

**PREVALENCE OF SKIN LIGHTENING AMONG UNIVERSITY STUDENTS IN SIERRA LEONE.**

Camilla Bangura<sup>1\*</sup>, Madison Gardner<sup>2</sup>, Augustus Osborne<sup>1</sup>, Richard Wadsworth<sup>1</sup> & Aiah Lebbie<sup>1</sup>

<sup>1</sup>Department of Biological Sciences, School of Environmental Sciences, Njala University, Njala Campus, Sierra Leone.

<sup>2</sup> University of Illinois, Champaign-Urbana, United States of America.

**ABSTRACT**

A growing number of individuals worldwide are keen to modify their skin colour; sunbathers risk skin cancer and premature ageing (and more recently, many risked catching the coronavirus just for the chance to lie on a beach). Skin lightening raises different but at least equally severe risks as tanning to the people undertaking it. In Sierra Leone, skin lightening is a common practice, but we lack any quantitative evidence of its prevalence. We assessed the prevalence of skin lightening among university students in general on a University campus in Sierra Leone. In this study, we interviewed male and female undergraduates at Njala University to better understand why they did or did not bleach and whether they fully understood the risks. Out of 100 respondents, we found 22 are actively bleaching, and 44 have bleached in the past. As we expected, bleaching is more common among women (over three-quarters are or have bleached, and knowledge of the risks is widespread but insufficient to deter the practice). However, surprisingly nearly half of the men in our survey had or were still bleaching. Bleaching is similar but not identical to the reasons reported in studies from other countries, mainly to remove blemishes (78%), to be fashionable (73%), to look European (73%), and to please one's spouse (65%). Family and friends had little influence in deciding whether to bleach or not. Despite the risks being widely known, skin lightening is common among students on the Njala campus in Sierra Leone.

**Keywords:** skin lightening, bleaching, negative consequences, students, Sierra Leone.

## INTRODUCTION

Skin lightening can be carried out by the topical application of creams, gels, or soaps or by taking drugs to reduce melanin production. These products may contain mercury, hydroquinone, or topical corticosteroids, which can sometimes cause permanent damage and even death (Street et al., 2014). Skin lightening has been widely reported for both Asia and Africa, with a quarter of women in Japan and two-thirds of Indian women using such products (Street et al., 2014). Rates in Africa are also variable; from about a quarter of women in Mali and Ghana, about half in Senegal and Togo to over three-quarters in Nigeria (Durosaro et al. 2012, Kpanake et al., 2010).

According to a Cameroonian University study, the main persuading element is to improve skin colour by lightening. In that study, 30% were involved in skin lightening, and 14% stated that skin lightening is a decent thing to do (Kouotou et al., 2017). In an investigation carried out among university students in Zimbabwe, respondents held different convictions on skin lightening; 23.3% as representing influence, 65% as an indication of riches, and 93.3% saw fair complexion as an image of magnificence, and over 80% favoured lighter skin tone (January et al. 2018).

As the Cameroonian and Zimbabwean studies show there are numerous perceived benefits associated with the utilization of skin lightening creams, knowing that the closer to white skin, the more noteworthy the benefits held for them according to individuals who bleach their skin. However, bleaching can result in skin damage, making it delicate, and it interferes with the healing process, and in some severe cases resulting in corrective surgical procedures being needed (Ajose, 2005). There are also some known physiological effects, such as the increased risk of diabetes, renal and liver functions, and some individuals become susceptible to cancers and a general lack of well-being (Ajose, 2005; Mahé et al., 2007; Lewis et al., 2010).

The reports of skin bleaching in Africa have also mainly focused on women, and to date, there is no known report for the use of such products across Sierra Leone. We have observed the use of the products among diverse people but have no quantified data on the extent to which this is the case. There are reports of skin bleaching use among high school students in Ghana and Benin. Osei et al., (2018), found 60% of 450 female secondary school students in Ghana were engaged in skin-lightening practices, and 36.6% of high school students in the Republic of Benin were practising depigmentation, as reported by (Atadokpédé et al., 2015). There are reports of use among university students in Malaysia, Nigeria, and Zimbabwe. (Rusmadi et al., 2015) it is reported that 63.6% of university students in a Malaysian university had used skin lightening items. (Faronbi et al., 2018) reported that 41.5% of university students in southwest Nigeria had used lightning products. (January, et al., 2018) said 20% of University students of Zimbabwe used skin lightening products. In Sierra Leone, it is not apparent to us the extent to which university students are employing such products and their perceptions about the benefits and dangers. Our study aimed at assessing the prevalence among university students in general on a University campus in Sierra Leone, and included both female and male students to provide some understanding of the practice of depigmentation among university students.

