

**“ COSMETICO VIGILANCE OF SKIN LIGHTENING AGENTS : PATIENT
UTILIZATION PATTERN VERSUS VIRTUAL NEED IN MUMBAI
METROPOLITAN REGION ”**

Submitted in partial fulfillment of the requirements for the degree of Bachelor of
Pharmacy

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This is to certify that the project entitled "**Cosmetico Vigilance Of Skin Lightening Agents : Patient Utilization Pattern Versus Virtual Need In Mumbai Metropolitan Region**" is a bonafide work of **Gabhrani Mehandi Reza Shabbirali (Roll No.17PH09)** submitted for the appreciation of the degree of Bachelor of Pharmacy in Department of Pharmaceutics.

Name of supervisor: **Prof. Maria Lal**

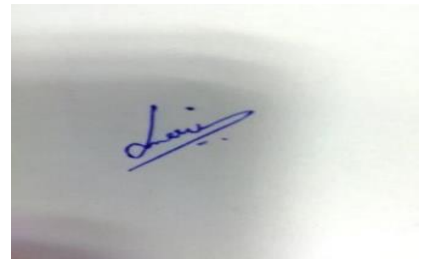
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APPROVAL FOR BACHELOR OF PHARMACY

This project entitled “**Cosmetico Vigilance Of Skin Lightening Agents : Patient Utilization Pattern Versus Virtual Need In Mumbai Metropolitan Region**” by **Gabhrani Mehandi Reza Shabbirali** is approved for the degree of Bachelor of Pharmacy in Department of Pharmaceutics.

Examiners

A photograph of a handwritten signature in blue ink on a white surface. The signature is cursive and appears to be 'L. S. S.' with a horizontal line underneath.

Supervisors

DECLARATION

I hereby declare that this written submission represents my ideas in my own words and I have adequately and referenced the original sources. I also declare that I have adhered to all the principles of academic honesty and integrity, and have not misrepresented or fabricated or falsified any idea/fact/data/source in my submission. I understand that any violation of the above will cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not properly cited or from whom proper permission has not been taken when needed.

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ACKNOWLEDGEMENT

I would like to take this opportunity to express my sincere gratitude to our guide **Prof. Maria Lal**, Department of Pharmaceutics, AIKTC, School of Pharmacy, New Panvel; for her valuable support and guidance throughout my project work.

I am grateful for her encouragement and innovative ideas that helped me to complete the project more efficiently.

I would also like to thank Dr. Abdul Razzak Honnutagi, Director of AIKTC, New Panvel, for providing us an outstanding academic environment.

I am thankful to Dr. Shariq Syed, Dean, School of Pharmacy, New panvel and all my B.Pharm. faculties for providing advice and valuable guidance.

I am also thankful to all my family members whose constant support and encouragement in every aspect helped me to complete my project.

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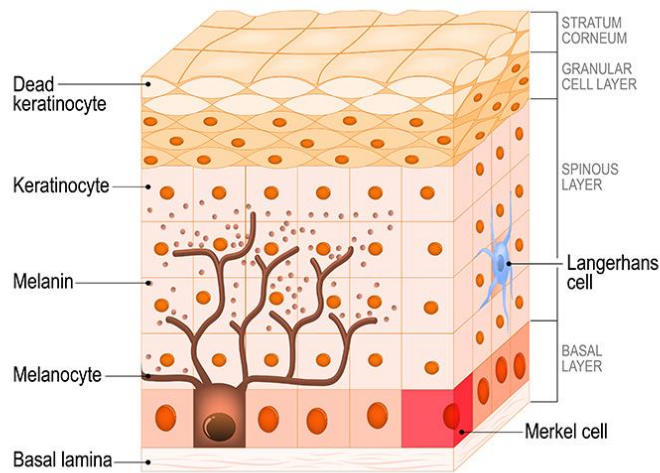
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INTRODUCTION

The preference to have white skin has driven the skin lightening (SL) industry. This phenomenon was reflected in the domination of skin lightening products in Asian skincare market with 60 percent of sales. Skin lightening products are readily available from major cosmetics companies, from local convenience stores, and widely over the internet. These types of products are marketed as skin-evening creams, skin lighteners, skin brighteners, skin whiteners, skin tones, fading creams, or fairness creams.

EPIDERMIS



Melanin

Melanin is a natural skin pigment. Hair, skin, and eye color in people and animals mostly depends on the type and amount of melanin they have. Special skin cells called melanocytes make melanin. Everyone has the same number of melanocytes, but some people make more melanin than others.

