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Prevalence and Factors Influencing the Use of Skin Lightening Products among Female Undergraduate University Students, Mogadishu, Somalia

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Abstract

Purpose: The aim of the study was to assess the prevalence of skin-lightening product use among female undergraduate students in Mogadishu,

Methodology: The study employed a multi-stage sampling approach. Initially, purposive sampling was used to select four of the largest and most recognized universities in Mogadishu. To ensure proportional representation, stratified sampling was applied based on the student population of each university. Finally, simple random sampling was conducted within each stratum to select individual participants. The final sample size of 422 participants. Data was collected through self-administered questionnaires, designed to capture information on the prevalence of skin-lightening product use, influencing factors, and social perceptions. The researchers used Statistical Package for Social Sciences (SPSS 2022) to perform data analysis which they are presented in figures and tables.

Findings: The study found that 74.4% of female respondents had used skin-lightening products which represents a higher percentage than the worldwide and African regional averages. The demographic data showed that 83.1% of respondents belonged to the age group of 20 to 25 years while 91.5% of respondents were unmarried which indicates that young single women experience stronger societal pressure to meet current beauty standards. The study found that socio-economic factors determine skin-lightening product usage because more than 54% of respondents identified as members of low-income families. The study found that people with low-income backgrounds use inexpensive skin-lightening products which contain dangerous unregulated chemicals. People practice this behavior because of cultural norms which link lighter skin to beauty and success and social mobility. Peer influence together with media representation had a major impact on the results as a large portion of respondents showed this behavior pattern. Platforms were a key source of influence in shaping their perceptions of beauty. However, concerning, over 57% of participants expressed a lack of awareness regarding the ingredients in skin-lightening products and the health risks that these products pose which include skin irritation and dermatitis and the long-term systemic toxicity of certain chemicals like mercury and hydroquinone.

Unique Contribution to Theory, Practice and Policy: The study's findings highlight the urgent need for comprehensive educational campaigns which will teach university students about the health dangers of skin-lightening products while showing them safer product options. Furthermore, public health protection requires stronger regulatory actions which should include a complete ban on all products that contain dangerous substances such as mercury and hydroquinone. University-led initiatives which include media campaigns that target specific audiences will help society to accept different skin tones while creating a positive body image for all people. The study recommends that scientists should investigate how skin-lightening products affect human health throughout their entire lifetime while governments should create new rules to control product availability in stores. The increasing problem of skin bleaching requires stronger public health measures because it harms both personal well-being and community standards of beauty.

Keywords: Skin-Lightening Products, Prevalence, Health Risks, University Students

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INTRODUCTION

Skin-lightening products are topical cosmetic formulations used to reduce melanin production and lighten the skin. They are available in various forms, including creams, lotions, soaps, and serums, and may be medically prescribed for certain dermatological conditions such as hyperpigmentation. However, their use has increasingly extended beyond medical purposes to cosmetic skin lightening. Although medically supervised products may be used safely under appropriate conditions, some over-the-counter formulations contain potentially harmful substances, including mercury, hydroquinone, and corticosteroids. Prolonged or inappropriate use of these substances has been associated with adverse health effects such as skin irritation, dermatitis, pigmentary disorders, kidney damage, and other systemic complications (Jagadeesan et al., 2021). Globally, skin-lightening practices have become an important public health concern, particularly in Africa and Asia, where lighter skin may be associated with beauty, social status, attractiveness, and perceived socioeconomic opportunities. A systematic review estimated the global lifetime prevalence of skin-lightening product use at 27.7%, with Africa recording a prevalence of approximately 27.1% (Sagoe et al., 2019). These findings demonstrate the widespread nature of the practice and its relevance to public health.

In Somalia, available evidence indicates that skin-lightening practices have also been prevalent among young women. Yusuf et al. (2019), for example, reported that 58.5% of female health science students had used skin-lightening products. This study provides important baseline evidence on the magnitude of the practice among young educated women in Somalia. However, the findings are based on data collected several years ago and may not fully reflect the current situation. Changes in access to cosmetic products, the expansion of local and imported beauty-product markets, increased exposure to social media and online beauty trends, and evolving perceptions of beauty may have influenced the prevalence and patterns of skin-lightening product use among young women in recent years. Consequently, relying solely on the 2019 findings may not adequately capture current trends in Mogadishu. There is limited recent empirical evidence documenting the present prevalence of skin-lightening product use and the factors influencing its adoption among female undergraduate university students in Mogadishu. Updated evidence is therefore necessary to establish the current magnitude of the practice and determine whether factors such as sociodemographic characteristics, social media exposure, peer influence, perceptions of beauty, accessibility of products, and knowledge of potential health risks contribute to their use. The present study therefore seeks to provide current empirical evidence on the prevalence and factors influencing the use of skin-lightening products among female undergraduate university students in Mogadishu, Somalia.