## MATERIALS AND METHODS

We did a descriptive cross-sectional study from January to February 2020, and we collected data from 100 students of Njala University on the Njala Campus in Sierra Leone. The University offers academic programs in the natural and physical sciences, technology, and social sciences, which pull in many students from across the country.

### *Data collection procedure*

We used a self-administered questionnaire to conduct this research. Random selection of males and females among students was made, and each

student approached and talked to. If consent is given, he/she signs an informed consent form and fills the questionnaire. The refusal rate was low. The questionnaire was planned to allow each of the one hundred participants to pick an answer among a) strongly agree, b) agree, c) disagree, d) strongly disagree, and they had the opportunity to give reasons behind the choice. We informed respondents that their reactions be treated with the most extreme confidentiality.

*Data Analysis*

Data were entered into the 2016 Microsoft excel sheet and then analyzed using the  $\chi^2$ , Binomial test, and ANOVA (analysis of variance). Results are presented as count (percentage) or mean  $\pm$  standard deviation (SD) where appropriate. We utilized the Chi-square test to examine qualitatively and count variables, and a p-value <0.05 was used to describe measurably noteworthy outcomes.

**RESULTS**

In the present study, skin lightening is common among students, with only 34 participants indicating they have never bleached their skin, 22 are still bleaching, and 44 stopped bleaching. Out of the 44 participants that have stopped bleaching, 30 were women, and 14 were men. Of the 34 participants that have never bleached their skin, 12 were women, and 22 were men.

Table 1 shows the demographic attributes of the 100 respondents. The information on gender was critical as 41 were males, and 59 were females (Table 1). Forty-four per cent (44%) of respondents detailed that they were dating, and 40% announced that they were single, 16% indicated that they were in a long-term relationship. None of the study members announced being separated or widowed. Their ages ran between 20 to 44 years, with undergraduate students comprising the study's main participants.

Table1. Demographic characteristics of survey questionnaire participants

Demographic characteristics	Percentage
Gender	
Male	41%
Female	59%
Relationship status	
Single/not dating	40%
Dating	44%
Divorced	0
Married	16%
Widowed	0
Age	
20-25	60%
26-31	33%
32-37	5%
37-42	2%
Level of Study	
Undergraduate	95%
Masters	5%
Doctorate	0

Motivations for skin lightening creams by participants are shown in Table 2, with respondents indicating that the primary reason for engaging in skin lightening is to expel pimples and flaws on the skin. Among other reasons stated by the students were; to look European, fashionable, and please their spouse. Seventy-seven per cent (77%) of the respondents disagreed that engaging in skin lightening cannot help you obtain a preferred spouse. In contrast, 64% disagreed that skin lightening does not improve social status. Fifty-nine per cent (59%) disagreed that peer pressure and to thrive in a career are not motivations for skin lightening.

Table 3 shows that respondents supported the notion that skin lightening brings about adverse outcomes such as delicate skin (99%), skin infections (96%), personal stench (95%), sun damage (94%), financial constraints (92%), negative mentality from society (92%), retention of destructive substances (88%), and suppression of the immune system (82%).

**Table 2. Motivations for skin lightening**

Statistical significance is estimated using the binomial distribution.

Factor	Agree + strongly agree	Disagree + strongly disagree	Statistical significance
Expel pimples and flaws	78	19	P<0.001
To look European	73	23	P<0.001
To be fashionable	73	27	P<0.001
Please one's spouse	65	34	P<0.001
Thrive in career	41	59	P<0.05
Peer pressure	40	59	P<0.05
Improve social status	34	64	P<0.001
Obtain preferred Spouse	23	77	P<0.001

**Table 3. Negative consequences of skin lightening identified by the respondents.**

ITEM	Never bleached	Still B leaching	Previously bleached	Total number of responses
Delicate skin	33	22	44	99
Skin infections	33	21	42	96
Personal stench	34	21	40	95
Sun damage	31	20	43	94
Financial constraints	31	19	42	92
Negative mentality from society	31	21	40	92
Retention of destructive substances	28	17	40	88
Suppression of the immune system	29	17	36	82

## DISCUSSION

We found very high rates of skin lightening cream use among the women and lower frequencies among the men, which generally mirrors those reported worldwide. Women commonly engage in skin lightening more than men, although both do practice skin lightening (Rusmadi et al., 2015). In an investigation into skin lightening, (Olumide et al., 2008) reported that out of 450 Nigerians admitted to helping creams, 73.3% were ladies, and 27.6% were men. (Adebajo, 2002) Moreover, (Ravichandran 2013) have also found females aged between 20-30 years more dynamic in the skin, helping creams than their male counterparts. The ages of the participants in our study ran from 20 to 42 years, almost agreeing with the research done by (Gathse et al., 2005) were in their ages ran from 14 and 58 years.