Melanocyte

Melanocytes are melanin-producing neural crest-derived cells located in the bottom layer (the stratum basale) of the skin's epidermis, the middle layer of the eye (the uvea), the inner ear, vaginal epithelium, meninges, bones, and heart. Melanin is a dark pigment primarily responsible for skin color.

Keratinocytes

Keratinocytes are the primary type of cell found in the epidermis, the outermost layer of the skin. In humans, they constitute 90% of epidermal skin cells. Basal cells in the basal layer (stratum basale) of the skin are sometimes referred to as basal keratinocytes.

AIM & OBJECTIVE

The aim & objective of the present study was to question the rationale behind the practice of Skin Lightening as well develop awareness for using safer products to the public domain.

Areas of increased pigmentation such as moles may be depigmented to match the surrounding skin. Effective agents for specific areas include corticosteroids, tretinoin, and hydroquinone. These agents, however, are not allowed in cosmetics in Europe due to concerns of side effects. Attempts to whiten large areas of skin may also be carried out by certain cultures. This may be done for reasons of appearance, politics, or economics.

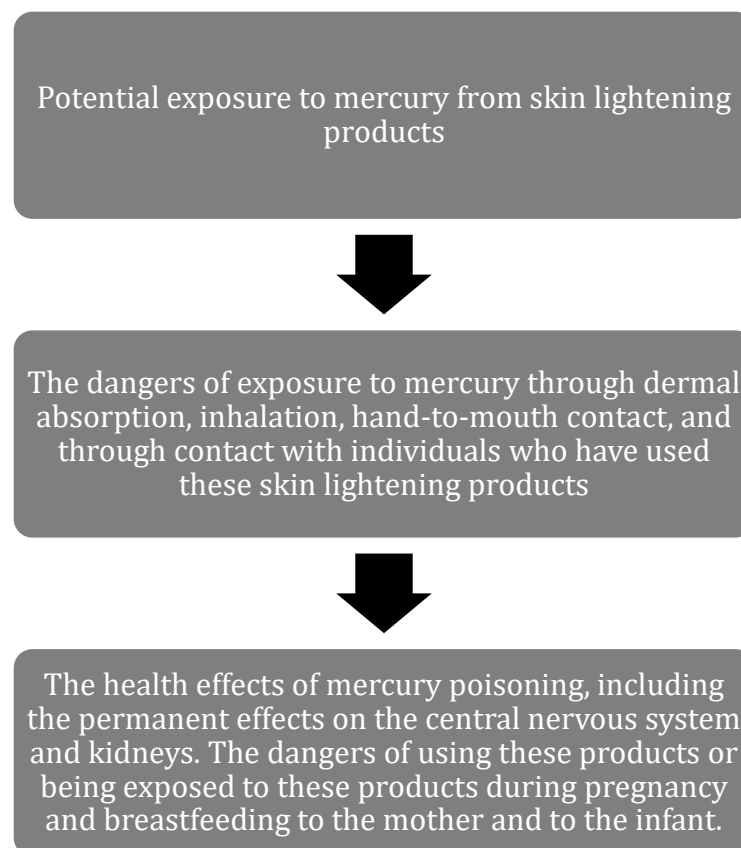
The objective of the Skin Lightening Products Public Awareness and Education Grant is to increase public awareness and education on the health dangers associated with using skin lightening products that contain mercury that are manufactured in other countries and brought into India and sold illegally online or in stores.

Skin Lightening Agents

Skin lightening, also known as **skin whitening** and **skin bleaching**, is the practice of using chemical substances in an attempt to lighten the skin or provide an even skin color by reducing the **melanin** concentration in the skin. Several chemicals have been shown to be effective in skin whitening, while some have proven to be toxic or have questionable safety profiles.

Skin lightening creams have commonly contained mercury, hydroquinone, and corticosteroids, because these compounds can induce both superficial and internal side effects, they are illegal to use and market in multiple nations. However, various chemical studies indicate that these compounds continue to be used in sold cosmetic products, though they are not explicitly declared as ingredients.

Prolonged usage of mercury-based products can ultimately discolor the skin, as mercury will accumulate within the dermis. Mercury toxicity can cause acute symptoms such as pneumonitis and gastric irritation.