Problem Statement

The use of skin-lightening products is an increasing public health concern because of the potential adverse health effects associated with prolonged and inappropriate exposure to harmful ingredients. Although some skin-lightening products may be medically indicated for specific dermatological conditions, products obtained from informal and poorly regulated markets may contain substances such as mercury, hydroquinone, and potent corticosteroids. Prolonged or unsupervised exposure to these substances may result in skin irritation, dermatitis, abnormal pigmentation, skin thinning, and other systemic complications, including kidney damage and hormonal disturbances. In addition to physical health effects, skin-lightening practices may be associated with psychological and social consequences arising from dissatisfaction with natural skin tone and pressure to conform to socially constructed ideals of

beauty. The widespread availability and continued use of potentially harmful products therefore constitute an important health concern among young women.

In Somalia, the problem is compounded by limited empirical evidence and challenges in monitoring cosmetic products available through informal markets. Yusuf et al. (2019) reported that 58.5% of female health science students had used skin-lightening products, demonstrating that the practice is prevalent among young educated women. However, this evidence was obtained several years ago and focused on health science students, leaving limited information on the current prevalence and determinants of skin-lightening product use among female undergraduate students from other academic disciplines in Mogadishu. Furthermore, changes in cosmetic-product availability, social media exposure, and peer influence, and beauty perceptions may have altered patterns of use since the earlier study. The limited current evidence makes it difficult to establish the magnitude of the problem across the broader university student population and to identify the factors sustaining the practice. If this evidence gap persists, continued use of potentially harmful skin-lightening products may expose young women to preventable physical and psychological health consequences. Inadequate information on the prevalence, types of products used, motivations for use, and associated factors may also contribute to under-recognition and under-diagnosis of adverse effects related to toxic cosmetic ingredients. At the policy level, the absence of current empirical evidence may constrain the ability of the Somali Ministry of Health and other relevant regulatory authorities to design targeted health education interventions, strengthen monitoring of cosmetic products, and develop or enforce appropriate cosmetic safety standards. Therefore, updated evidence is needed to establish the current magnitude of skin-lightening product use and identify the factors associated with its use among female undergraduate students in Mogadishu. This study therefore aimed to determine the prevalence of skin-lightening product use and examine the factors influencing its use among female undergraduate university students in selected universities in Mogadishu, Somalia.

Objective

- i. To determine the prevalence of skin-lightening products that are used by Mogadishu's female undergraduate students.

LITERATURE REVIEW

Conceptual Framework

The research study uses a conceptual framework to show how its variable relationships work. The framework studies how female undergraduate students in Mogadishu Somalia use skin-lightening products through three main aspects, which include product usage frequency and social perception and the elements that affect their product usage.

Independent Variables

Dependent Variable

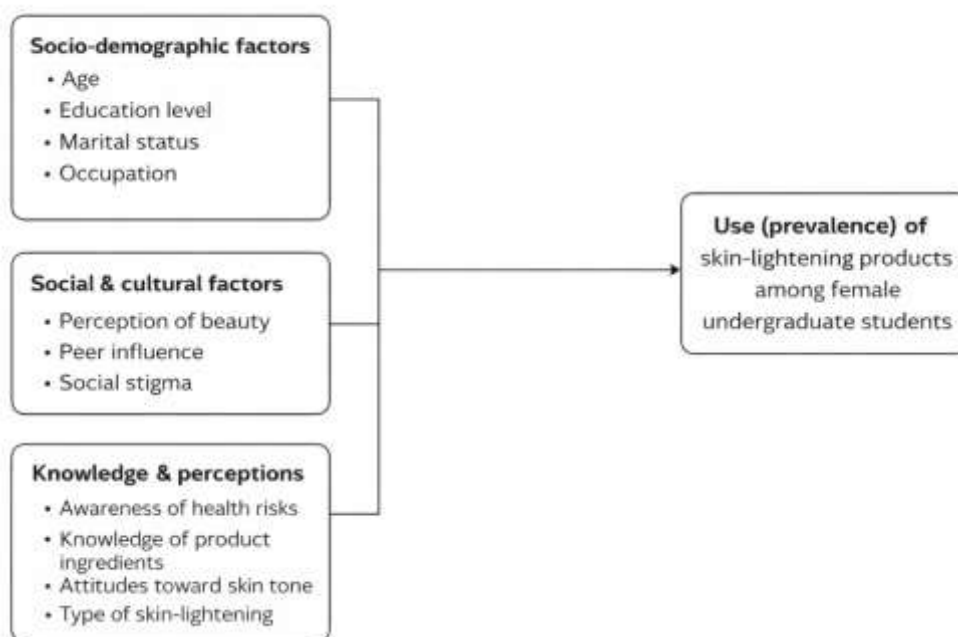


Figure 1: Conceptual Framework

Empirical Review

Skin Lightening and Skin-Lightening Products

Skin lightening refers to the use of topical or systemic agents to reduce melanin production and achieve a lighter skin tone. Although these products are medically indicated for treating hyperpigmentation disorders such as melasma and post-inflammatory hyperpigmentation, they are widely used for cosmetic purposes in many parts of the world. The practice is particularly common in Africa, Asia, and the Middle East, where lighter skin is often associated with beauty, youthfulness, higher social status, and improved economic opportunities (Sagoe et al., 2019; WHO, 2024). The increasing demand for skin-lightening products has become a major public health concern because many products contain harmful chemicals and are frequently used without medical supervision (Dlova et al., 2023).

