

**“THE ROLE OF MOISTURIZERS AND PEOPLE PREFERENCE
TOWARDS IT”.**

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 "**The role of moisturizers and people preference towards it**" is a bonafide work of **Kazi Aqsa Mohammed Husain (Roll No. 17PH18)** submitted for the appreciation of the degree of Bachelor Of Pharmacy in Department of Pharmaceutics.

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

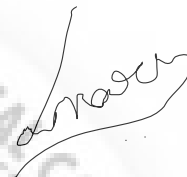
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APPROVAL FOR BACHELOR OF PHARMACY

This project entitled “**The role of moisturizers and people preference towards it**” by **Kazi Aqsa Mohammed Husain** is approved for the degree of Bachelor of Pharmacy in Department of Pharmaceutics.

Examiners



Supervisors

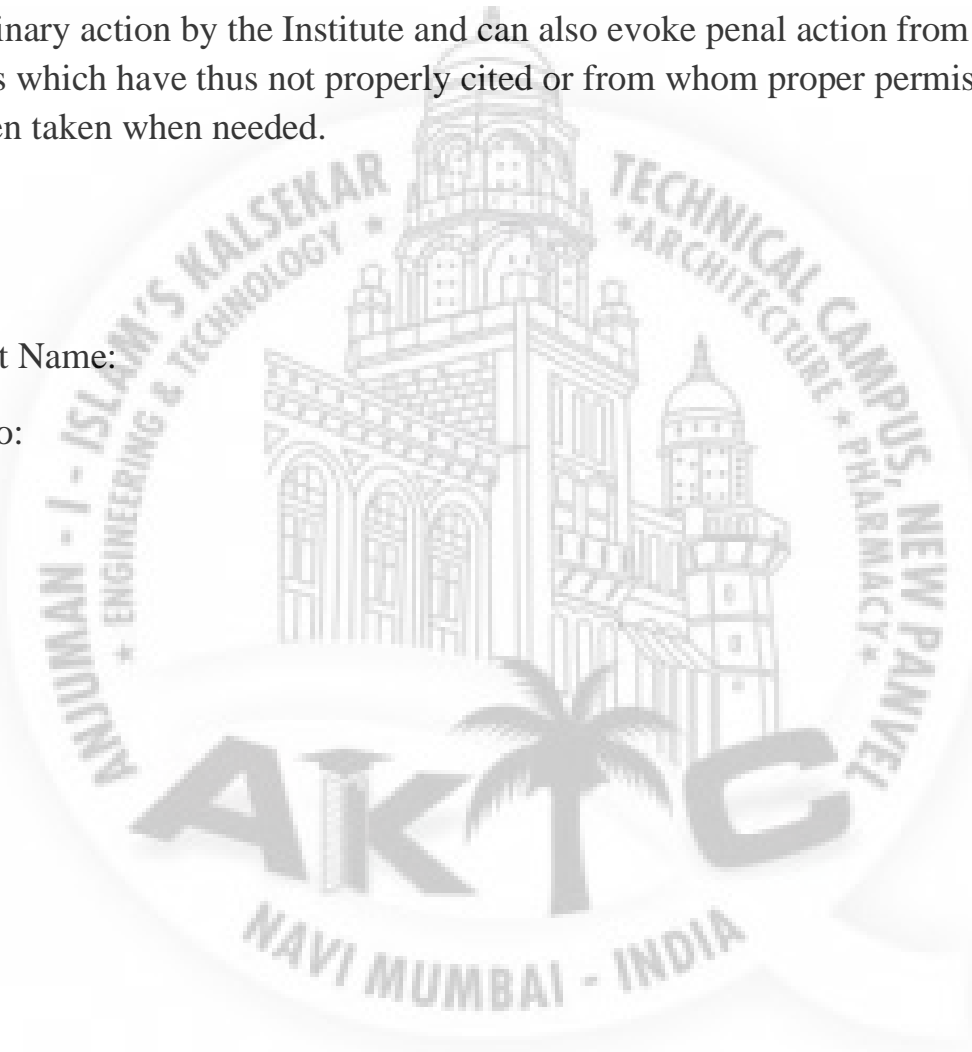


DECLARATION

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

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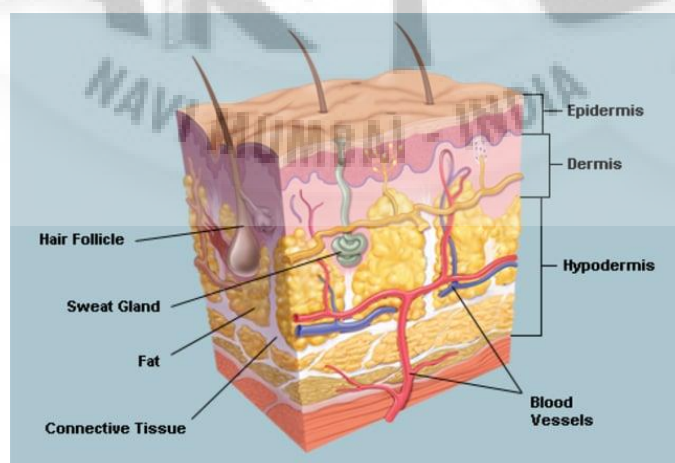
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INTRODUCTION

Skin:

The skin is the largest organ of the human body, which protects us from entry of microorganisms, regulate our body temperature. It serves as a barrier against physical and chemical attack. It also acts as a thermostat in maintaining body temperature, shields the body from invasion by micro-organisms, protects against UV rays and plays a role in regulation of blood pressure. There are thousands of diseases that we come across now-a-days among which, dry skin called xeroderma, acne, seborrhea are the most commonest for which the people are getting introduced to skin moisturizers; which are available in varieties in market with different brands and many ingredients. Therefore, skin moisturizer is used by many people to keep the skin hydrated and make it feel soft and smooth, maintain skin health and treat seborrhoea. With the increasing demand of skin moisturizer by people, we did a survey to examine people preference towards it, why they use moisturizer and what's their expectations from it.

The skin contains three layers: the epidermis, the dermis and the subcutaneous fat layer.



1) Epidermis: This is the outer layer of the skin.

The top layer of the epidermis is stratum corneum or horny layer, which consists of compacted, dead, keratinized cells in stratified layers.

The outermost layer of the stratum corneum is dense in nature due to which diffusion coefficient in this tissue is many times smaller than any other tissue which make it impenetrable and resist entry of micro-organism.