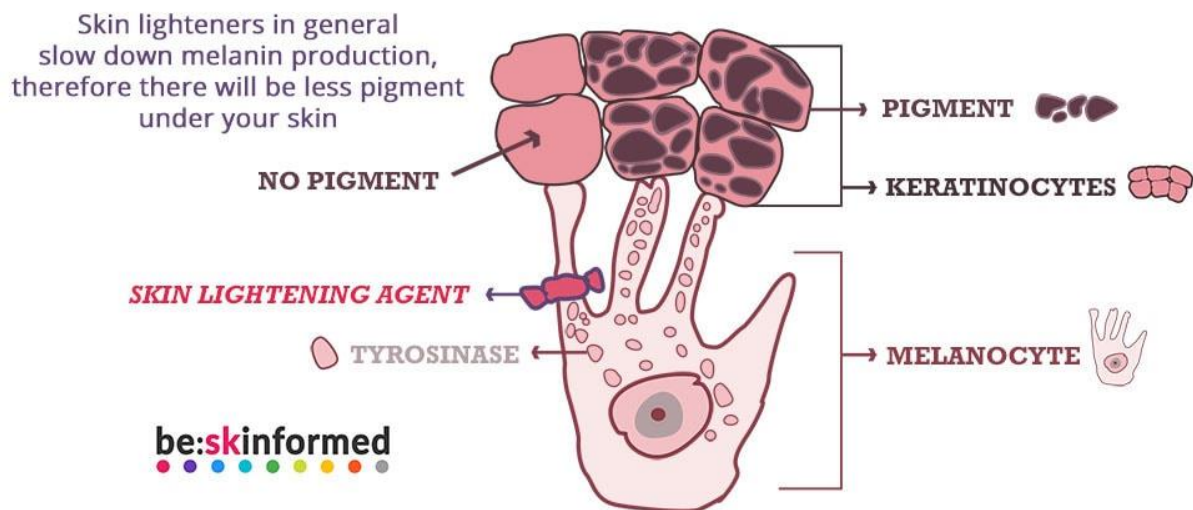
Studies have additionally linked paler skin to achieving various forms of social standing and mobility. A study by Kelly Lewis and her colleagues found that, in Tanzania, residents choose to bleach their skin to appear more European and impress peers and potential partners. Both advertisements and consumers have suggested that whiter skin can enhance individual sexual attractiveness. Sociologist Margaret Hunter noted the influence of mass-marketing and celebrity culture emphasizing whiteness as an ideal of beauty. A study by Itisha Nagar also revealed that lighter skin tones in both men and women in India improved their prospects for marriage.

Skin whitening is a major issue throughout Asia. In South Korea, light skin is considered an ideal of beauty and most South Koreans believe that having paler skin is the only way to look beautiful. In South Korea, skin whitening is a multi-billion-dollar industry. The K-pop and K-drama industries are saturated with fair-skinned celebrities, some of whom serve as brand ambassadors and beauty ideals. The trend of having fairer skin can be traced back to several centuries, where white skin was a sign of being high in the social hierarchy since those who were wealthier did not have to work outside in the fields. The increasing popularity of K-pop and K-beauty has driven the skin whitening trend elsewhere in Asia.

MECHANISM OF ACTION

Skin whitening agents work by reducing the presence of melanin pigment in the skin. To accomplish this, there are several possible mechanisms of action:^[34]

- ❖ Inhibition of the activity of tyrosinase: The catalytic action of tyrosinase is inhibited by the skin whitening agent.
- ❖ Inhibition of the expression or activation of tyrosinase: The antimelanogenic agent causes less tyrosinase to be generated or prevents tyrosinase from being activated to its functional form.
- ❖ Scavenging of the intermediate products of melanin synthesis.
- ❖ Preventing the transfer of melanosomes to keratinocytes.
- ❖ Directly destroying existing melanin.
- ❖ Destroying melanocytes.



Inhibition of tyrosinase

Up regulation of tyrosinase caused by tyrosinase inhibitors. Several skin whitening agents, including tyrosinase inhibitors, have been found to cause an increase in the expression of tyrosinase, which by itself would increase melanin synthesis.

Destroying melanocytes

Some compounds are known to destroy melanocytes; this mechanism of action is often used to remove the remaining pigmentation in cases of vitiligo.

Preventing the transfer of melanosomes to keratinocytes

Melanosomes along with the melanin they contain are transferred from melanocytes to keratinocytes when keratinocytes are low in the epidermis. Keratinocytes carry the melanosomes with them as they move towards the surface. Keratinocytes contribute to skin pigmentation by holding the melanin originated in melanocytes and inducing melanogenesis through chemical signals directed at melanocytes. The transfer of melanosomes to keratinocytes is a necessary condition for the visible pigmentation of the skin. Blocking this transfer is a mechanism of action of some skin whitening agents.

