). This study concluded that bleaching of the face and, skin and hair were common in their society, and even among young people with the education, awareness of this practice is low (33).

A study was done by this author (Beshir S, et al., 2023) to determine extent of the skin lightening procedures used among women, the information sources they utilize, investigate the variables linked to SLP use, and to examine the knowledge, attitudes, and the practices connected to SLP between UAE women. A questionnaire was allocated in English and in Arabic to the women. Additionally, chi-square tests were employed to examine the relationships among SLP use, dichotomized KAP scores, and demographic characteristics. 370 participants were included in this study of which 40% were from the Middle East, 91% of them who had university degrees, and 50% had the healthcare associated profession, 64.8% were unmarried, Participants with knowledge, attitude, and the practice scores of  $\geq 70\%$  are 66.48%, 76.75%, and 74.72%, in that order. The study concluded that campaigns for education and more stringent laws are required to encourage the responsible use of skin lightening practices (34).

A study was done by this author (Alatawi, et al., 2020) to investigate frequency with which Saudi women use the skin-bleaching products on their own, as well as the degree of knowledge, attitudes, and usage of these agents. Data was collected by a structured questionnaire. Out of 358 women, approximately 25% were now utilizing the skin-bleaching products, and 39.6% of them had used in the past. 38% of the women obtained them through a doctor's prescription, and 27.8% of them got without a prescription. Creams were used by 51.6% of females to enhance their appearance, 51% to create a fresh appearance, 6% for having a strong level of confidence, and 4.3% to increase stability of the marriage. According to nearly 56% of the ladies, cortisone in skin-bleaching agent's most harmful ingredient. The study indicates that many respondents used unknown agents, awareness of these agents is

minimal. Additionally, skin-bleaching chemicals obtained without physician or pharmacist consulting are used extensively (35).

A study was done by this author (Yayehrad AT, et al., 2023) to evaluate the degree of awareness between females in the Bahir Dar, Ethiopia, regarding the adverse effects of the skin whitening products and their linked factors. 362 female samples were chosen utilizing a multistage sampling strategy. Merely 42.7% of the participants had a favorable awareness level. The usage of skin-lightening cosmetics was mostly driven by peer pressure (39.9%) and social media (37.4%). Almost 50% of the consumers reported experiencing adverse effects. Only 8.9% of participants were aware of items' active components. Study concluded that in addition to legal limitations, strong correlation between awareness and educational attainment should be taken into account as an additional intervention (36).

A study was done by this author (Daftary, et al., 2023) it was a cross-sectional based on a study to investigate prevalence of Skin Lightening practices among Americans, encompassing both general and targeted lightening for the treatment of skin conditions, and the influence of colorism on these practices. 455 participants completed the survey. 21.3% participants reported using skin lightening agents: 73.2% used them to cure a skin issue, whereas 26.8% used them for the general skin whitening. Before using the products, just 22.6% of skin lightening users consulted a doctor. Participants reported using hydroquinone-based products in 35.1% of cases, whereas 45.4% were not aware of the ingredients in their skin lightening products, they do not seek medical advice prior using them, and they have access to the potentially dangerous formulations, skin lightening is a health risk that is widely accepted in United States (37).

A study was performed by this author (Abdrmane, et al., 2024) to investigate that do consumers of skin-lightening cosmetics understand the effects they are having. The social and health effects of skin depigmentation were extensively researched. 46 women participated in this socio-anthropological study in the Bobo-Dioulasso, to investigate their level of awareness in the advantages and disadvantages of the skin-lightening cosmetics. The study's findings indicate that while there are health hazards such as skin disorders and sun sensitivity, users also recognized benefits such as enhanced social status and self-esteem. Using these items indicates a complex

awareness about the effects of skin depigmentation, as it displays a careful evaluation of the social, personal, and economical benefits against the potential health hazards (38).

A study was done by this author (Nyoni-Kachambwa P, et al., 2021) to determine the phenomenon of skin bleaching, its trends, and the contributing variables among Zimbabwean women. It was a cross-sectional survey based study consisting of 260 respondents, percentage of the participants who had bleached their skin was 31.15%. Having smooth and healthy skin, in addition to other attributes like beauty and obtaining social favors like marriage and good jobs, was the main cause of skin bleaching that was documented. The probabilities of bleaching skin were 2.87; p-value is 0.03 for those who were without a partner, 2.56; p-value is 0.01 for those with the dark skin, and 1.45; p-value 0.02 for those who were with light skin. Skin bleaching appears to have its roots in colorism and may be extremely harmful to women's health. The cosmetics business seems to be taking advantage of the colorism by making it potentially harmful products that promise the women their desired light skin, but at a cost (39).

A study was performed by this author (Banala M, et al., 2023) to explore into South Asian Americans' opinions about skin tone, the prevalence of using the skin-whitening products, and the negative effects of doing so. They carried out a cross-sectional study in which 175 women or non-binary people were recruited and surveyed. 31% of the respondents have previously used the skin-lightening product. 11% of users were aware of side effects, 33% reported that side effects most commonly acne and dry skin. Statements linking lighter skin to higher self-esteem ( $P=.73$ ), social status ( $P=.98$ ), marriageability ( $P=.94$ ), and attractiveness ( $P=.31$ ), and the respect from others ( $P=.74$ ) were equally endorsed by users and nonusers. This study emphasizes the need of more efforts to question damaging beauty norms and educational campaigns regarding the possible health risks connected to skin-lightening procedures (40).

A study was done by this author (Malik SS, et al., 2021) to assess users' understanding and the driving factors behind use of the skin-lightening products. It was a cross-sectional study based on 250 patients who were using skin lightening creams. Age range of skin lightening product consumers was 16–56, with females

making up the majority (190). 158 were married, 180 had higher level of education, and 146 primarily had Fitzpatrick skin types 3-5. Our questionnaire's Cronbach alpha was 0.802. Eighty-nine people, utilized the product after seeing it recommended on social media. Telangiectasia and skin thinning were most frequent side effects, accounting for 201 of the developed cases. 88 people were using skin-whitening methods other than these creams. Study concluded that skin lightening procedures are motivated by misconceptions and a lack of user awareness, which leads to higher usage and adverse consequences for users and a widespread educational campaign about "skin lightening creams" is much-needed. This study came from a dermatological OPD with particular clients who are largely educated, therefore results cannot be generalized (41).

A study was conducted by this author (Khalil RA, et al., 2021) it was a cross-sectional study carried out at University of the Khartoum's medical campus in order to ascertain female undergraduates' knowledge, attitudes, and practices about skin-whitening. 365 participants completed the questionnaire, obtaining response rate of 87%. Out of them 32% had inadequate knowledge, 16% had outstanding knowledge, and 52% had ordinary knowledge. 38% said they used skin-whitening creams, and 32% had a positive attitude. The media and social media were crucial since they were the primary information source and put pressure on women to lighten their complexion. According to the study, the media and social media should encourage people to embrace those with dark complexion and provide knowledge about safe skin-whitening procedures. Study stated that Authorities should require that the labels of all products marketed in Sudan provide information about the ingredients' concentrations (42).

A study was done by this author (Parvathi N, et al., 2021) to look into people's understanding, attitudes, and usage of SLPs as well as the social and psychological relationships that surround them in a district in south Karnataka. By using a questionnaire, study investigated the usage of SLPs among 2000 people of all ages and genders. Women are twice as likely as men to use SLPs, with 33.8% of the sample reporting current use of these items, and of those 12.8% have had negative side effects in the past. The two main motivators for utilizing fairness products were "friends" and "family." The study finalized that SLP use was significantly prevalent

and a number of social and mental health-related risk factors, also the need to shift people's perception of beauty as being fair. The study indicated that dermatologists had a moral responsibility to avoid prescription skin whitening products purely for fairness (43).

A study was carried out by this author (Tesfamariam, et al., 2023) to investigate the awareness, understanding, and use of skin lightening agents between females in the Asmara, Eritrea. A quantitative cross-sectional analysis was carried out. The study enrolled 721 women and 684 finished it. Most respondents believed that skin-lightening agents can make someone more attractive than someone with dark skin (58.8%), light-skinned (84.4%), gorgeous (67.8%), and stylish and fashionable (55.0%). Approximately 46% of users were still using it, but 53.6% discontinued because of ineffectiveness, side effects, or fear of side effects. Among 150 natural skin-lightening agents, Aneeza, Natural Face, and Betamethasone were the most popular. Study concluded that the regulatory authorities and stakeholders should address this major public health issue by establishing a regulatory system to address the dangerous practices and to promote public knowledge of cosmetic safety (44).

A study was done by this author (Egbi OG, et al., 2021) it was a cross-sectional descriptive study type to assess the prevalence, determinants, and perception of the use of SLP between female undergraduate medical students in the Nigeria. Of the 110 respondents who finished the study, more than half (56.4%) were between the ages of 20 and 24. SLP use was 40.9%, with facial cleansers being the most popular (51.1%). Over 80% of people understood SLP might produce side effects, with 64.5% identifying skin irritation. Despite the fact that 80% of respondents did not believe that light skin was superior then the dark skin, the most common justifications for use were "cosmetic reasons" (37.8%) and "removal of discoloration/dark spots" (40%). A constraint of research is the limited sample size sourced from one institution. This study found that there was a high rate of SLP use among respondents in order to prevent dangerous use, it is crucial to educate the general public about their bad effects (45).

A research is done by this author (Ibekwe PU, et al., 2020) the aim of this study was to record what college students know, how they feel, and why they use skin lightening products. A questionnaire-based cross-sectional survey was done among

University of Abuja, Nigeria students. A pre-tested questionnaire was completed by 200 students—24 male and 176 female. The use rates of skin whitening soaps and body creams were 25.5% and 46%, respectively. Men used more skin whitening body creams than soaps. Only 19.6% of students who used SL body creams had ever applied sunscreen lotion to their bodies or faces. Skin lightening products were most commonly recommended by friends. The study found that mostly students confused skin toning with skin lightening, bleaching, or whitening also institutions should educate students on proper SL terminology and the need of using sunscreens (46).

A study is conducted by this author (Regencia ZJ, et al., 2023) to determine the factors that affect Filipino emerging adults' body image perspective, skin-lightening practices, and the mental well-being. A case study featured 25 in-depth interviews, while a cross-sectional study involved 1258 participants who completed an online self-administered questionnaire. Study found that this quantitative methodology will not evaluate temporal links between body image perspective, skin-lightening behaviors, and the mental health status. The questionnaire was online, thus it may only be available to study participants with the internet access. The author stated that by using this research the Education Department can promote physical and variability in skin tone in the early education. Study concluded that society must explicitly encourage good body image to support genuine mental health issues (47).

A study is done by this author (Al Kathiri MA, et al., 2022) to investigate female university students' knowledge, attitudes, and practices about application of the topical bleaching chemicals. A descriptive survey was conducted on 100 female students. Study results indicate frequent usage of topical bleaching agents. Most respondents aged 20-25 tried skin lightening. Skin bleaching and its serious negative effects were poorly understood. The majority (68%) were unaware that corticosteroids in bleaching agents can lead to diabetes, hypertension, and obesity. (40%) respondents stated that bleaching agents can enhance beauty, fairness, and radiance. (63%) used skin bleaching products daily. Study samples were limited to one university. The survey concluded that respondents were unaware of negative consequences of bleaching products. Educational activities for the public could be expanded via mass media (48).

A study is conducted by this author (El-Sayed S, et al., 2024) to assessed Ahfad

University for Women students' knowledge, attitude, and the practice of skin-whitening products. 200 participants participated in this descriptive cross-sectional study. The average participant age was 23. Many people were aware about the skin whitening products and their harmful effects, but only 32% know their ingredients, mostly students were from medical and health colleges (18%). (63%) used skin whitening products, School of management used these items the most (22%). (61%) of users reported no adverse effects, whereas (39%) reported local and systemic adverse effects. Study stated that these findings could not be applied to the whole population of Sudan as they were limited to female university students and the public. Study indicated that students had high skin whitening product knowledge, attitude, and the practice but skin whitening agents' dangers were ignored (49).