The Stratum corneum is the barrier responsible for the inward and outward movement of chemical substances. Stratum corneum is an active membrane involve in water influx, retention and overall moisturizing level.

2) Dermis: It consists of two layers: the upper papillary layer and the lower reticular layer; both of which contains three tissue types in varying degrees and they are collagen, elastic tissue and reticular fibres.

The dermis layer contains hair follicles, sebaceous (oil) glands, eccrine (sweat) glands, blood vessels and nerves.

3) Subcutaneous tissue: It is the bottom layer of the skin which is made up of fat and connective tissue. It contains larger blood vessels and nerves and is important in regulating temperature.

Different skin conditions:

Most skin disorders are due to the lipid barrier defects which is due to the removal of intercellular lipid layer results from trans-epidermal water loss from the surface of skin, this water loss cause skin to become dry also called xerosis or xeroderma which leads to itching, flaking of the skin , swelling and redness that are the main symptoms of many skin diseases.

Dry skin is a condition that affect almost all the people from every age and region.

With increasing age people experience dry skin as the moisture producing oil and sweat glands starts to dry up, production of fats and collagen that gives skin elasticity decrease.

1. **RASH:** Rashes are abnormal changes in skin color or texture. They usually result from skin inflammation, which can have many causes.
2. **DERMATITIS:** Dermatitis simply means skin inflammation. In most people, the early stages of dermatitis are characterized by red, dry, and itchy skin. More serious dermatitis may result in crusty scales, painful cracks, or blisters that ooze fluid.
3. **Contact dermatitis:** It occurs when something comes into contact with the skin, which causes an irritant or allergic reaction. Skin may be dry, itchy and red, and can also have a skin rash. To treat these conditions the lipid barrier is needed to be repair. To avoid further complications dermatologist recommend decrease in bathing as it include use of chemicals that drain out the water leaving skin dry and crack, use of mild detergents to prevent undesirable removal of excess intercellular lipid, use of moisturizers are helpful to create an artificial barrier and prevent trans-epidermal water loss.
4. **ECZEMA:** Eczema is a group of conditions that make your skin inflamed or irritated. The most common type is atopic dermatitis or atopic eczema. “Atopic” refers to a person’s tendency to get allergic conditions such as asthma and hay fever.

