

The Impact of Care and Intelligent Scientific Management in Skin Routine

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ABSTRACT

Given the recognized importance of skin care and the modern world's focus on preserving beauty and youth, with people willing to invest more in achieving this goal, the medical and beauty industry constantly strives to improve and enhance the quality of its products. Extensive research is conducted annually in this field, leading to the development of a culture of personal skin care and management, which is constantly advancing. Daily skin care and maintenance have a significant impact on slowing the aging process and various aspects of it, such as wrinkles, blemishes, loss of firmness, and elasticity. Therefore, long-term daily care significantly affects the overall quality of individuals' faces, influencing their self-confidence and social performance. In this article, we review the basic requirements of skin care, including makeup removal, removing impurities and excess sebum, adjusting skin pH, and preserving the skin against sunlight-induced damage. We also discuss how to enhance this culture, examining the execution and level of awareness within society.

Keywords: Skin Care; pH of Skin; Toner; Sunscreen; Moisture; Healthy Skin

Introduction

The skin, as the largest organ of the body and the first line of defense, plays a crucial role in protecting the body from external injuries and microorganisms [1]. It acts as a filter and purifier by secreting sweat and expelling toxins and harmful substances (Figure 1). Additionally, it regulates body temperature by constricting and dilating skin blood vessels and maintaining body temperature [2]. Moreover, it prevents reactions to allergens by releasing substances like histamine in response to stressful and inflammatory factors [3]. Alterations in skin function and the resulting physical changes have significant effects on skin beauty, interpersonal communication, and an individual's self-confidence over time [4]. Proper and scientific daily skin care is an intelligent approach to prevent skin damage, avoid additional expenses, and slow down the aging process [5,6]. Considering that skin microbiota comprises various organisms living on the skin's surface, including bacteria, fungi, and viruses, research indicates their

role in all three layers of skin defense [2,6]. The skin microbiome creates a bacterial barrier against pathogenic bacteria and invaders and influences the skin's exfoliation process. Moreover, it promotes the reconstruction of the epidermal layer and the production of free fatty acids, contributing to the repair and maintenance of the skin's defensive barrier [2,5]. The composition of an individual's skin microbiota varies based on factors such as moisture, dryness, sebum content, genetics, and aging, and is influenced by environmental factors [2,6]. Inappropriate use of detergents and unsuitable products can damage skin microbiota, jeopardizing its health and beauty [7]. Therefore, we aim to provide a brief overview of the topic of routine skin care, which includes:

- 1) Cleansing and washing the skin,
- 2) Balancing the skin's pH,
- 3) Moisturizing and hydrating,
- 4) Sunscreen and its patterns of use by the public.

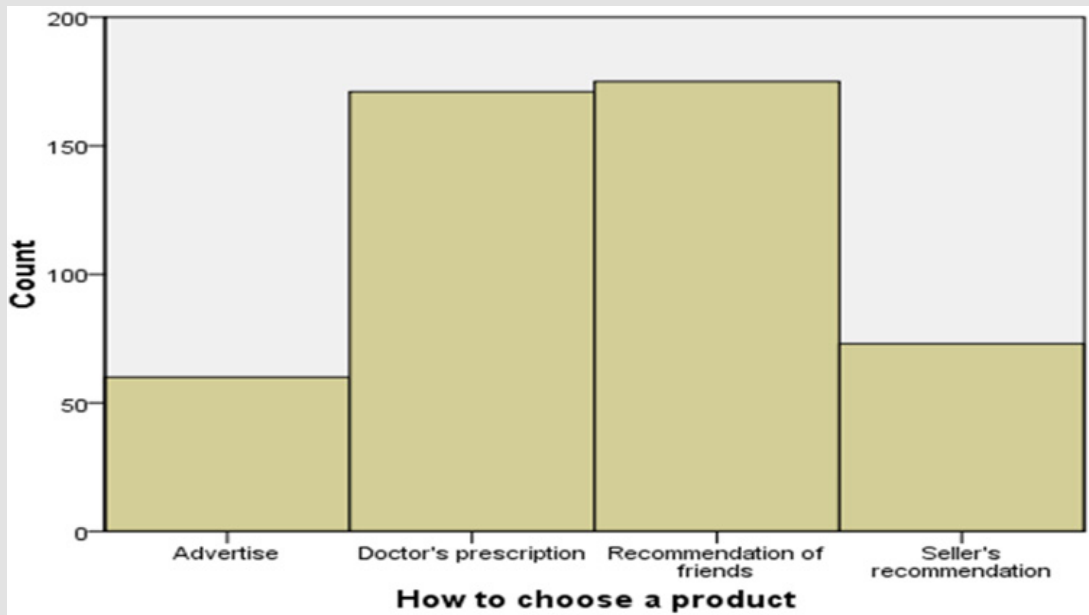


Figure 1: How to choose a product.