A study was conducted by this author (Yayehrad AT, et al., 2023) to assess the level of awareness towards adverse effects of the skin lightening products and related factors between females of southwestern Ethiopia discovered that dermatological items taken by individuals contain prohibited components. Study concluded that 42.7% of the participants had a good level of awareness. Peer pressure (39.9%) and the social media (37.4%) were the most influential factors for utilizing skin whitening products. Nearly half of the consumers reported adverse effects. Only 8.9% of the respondents know about active components in the products. Evaluating the degree of SLP usage from multiple perspectives should result in development of the tailored interventions intended at altering views and educating users about the potential impacts of their use (7).

A research was done by this author (Banala M, et al., 2023) it was cross-sectional study conducted on South Asian Americans; 55 out of 175 participants had previously used the skin-lightening product. Parental pressure to use skin-lightening cosmetics, as well as less time spent in the United States, were strongly related with their usage. Although just 6 percent of users were conscious of the potential negative effects of skin-lightening treatments, 33 percent stated unfavorable effects, with acne, the skin irritation, and dry skin being most prevalent. Both consumers and non-consumers agreed that lighter skin is associated with enhanced beauty, marriageability, self-esteem, social standing, and the respect from others. This study emphasized the importance of educational campaigns regarding the potential health

dangers linked with skin whitening, as well as intensified efforts to oppose destroying beauty standards (19).

A study was conducted by this author (Al Kathiri MA, et al., 2023) in this study, there was a lack of awareness regarding the risks associated with skin bleaching. (68%) were unaware that corticosteroids in bleaching agents can lead to diabetes, hypertension, and obesity. 40% of respondents stated that using bleaching products can improve their beauty, fairness, and glowing complexion. Skin bleaching products were utilized frequently, with 63% using them on a daily basis. The study suggested for more educational campaigns about the hazardous effects and ingredients of skin lightening agents (23).

A study was done by this author (Regencia ZJ, et al., 2024) this study investigated correlation between Filipino emerging adults' psychological distress levels and their understanding of, attitudes about, and usage of SLP. It was a cross sectional survey based study based on 3127 participants. The study stated that high perceived benefit of using skin lightening agents was connected with an increase in depression levels by 95%. Furthermore, frequent usage of skin lightening agents was related with (20-24%) lower depression levels and (11-18%) higher anxiety levels. Lastly, once-a-week use of Skin Lightening Products was associated with a 35% reduction in stress levels among individuals. Moreover, the findings of this study may lead to development of the public health policy to deal with the impact of skin-lightening procedures on the mental health (51).

A study was conducted by this author (Santoso M, et al., 2025) to comprehend the skin-whitening promises and items that TikTok customers encounter on that platform. It was a cross-sectional content analysis on 100 most-viewed videos using the (#skinlightening) hashtag on TikTok (N = 79) and generated descriptive statistics. Ineligible and unrelated movies contained those that had been withdrawn from website by the consumer or the platform since start of collection, or those that involved the whitening of a portion of the body other than skin, such as the teeth or hair. Most people featured were more likely to be South Asian (43.1%), Black (30.4%), or African American (72.2%), and to have lighter skin tones (49.4%) in the videos. Adults aged from 25 to 59 made up largest group (40.5%). The majority of videos did not present scientific proof of effectiveness (98.7%) or the qualifications

of the product's influencer (88.6%). TikTok videos that promote skin whitening target women and people of color, which emphasizes the necessity for body image researchers and practitioners to evaluate social media use and its risks relative to skin shade dissatisfaction, as well as calls for platforms to instill community guidelines that prevent the spread of colorist ideals (52).

A study was done by this author (Bilewu OO, et al., 2025) to investigate the socio-demographic variables and health concerns related to young adults' skin-lightening practices. A cross-sectional study having a sample size of 450 participants. Majority of participants in the study were young, unmarried female secondary school students, and the study found that skin-lightening procedures were relatively common among them (65.3%). n. Commonly reported adverse health consequences included darkening (25.3%) and skin irritation (37.8%). Nevertheless, 76.2% of those surveyed were not aware of the product's long-term effects. Tribal traditions and affordability were two examples of cultural and economic elements that had a big impact on behavior. For example, the highest usage rates were recorded by younger demographics, specifically those aged 21–23 (53).

A study was conducted by this author (Pollock S, et al., 2021) to see dark side of the skin lightening it was a review based study with the international collaboration. This study looked at skin lightening in America, Asia, Africa, and the Middle East. The study evaluated that the increasing number of patients from varied backgrounds visiting dermatological clinics demands consideration of cultural customs (like Skin Lightening) and potential motivating factors. Study concluded that to completely explain how change can take place, more research into the socioeconomic and societal drivers of skin lightening will be beneficial. Also regulations must have been implemented globally to tackle growing skin whitening market and the potential harm these activities may create (54).

A study was done by this author (Lasco G, et al., 2020) to focuses upon a targeted ethnography of skin-lightening behaviors among young men in two Philippine cities. Young men who exhibit excessive concern about their skin by publicly using face washes and skin creams risk being viewed as unmanly, but if their skin tone is too pale, they might not be hired for the job they want. The study found that in a globalizing economy, the desire for lighter skin was not an isolated effort but rather a

form of the body modification that was practiced in figurations between male peers, among men and women, and between men employers and the customers. In general, shifting ideas of masculinity, the constant desire to fit in with one's peers, and the urge to stay up to date with always evolving trends are the best ways to understand the skin practices and preferences of young men in the Philippines (55).

A study was done by this author (Garner S, et al., 2023) some important Topics, patterns, and frameworks identified in the multidisciplinary skin lightening research were highlighted in this study. Sociologists are interested in a number of intersecting areas that are affected by skin whitening. These include femininities, materialism, capital, the body, racialized and gendered social interactions and representations, masculinities, the influence of the media on people's perceptions of beauty, and the effects of colonial pasts on the present. The study concluded that a change in perspective to focus on the discourse and counter-discourse would recast women as active participants in the cultural resistance and transformation rather than merely the comparatively helpless victims of colonialism. Therefore, we lay forth a comprehensive research program that will turn skin lightening into a topic of extensive, ongoing sociological study (56).

A study was conducted by this author (Saade DS, et al., 2021) that assessed the usage trends of prescription skin-lightening creams, especially among US patients with darker skin tones. Results showed that Among 404 participants, melasma was the most common diagnosis linked to prescription product use (60.8%), and the quality of life of patients was moderately impacted by skin hyperpigmentation. Hydroquinone was most often prescribed medication (62.9%), followed by the triple combination cream (31.4%). Less than 20% of respondents thought that azelaic acid and prescription steroids helped. Most patients (>64%) were not sure if they were aware of their hyperpigmentation diagnosis. In order to advise, customize, and select the best course of therapy, dermatologists must assess how pigmentation disorders affect their patients' lives (57).

A study was conducted by this author (Adebimpe WO, et al., 2020) it was a cross-sectional study type among University undergraduates with a sample size of 300 participants. The study evaluated undergraduate students in Osun State, Southwestern Nigeria, on their awareness of and usage patterns of skin-lightening

cosmetics (SLCs). The Internet was the most popular source of information, and the majority of students (94.3%) were aware of SLCs. About 67.0% of respondents had a negative opinion toward the usage of SLC, whereas 69.0% had good knowledge. Fifty-nine (60.5%) respondents continue use SLC now, forty-five (39.5%) stopped using it, and eighty-one (27.0%) respondents were aware that SLC caused adverse consequences. Study suggested that a sizable percentage of SLC users in the survey had good information but poor attitude, which highlighted the need for more public awareness in this area and for focusing on this vulnerable, youthful demographic (58).

A study was done by this author (Motlohi NF, et al., 2023) to evaluated African Basotho women's knowledge, attitudes, behaviors, and variables related to health risk awareness with regard to SLPs. It was a cross-sectional study based on a questionnaire. The findings indicated that 78.2% of respondents had sufficient knowledge of SLPs. In percentage terms, pharmacies (41.9%) and supermarkets (67.6%) were the primary providers of SLPs. Approximately 43.7% of the participants used SLPs, and the majority of those who used them were factory workers. The majority of users (53.4%) did not know enough about the connection between skin issues and skin whitening. Skin reddening (33.6%), dry skin (41.1%), and rash (blemishes, pimples) (43.9%) were the most frequent reasons for using SLPs. Among African Basotho women, skin whitening was moderately practiced and sufficiently understood. To combat the issue of SLP usage, stringent laws and public awareness programs are needed (59).

A study was performed by this author (Okoro E, et al., 2022) to ascertain the level of skin-brightening knowledge, attitude, and the practice among teenage girls in the Nigeria. Poll was filled out by 247 teenagers, whose mean age was  $15.39 \pm 1.22$  years. 189 of people (76.5%) were aware of the skin-brightening, indicating a higher level of awareness. Although 91 people think that the skin-brightening makes one look lovely, a noteworthy number (39.7%) think that it makes one look more fashionable. The most often detected ingredient was carrot oil (11), followed by hydroquinone (7). Other constituents were egg, vitamin E, papaya, cucumber, lemon, acids, and turmeric. Twenty-seven students (10.7%) reported using skin-brightening. The participants' familiarity with bleaching products included creams (76.9%),

injections (5.7%), soaps (7.7%), and pills (1.6%). Skin-brightening first appeared at the age of eleven. A significant percentage of teenagers think skin-brightening is in trend. Early adolescence marks the beginning of the skin-brightening practice (60).

A study was completed by this author (Shivakumar S et al., 2020) the goal of this study was to draw attention to the various issues surrounding the usage of skin-lightening procedures. Clearly, banning skin-lightening cosmetics is not enough to address this problem. Fairness is seen by society as a determining factor in finding a life-long partner. Fair skin that was represented in the media as a prerequisite for success. Young minds are influenced by these subtle factors, which make them having desire fair skin. It is one of the most prevalent types of the body dysmorphic disorder, according to medical professionals. This article attempts to identify the psychosocial elements that shape this mindset and the potential negative psychological and physical impacts it may have on an individual. Social initiatives that educate patients and parents should work to improve self-esteem and foster a healthy body image in order to avoid avoidable emotional and social consequences (61).

A study was carried out by this author (Abdalla AA, et al., 2020) to find out how many women students at the Ibn Sina University in Sudan use skin-whitening agents. The assessment of potential problems and risk factors resulting out of the growing use of the skin-whitening products was a further objective. A total of 138 females, ranging in age from 17 to 25, provided the data. According to the findings, 47.4% people used skin-lightening agents, with 58.8% of the respondents being between the ages of 20 and 22, whereas the majority (52.6%) had never used them. 26.3% of the students acknowledged using skin-whitening products occasionally. Most of the respondents indicated that the two main skin issues were acne (27.0%) and skin redness (33.3%). The participants genuinely believed that fairness results to the attainment of a partner, as can be observed. The study determined that in order to prevent ovarian or skin cancer, people should be more aware of early warning signs of complications and how to treat them right away (62).

## **OPERATIONAL DEFINITIONS**

**Prevalence:** Prevalence is the proportion of a population that possesses a specified feature throughout a given time period.

**Prevalence** = Proportion of people in sample with characteristics / Total Proportion of people in sample

**Determinants:** A determinant is defined as an element that determines the nature of something, fixes an outcome, or determines its identity.

For example; in this research determinants will be socio-demographic factors, media exposure, economic status etc.

**Skin Lightning Products:** Skin lightening products, often referred to as skin brighteners that are intended to lighten skin color. Dark skin areas, such as age spots and acne scars, are commonly treated with these products. They are frequently applied to lighten the complexion as a whole.

**Melanocytes:** The neural crest-derived cells known as melanocytes, which generate melanin, are present in the inner ear, bones, vaginal epithelium, meninges, heart, the stratum basale, the bottom layer of the skin's epidermis, and the uvea, in middle layer of the eye.