5. **PSORIASIS:** Psoriasis is a skin disorder that causes skin cells to multiply up to 10 times faster than normal. This makes the skin build up into bumpy red patches covered with white scales. They can grow anywhere, but most appear on the scalp, elbows, knees, and lower back.
6. **ACNE:** Acne is a skin condition that occurs when your hair follicles become plugged with oil and dead skin cells. It causes whiteheads, blackheads or pimples.
7. **RINGWORM:** Ringworm, also known as dermatophytosis, dermatophyte infection, or tinea, is a fungal infection of the skin.

Moisturizers are used to minimize further damage to skin while skin is repairing the barrier. It smooths and softens dry skin to help prevent cracking and restoring skin moisture.

What is skin moisturizer?

Moisturizers contain oils that help lock the hydration, prevent and treat dry skin. They can also protect sensitive skin, improve skin texture and mask imperfections.

Moisturizers are important because they help keep your skin from getting dehydrated.

There are different formulations available for moisturizers such as water-based lotions, creams, gels and serums.

Different formulations:

Creams: Creams are semi-solid formulation that contain 20% water and less than 50% hydrocarbons, waxes. They aid in retention of moisture and give emollient effect. They are heavyweight moisturizer and keep the skin soft due to their water content they can be easily absorbed in the skin and by the amount of oil they can be used for dry skin as it stays on the surface of skin and prevent moisture loss.

Lotions: Lotions are lightweight moisturizers with a high content of water. They are similar to creams in some extent, cream has half water and half oil content lotions mostly contain water and little oil. They get absorb easily and don't make the skin greasy, which can be good for people with oily skin and for everyday use.

Gels: Gels are another type of lightweight moisturizes, it is a combination of cellulose, water and alcohol.

These are oil free products used by the people who has extremely oily skin that get absorb into the skin easily and provide a lot of hydration. Some of them contain alcohol which can be a problem for sensitive skin.

This might not be useful for the people with dry skin because it absorb too quickly and does not form any barrier on the skin tom prevent moisture loss.

Ointments: The heaviest and thickest types of moisturizers with a high content of oils. They has occlusive effect that stays on top of the skin surface rather than

being absorbed right away they help in prevention of moisture loss and reduce the chances of dry skin.

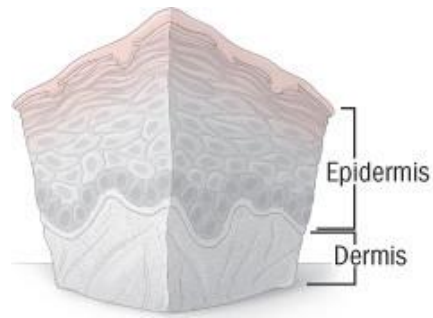
Moisturizers usually are in a combination of 3 specific kind of ingredients: humectants, emollients and/or occlusives.

- I. **Humectant:** Humectants are the ingredients that keep the skin hydrated by helping stratum corneum to absorb water by attracting water from dermis. Humectants pull water into the stratum corneum both from the air and from deeper layers of the skin.

Example: Glycerine, Hyaluronic acid, Aloe-vera.

- II. **Emollient:** An emollient is a preparation that softens the skin, usually made up of lipids.

Example: Petrolatum, mineral oil, lanolin, shea butter, ceramide.



III. Occlusive: Occlusive agents physically prevent or retard water loss by creating a hydrophobic barrier over skin and blocking trans-epidermal water loss.

Example: Mineral oil, beeswax, lanolin.



Other ingredients used in moisturizers are:

Vitamins: Topical retinoic acid – a form of vitamin A, reduces fine lines and wrinkles in the skin by stimulating the production of collagen. Vitamin C, usually named as Ascorbic acid and Vitamin E, usually named as tocopheryl acetate are added because of their antioxidant properties.