This is intended to capture the attention of enthusiasts and the medical community alike.

Materials and Methods

Considering that skin aging and skin damage are influenced by various biological, genetic, lifestyle, and environmental factors, and it is a long-term process, this article has focused on investigating these

factors. This investigation was carried out by designing a questionnaire that was randomly distributed through virtual platforms over a one-month period from April 2023 to June 2023, reaching the general population. A total of 340 individuals responded to 33 questions (Figure 2). The questionnaire questions were categorized into several groups:

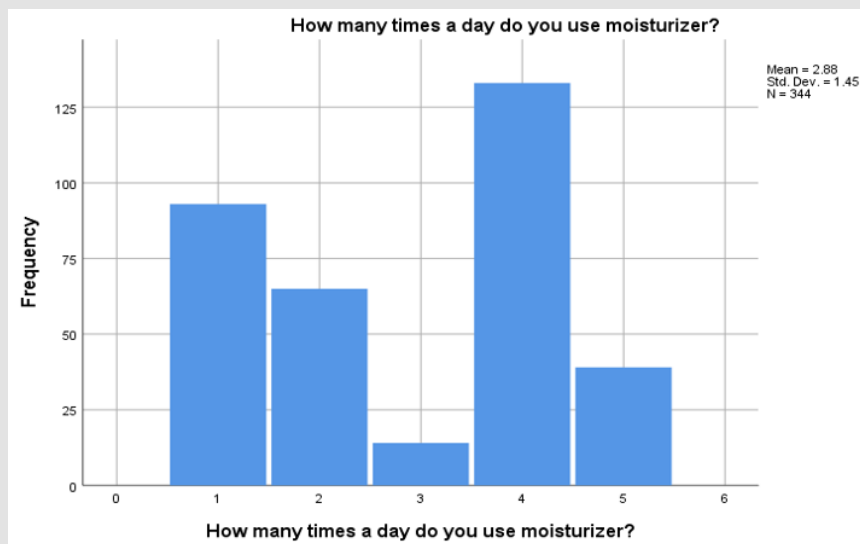


Figure 2: How many times a day do you use moisturizer?.

1. The first category included questions related to age, gender, level of education, skin type.
2. The second category encompassed environmental variables.
3. The third category comprised variables affecting skin health and hygiene to assess the level of attention to skincare routines.
4. The fourth category explored socioeconomic levels, expenses related to skincare, product selection by individuals, and, finally, individual satisfaction with their daily skincare routines.

We processed the collected data using Microsoft Excel and the SPSS program. We conducted correlation and frequency analyses to examine relationships between variables.

Cleansing

However, Cleansing

If the cleanser that an individual uses disrupts any of these factors, the skin becomes prone to various damages. [3] For example, alkaline soaps:

1. Damage the horny layer and cause the defensive barrier to break down, thus increasing the likelihood of microbial invasion. On the other hand, TEWL increases, eventually leading the skin to dryness [7].
2. Alkalinize the pH, thus removing the acid mantle and providing a medium for microbial entrance [3,6].

It is advisable to use a cleanser that is pH-balanced with the skin [1,8]. In our surveyed population, approximately 13.4% of individuals did not wash their faces at all, while 21.9% only used plain water for cleansing, and about 40% used soap (Figure 3). Those who used water alone or soap did not use other cleansers like micellar water or other cleansers. Some individuals used moistened wipes for cleansing, which deviates from proper skincare practices. This can lead to dehydration or an increase in sebum production, resulting in rougher, looser, and dull-looking skin [8]. In our research questionnaire, individuals who used micellar water, gel, and foam to cleanse their skin reported greater satisfaction with their skin compared to those who used plain water or soap. Since the normal skin flora helps maintain the skin's acidic property, any product with a pH closest to the normal skin pH (4.5-6) is more beneficial for preserving skin health [7,8].