Common skin-lightening agents include hydroquinone, corticosteroids, and mercury compounds. While hydroquinone and topical corticosteroids have legitimate therapeutic applications under medical supervision, prolonged or unsupervised use may result in adverse effects such as skin atrophy, exogenous ochronosis, delayed wound healing, and increased susceptibility to infections. Mercury-containing products pose even greater health risks, including nephrotoxicity, neurotoxicity, and systemic toxicity, and remain widely available through informal markets despite regulatory restrictions (WHO, 2024; U.S. Food and Drug Administration, 2021). These concerns underscore the need for stronger regulatory enforcement, public education, and surveillance of cosmetic products, particularly in low- and middle-income countries where product regulation is often inadequate (Dlova et al., 2023; Sagoe et al., 2019).

Research Gaps

Despite the widespread use of skin-lightening products, evidence from Somalia remains limited. Existing studies have largely focused on prevalence and health effects in selected

populations, particularly health science students, with little attention given to female undergraduate students from different academic disciplines (Yusuf et al., 2019). Furthermore, limited research has examined the influence of socio-demographic characteristics, cultural beliefs, peer pressure, social media, and economic factors on skin-lightening practices. Evidence on users' knowledge of product ingredients and associated health risks is also scarce. In this context presents unique regulatory challenges, including limited capacity for cosmetic import control, weak regulatory mechanisms, and the widespread availability of cosmetics through informal markets. Addressing these gaps is essential for developing evidence-based public health interventions and regulatory policies. Therefore, this study investigates the prevalence of skin-lightening product use and the factors influencing its use among female undergraduate students in selected universities in Mogadishu, Somalia.

METHODOLOGY

This study employed an analytical cross-sectional design to assess the prevalence of skin-lightening product use and the factors influencing its use among female undergraduate students in Mogadishu, Somalia. The study was conducted in four purposively selected universities with high student enrolment: Benadir University, Mogadishu University, SIMAD University, and Somali National University. A multistage sampling technique was used, involving purposive selection of universities, proportional stratified sampling, and simple random sampling to recruit participants. Using Yamane's formula with a 95% confidence level and a 5% margin of error, a sample size of 422 participants (including a 10% allowance for non-response) was obtained from a target population of 10,100 female undergraduate students.

Data were collected using a pretested, structured, self-administered questionnaire that captured socio-demographic characteristics, skin-lightening practices, influencing factors, and perceptions. The questionnaire was pilot-tested to assess validity and reliability, with internal consistency confirmed using Cronbach's alpha ($\alpha \geq 0.70$). Data were entered, cleaned, and analysed using SPSS version 21. Descriptive statistics (frequencies, percentages, means, and standard deviations) summarized participant characteristics, while Chi-square tests and one-way ANOVA examined associations between variables. Ethical approval was obtained from the Kenyatta University Ethics and Moral Review Committee (KUEMRC), and research permission was granted by the Somali National Institute of Health (NIH). Written informed consent was obtained from all participants, and confidentiality and voluntary participation were maintained throughout the study.

RESULTS

Response Rate

The research study sent out 422 questionnaires to female undergraduate students who study in Mogadishu to gather information about their usage of skin-lightening products. Out of these, 402 questionnaires were well answered and returned, while 20 were either incomplete or not returned, resulting in a response rate of 95.26%.

Table 1 below summarizes the response rate, highlighting the strong engagement of the targeted population and ensuring the representativeness of the results presented in this chapter.

Table 1: Response Rate

Response	Frequency	Percentage
Well answered and returned	402	95.26
Incomplete/not returned	20	4.74
Total	422	100

Prevalence of the Skin Lightening Products

The first objective of the study was to assess the prevalence of skin-lightening products among female undergraduate students in Mogadishu. Respondents were asked about their usage patterns and preferences, and their responses are presented in Table 2 below.

Ever used Skin Bleaching

The researcher asked the respondents if they have ever used or applied the skin lightening/bleaching products, respondents gave their results as discussed in Table 2 below.

Table 2: Have you ever used/applied Skin Bleaching Products?

Response	Frequency	Percent
Yes	299	74.4
No	103	25.6
Total	402	100.0

The data reveals that 74.4% of female undergraduate students in Mogadishu have used skin bleaching products, while 25.6% have not. This prevalence is notably higher than the global average of 27.7% and the continental average of 27.1% in Africa.