Lactic acid: Skin over the heel can get thick and dry sometimes. For this AmLactin moisturizer is used to soften it up and the skin becomes less cracky.

The efficacy of moisturizers depend on many factors including the skin type, age, region, routine etc.

Skin types:

1) Normal skin: Normal skin is neither too dry nor too oily. So for normal skin water-based moisturizers can be used.

2) Dry skin: Dry skin tends to be itchy or rough. So for dry skin oil-based moisturizers that contains ingredients which help to retain water, can be used.

3) Oily skin: Oily skin is shiny, greasy and prone to acne and breakouts. Such skin still needs moisture, especially after using skin care products that remove oils and dry the skin. A light moisturizer can also help protect your skin after washing.

4) Combination skin: Combination skin has areas that are dry and oily. For example, the forehead, nose or chin might be oily, but the cheeks are dry. So for combination skin a light moisturizer can be used.

5) Sensitive skin: Sensitive skin is susceptible to irritation, redness, itching or rashes. So for sensitive skin a moisturizer that contains soothing ingredients such as chamomile or aloe, can be used.

Mechanism of skin moisturizer:

The main cellular component of the skin are proteins, lipids and water. The lipid layer consists of ceramides, cholesterol and fatty acids to form bilayer which participates into epidermal water function, the loss of intercellular lipids damages the water barrier function.

Epidermal barrier with maintenance of the proper water content required for physiologic and enzymatic functions. The epidermal barrier is comprised of two components which work together to assure barrier integrity through functions like maintenance of proper epidermal water balance, stratum corneum water content (20–35%), optimal lipid synthesis, limitation of trans-epidermal water loss (TEWL).

The first component of the epidermal barrier, the cellular matrix, referred as the “bricks.” In its uppermost layer, the flattened stratum corneum cells are referred to as corneocytes. The second component of the epidermal barrier, the intercellular lipid bilayer matrix, referred as the “mortar” Disturbances of these epidermal barrier components, with the use of harsh soaps or other factor causes various dermatological disorders such as atopic dermatitis or rosacea, enhance TEWL, causes dryness of skin.

The intercellular lipid bilayer matrix “the mortar” functions to control intercellular water movement, maintain intracellular water content, and limit

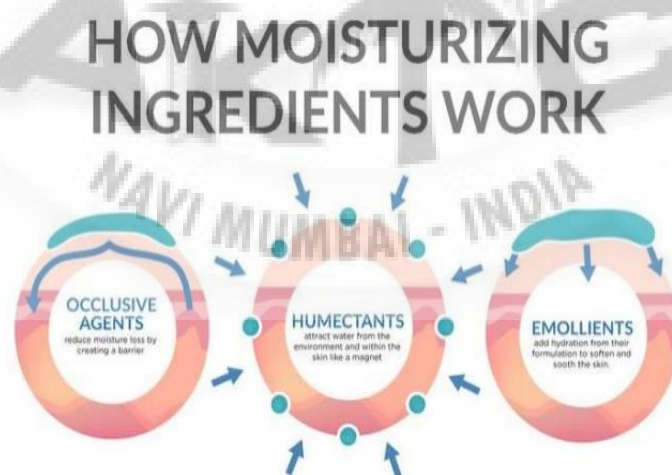
TEWL. Water from deeper epidermal layer moves into stratum corneum by evaporation process and finally drain out from the stratum corneum. To maintain the moisture of the skin it is important to return the extracted lipid of the skin back to it. Moisturizers act in a similar manner to epidermal lipids in promoting and restoring epidermal barrier function.

Lipids applied externally as a moisturizer intercalate between corneocytes and help to reduce skin irritation. The use of lipids such as petrolatum initially restores barrier function.

Lipids applied in moisturizers can be directly incorporated into barrier lipids. it is vital to have all three lipid components (ceramide, cholesterol, free fatty acids) to be incorporated in moisturizer formulations in optimized concentrations in order to avoid impairment of barrier recovery.

Moisturizers are known to inhibit trans-epidermal water loss by occlusion, occlusive agents present in the formulation inhibit the evaporation of water from stratum corneum.