**Melanin:** Melanin exists as a naturally occurring substance in the body that influences the color of hair, skin and eyes in humans and animals.

## **Chapter 3**

# METHODOLOGY

## 3.1. Research Design:

Cross-sectional observational study

## 3.2. Clinical Settings:

The study was conducted in different places of Lahore, as universities (Superior University, University of Lahore, and UMT), Emporium Mall and Packages mall Lahore.

## 3.3. Sample Size:

The formula for calculating sample size was

$$n = (Z^2 * p * (1 - p)) / E^2$$

Sample size was 295 participants.

## 3.4. Sampling Technique

Simple Random Sampling was used to avoid biasness.

## 3.5. Duration of Study

This study duration was four months.

## 3.6. Selection Criteria

### 3.6.1. Inclusion Criteria:

- Women of age 18 – 45years.
- Data was collected from women living in Lahore.
- Data was gathered through questionnaire and by interviews.

### 3.6.2. Exclusion Criteria

- Women underage of 18y and above age of 45y were not included.
- Data was not collected from any other city expect Lahore.
- Pregnant women and Males were not a part of study.

## 3.7. Ethical Consideration:

Participants were provided consent, and the survey aimed to identify safety concerns related to their identity.

## 3.8. Data Collection Procedure:

The data was gathered through a questionnaire or by interviews. A 26-point structured questionnaire was built to record the background data and to evaluate perceptions, attitudes, and experiences towards the skin lightening.

## 3.9. Data Analysis:

Data was examined by using IBM-SPSS-26 through frequency distribution and descriptive statistics. Bar graph displayed for each variable. The chi-Square test was used to find the prevalence. Pearson's correlation test was used to figure out consequences and negative effects of the skin lightening products.

## **Chapter 4**

## **RESULTS**

Results were displayed in the form of tables and figures (bar-charts). Mean and standard deviation of age was 2.22 and .739, mean and standard deviation of weight was 3.776 and 1.4745. Results showed that 66.8% participants were using whitening cream/ product. 27.1% have acne, 15.9% have skin irritation/itching, 12.5% have itching and 27.8% have experienced eczema skin issues. 16.7% people have other skin issues such as Skin peeling, and dryness. 18.3% have hyperpigmentation disorders, 29.8% percent have other reason, 22.4% used to improve complexion and 27.1% have both reasons so that they were using the skin lightening products. The prevalence of using the skin lightening products is 66.8%. The consequences of the skin lightening products were determined by using chi-square test. P-value is less than 0.005 which showed the significant results.

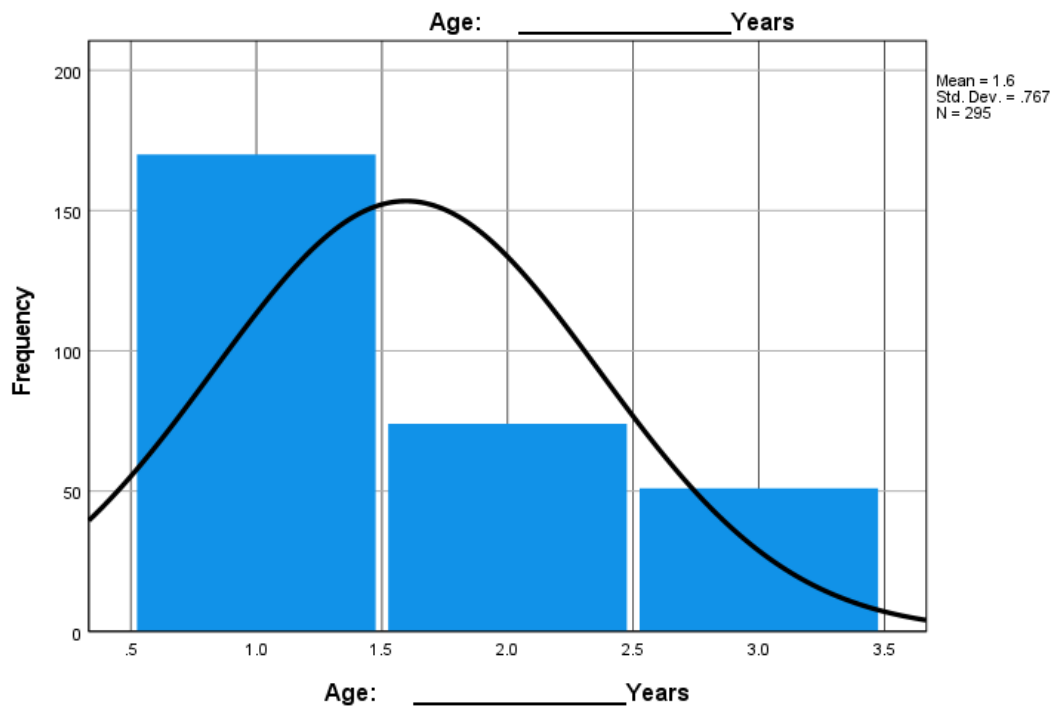
**Table 4.1: The Frequency Distribution of Demographics**

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		
Total	295	Total	295	Total	295	Total	295

Table 4.1 showed that the 170 participants were of age between 18-26 years, 74 were of age between 27-35 years, 51 were of age between 36-45 years, showed the frequency distribution of education. 2.0% subjects were Below Matric, 5.7% subjects were Intermediate, 1.4% subjects were Matric, 26.1% subjects were Postgraduate, 64.7% subjects were Undergraduate. Table showed that the 41% participants have income 0Rs, 18.6% participants have 1000-30000Rs, 17.6% participants have 31000-60000Rs, 16.3% participants have 61000-90000 and 6.4% participants have income 121000-150000Rs, Table showed that 15.3% participants were married and 84.7% were unmarried. 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.

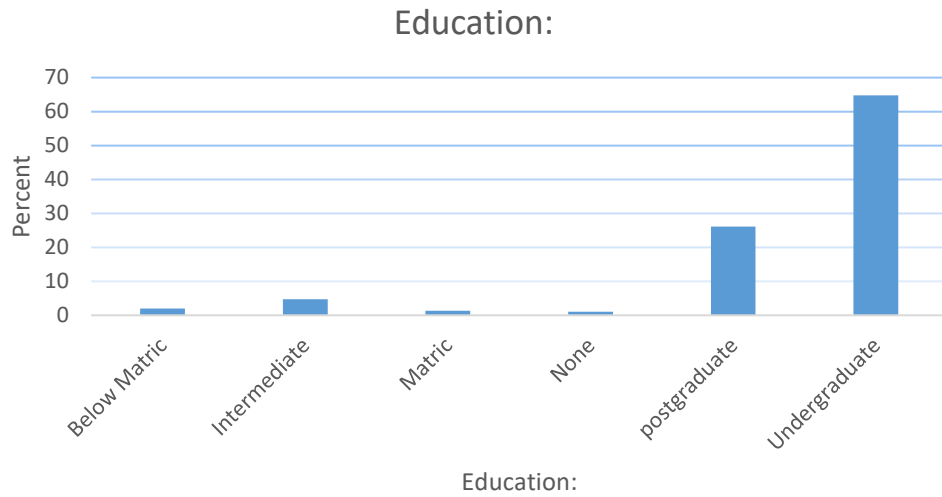
Graph 4.1 showed the frequency distribution of age. Graph showed that the 170

participants were of age between 18-26 years, 74 were of age between 27-35 years, 51 were of age between 36-45 years.



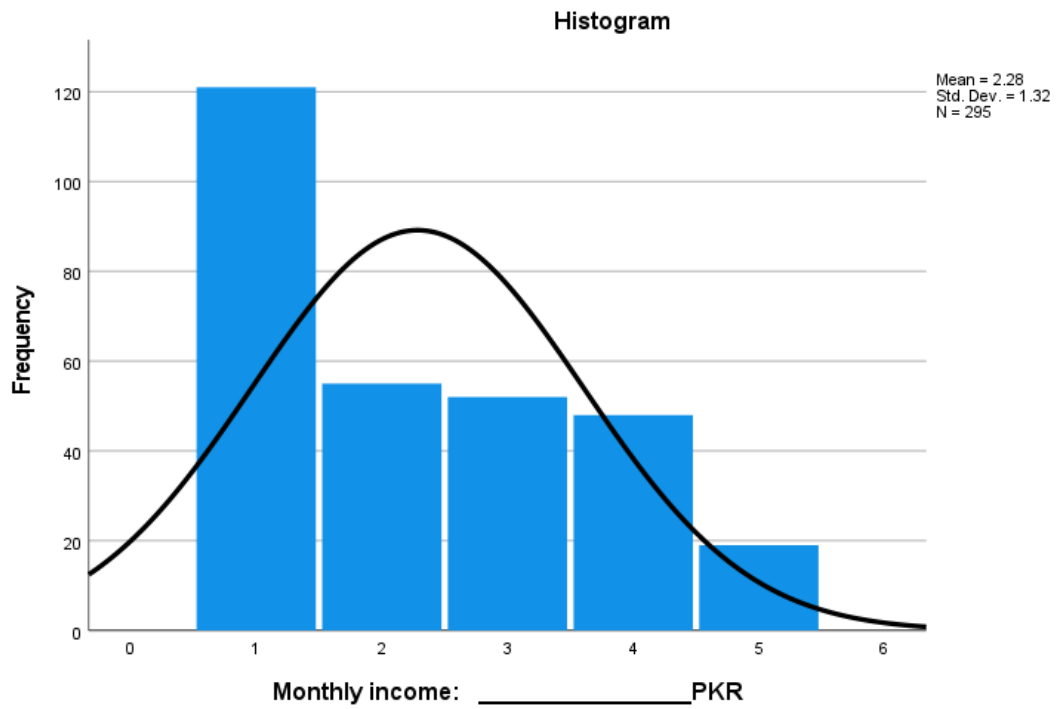
**Figure 4.1: Frequency Distribution of Age**

Figure 4.2 showed the frequency distribution of Education. 3.0% subjects were Below Matric, 4.7% subjects were Intermediate, 1.4% subjects were Matric, 26.1% subjects were Postgraduate, 64.7% subjects were Undergraduate.



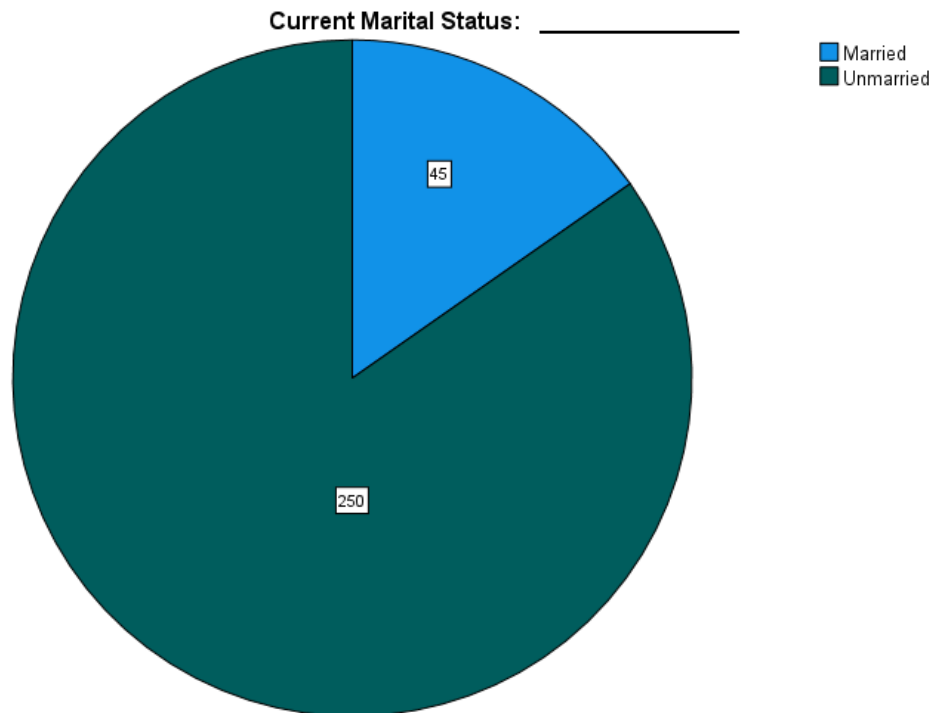
**Figure 4.2: The Frequency Distribution of Education**

Graph 4.3 showed frequency distribution of monthly income of participants. Graph showed that the 41% participants have income 0Rs, 18.6% participants have 1000-30000Rs, 17.6% participants have 31000-60000Rs, 16.3% participants have 61000-90000 and 6.4% participants have income 121000-150000Rs.



