



RESEARCH PAPER

PERCEIVED RISK AND CONSEQUENCES OF BLEACHING PRACTICES AMONG UNIVERSITY STUDENTS IN SOUTHWEST NIGERIA

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ABSTRACT

Despite the social, pathological, physiological and psychological effects that skin bleaching presents, it has become a widespread practice among different groups in Nigeria. This cross sectional study involving two selected universities in Osun State, Nigeria, assessed the perceived risks and consequences of skin bleaching among undergraduates in higher institutions in Osun State, Nigeria. Data was collected from 400 undergraduates using a validated self-administered questionnaire with a Cronbach's alpha value of 0.78. The data was analyzed descriptively and inferentially. Findings showed that almost half of the respondents (41.5%) had used bleaching agents, and 70.5% have a negative perception of its risks and consequences. Reasons for the use of bleaching product included removal of facial pimples or scars (79.8%), skin lightening (58.3%), spot removal (79.5%), fashion enhancement (67.0%) and to become more attractive (65.8%). There was a significant difference in the perception of the risks of skin bleaching based on institutional affiliations ($t=3.57$, $p=.000$). This study concluded that skin bleaching was prevalent among the studied population and that the participants had a negative perception of its risks and consequences.

Key words: Adverse effects, bleaching, bleaching agents, cosmetics use, undergraduate students

INTRODUCTION

Skin bleaching has become a widespread practice among individuals of different age groups, gender and religious affiliations especially within the black race, including Nigeria (Adebajo, 2002; Kamagaju *et al.*, 2016; Rusmadi *et al.*, 2015). It is the use of topical agents such as creams, gels, or soaps to lighten the skin, or the cosmetic application of topical ointments, gels, soaps and household chemicals to de-pigment or lightens (bleach) the skin complexion. This has emerged as an increasingly frequent practice during the past decades (Charles, 2003). This practice is known to cause injuries, many of which are potentially life-threatening (Street *et al.*, 2014).

Prevalence of bleaching has been estimated to range from 24% of women in Japan and 30% of women in Ghana (Street *et al.*, 2014) to an alarming rate in India where 60-65% of women use skin bleaching methods (Street *et al.*, 2014). Furthermore, Durosaro *et al.* (2012) established that there is high incidence rate of cosmetic skin bleaching among young adults in the urban centres. Durosaro *et al.* (2012) found that in Mali, 25% of the country's population practice skin bleaching while in Senegal up to 52% prevalence was observed. The prevalence is reportedly higher in Nigeria where up to 77% of women are documented to have used skin bleaching products (Kpanake *et al.*, 2010).





Several authors have identified numerous potentially life-threatening consequences of skin bleaching (Boyle and Kennedy, 1986; Mahé *et al.*, 2007; Ramsay *et al.*, 2003). It includes dermatologic consequences such as skin lesions, epidermal atrophy (thinning of the skin), and exogenous ochronosis (bluish black tissue discoloration) (Ramsay *et al.*, 2003; Tan, 2011). Also, eczema, bacterial and fungal infections, dermatitis (skin inflammation), scabies (contagious skin disease), warts acne, sun damage and body odour are parts of the consequences (Ajose, 2005).

Furthermore, skin bleaching can lead to fragile skin, poor wound healing, scarring and the need for corrective surgery (Ajose, 2005). Other serious health risks include hypertension, diabetes, infertility, leukaemia, skin cancer, foetal toxicity, and immunosuppression (Mahé *et al.*, 2007). Besides, renal and liver impairment and failure, Cushing's syndrome, insomnia, memory loss, tremors, speech and hearing impairment are other adverse outcomes of this practices (Ajose, 2005; Lewis *et al.*, 2010). Durosaro *et al.* (2012) argued that the degree to which attention has been focused on skin beautification, calls for special concern. Previous studies on the use of bleaching agents have focused on the pathological, physiological and psychological effects. However, little has been documented about the perception of the young people about the adverse effect of use of skin bleaching agents. The aim of this study was to assess the perception of risk and consequences of bleaching practices and to establish the reasons associated with this practice among Nigerian university students.