The natural mixer of amino acids, lactates, urea and electrolytes (Humectants) help stratum corneum to retain water.



The treatment of moisturizer takes place in four steps:

1. Repairing the skin barrier
2. Restoring lipid barriers
3. Reducing trans-epidermal water loss
4. Increasing water content

The ability to retain moisture depends on the lipid bilayer between the corneocytes.

Moisturizers control the rate of water loss, due to two active ingredients of use to formulate it: occlusives and humectants.

Occlusives form a coating on the surface of the skin, keeping moisture from escaping. The more occlusive the formulation, the greater is the effect.

Ointments are more occlusive than aqueous creams, which are more occlusive than lotion. A layer of petrolatum applied to normal skin can reduce the loss by 50–75% for several hours. Oils naturally produced by the human body moisturize through this same mechanism.

Humectants absorb water. They can absorb this water from the air and moisturize the skin when the humidity is greater than 70%, but more commonly they draw water from the dermis into the epidermis.

Uses of skin moisturizer:

Some areas of the skin can be really sensitive due to environmental changes, commonly those which are exposed to sun and pollution and are most likely to develop skin cancer, these areas can also shed cells more rapidly than other part of the body, therefore it need moisture to repair itself. To keep skin moisturize it is necessary to incorporate the use of moisturizer in our daily routine as it is an important step towards the improvement of skin health.

Everyday use of moisturizer can help in preventing many skin disorders like extreme dryness or oiliness which is harmful as such and can lead to many other skin diseases. It can also be used as a treatment for skin diseases caused by dryness and oiliness such as acne, seborrhea, dermatitis etc.

Moisturizer also reduces skin problems:

1. **Help fight acne:** when your skin dry out it send signal to gland to secret more oil which can clog the pores and cause breakouts leading to appearance of acne and pimples. using moisturizer to keep skin hydration in balance can stop the production of excessive oils and prevent acne.
2. **Prevent dryness:** environmental changes such as too hot or too dry weather can cause skin moisture to drain out of the skin making the moisture level imbalance and skin dry and flaky leading to many other skin problems, maintaining the moisture level with proper and adequate use of moisturizer helps to prevent any further complications related to skin.
3. **Conceals blemishes:** hydrated skin provide glow that conceal the blemishes. Moisturizer ensures that the blemishes are camouflaged as it contain some tints which is helpful to make skin even tone.
4. **Slow the signs of aging:** After skin loses moisture, it also loses elasticity which can result in wrinkles. Moisturizers draw water from the innermost part of the skin. Moisturizing help to protect the skin from premature aging.

Now many formulations containing some anti-aging ingredients to target the wrinkles and fine lines are available.

Moisturizing and hydrating skin is able to boost the ability to repair itself and produce collagen, stay tight and vibrant.

5. Make it look younger: With balanced moisture in the skin it look nourish, feel soft and smooth prevent dullness and lifeless appearance, cause good circulation and give color to skin.

6. Protection from the pollution: An occlusive moisturizer can protect and repair the lipid barrier which prevents the entry of pollutants, toxins from the surroundings to get into the skin cells and damage it.

7. Faster new cell formation: Our skin constantly produces new skin cells deep within the dermis and replaces old, worn-out, and ill-functioning cells. As we age, this regeneration-process slows down and the skin looks more dull and lifeless. Lot of vitamins (especially vitamin A), minerals, and essential fatty acids which are the ingredients of moisturizer can help to increase the formation of new cells. So it is recommended to apply moisturizer after cleansing and exfoliating the dead layer of the skin's surface, which provides the skin with rich nutrients to make look young and healthy.

8. Protection from the sun: Many of the moisturizer in market now-a-days come with SPF to protect the skin from the harmful UV rays. There are products available that are in a combination of moisturizer and sunscreens, which can be applies in morning before going out in the sun.

9. As anti-pruritic: Moisturizers can also act as anti-pruritic to cure itching. It is seen that ceramide containing lotions and cream provide rapid and long-lasting relief from dryness, itchiness and irritated skin.

10. To perfect your makeup look: Before applying makeup, moisturizing your skin helps in prevent peeling off makeup the make and flakiness of foundation which make you disturb.