**Figure 4.3: Frequency Distribution of monthly income**

Graph 4.4 showed frequency distribution of marital status. Graph showed that 15.3% participants were married and 84.7% were unmarried.



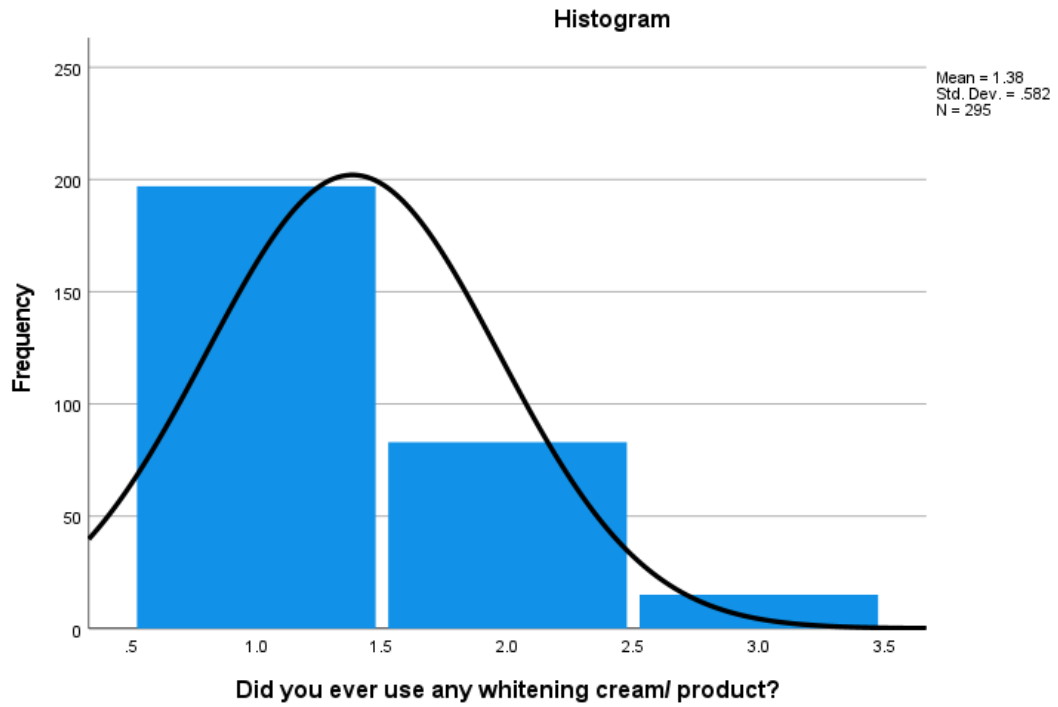
**Figure 4.4: Frequency Distribution of marital status**

**Table 4.2: Frequency Distribution of adverse effects, checking ingredients and usage of whitening products**

<b>Variables</b>	<b>Yes</b>	<b>No</b>	<b>Maybe</b>
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 4.2 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

Graph 4.5 showed the frequency distribution of using any whitening cream/ product. Showed that 37.6% 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.



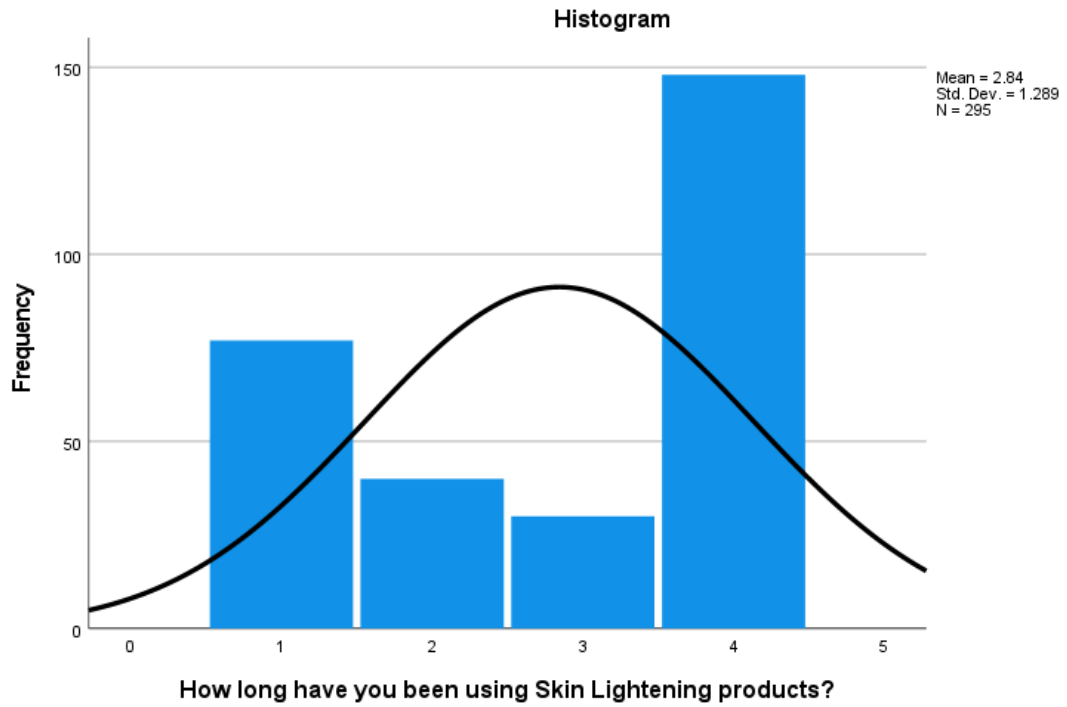
**Figure 4.5: Frequency Distribution of Using any Whitening cream/ product**

**Table 4.3: Frequency Distribution of Time duration using Skin Lightening products**

<b>Time duration using Skin Lightening products</b>				
<b>Time duration using Skin Lightening products</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Less than 6 months	77	26.1	26.1	26.1
Less than a year	40	13.6	13.6	39.7
More than a year	30	10.2	10.2	49.8
Other	148	50.2	50.2	100.0
Total	295	100.0	100.0	

Table 4.3 showed that the Frequency Distribution of Time duration using Skin Lightening products. Table Showed that 26.1% participants were using from less than 6 months, 13.6% were using from less than a year, 10.2% were using from more than a year and 50.2% were using other than this time period.

Graph 4.6 showed the Frequency Distribution of Time duration using Skin Lightening products. Graph Showed that 26.1% participants were using from less than 6 months, 13.6% were using from less than a year, 10.2% were using from more than a year and 50.2% were using other than this time period.



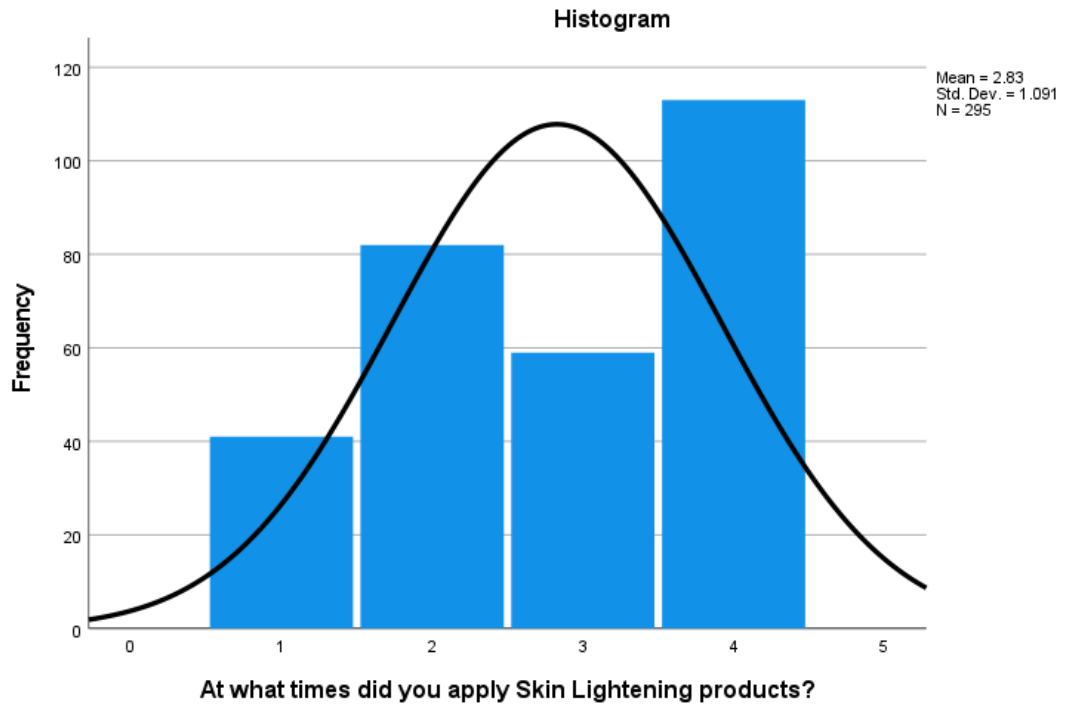
**Figure 4.6: Frequency Distribution of Time using Skin Lightening products**

**Table 4.4: Frequency Distribution of time of using Skin products**

<b>Time apply Skin Lightening products</b>				
<b>Time apply Skin Lightening products</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Evening	82	27.8	27.8	27.8
Morning	41	13.9	13.9	41.7
Morning and Evening both	59	20.0	20.0	61.7
Other	113	38.3	38.3	100.0
Total	295	100.0	100.0	

Table 4.4 showed that the frequency distribution of Time apply Skin Lightening products. Table showed that 27.8% participants were using skin products in evening, 13.9% were using in morning, 20% were using both in morning and evening and 38.3% were using at time other than mentioned.

Graph 4.7 showed the frequency distribution of Time to apply Skin Lightening products. Graph showed that 27.8% participants were using skin products in evening, 13.9% were using in morning, 20% were using both in morning and evening and 38.3% were using at time other than mentioned.