MATERIALS AND METHODS

Research Settings and Design: The study was conducted in Osun State, Nigeria. The State plays host to seven Nigerian universities among which are Obafemi Awolowo University (OAU), Ile Ife, and Bowen University, Iwo. The OAU, Ile-Ife is a federal government owned university, while Bowen University, is a mission owned, private university. The study utilized the descriptive cross-sectional design.

Target Population: The target population comprises all registered students of Obafemi Awolowo University (OAU), Ile Ife, and Bowen University, Iwo, with an average population of 35000 and 5000 students respectively.

Sampling Technique and Sample Size: A multistage sampling technique was adopted; two universities OAU and Bowen University were purposively selected based on the orientation and affiliation of the institutions. This was with the aim of examining the influence of institutional affiliation on the skin bleaching practice. The Obafemi Awolowo University is a Federal public Institution with a liberal orientation while Bowen University is a private religious institution with some levels of control over students based on the doctrine of the founding mission. In each of the selected schools, students were stratified into faculties and departments. Nine departments were selected from OAU and three from Bowen out of a total of 68 and 18 departments respectively. The final selection took place at the level of departments; students were selected using a simple random technique using the departmental enrollment list obtained from the Division of Student Affairs of the selected institutions. The sample size of 400 was derived from the total population of 40000 students in the two schools in the study. The sample size was estimated using Taro Yamane's formula, $n = N/[1+N(e)^2]$, where, n = sample size; N = population size; e = sampling error (usually between 0.01-0.05). Sample was selected proportionately to the size of each institution using a simple random sampling (316 from OAU and 84 from Bowen).

Research Instrument: Data was collected using a structured questionnaire comprising four sections. Section A asks questions on respondents socio-demographic data, Section B assesses the respondents use of skin bleaching, and Section C consisted of questions on perceived risks and consequences of skin bleaching, while Section D consisted of factors predisposing to skin bleaching. Section C contains items that elicit information on perception of respondents towards the use of bleaching agents. It includes nine items using a 4-point Likert scale ranges from strongly agree, agree, disagree to strongly disagree; summed to give a total score ranging from 9 - 36 with 9 being the minimum score and 36 is the maximum rating. The perception was rated as negative (9-18) and positive (19-36). Likewise, Section D contains 14 items in Yes/No, format.

Validity and Reliability of the Research Instrument: Face and content validity was established by scrutiny, which was done by a panel of experts in nursing, medicine, education and psychology. The reliability was ensured via the pilot study conducted at Oduduwa University, and the result yielded a Cronbach's alpha of 0.78, it was, therefore, deemed suitable for use in the current study.





Ethical Consideration: Ethical approval for the study was obtained from the Human Research Ethics Committee, Institute of Public Health, Obafemi Awolowo University, Ile-Ife (IPHOAU/12/660). Permission was also obtained from the authority of the selected institutions. Also, informed consent was obtained from the students before the commencement of the study. Participants were assured anonymity and confidentiality of the information and that they were at liberty to decide to discontinue in the study at any time.

Procedure for Data Collection: Preliminary visits were made to the authority of the institutions to seek their permission for the conduct of the study. Participants’ consent was obtained, and they were given the questionnaire which they filled without any form of coercion. The questionnaire was returned immediately.

Data Analysis: Data analyses were performed in Statistical Package for Social Sciences (SPSS) (v.20) using descriptive and inferential statistics. Statistical methods employed include frequency count, percentage and chi-square. Association between the perception of the risk and consequences of skin bleaching and demographic characteristics of the respondents as well as actual use of bleaching agents was explored using Chi-square. In addition, t-test was used in determining the differences in the perception of risk and consequences of skin bleaching practices between the two institutions.

RESULTS

Table 1A and 1B presents the socio-demographic characteristics of the students who participated in the study. The age ranges from 18 to 25 years with a mean 21.37 (\pm 2.59). The age distribution of the respondents showed that about half (50.3%) were between 19 and 21years. Results further revealed that 72.5% of the respondents were females, 89.2%, were Christians, and 82.5% were from Yoruba tribe. Further analysis revealed that sex ($p=0.0101$), age ($p=0.0001$), religion ($p=0.7518$), tribe ($p=0.0001$), educational level ($p=0.0199$) and institution ($p=0.0001$) are significantly associated with perception of bleaching practices. However, there was no significant association between perception of bleaching practices and religion.