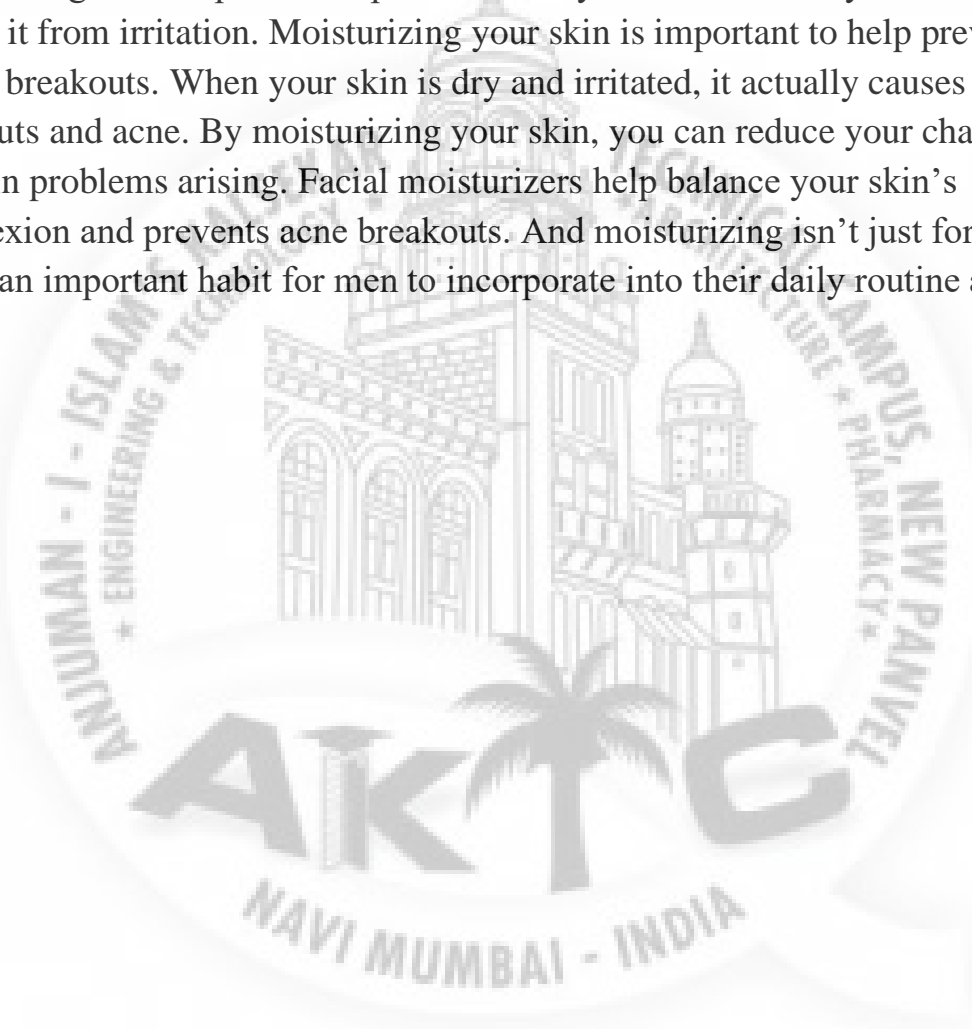
11. Reduce inflammation: Moisturizer with an ingredient which has natural anti-inflammatory properties can prevent inflammation and other skin diseases related to it.

Moisturizer has several benefits on skin in keeping it healthy and maintain and preventing and treating many skin related problems, moisturizer indirectly help to prevent skin cancer. Therefore, it is good habit to use moisturizer on daily basis.



