

Skin Lightening Practices and Awareness of the Health effects among Female Students of Tertiary Institutions in Jigawa State

Yakubu Ibrahim¹ and Ka'ab Mu'az²

¹Department of Chemistry, ²Department of Physical and Health Education
Jigawa State College of Education Gumel, Nigeria
yaksgbs79@gmail.com

Abstract

The study utilized a survey design conducted between November 7th and December 16th, of the year 2024, during the first-semester session. Purposive and accidental sampling techniques were employed to engage female participants across tertiary institutions in Jigawa State. A total of 200 volunteers, comprising Nigeria Certificate in Education (NCE) and undergraduate (UG) female students, were administered a structured questionnaire to assess their skin bleaching practices and awareness of its health effects. The findings revealed that female students demonstrated moderate awareness of the health risks (59.8%), with minimal engagement in the practice (23.8%) for undergraduates and (30.8%) for NCE students. Older females showed greater awareness and lower involvement in skin bleaching. Participants specializing in science-related fields exhibited higher awareness of the associated health risks (66.8%) and a higher prevalence of the practice (40.4%). In contrast, NCE participants had lower awareness (50%) and engaged in skin bleaching more frequently (30.8%) than their undergraduate counterparts. The study highlights the need to integrate skin bleaching awareness into general courses in tertiary institutions.

Keywords: Skin lightening practices, Awareness, Health risk

Introduction

The use of cosmetics such as soaps, creams, gels, and household chemicals to lighten skin complexion is commonly referred to as skin bleaching or lightening. This process involves the artificial removal of the topmost layer of skin. Some perceive it as a temporary or permanent alteration of the skin's outer layer (Adewoyin, 2020).

Skin bleaching is a global phenomenon, with its prevalence across multiple countries. It is particularly widespread in trans-Saharan West Africa (Bilewu et al., 2025), in Jigawa State, Nigeria, the increasing use of skin-lightening products among female students in tertiary institutions is alarming. The motivations behind this practice stem from psychosocial, cultural, and economic factors (Juliano, 2022). Many individuals associate lighter skin with enhanced beauty and social acceptance, contributing to the widespread use of these products (Bakare et al., 2023).

However, skin-lightening agents often contain highly toxic ingredients such as mercury derivatives, hydroquinone, and corticosteroids, which pose serious health risks (Juliano, 2022; Lu et al., 2024). Several studies have highlighted the severe consequences of skin bleaching. Omohwovo and Lucero-Prisno (2023) reported that prolonged use can lead to kidney and liver damage. Other documented health risks include skin cancer, difficulty in wound stitching during surgical procedures, slow wound healing, skin thinning, acne, osteoporosis, muscle weakness, hypertension, diabetes, infertility, and renal failure (Adewoyin, 2020). Additional risks include lung damage, increased susceptibility to skin cancer, high blood pressure, fatigue, light sensitivity, numbness, and neurological symptoms such as tremors, memory loss, and irritability (Walkin Dermatology, 2021).

Despite these serious health concerns, skin bleaching remains widespread, particularly among African women (Adetoogun et al., 2023). Studies indicate that between 25% and 80% of women in African countries regularly use skin-whitening products (Adetoogun et al., 2023). In Nigeria, skin-bleaching creams continue to gain popularity, with reports showing that 77% of women engage in the practice. According to Chifamba and Murairwa (2024), skin-lightening products are no longer limited to creams, lotions, and serums but now include oral and injectable forms. The trend has shifted from traditional creams to pills and injections, often without regard for their harmful effects on the skin and internal organs (Chifamba & Murairwa, 2024).

Surprisingly, this practice is also prevalent among uneducated adolescent girls in major towns across Jigawa State. This could be attributed to ignorance or a lack of awareness regarding the potential health risks of skin bleaching. Considering these concerns, this study examines the prevalence of skin lightening and the level of awareness about its health effects among female students in tertiary institutions in Jigawa State, Nigeria.

Methodology

The study was conducted using a survey design from November 7th to December 16th, of the year 2024, during the first semester. Purposive and accidental sampling techniques were employed to engage female participants across tertiary institutions in Jigawa State. A total of 200 volunteer participants, from Jigawa State College of Education, Gumel, Nigeria, consisting of NCE and undergraduate female students, were given a structured questionnaire to assess their practice of skin bleaching and level of awareness regarding its health effects.