Table 1A: Socio-demographic characteristics of respondents (Sex, Age and Religion)

Variable	Perception Positive	Negative	Total	%	Chi	df	p
Sex							
Male	32	78	110	27.5	6.161	1	0.0101
Female	49	241	290	72.5			
Total	81	319	400	100			
Age (years)							
18 and below	11	28	39	9.8	58.63	3	0.0001
19-21	27	174	201	50.3			
22-24	16	101	117	29.3			
25 and above	27	16	43	10.8			
Total	81	319	400	100			
Religion							
Christianity	71	286	357	89.2	0.126	1	0.7518
Islam	10	33	43	10.8			
Total	81	319	400	100			





Table 1B: Socio-demographic characteristics of respondents (Tribe, Educational Level and Institution)

Variable	Perception Positive	Negative	Total	%	Chi	df	P
Tribe							
Yoruba	50	280	330	82.5	50.81	3	0.0001
Hausa	3	5	8	2			
Igbo	6	23	29	7.3			
Others	22	11	33	8.3			
Total	81	319	400	100			
Educational level							
100	11	35	46	11.5	11.68	4	0.0199
200	27	56	83	20.8			
300	16	96	112	28			
400	19	95	114	28.5			
500	8	37	45	11.3			
Total	81	319	400	100			
Institution							
Bowen	25	59	84	21	5.23	1	0.0222
OAU	56	260	316	79			
Total	81	319	400	100			

The use of bleaching agents is presented in Table 2A and 2B. The result showed that 41.5% had used bleaching agent and 18.5% have attempted to use other skin bleaching product. About the effect of the product on their skin, 36.7% have noticed definite changes in the skin colour, and these changes include fair skin (15.7%), lighten skin (21.1%), and (36.7%) claimed they were satisfied with the products.

Table 2A: Use of Skin Bleaching by the Respondents (1)

Variable	Freq	%
Ever use bleaching product		
Yes	166	41.5
No	234	58.5
Total	400	100.0
Attempt of other skin bleaching product		
Yes	74	18.5
No	326	81.5
Total	400	100.0





Table 2B: Use of Skin Bleaching by the Respondents (2)

Variable	Freq	%
Yes	61	36.7
No	105	63.3
Total	166	100.0
Changes observed after other products usage		
Fair skin	26	15.7
Lighten skin	35	21.1
No change	105	63.3
Total	166	100.0
Number of skin lightening product ever used		
1	135	81.3
2-3	28	16.9
Above 4	3	1.8
Total	166	100.0
Satisfaction after the application of the products		
Yes	61	36.7
No	69	41.6
Somehow	36	21.7
Total	166	100.0

Table 3 showed the perception of respondents on the risk and consequences of skin bleaching. These results include skin bleaching has a lot of health risk for users (95.8%), skin bleaching can cause fragile skin, which later causes other skin complications over time (94.5%). They also agreed that skin bleaching increases the risk of other diseases like dermatitis, acne and burns due to the chemicals in the products (94%), cause abnormal skin pigmentation base on the chronic effects of the harsh chemicals present in the bleaching products (93.5%). Also, they believed that skin bleaching increases the risk of skin cancers (90.8%), cause exogenous ochronosis, hyperpigmentation and burns (65.3%).

Based on the overall rating of the perception, the results revealed that a large proportion (79.75%) had negative perception toward the use of bleaching agents.

Furthermore, there was a significant association between perception of risk and consequences of skin bleaching and the actual use of bleaching agents ($p < 0.0001$) (See Table 4).