Bleaching/Skin Product Use Frequency

Respondents were asked to state the frequency of which they have been using the products, results are as stated below in Table 3

Table 3: Bleaching/Skin Product Use Frequency

Usage Category	Frequency Description	Frequency	Percent
In the past	No longer using	16	5.4%
Rarely	Once a month or less	12	4.0%
Occasionally	Weekly to monthly	160	53.5%
Sometimes	Several times per week	59	19.7%
Always	Daily or more	52	17.4%
Total		299	100.0%

Respondents were asked to indicate how frequently they used skin-lightening products. The time periods used to assess product usage were defined in Table 4.6 to create more accurate results. The majority of respondents 53.5% reported that they used products occasionally, which happened between once a week and once a month during special events like dating and meeting their boyfriend and wedding and bridal celebrations. People see these times as chances to improve their looks because society expects them to conform to standards of beauty and feminine grace. A smaller proportion of users 19.7% used the products multiple times during each week while 17.4% reported that they applied the products every day. The participants reported rare usage which they defined as using the product once a month or less in 4.0% of cases while 5.4% of participants had stopped using products that they had previously used.

The data shows different ways people use skin-lightening products because many users who use the product infrequently still face health risks from their usage. Daily users 17.4% face the highest health risks because they continuously contact dangerous substances which include mercury and hydroquinone. People continue to use the product because they experience body image issues and their friends and the media present certain beauty standards as desirable. The solution to this problem requires public health programs which need to provide both educational materials and campaigns that advocate for natural beauty and diverse beauty standards.

Initial Use of Skin-Lightening Products

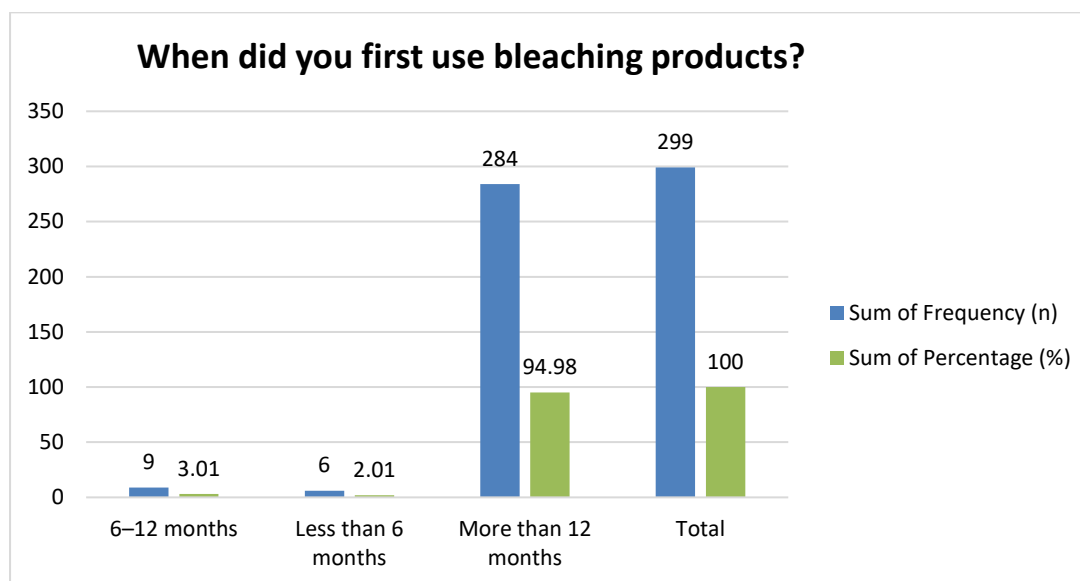


Figure 2: Debut of Beauty Products?

The data presented in Figure 2 shows that 95% of respondents began using skin-lightening products more than one year ago while 3% have been using 6 to 12 months and only 2% started the practice less than 6 month. The study population exhibits high long-term skin-bleaching product usage because most of its members have used these products for extended periods. For most respondents skin lightening has become an established practice which they have maintained throughout their lives. The 95% of respondents who began using these products more than one year highlights how entrenched the practice is among female undergraduate students in Mogadishu. The established pattern demonstrates that people who use these products have developed permanent habits through their continuous exposure to cultural standards and societal expectations. The recent user base which includes 3% and 2% of participants represents people who started their usage because of current social activities or increased focus on their physical looks. The practice maintains its historical roots while people continue to adopt it because skin-lightening practices currently shape social trends.

Type of Bleaching/Skin Lightening Product used/applied

Table 4 below categorizes the types of skin-lightening products used by the respondents into six groups: facial cleanser, facial toner, sunblock/serum, facial moisturizer, anti-aging products, and combined products ("both"). The results show different user preferences which depend on product functionality and product accessibility.

Table 4: Type of Bleaching/Skin Lightening Product used/applied

Facial cleanser		
Response	Frequency	Percent
Yes	285	95.3
No	14	4.7
Total	299	100.0
Facial Toner		
	Frequency	Percent
Yes	280	93.6
No	19	6.4
Total	299	100.0
Sun block/serum		
Response	Frequency	Percent
Yes	162	54.2
No	137	45.8
Total	299	100.0
Facial Moisturizer		
Response	Frequency	Percent
Yes	6	2.0
No	293	98.0
Total	299	100.0
Anti-Age		
Response	Frequency	Percent
Yes	17	5.7
No	282	94.3
Total	299	100.0
Both		
Response	Frequency	Percent
Yes	28	9.4
No	271	90.6
Total	299	100.0

People use facial cleansers as their primary skin-lightening product because 95.3% of surveyed individuals reported using this product, while 93.6% of people confirmed their usage of facial toners. The usage of sunblocks and serums stands at 54.2% while only 2% of respondents use facial moisturizers and 5.7% use anti-aging products. The group of combination products which provide multiple skincare functions sees usage by 9.4% of participants. The pattern shows that people prefer to use products which they can easily obtain and which cost less money, so people mostly choose to use cleansers and toners.