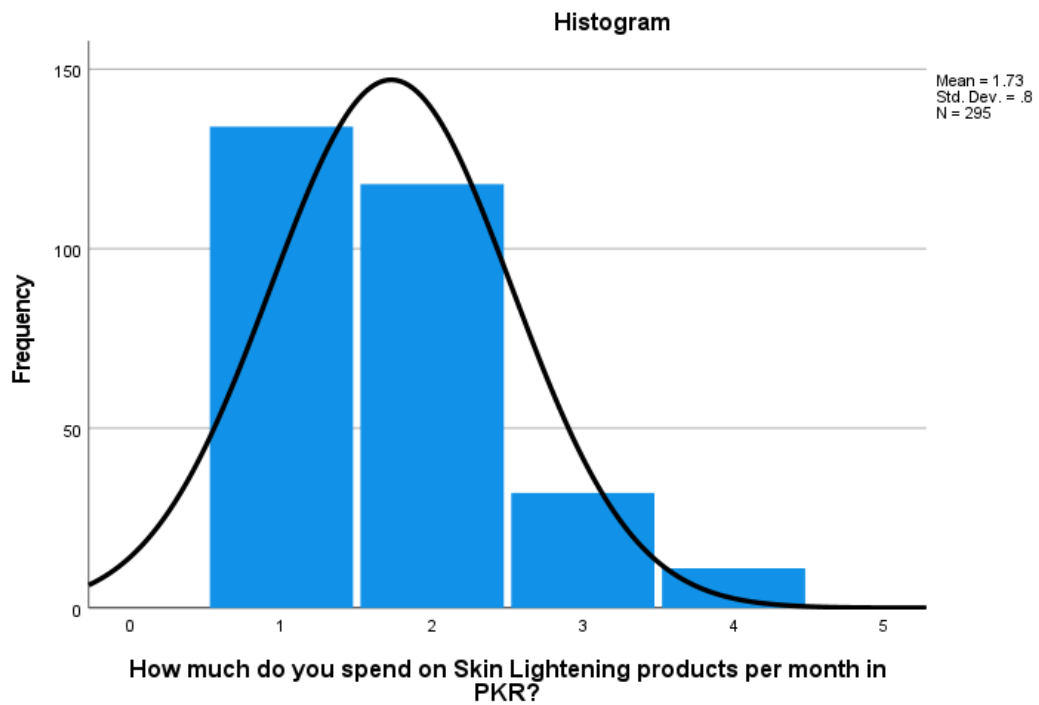
**Figure 4.7: Frequency Distribution of time of using Skin products**

**Table 4.5: Frequency Distribution of Expense on Skin Lightening products per month (PKR)**

<b>Expense on Skin Lightening products per month(PKR)</b>				
Monthly Expense(PKR)	Frequency	Percent	Valid Percent	Cumulative Percent
500 to 5000	118	40.0	40.0	40.0
5000 to 10000	32	10.8	10.8	50.8
Less than 500	134	45.4	45.4	96.3
More than 10000	11	3.7	3.7	100.0
Total	295	100.0	100.0	

Table 4.5 showed that the frequency distribution of Expense on Skin Lightening products per month.40% were using 500 to 5000 PKR, 10.8% were using 5000 to 10000, 45.4% were using less than 500 and 3.7% were using more than 10000PKR.

Graph 4.8 showed the frequency distribution of Expense on Skin Lightening products per month. 40% were using 500 to 5000 PKR, 10.8% were using 5000 to 10000, 45.4% were using less than 500 and 3.7% were using more than 10000PKR.



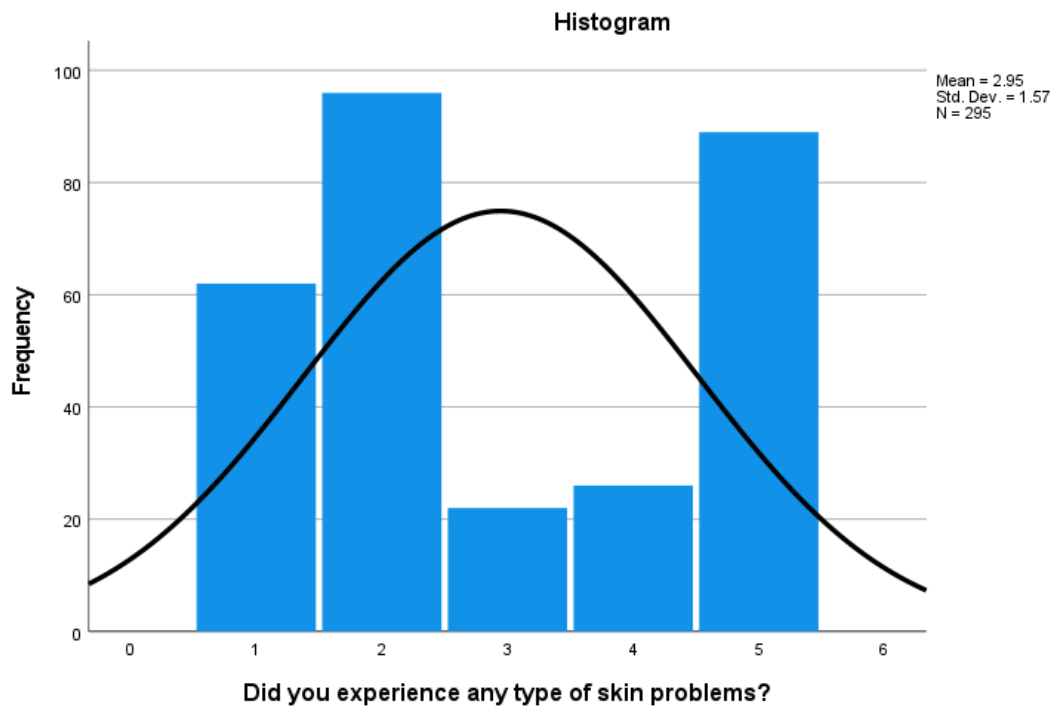
**Figure 4.8: Frequency Distribution of Expense on Skin Lightening products per month (PKR)**

**Table 4.6: Frequency Distribution Of any type of skin problems**

<b>Experience of any type of skin problems</b>				
<b>Skin Problems</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Skin irritation/Itching	78	26.4	26.4	26.4
Acne	108	36.6	36.6	63.0
Eczema	12	4.1	4.1	67.1
Skin peeling	15	5.2	5.2	72.3
Others	82	27.7	27.7	100.0
Total	295	100.0	100.0	

Table 4.6 showed that frequency distribution of any type of the skin problems. 36.6% acne, 26.4% have itching, 4.1% have eczema and 27.7% have experienced other skin issues.

Graph 4.9 showed Frequency Distribution Of any type of skin problems. 36.6% acne, 26.4% have itching, 4.1% have eczema and 27.7% have experienced other skin issues.



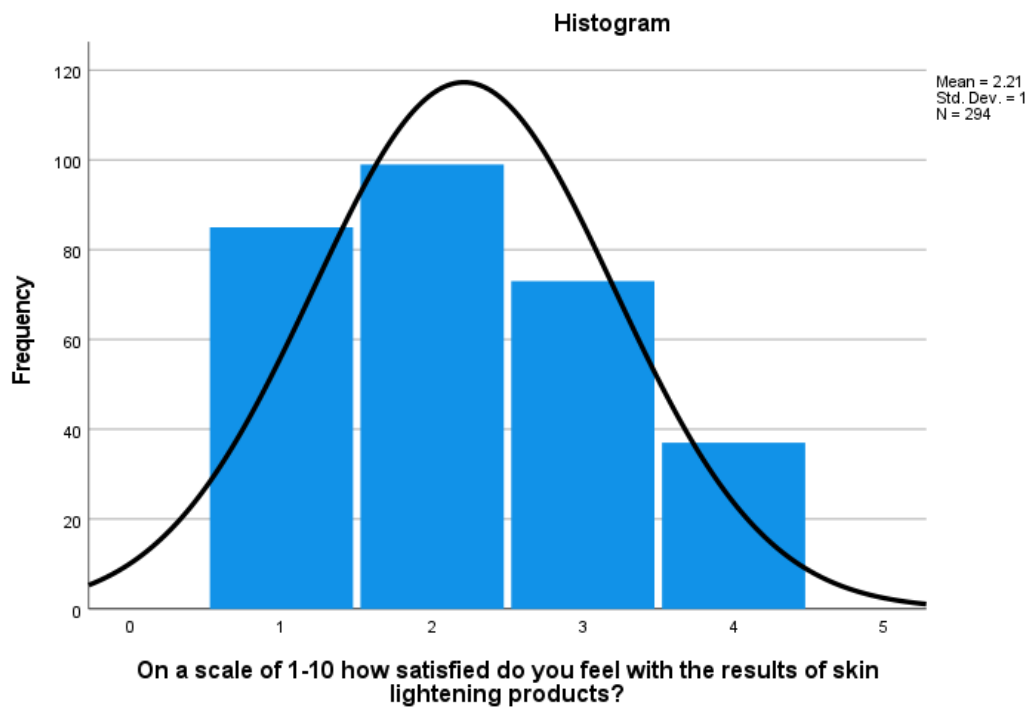
**Figure 4.9: Frequency Distribution of the any type of skin problems**

**Table 4.7: Frequency distribution of results satisfaction after using skin lightening products**

<b>On a scale of 1-10 how satisfied do you feel with the results of skin lightening products</b>				
Scale	Frequency	Percent	Valid Percent	Cumulative Percent
1-3	85	28.8	28.9	28.9
4-6	99	33.6	33.7	62.6
7-8	73	24.7	24.8	87.4
9-10	37	12.5	12.6	100.0
Total	294	99.7	100.0	

Table 4.7 showed results satisfaction of skin lightening products on scale 1-10. 28.8% scored 1-3 on scale, 33.6% scored 4-6, 24.7% scored 7-8, and 12.5% scored 9-10.

Graph 4.10 showed results satisfaction of skin lightening products on scale 1-10. 28.8% scored 1-3 on scale, 33.6% scored 4-6, 24.7% scored 7-8, and 12.5% scored 9-10.



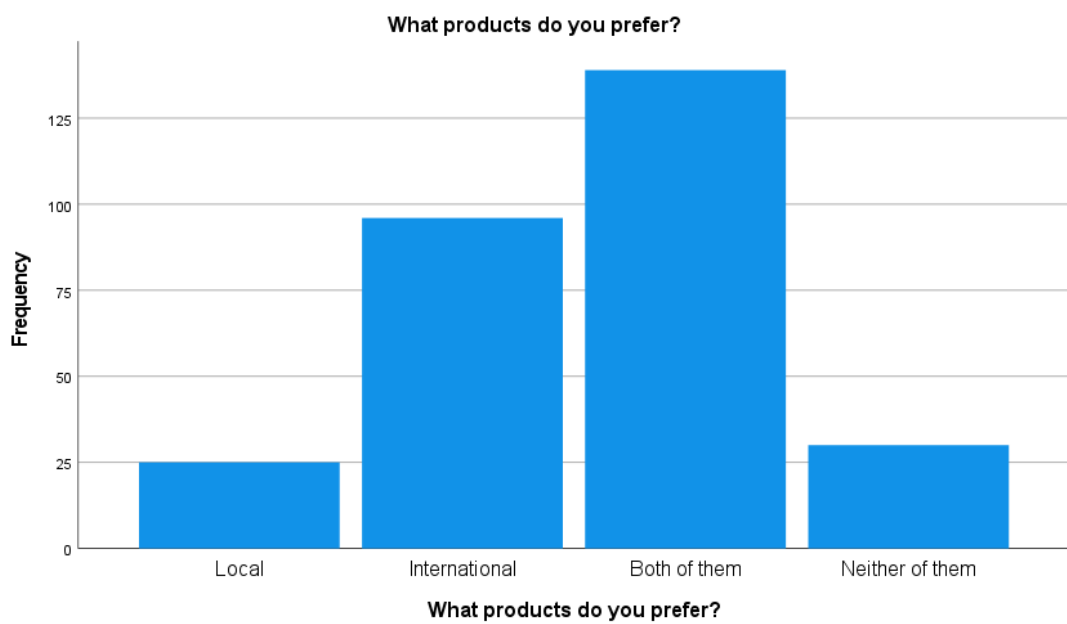
**Figure 4.10: Frequency distribution of results satisfaction after using skin lightening products**

**Table 4.8: Frequency distribution of products preference**

<b>What products do you prefer?</b>				
<b>Product preference</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Local	25	8.5	8.6	8.6
International	96	32.5	33.1	41.7
Both of them	139	47.1	47.9	89.7
Neither of them	30	10.2	10.3	100.0

Table 4.8 showed that frequency distribution of products preference. 32.5% prefer international product, 8.5% prefer local, .3% prefer local, 10.2% prefer neither of them and 47.1% prefer both of the products.

Graph 4.11 showed frequency distribution of products preference. 32.5% prefer international product, 8.5% prefer local, .3% prefer local, 10.2% prefer neither of them and 47.1% prefer both of the products.