Table 3: Perception of Risk and Consequences of Skin Bleaching

S/N	Perceptions	Disagree		Agree	
		Freq	(%)	Freq	(%)
1.	Skin bleaching has a lot of health risk for users	383	95.75	17	4.25
2.	Skin bleaching increases the risk of other diseases like dermatitis, acne and burns due to the chemicals in the products.	376	94	24	6
3.	Skin bleaching can cause abnormal skin pigmentation base on the chronic effects of the harsh chemicals present in the bleaching products.	374	93.5	26	6.5
4.	Skin bleaching could increase the risk of skin cancers	363	90.75	37	9.25
5.	Skin bleaching can cause fragile skin, which later causes other skin complications over time.	378	94.5	22	5.5
6.	Disruption of normal DNA functioning is a risk for skin bleachers.	193	48.25	207	51.75
7.	Skin bleaching can cause congenital disabilities in offspring health	131	32.75	269	67.25
8.	Skin bleaching can cause Toxic shock syndrome	163	40.75	237	59.25
9.	Skin bleaching can cause exogenous ochronosis, hyperpigmentation and burns.	261	65.25	139	34.75

Table 4: Association between Practice and Perception of Risk and consequences associated with Skin Bleaching Products

Ever use of tone product	Perception			Chi	df	p
	Positive	Negative	Total			
Yes	52 (13)	114 (28.5)	166 (41.5)	20.4	1	0.0001
No	29 (7.3)	205 (51.3)	234 (58.5)			
Total	81 (20.3)	319 (79.8)	400 (100)			

Factors influencing the use of skin bleaching agents by the respondents are presented in Table 4. It includes the desire to remove facial pimples or other scars (79.8%), to get rid of a spot on the skin (79.5%), to enhance fashion and style (67.0%), desire to be more attractive (65.8%). Also included is the desire to have a lighter skinned (58.3%), to eradicate racial discrimination (54.5%), and to remove teenage bumps (52.5%) (Table 5).





Table 5: Factors influencing the use Skin Bleaching Agents by Respondents

S/N	Factors	Yes	(%)	No	(%)
	Desire to remove facial pimples or other scars	319	79.8	81	20.3
	To get rid of spot on the skin	318	79.5	82	20.5
	To enhance fashion and style	268	67.0	132	33.0
	Desire to be more attractive	263	65.8	137	34.3
	Desire to be lighter skinned	233	58.3	167	41.8
	To eradicate racial discrimination	218	54.5	182	45.5
	To remove teenage bumps	210	52.5	190	47.5
	Desire to become more attracted to opposite sex	186	46.5	214	53.5
	Desire to be more popular	175	43.8	225	56.3
	Men consider lighter skin woman more beautiful	154	38.5	246	61.5
	Lighter skin implies membership of higher social class	87	21.8	313	78.3
	There is no risk associated with skin bleaching	71	17.8	329	82.3
	Lighter skin helps to get better job	61	15.3	339	84.8
	Lighter skin increases the chance of getting married	50	12.5	350	87.5

An independent t-test was run on the sample to determine if there is a difference in the perception of risk and consequences of bleaching practices based on the institution affiliation (OAU or Bowen). The results showed that there was a statistically significant difference in the perception of risk and consequences of skin bleaching between students in the two institutions, $t(398) = 3.57, p = .000$ (Table 6).

Table 6: Difference in the Perception of Risk and Consequences of Skin Bleaching Practices

Variables		N	\bar{x}	SD	Df	T	P
Perception	Bowen University	84	23.67	3.85	398	3.57	0.000
	Obafemi Awolowo University	316	25.20	1.22			

DISCUSSION

This study examined the perception of risk and factors associated with skin bleaching among undergraduate students in Osun State. The findings revealed that there was a high prevalence of skin bleaching practices among the respondents. This prevalence is a little lower than that obtained by an earlier Nigerian study conducted among traders in Lagos metropolis (Adebajo, 2002). This is, however, higher than that obtained among women visiting outpatient clinics in Saudi Arabia (Alghamdi, 2010). Findings from this study are also in support of the studies by (Durosaro *et al.*, 2012; Street *et al.*, 2014) who reported that quite a large number of respondents use at least one form of skin bleaching agents or the other. This high prevalence of skin bleaching practices may be related to the negative perception that exists among the students. Similarly, most of the materials used are over the counter products which are readily available due to non-compliance with drug and chemical compositions in the country. This may also be due to the absence of adequate awareness of the risk associated





with the prolonged and persistent use of the products (Sharif and Sharif, 2014). This result is of great public health importance considering the various complications associated with the overuse of bleaching agents.