Type of Bleaching Product Most Often Used

The figure 3 movie displays the main bleaching products which female undergraduate students from Mogadishu use. The data categorizes products into locally made (QASQAS) which is a Somali name, indicating a locally made product, imported, and a combination of both, revealing preferences and consumption trends. The results show that consumers prefer imported goods and products which combine different elements because they believe these items offer better quality and easier access. People need to understand these consumer choices

because they drive health problems social effects and existing policy deficiencies which stem from skin-lightening product use.

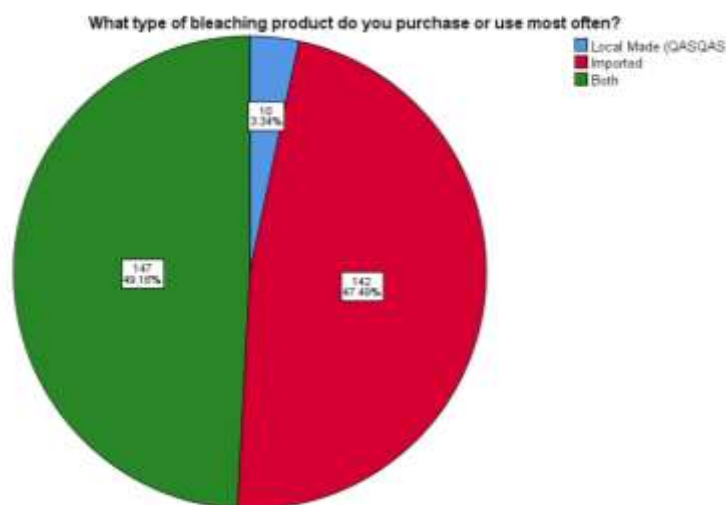


Figure 3: Type of Bleaching Product Most Often Used

The data on the **type of bleaching product most often used** reveals a strong preference for imported products (47.5%) and a nearly equal inclination toward using both local and imported products (49.2%), with only a small fraction (3.3%) relying solely on locally made products like QASQAS.

Number of Products Used in the Last 12 Months

The table displays data that shows how often products were used during the previous year to reveal details about people who used skin-lightening products. The research shows that most participants used multiple products because they were not satisfied with the results from using one product or because of marketing and social pressure. The research results show that people commonly test skin-lightening products which creates a need for public education and regulatory measures to reduce health risks from these products. The statement indicates that your training ends with data from October 2023.

Table 5: Number of Products Used in the Last 12 Months

Response	Frequency	Percent
One	19	6.3
2	167	55.9
More than 2	113	37.8
Total	299	100.0

The data indicates that over half of the respondents (55.9%) used two products in the last 12 months, while 37.8% used more than two. The research results show that female undergraduate students in Mogadishu practice skin lightening at high rates while using multiple products for their skin lightening needs. The research shows that skin bleaching occurs across Africa with different countries showing varying rates which range from 25% in Mali to 77% in Nigeria and 50% in Senegal because people use multiple products according to their cultural beauty standards and social relationships. The percentage of people who do not use any products or use a single product stands at 6.3%, which demonstrates how Somali culture and society treat skin lightening practices as standard behavior. The common practice of using several products

results from social pressure and the belief that African and Asian societies view lighter skin as a requirement for beauty and social success.

Knowledge of Ingredients in Cosmetic Products

Understanding the level of knowledge respondents had about the ingredients in cosmetic products was critical in assessing awareness and informed decision-making. The researchers asked respondents to share their knowledge about the components present in the products they used.

Table 6: Knowledge of Ingredients in Cosmetic Products

	Frequency	Percent
Yes	128	42.8
No	171	57.2
Total	299	100.0

The study shows that 57.2% of participants lack knowledge about cosmetic product ingredients while 42.8% of participants claimed they knew the ingredients. The finding shows that people lack essential knowledge about product ingredients and safety information. The same patterns have been observed in different countries throughout the world. In Mogadishu the unregulated cosmetic industry enables dangerous products to be sold because they lack proper market oversight according to sources who studied African market practices.

Public health solutions need to build consumer education programs which will solve this problem. The program needs to educate young women through university student outreach to identify dangerous components which exist in products. The team needs to work together with healthcare providers to develop safe cosmetic usage guidelines.

Continuous Use of Skin-Lightening Agents

The study aimed to assess the consistency of skin-lightening practices among respondents. The researchers wanted to evaluate this skin-lightening practice through direct questioning about continuous skin-lightening agent use among participants. The pie chart 4.5 presents a summary of their responses.