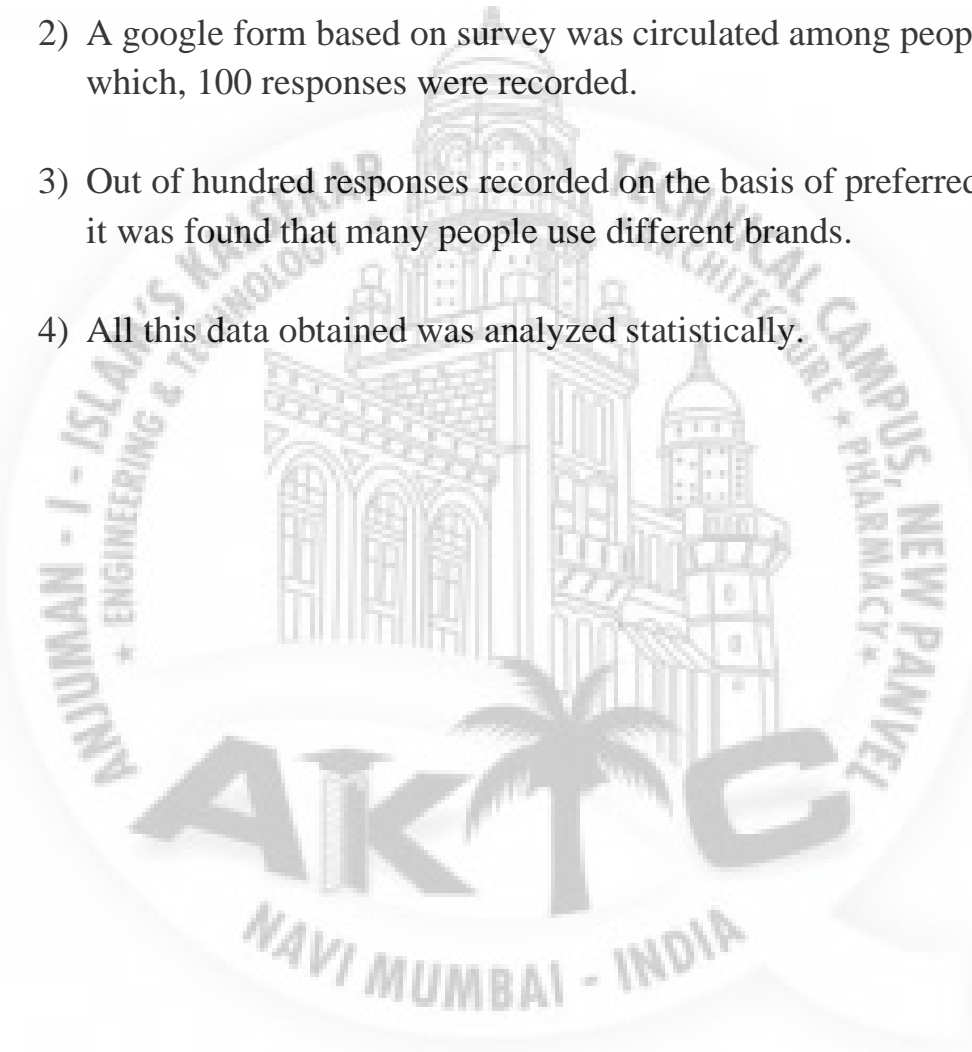
AIM AND OBJECTIVE

It seems like everywhere you go in today's world your skin plays an important role to add positivity to your personality and your good impression on your professional communication as well. This makes one to maintain a healthy skin. Moisturizing is an important step to maintain your skin's healthy cells and to protect it from irritation. Moisturizing your skin is important to help prevent further breakouts. When your skin is dry and irritated, it actually causes breakouts and acne. By moisturizing your skin, you can reduce your chances of any skin problems arising. Facial moisturizers help balance your skin's complexion and prevents acne breakouts. And moisturizing isn't just for women — it's an important habit for men to incorporate into their daily routine as well.



METHODOLOGY

- 1) The study was based on statistical analysis of survey.
- 2) A google form based on survey was circulated among people in which, 100 responses were recorded.
- 3) Out of hundred responses recorded on the basis of preferred brand, it was found that many people use different brands.
- 4) All this data obtained was analyzed statistically.