Furthermore, findings from the study revealed that respondents have a negative perception towards risk and consequences of the use of skin bleaching agents. Respondents claimed that they did not believe that the use of bleaching agents could pose any health hazard including the potential for dermatitis, acne and burns, abnormal skin pigmentation. It also includes an increase in the risk of skin cancers, exogenous ochronosis, hyperpigmentation and burns (Grimes, 2009; Tan, 2011). This is contrary to the findings of Peltzer and Pengpid (2017) who reported that a large proportion of the respondents were aware that the use of skin lightening products could harm the skin. The negative perception might have influenced some undergraduates who are engaged in skin bleaching. This negative perception calls for public health education about the health risk of the use of bleaching agents.

The findings also identified reasons for using bleaching agents, and this includes the desire to be lighter, to remove facial pimples or other scars, to remove teenage pumps, to get rid of a spot on the skin, to eradicate racial discrimination, to enhance fashion and style, and desire to be more attractive. This finding supports Durosaro et al. (2012) who found that willingness to be lighter, desire to eradicate racial discrimination, to get rid of a spot on the skin are key factors that propel skin bleaching practice. Also, these findings is supported by (Blay, 2010; Lewis *et al.*, 2012; Peltzer and Pengpid, 2017; Street *et al.*, 2014) who argued that the primary reasons why people engage in bleach practices are, to build a heterosexual relationship and become more attractive.

Findings from this study further established the influence of institutional affiliation on the perception of risk and consequences associated with skin bleaching practices. The result suggests that institution orientation would have influenced their perception. The mission school has as part of its curriculum religious and moral values training compared with the liberal institutions where such is absent. These would have probably influenced their perception. It, therefore, suggests that practices and values that could influence health choices should be incorporated into school curriculum.

Implication for Practice

The results of the findings suggest that undergraduates adduce several reasons for skin bleaching. It also reveals the level of ignorance regarding the consequences of the use of bleaching agents by the undergraduates. Owing to the fact that the reasons adduced do not remove the side effects of skin bleaching; health profession has a lot of responsibility in educating the society about the best health-promoting practices in body beautification. Health care professionals should emphasize potentially life-threatening practices and long-term consequences attached to the use of such bleaching products.

Health care professionals should reinforce understanding even on basic information on the practice of skin bleaching. Skin bleaching should also be examined under injury prevention in public health, incorporating skin bleaching into injury prevention effort in areas where the practice is most prevalent will go a long way in reducing and eradicating the use of this bleaching products. The significant public health risks that these practices pose cannot be ignored and incorporating efforts to prevent skin bleaching may give this understudied topic a necessary boost.

RECOMMENDATION

Based on the outcome of the study, the following recommendations were made;

1. Health seminars and symposia should be organized to educate the general public about the dangers of skin bleaching.
2. Religious organizations and non-governmental organization should also be employed to raise public awareness about the negative consequences of using bleaching products.
3. The Government should formulate policies to regulate the importation and sales of all cosmetic products that contain harmful chemicals such as hydroquinone, corticosteroids, in the country.

CONCLUSION

This study revealed that the use of skin bleaching agent is widely practice in this study setting and undergraduates had a negative perception towards risk and consequences of the use of skin bleaching agents. The study also identified desire to get lighter, and removal of facial pimples, scars, or spot on the skin, were the main factors predisposing students to skin





bleaching. In addition, it also established that the negative perception is influenced by institutional affiliation. Therefore, concrete efforts should be put in place to discourage this ugly practice.