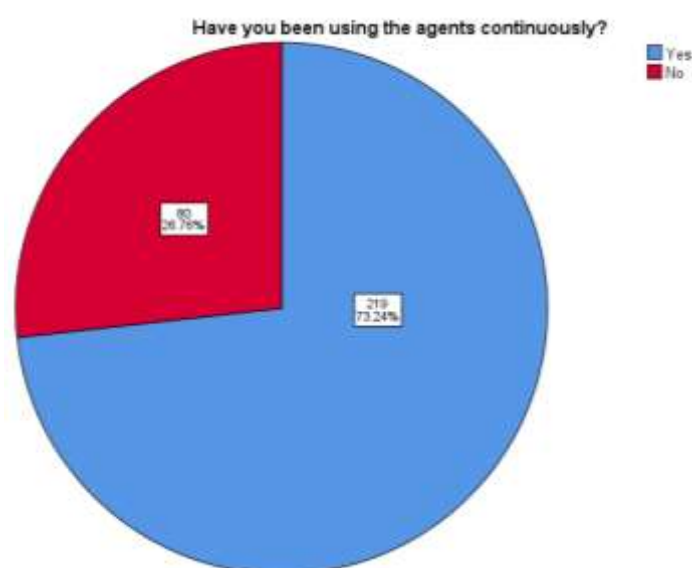


Figure 4: Continuous Use of Skin-Lightening Agents

A significant 73.2% of respondents report continuous use of skin-lightening agents which demonstrates how this practice has become deeply embedded in their lives. The social construct of beauty which favors lighter skin tones has received extensive academic investigation. The practice of using these products becomes mandatory for women in Mogadishu because their community standards require them to use these products throughout the day.

Health risks associated continuous product usage. The data shows that immediate behavioral intervention requirements exist because self-acceptance campaigns and harmful beauty standard challenges need to be implemented. Educational institutions and policymakers need to work together to create awareness programs which should be included in university curricula.

Duration of Usage among Users

To measure skin-lightening product exposure, researchers asked participants who used the products continuously to report their total time using the products. The results of their answers appear in table 10 which follows this statement.

Table 7: Duration of Usage among Users

Duration	Frequency	Percent
For a week- a month	3	1.4
For a year	6	2.7
More than a year	210	95.9
Total	219	100.0

Respondents who reported permanent usage of skin-lightening products were required to provide their complete usage duration for evaluation purposes. Table 7 shows that most users have used the products for extended periods. The study found that 210 respondents which represents 95.9% of the sample used skin-lightening products for more than one year. A smaller proportion had used the products for shorter durations, with 6 respondents (2.7%) indicating a usage period of one year, 3 respondents (1.4%) reporting use for a week- a month. The research shows that most users of skin-lightening products experience extended usage which can negatively affect their health through multiple effects that result from continuous product application.

When Respondents Stopped Using Skin-Lightening Products

For those who reported discontinuing the use of skin-lightening products, it was important to understand when they stopped. The respondents needed to answer how much time had passed

since they stopped using the product which the researchers showed in the following pie chart.

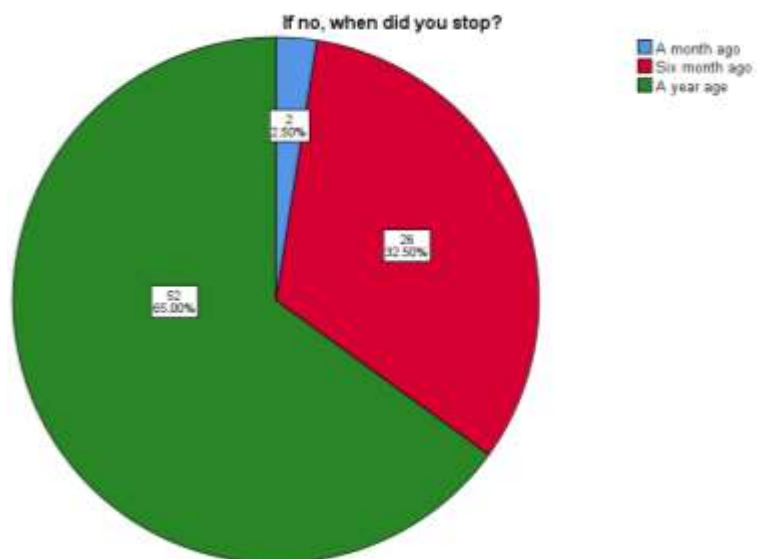


Figure 5: When Respondents Stopped Using Skin-Lightening Products

The data shows that 65% of respondents stopped using skin-lightening products one year ago while 32.5% stopped using them six months ago and 2.5% stopped using them one month ago. The pattern shows that some users stop their skin-lightening practices before others take more time to end their usage. The strong societal and cultural forces that exist about skin-lightening products drive people to use these products until they reach their desired stop point.