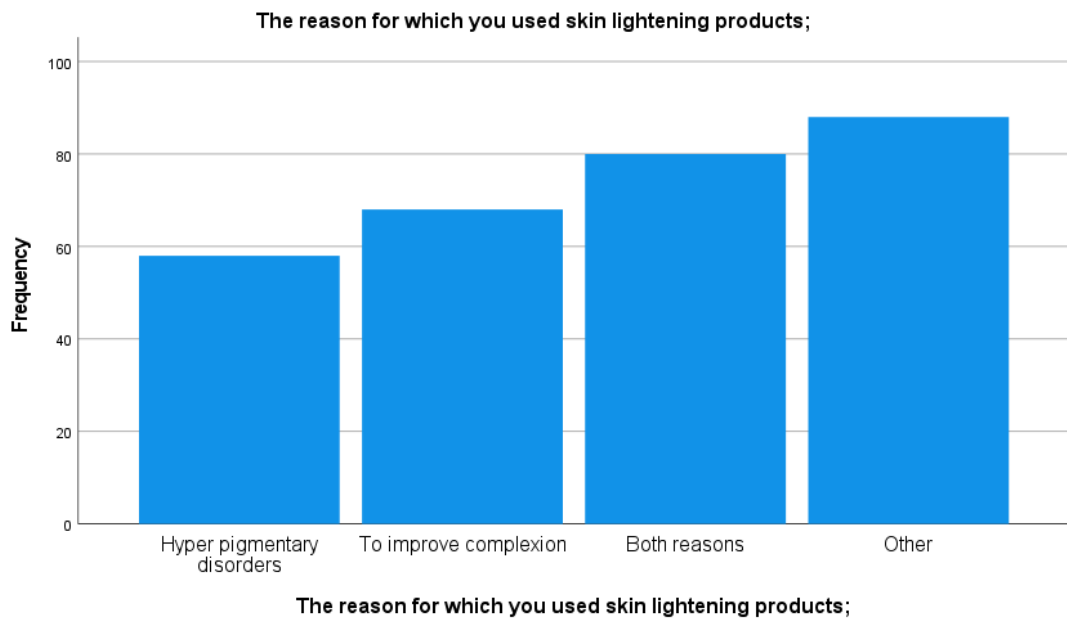
**Figure 4.11: Frequency distribution of products preference**

**Table 4.9: Frequency Distribution of why fairness creams applied**

<b>The reason for which you used skin lightening products;</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Hyper Pigmentary Disorders	58	19.7	19.7	19.7
To improve complexion	68	23.1	23.1	42.9
Both reasons	80	27.1	27.2	70.1
Other	88	29.8	29.9	100.0
Total	294	99.7	100.0	

Table 4.9 showed frequency Distribution of why fairness creams applied. 19.7% used for hyperpigmentation disorders, 23.1% used to improve complexion, 27.1% used for both reasons and 29.8% used for other reasons.

Graph 4.12 showed frequency Distribution of why fairness creams applied. 19.7% used for hyperpigmentation disorders, 23.1% used to improve complexion, 27.1% used for both reasons and 29.8% used for other reasons.



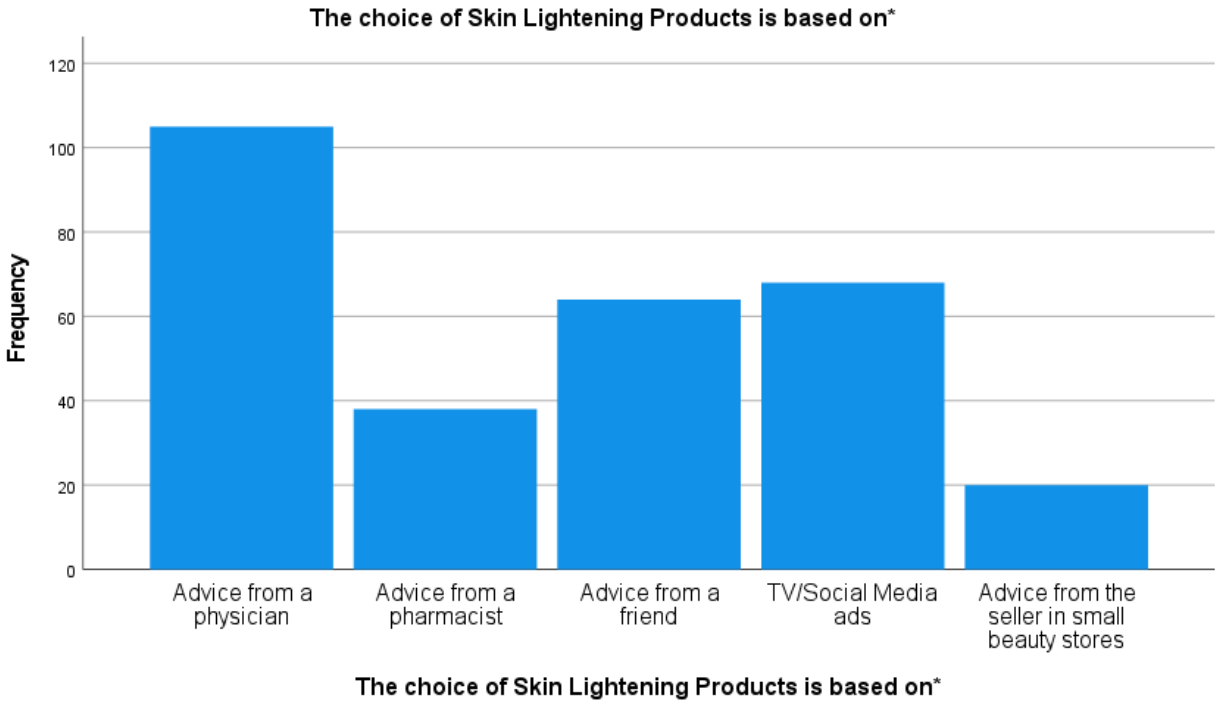
**Figure 4.12: Frequency Distribution of why fairness creams applied**

**Table 4.10: Frequency Distribution of the choice of a Skin Lightening Products is based on**

<b>The choice of a Skin Lightening Products is based on*</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Advice from a physician	105	35.6	35.6	35.6
Advice from a pharmacist	38	12.9	12.9	48.5
Advice from a friend	64	21.7	21.7	70.2
TV/Social Media ads	68	23.1	23.1	93.2
Advice from the seller in small beauty stores	20	6.8	6.8	100.0
Total	295	100.0	100.0	

Table 4.10 showed that frequency distribution of choice of skin whitening products. Table showed that 23.1 % participants choose skin lightening products by TV/Social Media ads, 35.6% used by physician advice, 12.9% participants used by pharmacist advice, 21.7% participants used by friend's choice and 6.8% used by small beauty store seller's advice.

Graph 4.13 showed frequency distribution of choice of skin whitening products. Graph showed that 23.1 % participants choose skin lightening products by TV/Social Media ads, 35.6% used by physician advice, 12.9% participants used by pharmacist advice, 21.7% participants used by friend's choice 6.8% used by small beauty store seller's advice.



**Figure 4.13: Frequency distribution of the choice of skin lightening products is based on**

**Table 4.11: Frequency distribution of point of purchase of skin lightening products**

What was your point of purchase?				
Point of purchase	Frequency	Percent	Valid Percent	Cumulative Percent
Department store	32	10.8	10.8	10.8
Specialty beauty store/Clinic	88	29.8	29.8	40.7
Drugstore/Pharmacy	59	20.0	20.0	60.7
Online	80	27.1	27.1	87.8
Convenience shop	36	12.2	12.2	100.0
Total	295	100.0	100.0	

Table 4.11 showed the frequency distribution for the point of purchase of skin lightening products. Table showed that 29.8% participants purchased from beauty clinics, 27.1% participants purchased online, 20% participants purchased from pharmacy and 12.2% participants purchased skin lightening products from convenient shop.

Graph 4.14 showed the frequency distribution of point of purchase of skin lightening products. Graph showed that 29.8% participants purchased from beauty clinics, 27.1% participants purchased online, 20% participants purchased from pharmacy and 12.2% participants purchased skin lightening products from convenient shop.



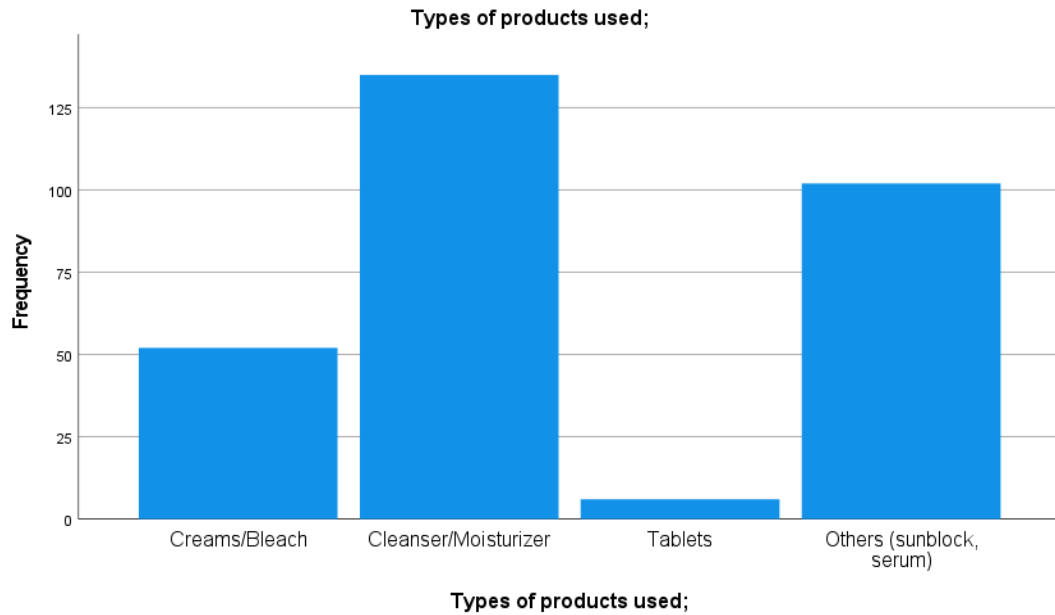
**Figure 4.14: Frequency distribution of the point of purchase of skin lightening products**

**Table 4.12: Frequency distribution of type of product**

<b>Types of products used;</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
Creams/Bleach	52	17.6	17.6	17.6
Cleanser/Moisturizer	135	45.8	45.8	63.4
Tablets	6	2.0	2.0	65.4
Others (sunblock, serum)	102	34.6	34.6	100.0
Total	295	100.0	100.0	

Table 4.12 showed frequency distribution for the type of products used. 17.6% used creams/bleach, 45.8% used cleanser/moisturizer, 2.0% used tablets and 34.6% used sunblock/serum products.

Graph 4.15 showed frequency distribution of type of products used. 17.6% used creams/bleach, 45.8% used cleanser/moisturizer, 2.0% used tablets and 34.6% used sunblock/serum products.



**Figure 4.15: Frequency distribution of the types of products**

**Table 4.13: Descriptive statistics**

Descriptive Statistics Demographics					
Demographics	N	Minimum	Maximum	Mean	Std. Deviation
Age	295	1	3	2.22	.739
Weight	295	1.0	6.0	3.776	1.4745
Current Marital Status	295	1	2	1.56	.497
Monthly income PKR	295	1	4	2.15	1.131
Valid N (list wise)	0				

Table 4.13 showed descriptive statistics of demographics. Table showed that mean and standard deviation of age was 2.22 and .739, mean and standard deviation of weight was 3.776 and 1.4745, mean and standard deviation of marital status was 1.56 and .497 and mean and standard deviation of monthly income was 2.15 and 1.131 respectively.