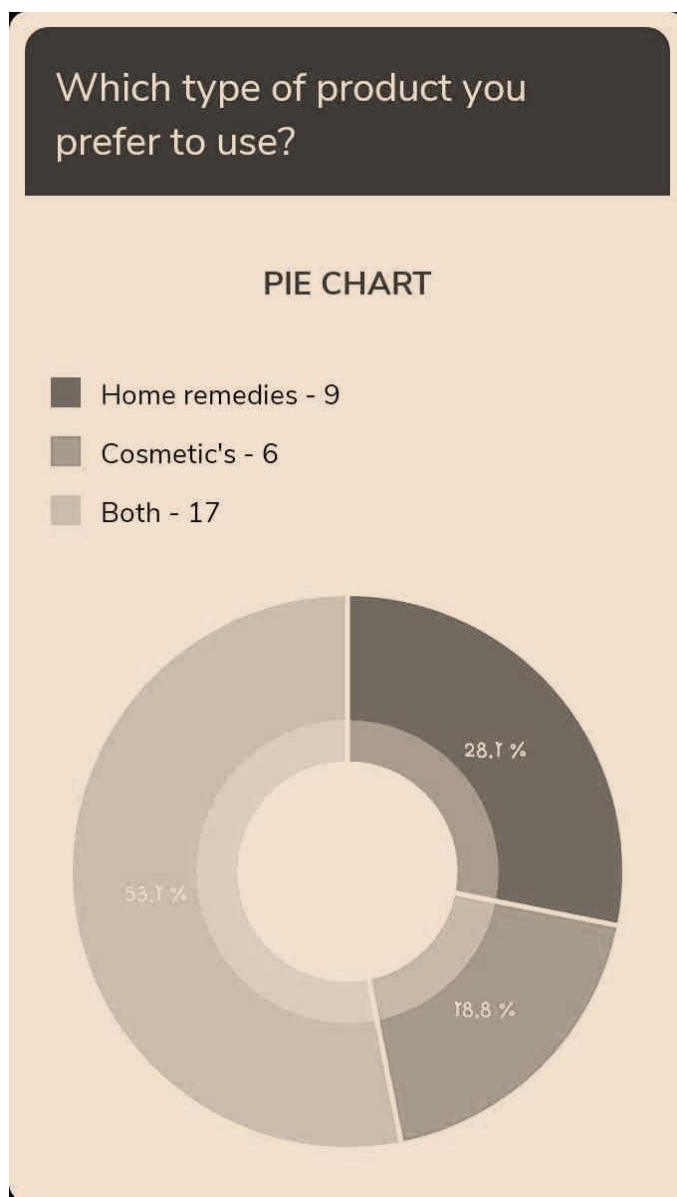
METHODOLOGY

- ❖ Present study was based on cross sectional method of statistical analysis.
- ❖ This study assessed the skin lightening practice and health symptoms among students.
- ❖ Self-administered Google form was distributed to students and faculties in AIKTC campus, Mumbai University.
- ❖ The prevalence and severity of side effects were evaluated in collaboration with dermatologists and general practitioners through a specific question and interviews.
- ❖ A cross sectional cohort study was performed on the subjects as well as Dermatologist .
- ❖ An Google form based survey was performed, 46 samples were collected. Cross sectional questions and prescriptions of dermatologists were assessed from the period of February To March 2021.
- ❖ Data obtained were assessed statistically analyzed by Microsoft excel spreadsheet.