Reasons for Stopping Use of Skin-Lightening Products

The study also aimed to discover why participants stopped using skin-lightening products. The Table 8 below shows the summary of participant responses to the question about their reasons for product discontinuation.

Table 8: Reasons for Stopping Use of Skin-Lightening Products

Reason	Frequency	Percent
Pressure from parents	23	29.1
Realized their danger	56	70.9
Total	79	100.0

The study aimed to explore the reasons why respondents discontinued the use of skin-lightening products. The findings showed that 70.9% of participants who made up 56 respondents reported that they stopped using the products after realizing the potential dangers associated with their use. The data shows that users have developed more knowledge about the dangerous health effects which skin-lightening products produce. The other 29.1% of respondents which equals 23 individuals reported that parent pressure was the main reason which made them stop using the products. Family members who use cosmetic products have a strong impact on their family members' product choices according to this evidence.

Part of the Body Where Bleaching or Skin Lightening is applied

The results presented in the Table 9 highlight the specific areas of the body where respondents apply bleaching or skin-lightening products. The findings show distinct application preferences because researchers discovered that some areas of the body receive more attention than other body parts.

Table 9: Parts of the Body Where Skin Bleaching or Lightening Is Applied

Face		
	Frequency	Percent
Yes	392	97.5
No	10	2.5
Total	402	100.0
Hands and Arms		
	Frequency	Percent
Yes	392	97.5
No	10	2.5
Total	402	100.0
Legs		
	Frequency	Percent
Yes	326	81.1
No	76	18.9
Total	402	100.0
Whole Body		
	Frequency	Percent
Yes	3	.7
No	399	99.3
Total	402	100.0

The Table 9 above shows that people use skin-lightening products on their face and hands and arms because 97.5% of respondents confirmed this practice. People choose these areas because society defines their beauty standards through these visible body parts which determine how others perceive their overall beauty. In many cultures, lighter facial skin is associated with attractiveness, youthfulness, and social acceptance.

Approximately 81.1% of respondents reported applying skin-lightening products to their legs, indicating a slightly lower priority for this area compared to the face and arms. People do not focus on their legs because they are covered by clothing which makes them harder to see during social times. People still want lighter skin tones in situations where they show their legs such as special events or certain clothing styles. People choose to use skin-lightening products based on their visibility to others and the beauty standards that exist in their culture. The study group showed that only 0.7% of participants use skin-lightening products for their whole body which demonstrates that this practice is uncommon. People avoid using extensive amounts of bleaching products because they require expensive resources and time and create possible health dangers.

Inferential Analysis

Table 10: Inferential Analysis for the Prevalence of Skin-Lightening Product Use

Variable	Statistical Test	Test Statistic	p-value
Social perceptions	ANOVA	F = 1.903	0.161
Social perceptions	Pearson square	Chi- $\chi^2 = 523.132$	<0.001
Factors influencing product use	Pearson square	Chi- $\chi^2 = 418.594$	0.251
Demographic characteristics	Pearson square	Chi- $\chi^2 = 246.997$	0.003

Although exploratory inferential analyses were conducted, the primary objective of this study was to determine the prevalence of skin-lightening product use among female undergraduate students in Mogadishu. The ANOVA results showed no statistically significant relationship between social perceptions and the prevalence of skin-lightening product use ($F = 1.903$, $p = 0.161$). Similarly, no significant association was observed between factors influencing product use and prevalence ($\chi^2 = 418.594$, $p = 0.251$).

While Chi-square analyses for social perceptions ($\chi^2 = 523.132$, $p < 0.001$) and demographic characteristics ($\chi^2 = 246.997$, $p = 0.003$) indicated statistically significant associations, all contingency tables violated the Chi-square assumption of adequate expected cell frequencies, with all expected counts below five. Consequently, these findings should be interpreted with caution and regarded as exploratory rather than conclusive. Future studies should employ larger samples or alternative statistical approaches to validate these associations.

Discussion

Sociodemographic Information of the Respondents

The research study managed to obtain a response rate of 95.26%, which surpassed the 70% threshold that research studies consider to be an acceptable response rate according to Mugenda and Mugenda 2003. The study achieved high respondent participation because people took part in the research process, which strengthened the study's data trustworthiness and its ability to represent the examined population. The dataset quality improves because only 4.74% of the questionnaires remain incomplete or missing, which makes the dataset suitable for in-depth research.

The demographic profile of the participants provided important insights into the characteristics of the target population. The study found that 83.1% of respondents belong to the age group which includes students who typically study at undergraduate level. This age group represents a developmental stage where people need social approval because their physical appearance influences their actions and their understanding of themselves. The finding demonstrates that young people normally follow social beauty norms according to existing research (Gwaravanda 2018). The research results showed that 98.3% of participants belonged to the undergraduate student group while only 1.7% shared their "Others" category which most likely included postgraduate students. The study results show that university students face more external influences because they experience both media and peer pressure which leads them to prefer lighter skin tones (Peltzer & Pengpid 2017). The study found that 91.5% of survey respondents identified as single which suggests that appearance-related worries develop from social

standards that people think help them build romantic connections especially when it comes to young women who remain unmarried.