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REFERENCES

- Adebajo, S. (2002). An epidemiological survey of the use of cosmetic skin lightening cosmetics among traders in Lagos, Nigeria. *Mercury*; 5(7), 43-48.
- Ajose, F. O. (2005). Consequences of skin bleaching in Nigerian men and women. *International journal of dermatology*; 44(s1), 41-43.
- Alghamdi, K. (2010). The use of topical bleaching agents among women: a cross-sectional study of knowledge, attitude and practices. *Journal of the European Academy of Dermatology and Venereology*; 24(10), 1214-1219.
- Blay, Y. A. (2010). Ahoofe Kasa!: Skin Bleaching and the function of beauty among Ghanaian women. *JENdA: A Journal of Culture and African Women Studies*; (14).
- Boyle, J. and Kennedy, C. (1986). Hydroquinone concentrations in skin lightening creams. *British Journal of Dermatology*; 114(4), 501-504.
- Charles, C. A. (2003). Skin bleaching, self-hate, and black identity in Jamaica. *Journal of Black Studies*; 33(6), 711-728.
- Durosaro, A., Ajiboye, S. and Oniye, A. (2012). Perception of skin bleaching among female secondary school students in Ibadan metropolis, Nigeria. *Journal of Education and Practice*; 3(7), 40-46.
- Grimes, P. E. (2009). *Management of hyperpigmentation in darker racial ethnic groups*. Paper presented at the Seminars in cutaneous medicine and surgery.
- Kamagaju, L., Morandini, R., Gahongayire, F., Stévigny, C., Ghanem, G., Pirotte, G. and Duez, P. (2016). Survey on skin-lightening practices and cosmetics in Kigali, Rwanda. *International journal of dermatology*; 55(1), 45-51.
- Kpanake, L., Muñoz Sastre, M. T. and Mullet, E. (2010). Skin bleaching among Togolese: A preliminary inventory of motives. *Journal of Black Psychology*; 36(3), 350-368.
- Lewis, K., Robkin, N., Gaska, K., Njoki, L. C., Andrews, E. and Jetha, K. (2010). The Tanzanian response to dangerous skin bleaching products and practices and the gendered politics of it all: a critical analysis. *JENdA: A Journal of Culture and African Women Studies*; (14).
- Lewis, K. M., Harris, S., Camp, C., Kalala, W., Jones, W., Ellick, K. L., . . . Younge, S. (2012). The Historical and Cultural Influences of Skin Bleaching in Tanzania. *The Melanin Millennium: Skin Color as 21st Century International Discourse*; 19.
- Mahé, A., Perret, J., Ly, F., Fall, F., Rault, J. and Dumont, A. (2007). The cosmetic use of skin-lightening products during pregnancy in Dakar, Senegal: a common and potentially hazardous practice. *Transactions of the Royal Society of Tropical Medicine and Hygiene*; 101(2), 183-187.
- Peltzer, K. and Pengpid, S. (2017). Knowledge about, attitude toward, and practice of skin lightening products use and its social correlates among university students in five Association of Southeast Asian Nations (ASEAN) countries. *International journal of dermatology*; 56(3), 277-283.





Ramsay, H., Goddard, W., Gill, S. and Moss, C. (2003). Herbal creams used for atopic eczema in Birmingham, UK illegally contain potent corticosteroids. *Archives of disease in childhood*; 88(12), 1056-1057.

Rusmadi, S. Z., Syed Ismail, S. N. and Praveena, S. M. (2015). Preliminary study on the skin lightening practice and health symptoms among female students in Malaysia. *Journal of environmental and public health*; 2015.

Sharif, S. I. and Sharif, R. S. (2014). Self-medication among non-healthcare students of the University of Sharjah, United Arab Emirates. *Archives of Pharmacy Practice*; 5(1), 35.

Street, J. C., Gaska, K., Lewis, K. M. and Wilson, M. L. (2014). Skin bleaching: A neglected form of injury and threat to global skin. *African Safety Promotion: A Journal of Injury and Violence Prevention*; 12(1), 52-71.

Tan, S. (2011). Exogenous ochronosis in ethnic Chinese Asians: a clinicopathological study, diagnosis and treatment. *Journal of the European Academy of Dermatology and Venereology*; 25(7), 842-850.

AUTHORS' CONTRIBUTIONS

JOF conceived the idea for this study, participated in the design of methodology and data collection and analysis and prepared the final manuscript for publication. MAA participated in the design of methodology, data collection and analysis and drafted the manuscript. OOO SCA, GOF and TTF participated in the design of the study's methodology and drafted the manuscript. All authors read and approved the final manuscript.