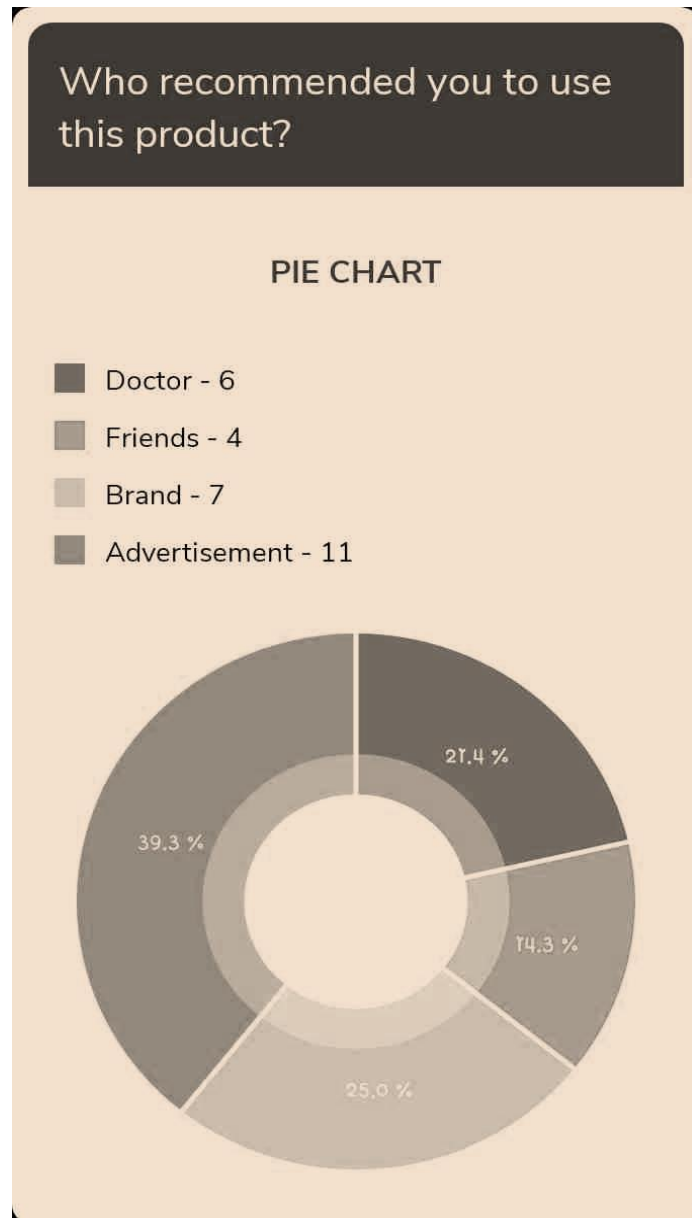
RESULTS & DISCUSSIONS

Majority of the population (65%) used SL agents formulated Creams whereas few population (35%)Preferred to used home remedies for skin lightening. This could be co-related to the influence of media and branding on their choice.

Since the choice of consumers was based brand influence , majority of the people were not aware (45%) of the irritating potential of SL agents .



The study showed that 45 % of the population 's choice was based on advertisement of the particular lightening product 40% followed brand and friends advice. It was observed that only few subjects (15%) used SL agents prescribed by doctors.



Symptoms & effects observed by people

- Red patches & rashes
- Patchy depigmentation, and contact dermatitis
- Skin atrophy and fragility
- Dermal & fungal infections.

Products used by people as skin lightening agents

- *Lemon juice, Honey & Milk*
- *Potato juice*
- *Papaya & Honey*
- *Yoghurt*
- *Rice flour & Milk*
- *Cumin (jeera) seeds*
- *Sandalwood (chandan) powder*
- *Carrot & Avocado*

PRESCRIBING FACTORS OF SKIN LIGHTENING AGENTS BY DERMATOLOGISTS

Dermats preferred Chemical Peels(80%) for treating melasma. There are several types of chemical peels with different and multiple chemicals in them. Depigmenting creams (20%) in facial pigmentation and skin toning. It was found that (50 %) preferred to chose SL agents working on the principle of decrease melanin synthesis as compared to 40% who preferred complete inhibition of melanin but many cases of side effects were reported in such mechanism.


TYPES OF CHEMICAL PEELS

GLYCOLIC

The Glycolic peel has the smallest molecular size and penetrates the deepest. It's great for the exfoliation and rejuvenation of aging skin.

LACTIC

Derived from milk, the Lactic peel is ideal for skin that's dry or sensitive to ingredients like retinol. If you're concerned about an adverse reaction, this peel is easier on the skin.



VITALIZE


The Vitalize peel includes citric, lactic and salicylic acids, plus a retinol layer, to improve the quality and lighten the pigmentation of your skin. This is a great place to start for people who have never had a chemical peel.


PIGMENT BALANCING

The pigment balancing peel is designed to lighten the pigment of the skin. But this process takes time, and it's important to have realistic expectations when trying to eliminate brown spots and reduce pigmentation.

BETA

The beta peel is used to treat acne in both younger and older patients. It uses salicylic acid to exfoliate the skin, help with oil control, and target the bacteria that causes acne.



 DERMATOLOGY Alliance

Board-Certified Dermatology in Keller, Coppell, & Roanoke, TX

If you have walked down a makeup aisle recently (or browsed a makeup website), you probably saw hundreds of products claiming to brighten your skin. Brightening makeup products help to even skin tone and provide an overall brighter look by covering dark spots and leaving a dewy glow on the skin. Brightening makeup foundations and concealers work on the skin's surface, but do not affect how much melanin the skin cells are producing like bleaching products do. As soon as the makeup is washed off, your skin will return to its natural color.

CONCLUSION

Albeit that many people acknowledge that there are possible side effects of using preparations commonly used in SL, the practice is generally continued. Although it is important to question the rationale behind the practice of SL, it is equally important to develop and propose safer products. It was also noticed that some dermatologists still prescribe banned agents like hydroquinone which is of great concern.

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