The study discovered that first-year students constituted 37.1% of the sample while second-year students followed with a representation of 26.6% The researchers observed that students from high school who recently graduated experience difficulties because they need to adjust to unfamiliar cultural practices and social settings. The lower enrollment of students in advanced academic years indicates that students develop new awareness about skin-lightening products which students show reduced interest in as they continue through their studies. First-year students demonstrate higher susceptibility to psychological and social pressures which lead to product usage, thus universities need to provide specialized educational programs to help students during their initial time on campus.

The study found that skin-lightening behavior among participants who earned less than 50% of the low-income population showed a connection to their economic background. The study shows that (Dadzie and Petit, 2009) discovered that users from developing countries choose low-priced skin-lightening products because they do not require safety regulations. The study discovered that 74.4% of Mogadishu residents use skin-lightening products which matches the findings from other African countries because 70%-77% of women in Ghana and Nigeria practice the same behavior discovered by Doku and Neupane in 2016. The research shows how age, socio-economic status and education and cultural factors work together to create skin-lightening product patterns, which need special interventions that address their actual reasons for these behaviors.

CONCLUSION AND RECOMMENDATIONS

Conclusion

Effect of Cultural Perception on Skin-Lightening Practices

The beauty standards of a society form a cultural framework which determines how people view beauty and this framework directly affects how female university students in Mogadishu choose to use skin-lightening products. The study demonstrates that people link lighter skin tones with greater physical attractiveness and elevated social standing and better marriage opportunities. Historical standards and social class systems and international beauty standards which favor light skin tones all work together to maintain these beauty standards. The African community of Somalia still follows colonial beauty standards which associate light skin with social honor and dominance over others.

Media and advertising play a significant role in reinforcing these cultural norms. Social media platforms, beauty advertisements, and celebrity endorsements frequently portray lighter-skinned individuals as more successful, confident, and desirable. This creates a pervasive belief among young women that achieving a lighter complexion is key to social and professional advancement. The study highlights that such portrayals have a particularly strong influence on university students, who are in a critical stage of identity formation and often face societal pressures to conform to idealized beauty standards.

The process of addressing these cultural perceptions needs multiple approaches to achieve its goal. Public awareness campaigns that challenge the association of beauty with lighter skin can help shift societal attitudes. Community leaders and educators together with influencers need to work together for the purpose of showing different ways to perceive beauty which includes all skin tones. Young women can learn to accept their natural beauty through media content

and educational curriculums which include these messages, which in turn help them, gain self-assurance while decreasing their need for dangerous skin-lightening products.

Recommendations

Based on the findings of the study, the following recommendations are proposed to address the identified issues:

- i. Educational programs reduce skin-lightening rituals because they teach people about the dangerous health effects which result from using hazardous substances like mercury and hydroquinone. Awareness campaigns targeting female university students should emphasize both the short- and long-term effects, including skin damage and increased cancer risk. Students will gain knowledge about skincare through partnerships between universities and healthcare organizations which use social media platforms, workshops, and educational materials. The presence of lecturers and health professionals as important people will help deliver these messages more effectively to the audience.
- ii. The creation of effective regulatory measures serves to restrict access to skin-lightening products which pose danger to human health. The government needs to implement strict regulations which will track all activities related to the production and import and sale of cosmetics that contain hazardous materials such as mercury and corticosteroids. The regulatory work can benefit from both routine inspections and the establishment of partnerships between regulatory bodies and international organizations like the World Health Organization (WHO). The manufacturers need to disclose complete and precise product information to their customers through product labels. Public awareness campaigns should educate consumers on identifying harmful products, while digital reporting platforms or helplines can enhance consumer protection and accountability within the cosmetic industry.
- iii. The decrease of skin-lightening product usage needs to implement programs which challenge existing beauty standards through the promotion of all skin tone acceptance. Universities and community organizations can help people develop self-acceptance through their programs which include awareness events and advocacy campaigns and testimonials from people who love their authentic self. Media outlets and social influencers can contribute by challenging colorism and endorsing inclusive definitions of beauty. Schools should include self-esteem and body image education in their curricula because this approach helps students develop coping skills against societal pressures which they will encounter throughout their lives. A collective cultural shift is necessary to create an environment that values individuals beyond physical appearance.

- iv. The promotion of complete skincare methods needs to become a main focus because it helps to decrease the need for dangerous skin-lightening products. Educational campaigns should explain to people how they need to maintain their skin through proper skincare routines and proper nutrition and proper hydration and proper sun protection. Universities and healthcare institutions can organize workshops on safe skincare practices and promote the use of non-bleaching alternatives such as moisturizers and sunscreens. The provision of affordable and accessible alternatives will enable people to choose healthier options. The creation of local partnerships between businesses will enable them to develop and distribute safe products which will enhance public health and support local economic growth. Dermatologists together with skincare professionals have the ability to eliminate false beliefs about skin color while they promote a healthy self-acceptance cultural environment.

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