**Table 4.14: Descriptive statistics of variables**

Descriptive Statistics					
	N	Minimu m	Maximu m	Mean	Std. Deviation
Did you ever use any whitening cream/ product?	295	1	3	1.38	.58
Do you prefer a lighter skin tone for yourself?	295	1	3	1.66	.77
How long have you been using Skin Lightening products?	295	1	4	2.84	1.28
At what times did you apply Skin Lightening products?	295	1	4	2.83	1.09
How much do you spend on Skin Lightening products per month in PKR?	295	1	4	1.73	.80
Valid N (list wise)	295				

Table 4.14 showed the descriptive statistics of variables. Table showed mean and the standard deviation of usage of skin whitening products is  $1.38 \pm 0.58$ , mean and standard deviation lighter skin is  $1.66 \pm .77$ , mean and standard deviation of duration of usage is  $2.84 \pm 1.28$ , mean and standard deviation time usage is  $2.83 \pm 1.09$ , mean and standard deviation of monthly expense is  $1.73 \pm .80$ .

**Table 4.15: Descriptive statistics of the variables**

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Ever encountered any adverse effects after using skin lightening products for a long time?	295	1	3	1.82	.71
On a scale of 1-10 how satisfied do you feel with the results of skin lightening products?	294	1	4	2.21	1.00
What products do you prefer?	290	1	4	2.60	.78
Do you check the authenticity of the product while purchasing?	295	1	3	1.48	.72
Are you aware about ingredients banned in skin lightening products?	295	1	3	1.85	.73
Valid N (list wise)	289				

Table 4.15 showed that descriptive statistics of the variables. Table showed mean and standard deviation of adverse effect is  $1.82 \pm .71$ , mean and standard deviation of satisfied results is  $2.21 \pm 1.00$ , mean and the standard deviation of products preference is  $2.60 \pm .78$ , mean and standard deviation of authenticity of products is  $1.48 \pm .72$ , mean and standard deviation of ingredients awareness is  $1.85 \pm .73$ .

**Table 4.16: Descriptive statistics of the variables**

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
What was your point of purchase?	295	1	5	3.00	1.22
Did you experience any type of skin problems?	295	1	5	2.95	1.57
The choice of Skin Lightening Products is based on*	295	1	5	2.53	1.35
Types of products used;	293	1	5	3.30	1.54
Why in your opinion, are fairness creams applied?	295	1	5	3.46	1.45
Valid N (list wise)	293				

Table 4.16 showed that the descriptive statistics of variables. Table showed mean and the standard deviation of point of purchase is  $3.0 \pm 0.122$ , mean and standard deviation of skin problems is  $2.95 \pm 1.57$ , mean and the standard deviation of choice of products is  $2.53 \pm 1.35$ , mean and standard deviation of type of products is  $3.30 \pm 1.54$ , and mean and standard deviation of fairness cream applied is  $3.46 \pm 1.45$ .

**Table 4.17: Correlation of variables**

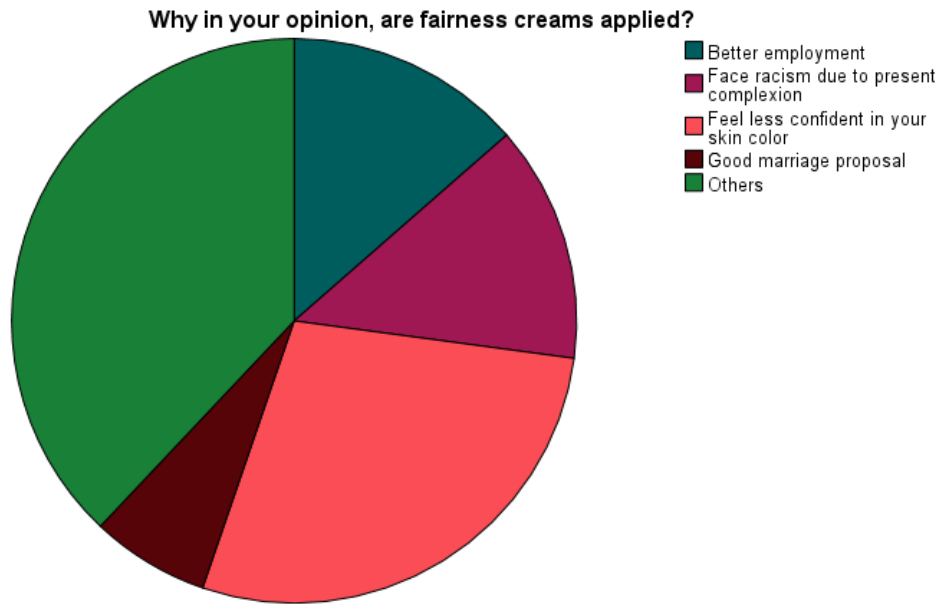
<b>Chi-Square Tests</b>			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18.800	8	.016
Likelihood Ratio	19.496	8	.012
Linear-by-Linear Association	3.940	1	.047

Table 4.17 showed correlation of variables. Results are significant and correlation is positive.

**Table 4.18: Correlation of skin whitening products and consequences**

Symmetric Measures				
Variables			Approximate Significance	P Value
skin whitening products and their consequences	Interval by Interval	Pearson's R	.039	.049
	Ordinal by Ordinal	Spearman Correlation	.011	.045
skin whitening products and their awareness	Interval by Interval	Pearson's R	.800	.015
	Ordinal by Ordinal	Spearman Correlation	.483	.041
skin whitening products and their adverse effects	Interval by Interval	Pearson's R	.044	.03
	Ordinal by Ordinal	Spearman Correlation	.009	.04

Table 4.18 showed Correlation of variables. P value is less than 0.05 that demonstrates results are significant.



**Figure 4.16: Frequency Distribution of reasons of whitening creams**

## Chapter 5

### DISCUSSION

This present study entitled **Skin Lightning among women living in Lahore; Its Prevalence, Effects, Determinants and Awareness** has objectives to determine the percentage of women in Lahore who use the skin whitening products, as well as it will examine impact and consequences of its usage and to investigate the determinants behind its usage and will also explore the awareness about skin whitening. This was a cross-sectional study with sample size 295. 66.8% participants were using whitening cream/ product so the prevalence was 66.8%. According to a previous study More than half (56.4%) of the 110 respondents were between the ages of 20 and 24. Facial cleansers were the most often used product (51.1%), and prevalence of using the skin lightening products was 40.9% (Egbi and Kasia, 2021). According to another previous literature 382 subjects (63.1%) out of 605 women used skin-lightening products. Every participant's skin tone was comparatively lighter. Skin-lightening procedures were strongly impacted by skin type and education (P values = 0.012 and 0.002, respectively) (Alrayyes et al., 2020). A previous study reported the awareness, perception, and usage of the skin lightening agents (SLAs) between African females with dark skin which conducted in Asmara, Eritrea. According to most respondents, SLAs could make them appear lighter, more appealing, fashionable, and more attractive than people with darker skin. About 64.2% have used SLAs in the past after being persuaded by friends. 53.6% of users stopped because of negative consequences, whilst 46% were ongoing users. The most popular products were betamethasone, Natural Face, and Aneeza. According to study's findings, SLAs were the common among Asmara's female population, underscoring the necessity of concerted regulatory actions to encourage the use of safe cosmetics. A previous study told that our sample showed a higher prevalence of the skin-lightening product use (74.4%), which is thought to be in line with earlier findings from Sudan. According to a recent survey done in Sudan, 78.3% of young women between the ages of 20 and 29 used hydroquinone-containing cosmetics. According to Adebajo et al., 72.4% of female traders in Lagos, Nigeria, used skin-lightening cosmetics. Dlova et al. discovered that 60% of African women used skin-lightening cosmetics in a

survey done in Durban, South Africa. This number was lower than our results, most likely as a result of the participants' ages (18–70 years old) and the fact that their study was conducted at two sizable public hospitals in Durban. Similarly the Benin statistic, 70.7% of female participants in our study acknowledged using skin-lightening products (Dlova et al., 2014). According to Mahéa et al., 99 pregnant women used the skin-lightening cosmetics. While during their current pregnancy, 69% of the expectant mothers said they had used the skin-whitening products. Students at higher secondary schools might not be aware of the presence of chemicals and other hazardous ingredients in the products they use. When compared to the students who had no family members who use bleaching, our analysis showed that odds of using the skin-lightening agents were significantly greater for students who had a mother or sister who use bleaches (aOR = 7.8) and other relatives who use bleaches (aOR = 2.4). The findings also indicate that a variety of additional risk variables, such as being married, a sophomore, obese, and employed, may influence the usage of skin-whitening treatments (Yousif et al., 2014).

In this present study the simple random sampling technique to collect sample. Information was obtained by means of interviews or a questionnaire. To collect background information and evaluate attitudes, experiences, and views of skin lightning, a 26-point structured questionnaire is developed. Data was analyzed by using IBM-SPSS-26 through frequency distribution and descriptive statistics. Bar graph displayed for each variable. The chi-Square test was used to identify prevalence. Pearson's correlation test was used to find out the consequences and adverse effects of the skin lightening agents.

The study demonstrates that the high frequency of Skin Lightening (SL) goods between Somaliland's female health science students, exposing negative emotions brought on by preconceived notions regarding lighter skin tones (Dlova and Ajose, 2014). A study reported that Communities of color around the world are impacted by the growing dermatologic public health issue of cosmetic skin whitening. Patients of color continue to use cosmetic skin whitening despite the well-established negative health implications (Masub and Khachemoune, 2022). Dermatologists must understand the medical, social, and cultural ramifications of this treatment, especially in light of the US's shifting demographics. We go into the components, prevalence, and potential health risks of cosmetic skin-lightening products.

Dermatologists ought to advise patients who used the cosmetic skin-lightening agents, taking into account psychological, social, and medical aspects of the procedure. Clinical suggestions should be customized to each patient's lifestyle, habits, and level of health literacy using a comprehensive approach. Community-based interventions, such collaborations with beauty salons, should be put into practice, and neutral, non-judgmental language should be used (Masub and Khachemoune, 2022).

This present study determine that 19.7% used for hyperpigmentation disorders, 23.1% used to improve complexion, 27.1% used for both reasons and 29.8% used for other reasons. The main reason was Advertisements on television and magazines appear to have an impact on women's decisions regarding these products, making them effective platforms for educating the public about the risks associated with unregulated skin lightening (Liu et al., 2019). But according to this recent study 23.1 % participants choose skin lightening products by TV/Social Media ads, 35.6% used by physician advice, 12.9% participants used by pharmacist advice, 21.7% participants used by friend's choice and 6.8% used by small beauty store seller's advice. According to this study the point of purchase of 26.6% participants was online, 26.3% brought through speciality beauty store, 17.4% choose drug store/pharmacy, 12.0% choose departmental store while 11.1% choose convenience shop.

A study that polled 104 undergraduate and graduate students in Malaysia on skin-lightening cosmetics found that the two groups' practices differed significantly. The study discovered a negative relationship between skin-lightening procedures and educational attainment. Face cleanser and moisturizer, together with toner, mask, anti-aging, and sunscreen, were the most often used products (Lartey et al., 2017). According to present study, 17.6% used creams/bleach, 45.8% used cleanser/moisturizer, 2.0% used tablets and 34.6% used sunblock/serum products. When choosing skin-lightening products, price and brand were the primary determinants, with both domestic and foreign brands being favored. 89% of the respondents agreed that the skin lightening can have side effects, and most of them looked at the chemicals before making a purchase. In order to comprehend the reasons for skin lightening techniques, perceptions of lighter skin are essential (Lartey et al., 2017). According to this present study, 36.6% acne, 26.4% have itching, 4.1% have eczema and 27.7% have experienced other skin issues and 46.1%

encountered adverse effects, 35.9% not encountered any adverse effect and 18% maybe or may not encountered any adverse effect. Additionally, the report suggests that African Ministries of Health educate the public, remove known harmful items from the market, educate young people, penalize manufacturers, and increase public awareness through the media. A study is to determine the skin whitening practices between shoppers in the chosen markets in Kumasi Ghana, it was cross-sectional survey in 3 of the Kumasi's largest markets. An analysis was conducted on 331 participants who completed surveys. A total of the 40.4% respondents stated that they have used the skin-lightening products either now or in the past. Of those, men, 26.6% reported using these products in the past, compared to women, 56.5%. Using skin-lightening products was substantially correlated with female sex (95% confidence interval 2.26-5.70; odds ratio 3.59). All individuals show a high frequency of skin-lightening, which is linked to feelings of greater beauty, wealth, and self-worth. (Owusu-Agyei et al., 2020).