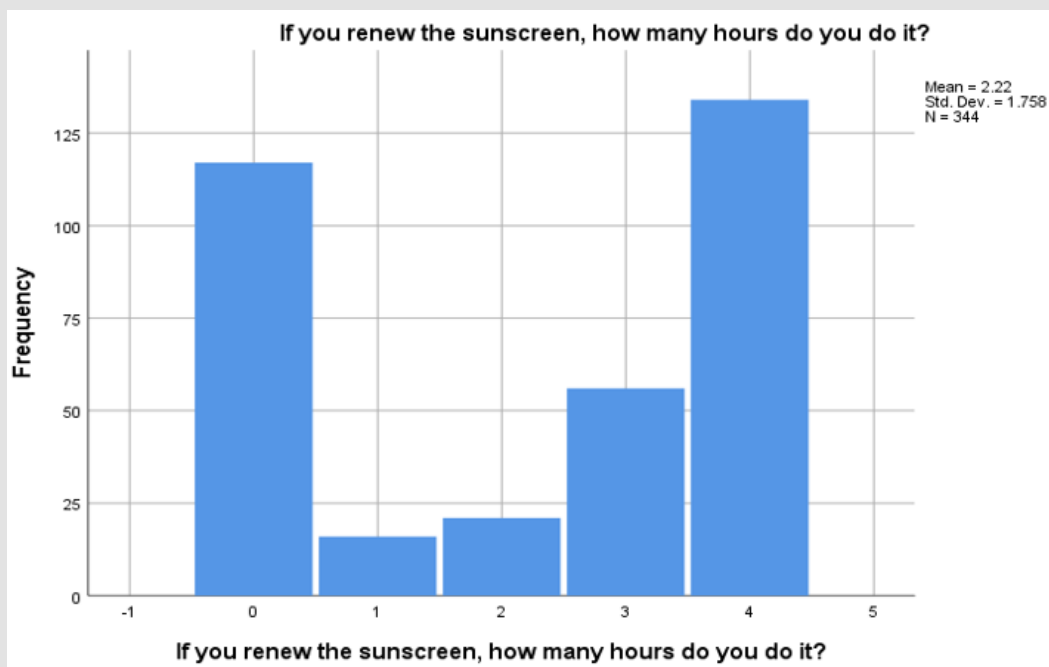


Figure 3: If you renew the sunscreen, how many hours do you do it?.

Balancing Skin pH

Previously, the importance of the pH of the epidermal layer was discussed, and it is advisable to use a toner that matches an individual's skin type after using a cleanser and makeup remover to balance the pH [7]. In our surveyed population, only 25% of individuals used

toner. Toners are rich in soothing and antioxidant ingredients, making them an excellent source for neutralizing free radicals [7-9].

Hydration

Skin that lacks proper hydration is prone to wrinkles, roughness, and cracking. Adequate hydration makes the skin supple and radiant,

imparting softness and elasticity to the epidermal layer [2]. A suitable moisturizer reduces Transepidermal Water Loss (TEWL) and increases skin hydration. Therefore, experts recommend teaching people about regular moisturization and the correct way to use moisturizers [1,8]. In our surveyed community, approximately 11.7% did not use moisturizers, and about 3% used mist, while 1% used mineral water. This is despite the fact that the proper moisturization regimen involves immediate application after cleansing, and the frequency of application varies depending on skin type and the type of moisturizer used [8].

Sunscreen Protection

Another factor contributing to skin aging, increased wrinkles, reduced elasticity, and the development of sun-induced pigmentation is exposure to UV (Ultraviolet) radiation from sunlight. UVB rays are high-energy radiation that can cause significant damage to living tissues and cells. They can lead to redness, sunburn, the appearance of skin tumors, and increased production of free radicals. UVA radiation activates collagenase, leading to collagen and elastin breakdown, intensifying the aging process [6,10,11]. Infrared (IR) radiation exacerbates the adverse effects of UVA and UVB radiation, leading to elastosis and, consequently, skin sagging. The best way to protect against photoaging is to avoid exposure to sunlight and, if necessary, adopt

appropriate sun protection measures [11]. In our surveyed community, approximately 65% of individuals used sunscreen. However, only about 4.2% reapplied sunscreen every two hours, and 39% did not re-apply sunscreen at all. Additionally, 22% of sunscreen users applied it approximately thirty minutes before sun exposure. Given these findings, proper application, adequate reapplication, and the selection of sunscreen suitable for each person's skin type are of paramount importance [1,3,6,8].

Sun protection should be taught to everyone to reduce the risk of sunburn, skin aging, skin diseases, and pigmentation [5]. In our surveyed population, 49% selected their skincare products based on a doctor's recommendation, 50% based on friends' recommendations, 21.2% based on salesperson recommendations, 17.4% based on product advertisements, and 53.8% based on brand influence. Based on the questionnaire analysis, individuals can be categorized into two groups:

1. The first group followed their doctor's recommendation, prioritizing the product's quality and availability over its price.
2. The second group chose their products based on recommendations from friends, advertisements, or both, prioritizing the product's packaging and price. The questionnaire also revealed a negative correlation between friend recommendations and individual satisfaction (Figure 4).