Participants favoured fair looking appearances over darker looking ones and getting smooth skin. The immaculate complexion is principal among skin lighteners, as 66% of participants indicated this as the core reason for utilizing skin lightening items. It is known that individuals in other studies have been inspired to condition their skin tone to improve their appearances (Ajose 2005; Blay & Ahoofe K, 2010). Among university students in South Africa, about 63.3% of individuals reportedly indicated that skin lighting enhances their appearance. For the most part, they do so when they need to dispose of rashes to look lovely (Mpengesi & Nzuza 2014). A smooth skin surface is one of the benefits of conditioning since individuals appreciate even-conditioned skin with no imperfection. It can also result from freeing the skin from any defects (Ajose 2005; De Souza 2008). In their quest to have glowing skin, nearly all the students reported frequent lightening of the skin to eradicate facial blemishes and look attractive. The attributed benefits often form validation for the continual use of these creams among university students, and this conforms with studies done in southwest university in Nigeria by (Faronbi et al.,

2018); what is more, in the University of KwaZulu-natal, South Africa, by (Mpengesi & Nzuza 2014).

Skin lightening creams are advertised through different media communication channels, including print, television/movies, internet, and social media and instant messaging platforms, which can be powerful influences in persuading students who are nowadays akin to using these platforms to be influenced in the use of the products associated with their favourite personalities. (Franklin, 2013) reported that Aishwariya Rai, an Indian actress, and former miss world, was employed to be the face of L'Oréal, a leading cosmetic company (Malik, 2007). L'Oréal took advantage of her celebrity status to sell their beauty products. Thus, because celebrities are looked up to by their fans and seen as trendsetters, they will buy any product endorsed by their stars.

A few reports show that these skin lightening creams contain amounts of hydroquinone, mercury, phenol, and corticosteroids, which are depigmenting operators causing skin fading (Lerner & Fitzpatrick, 1952; Jimbow K. et al., 1974). Hydroquinone adequately represses the formation of melanin in the skin, which is the thing that gives skin its shading. Unfortunately, after some time, this fixing can saturate the skin and enter the body, creating extreme reactions. Several reviews of the negative consequences of skin lightening cream emphasize the physiological effects of the practice (Lewis et al. 2010, Mahe et al. 2007). We found vast knowledge of the negative consequences associated with skin lightening cream used; therefore, to be effective public health campaigns would need to go beyond just raising awareness of the adverse effects.

Findings from our study indicate that the participants are aware of the negative consequences associated with the practice of Skin lightening. Most of the study participants were mindful of skin bleaching adverse effects, especially damage to the skin's surface, human organs, and physiological processes, which have also been observed in other studies (Ajose, 2005;

De Souza 2008). In South Africa, university students were less mindful of skin lightening's associated risks and negative impacts (Mpengezi & Nzuzza, 2014). Whereas, in another South Africa, study respondents claimed to be acquainted with the damaging implications of skin lightening items, but they were in established truth not grounded as reported by (Dlova et al. 2014). Njala University students' knowledge of skin lightening item's adverse effects is a reasonable indicator that the skin lightening phenomena is widespread, the problem confronting public health advocates is that extensive knowledge of adverse consequences does not seem to be sufficient to deter the practice. More detailed knowledge is required about those that have stopped bleaching before an effective public health strategy can be formulated.

#### CONCLUSION

Skin lightening is common among students of Njala University, Njala campus, Sierra Leone. Despite knowing the dangers associated with the use of skin lightening items, it is unimaginable to expect or prevent them from utilizing it as the belief that skin lightening expels pimples and flaws and also enhances beauty. We were amazed by the number of men who were or who had bleached. It would be helpful to know whether this is increasing or decreasing and how typical it is among the young students that enter the university setting. It is fundamental that future studies centre around peoples' motivations and mainly why people stop bleaching. This study could serve as an orientation point for future studies on skin lightening in general in Sierra Leone. As far as we could know, this is the first study on the prevalence of skin lighting among students or anyone else in Sierra Leone.

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#### Competing interests

The authors announce that they have no contending interests.

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