According a previous study skin lightening was a widespread practice in various countries, with the prevalence rates exceeding 50%. Common agents that were used in it included hydroquinone, corticosteroids, mercury, and the caustic agents. In Ghana, a study found a high level of prevalence in skin bleaching in urban communities. Out of 555 participants, 50.3% used the practice, with 76% using multiple products and 82% using agents on both face and body. The study recommends regulation of products, the education, and a population prevalent study to address the adverse effects of the skin lightening (Lartey et al., 2017).

According to this study In Jordan, skin whitening was a widespread practice among the women. Lighter skin tones are associated with a number of perceived advantages, such as improved beauty, employment, and marriage prospects. When creating interventions to prevent the misuse of skin-lightening goods, user awareness of the products' safety and usage instructions are crucial factors to take into account (Yayehrad et al., 2023). According to studies, a woman's age, educational attainment, employment status, occupation, and marital status all influence her knowledge of SLP safety. Although women may occasionally be aware that those products can have negative effects, they may not always be aware of the type and seriousness of these problems (Abd Wahil et al., 2020). Deliberately changing a person's skin tone without a doctor's approval is known as skin bleaching or skin lightening. The idea that lighter skin indicates greater rank, a more affluent

upbringing, or physical beauty is a complicated and multifaceted reason. Compounds that prevent the synthesis of melanin are used to lighten skin; these compounds frequently contain hydroquinone, steroids, or mercury. Serious side effects are possible with these medications. The sector is worth billions of dollars every year, despite being illegal in the majority of countries. Dermatologists were in a unique position to provide guidance on pigmentation differences, manage problems, and identify those who are at risk. In order to make sure that the people of different skin tones were represented in the media, society must alter to counter the notion that lighter skin is preferable (Sommerlad, 2022). In a previous study 52% of respondents had the average knowledge, 32% had a bad knowledge, and 16% of them had great understanding of skin-whitening products overall. Vast majority of the study participants expressed unfavourable opinions about skin-whitening. Additionally, 38% of the individuals had at some point in their life engaged in the skin-whitening procedures. Knowledge, attitude, and the skin-lightening practice were significantly correlated with socio-demographic parameters, skin traits, and sociocultural influences (Ahmed and Hamid, 2017). Eighty-eight percent of participants were aware that the skin-whitening creams can have negative effects in keeping with research done in the Sudan at the University of Al-Gezira and Nigeria. This study suggests that most people are aware that the skin-whitening procedures can have unfavourable adverse effects. Eighty-one percent of participants knew very little about the skin-whitening products which is significantly greater than the 56.1% reported among Nigerian university students (Amodu, 2018). This could be because, in contrast to Sudan, Nigeria is a major producer of skin-whitening goods, therefore there is more information about this issue. In this study, just 32% of respondents expressed a positive attitude, which is significantly less than the 87.9% who did so at the University of Al-Gezira in 2015. This significant disparity suggests that the Sudanese populace has become less supportive of skin-whitening over the last five years, or it may be related to the various research regions. Skin-whitening products were utilized by 38% of the subjects significantly lower than the Omdurman Locality's results (89.5%). This may be because the Omdurman neighbourhood, one of Sudan's biggest markets, is teeming with stores and boutiques offering skin-whitening goods. Sixty-six percent of the products used in this investigation were from pharmacies comparable to findings from pharmacies among Central Sudanese high school students (52.6%). This emphasizes how crucial

pharmacists are in controlling the sale and application of skin-whitening products in Sudan (Abdalla and Ahmed, 2020).

Although user awareness of the negative effects of skin whitening was defined differently in each study, it varied from 2.0% to 79.1%. Side effects were present in the 17.0% to 34.9% of cases. Following a thorough study, four themes emerged: the demand for social recognition, consumer behavior, health beliefs, and health authority. To protect the health of Malaysians, the public health authorities should keep a tight eye on the skin-whitening sector because demand for the procedure has grown over time. According to this previous study 11.9% often check expiry, 78.3% check expiry date and 9.8% don't check expiry date before buying products. This present study showed that there is positive correlation between the usage of the skin lightening products and their adverse effects.

## CONCLUSIONS

This study concluded that majority of women living in Lahore are using skin lightening products. This is a positive correlation between the skin lightening agents and their side effects like skin irritation/itching, eczema, and skin dryness. Mostly, people are unaware of the ingredients while purchasing, which is harmful for the skin.

### Recommendations

Further studies can promote self-acceptance and opposing cultural beauty standards that support the need for skin whitening should be the main goals of educational programs. Public awareness campaigns to highlight the risks associated with harmful ingredients like mercury and hydroquinone.

In addition to evaluating long-term effects of interventions on behaviour and awareness, more research is needed to investigate the psychological, cultural, and economic variables influencing these behaviours.

### Limitations

- It is more difficult to prove causal links between determinants and effects when using a cross-sectional approach.
- Long-term health effects and the psychological effects of the skin-lightening procedures might not have been included in the study.
- Unmeasured elements like cultural influences and media influence may also have an impact on the outcomes.
- Participants' reluctance to provide sensitive information and ethical restrictions may also have an effect on the data's depth.
- The changing nature of skin-lightening trends and the makeup and regulations of the cosmetics used may not be taken into consideration in this study.

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# APPENDICES

## **Skin Lightening Practices among Women living in Lahore; Its Prevalence, Effects, Determinants and Awareness**

Researcher's Name: Nimra Noreen

Supervisor's Name: Prof. Dr Rashida Parveen

This Performa is created for research purposes only and contains the questions about skin lightening products. Your answers are completely anonymous and does not reveal your identity. The information you provide will enable me to attain the purpose of my study. Thank you for agreeing to help me and letting me know about your experiences.

- **Appendices No.1**

### **General participant information**

Please answer a few questions about yourself. All information will be anonymized

1. Participant number: \_\_\_\_\_
2. Age: \_\_\_\_\_ Years
3. Height: \_\_\_\_\_ cm/feet,  
inches
4. Education: Up to 16y / Up to 18y/ College or  
University/Postgraduate
5. Current Marital Status: \_\_\_\_\_
6. Monthly income: \_\_\_\_\_ PKR

• **Appendices No. 2**

**To check the prevalence answer the following questions carefully.**

1. Do you use whitening cream/ product?

Yes     No     May be

2. Do you prefer lighter skin tone for yourself? \_\_\_\_\_

Yes     No     May be

3. How long have you been using the Skin Lightning products?

- a. Less than 6 months
- b. Less than a year
- c. more than a year
- d. Other

4. At what times did you apply Skin Lightning products?

- a. Morning
- b. Evening
- c. Morning and Evening both
- d. Other

5. How much do you spend on the Skin Lightning products per month in PKR?

- a. Less than 500
- b. 500 to 5000
- c. 5000 to 10000
- d. More than 10000

6. What was your point of purchase?

- a. Department store
- b. Specialty beauty store/Clinic
- c. Drugstore/Pharmacy
- d. Online
- e. Convenience shop

• **Appendices No. 3**

**To examine the effects of skin lightning products please choose the correct answer.**

1. Are you willing to spend more on fairness creams? \_\_\_\_\_

Yes     No     May be

2. Did you see skin improvement after using for a long time?  
\_\_\_\_\_

Yes     No     May be

3. Ever encountered any adverse effects after using skin lightning products for a long time?

Yes     No     May be

4. Fairness products advertisements promote racism significantly?

Yes     No     May be

5. Do women with paler skin tones have higher levels of self-assurance and confidence?

Yes     No     May be

6. Did you experience any type of the skin problems?

- a. Skin irritation/Itching
- b. Acne
- c. Eczema
- d. Skin peeling
- e. Others

7. On a scale of 1-10 how satisfied you feel with the results of skin lightning products?

- a. 1-3
- b. 4-6
- c. 7-8
- d. 9-10

• **Appendices No. 4**

**Please respond to the following questions to verify the determinants. Put a tick (✓) in the response box.**

1. Do you believe that a product's brand matters when purchasing skin-whitening products?

Yes       No       May be

2. What products do you prefer?

- a. Local
- b. International
- c. Both of them
- d. Neither of them

3. Types of products used;

- a. Creams
- b. Cleanser
- c. Serums
- d. Moisturizer
- e. Others (sunblock, serum)

4. The reason for which you used skin lightning products;

- a. Hyper pigmentary disorders
- b. To improve complexion
- c. Both reasons
- d. Other

5. The choice of Skin Lightning Products is based on\*

- a. Advice from a physician
- b. Advice from a pharmacist
- c. Advice from a friend
- d. TV/Social Media ads
- e. Advice from the seller in small beauty stores

- **Appendices No. 5**

**To rule out awareness about the skin lightning products choose the answer wisely.**

1. Do you check the ingredients while purchasing?

Yes       No       May be

2. Do you know how skin is treated using fairness creams?

Yes       No       May be

3. Are you aware about ingredients banned in skin lightning products?

Yes       No       About some of them

4. Do you check the authenticity of the product while purchasing?

Yes       No       May be

5. Do you check the expiry date mentioned on product before buying and using it?

Yes       No       Often

6. Why in your opinion, are fairness creams applied?

- a. Better employment
- b. Good marriage proposal
- c. Feel less confident in your skin color
- d. Face racism due to present complexion
- e. Others

**APPENDICES**  
**ENGLISH CONSENT FORM**

The study you are about to participate is a randomized control trial survey titled as;

“Skin Lightning Practices among Women Living in  
Lahore; Its Prevalence, Effects, Determinants and  
Awareness”

The study has no potential harm to participants. All data collected from you will be coded in order to protect your identity, and should not be disclosed to anyone. Following the study there will be no way to connect your name with your data. Your answers to the questions will not affect the quality of education given to you. Any additional information about the study results will be provided to you at its conclusion, upon your request.

You are free to withdraw from the study at any time. You agree to participate, indicating that you have read and understood the nature of the study, and that all your inquiries concerning the activities have been answered to your satisfaction.

**NAME** \_\_\_\_\_

**SIGNATURE** \_\_\_\_\_

**DATE** \_\_\_\_\_

## URDU CONSENT FORM

میں \_\_\_\_\_ تصدیق کرتا/ کرتی ہوں کہ محترمہ **Nimra Noreen** نے اپنی اس تحقیق

“Skin Lightning Practices among Women Living in Lahore; Its Prevalence,  
Effects, Determinants and Awareness”

زیر نگرانی **Rashida Perveen** کے متعلق بتا دیا ہے۔ مجھے اس تحقیق کی نوعیت،

مقاصد، احاداف، توقعات، فوائد اور خطرات کے متعلق ، ساری معلومات فراہم کر دی گئی ہیں  
اس تحقیق کے دوران ساری معلومات صیغہ راز میں رہیں گی اور مریض کا نام اور دیگر معلومات  
صرف تحقیق کے لیے استعمال ہوں گی۔ مجھے یہ بھی بتا دیا گیا ہے کہ میں اس تحقیق سے متعلقہ  
ہر قسم کے سوال پوچھنے کا مجاز ہوں اور یہ تحقیق صرف ایک شخص ک مفاد میں نہیں ہے بلکہ  
بحسبیت مجموعی انسانییت کا مفاد اس سے وابسطہ ہے۔ تمام تفصیلات جاننے کے بعد یس تحقیق میں  
شامل ہونے یا نہ ہونے پر کسی کا قائل نہیں ہوں۔ اس تحقیق سے کسی بھی وقت علیحدہ ہونے پر  
مجھ پر کوئی پابندی نہیں ہو گی۔ میں بذاتِ خود بقائمی حوش و حواس  
اور رضا مندی سے اس تحقیقاتی عمل میں شامل ہوتی/ ہوتا ہوں

دستخط محقق -----

دستخط شرکت کار -----

تاریخ -----