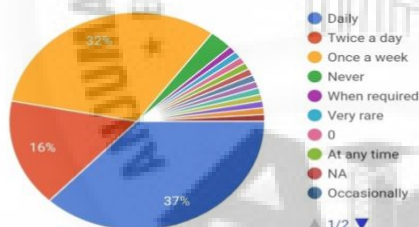


RESULTS AND DISCUSSION

The study showed that people use moisturizer depending upon their skin type. 100 responses were recorded. Depending on the formulations of moisturizer suitable for the area of the body where moisturizer is applied or as per skin characteristics, 13% use body lotion, 46% use cream, 16% use gel and the remaining 6% use products recommended by dermatologists. Survey shows that around half of the consumers apply moisturizer at night, some of them apply at day time, while the remaining ones apply at both time i.e. day and night or occasionally.

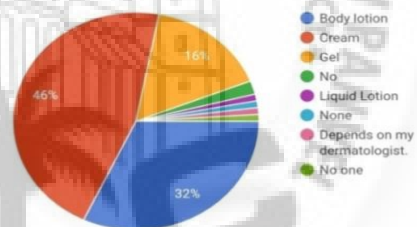
How often do you use moisturizer for your skin?

100 responses



Which of the following skin moisturizing product do you prefer?

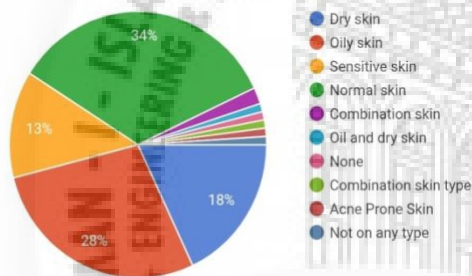
100 responses



Considering the skin type i.e. normal skin, dry skin, oily skin and combination skin, it was found that maximum people have normal skin and many of them had sensitive skin which makes them pay more attention to their skin and maintain healthy skin. According to the survey, Himalaya pharmaceutical company has the highest customer (approx. 35-40%). While many of them used products consulted by dermatologists.

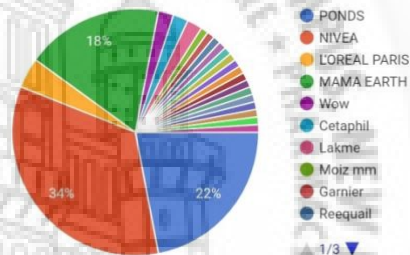
For which skin type the products you are currently using?

100 responses



Which brand do you prefer to use for your skin?

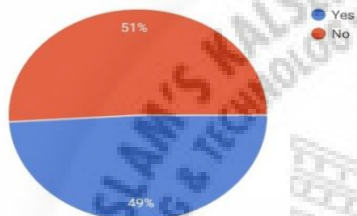
100 responses



Out of 100 responses, 49% preferred moisturizer with SPF while remaining 51% don't. Also out of the total responses, only 44% considered usage of manufactured cosmetic products of moisturizers, while other 56% prefer home remedies. Considering today's need to wear a mask due to the COVID-19; according to the survey 20% people think that it affects their moisturizer application.

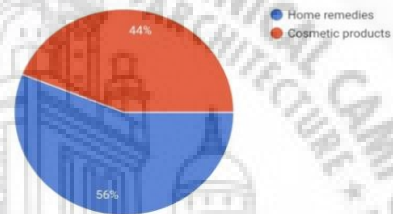
Do you use moisturizer which has SPF in addition to avoid sun burns?

100 responses



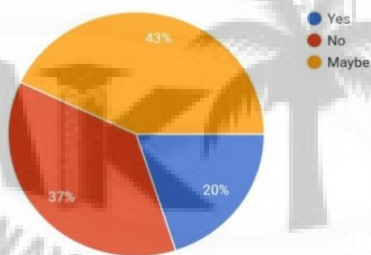
What do you prefer - home remedies or cosmetic products to keep your skin moisturized?

100 responses



Does wearing mask changes your need for moisturizer?

100 responses



CONCLUSION

With the use of harsh chemicals and other environmental factors, the number of people suffering from skin related problems are increasing, with that the need to bring moisture back to the skin and the demand for moisturizers is also increasing. In this survey we get to know that people are very careful about what type of products they are applying on their skin. Therefore, most of the people use homemade remedies while others use selected brands only. With the proper understanding of the physicochemical effect of moisturizer on the skin and the ideal characters that people want in their moisturizers, we get to know the opinion of people towards skin moisturization, it's real meaning and can bring the best for them in the future.

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