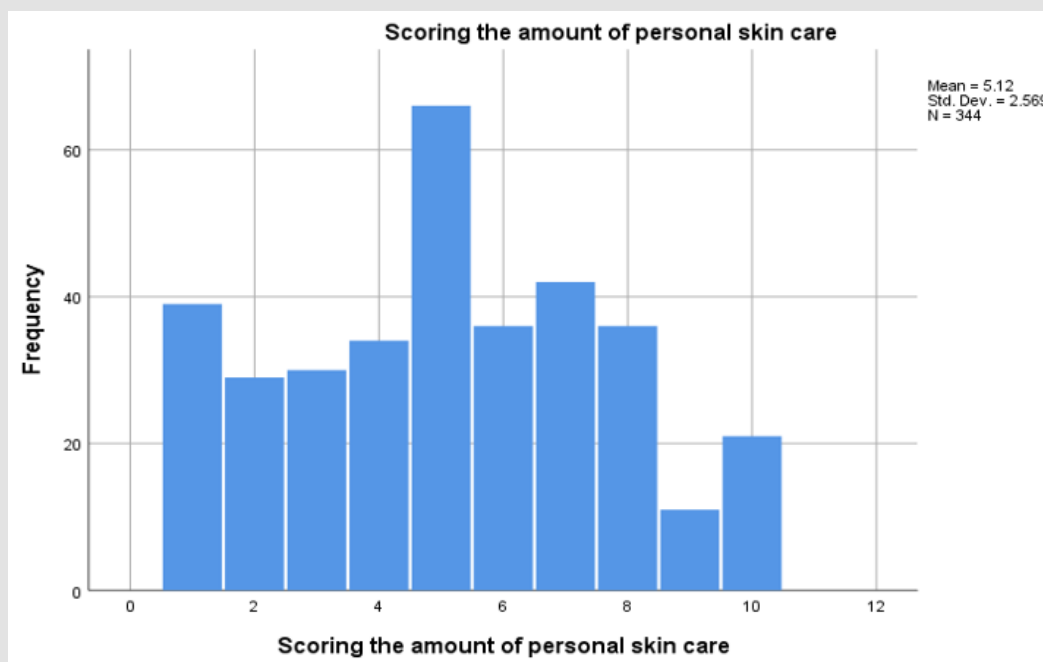


Figure 4: Scoring the amount of personal skin care.

Results

Reports and analyses indicated that daily skincare routines were not being properly and scientifically carried out under the supervision of a physician. Consequently, people, despite their expenditure of time and money, were not achieving their desired results. Limited patient knowledge about their skin condition and reliance on non-specialist advisors such as friends, salespeople, and advertisements played a role in this. Protection from sunlight and the correct use of products, especially those with the appropriate pH, were not being practiced as recommended by physicians and specialists. This led to an increased risk of unintended skin damage and additional expenses, while also diminishing individual satisfaction and treatment outcomes. In our sample population, approximately 49% of individuals chose their skincare products based on physician recommendations, 50% based on friends' recommendations, 21.2% based on salespeople's recommendations, 17.4% based on advertisements, and 53.8% based on product branding. Regarding the final question in the questionnaire, which asked individuals to rate their satisfaction with their daily skincare routines on a scale from 1 to 10, the responses were as follows: 28.4% of individuals gave a score of 1 to 3, 39.6% gave a score of 4 to 6, and 32% gave a score of 7 to 10, indicating varying levels of satisfaction with their skin.

Other questions in the questionnaire included:

1. How many times a day do you cleanse your skin, and what is your cleansing method?
2. What products do you use to adjust the pH after cleansing?
3. Do you use moisturizer and sunscreen during the day, and if so, how many times?
4. Do you extend your sunscreen application?

The responses revealed that 13.4% never washed their face, 21.9% only used plain water, and around 40% used soap. In our sample population, 25% used toner to adjust skin pH, while 11.7% did not use moisturizers. Among moisturizer users, 3% used mist and 1% used micellar water. Approximately 65% of individuals used sunscreen, but among them, 39% did not reapply it.

Discussion

The epidermal layer of the skin, with the help of its natural oils, acts as a barrier against microorganisms and controls the rate of water loss from the skin, known as Transepidermal Water Loss (TEWL). Its slightly acidic pH also prevents microbial invasion [3,6].

Conclusion

Today, people place a higher value on having ideal skin, investing time and money to achieve it. Therefore, it is crucial to make the right investments to obtain the most desirable and beneficial results. If the pattern of product use, application methods, and product se-

lection are inappropriate for an individual's skin, it not only fails to meet their desires but also inadvertently harms their skin, resulting in additional expenses. Through our analysis of questionnaire data, we have observed that this issue is not properly addressed in our society. Our recommendation is, first and foremost, to consult a specialized dermatologist. Subsequently, when purchasing skincare products, individuals should carefully consider the active ingredients and choose products suitable for their skin type after reading the product brochure. The primary goal of this article is to raise awareness and instigate a cultural shift in society towards regular and proper skincare routines.

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