Results

Table 1: Demographic indicators of the Participants

Variable		
Gender	Female	N= 171
Age	Frequency	%
17 years	20	11.69
18 years	58	33.91
19 years	48	28.07
20 years	25	14.61
22 years	6	3.50
Age not indicated	14	8.18
Undergraduate	92	53.90
NCE	79	46.19

The table shows that all the participants were female. The majority were 18 years old, followed by those who were 19, with a few aged 22. Fourteen participants (8.18%) did not disclose their age. A larger proportion were undergraduates (53.90%), while 46.19% were NCE students. This indicates that most of the participants were teenagers.

Table 2: Influence of Age of the Participants on Skin Bleaching Practice

	Age 17 yrs(n=20)				Age 18 yrs(n=58)				Age 19 Yrs(n=48)				Age 20 Yrs(n=25)				Age 22 yrs(n=6)			
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
Previously used the products	8	40	12	60	11	18.9	47	84.5	11	22.9	37	77.1	10	40	15	60	1	16.6	5	83.3
Use local products	4	20	16	80	15	25.9	43	74.1	14	29.1	34	70.8	12	48	13	52	1	16.6	5	83.3
Pharmaceutical products	8	40	12	60	15	25.9	43	74.1	12	23	36	75	7	28	18	72	2	33.3	4	66.6

The results in the table indicate that participants aged 17 and 20 had the highest percentage (40%) of individuals who reported previous use of skin-bleaching products compared to other age groups. The lowest percentage was recorded among 22-year-olds (16.6%). Among those who used local products for skin bleaching, 17-year-olds had the highest percentage. Meanwhile, 48% of 20-year-olds reported the highest usage of local products, while 17-year-olds had the lowest usage in this category. Regarding the use of pharmaceutical products for skin bleaching, 17-year-olds had the highest percentage (40%). Overall, the table reveals that the practice of skin bleaching decreases with age.

Table 3: Influence of Age of the Participants on the Awareness of the Health Effects of Skin Bleaching

	Age 17 yrs (n=20)				Age 18 yrs (n=58)				Age 19 Yrs (n=48)				Age 20 Yrs (n=25)				Age 22 yrs (n=6)			
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
Skin bleaching is dangerous	14	70	6	30	38	65.5	20	34.4	39	81.3	9	18.7	21	84	4	16	6	100	0	0
Skin bleaching increases body weakness	13	65	7	35	36	62.0	22	37.9	33	68.7	15	31.3	18	72	7	28	5	83.3	1	16.7
Increases the risk of high blood pressure	8	40	12	60	36	62.0	22	37.9	32	66.7	16	33.3	15	60	10	40	4	66.7	2	33.3
Leads to pregnancy problem and stillbirth	11	55	9	45	32	55.2	26	44.8	32	66.7	16	33.3	12	48	13	52	6	100	0	0
Increases skin cancer	14	70	6	30	40	68.9	18	31.0	43	89.6	5	10.4	13	52	12	48	6	100	0	0
Skin bleaching causes lungs damage	10	50	10	50	35	60.3	23	39.7	35	72.9	13	27.1	13	52	12	48	2	33.3	4	66.7
Leads to kidney damage or failure	7	35	13	65	33	56.9	25	43.1	32	66.7	16	33.3	14	56	11	44	2	33.3	4	66.7
Increases the risk of memory loss	4	20	16	80	23	39.7	35	60.3	21	43.8	27	56.3	6	24	19	76	1	16.7	5	83.3
Increases an involuntary shaking of the body parts	12	60	8	40	24	41.4	34	58.6	35	72.9	13	27.1	18	72	7	28	3	50	3	50

The results indicate that female participants aged 18 had the lowest awareness of the dangers of skin bleaching (65.5%), while 84% of 20-year-olds acknowledged its risks. Participants aged 22 had the highest awareness level, with all (100%) recognizing that skin bleaching is dangerous. This suggests that awareness of its risks increases with age. Regarding awareness of skin bleaching leading to increased body weakness, 22-year-old participants had the highest percentage (83.3%), followed by those aged 20 (72%) and 19 (68.7%), with the lowest percentage among 18-year-olds. In terms of awareness of the increased risk of high blood pressure due to skin bleaching, participants aged 22 and 19 had the highest awareness (66.7%), while those aged 17 had the lowest (40%). This further reinforces the trend that awareness increases with age. Participants aged 22 also had the highest awareness (100%) of the risk of skin bleaching causing pregnancy complications and stillbirth, followed by those aged 19 (66.7%), with the lowest percentage among 20-year-olds (48%). Regarding awareness of the increased risk of skin cancer, participants aged 22 (100%) and 19 (89.6%) had the highest awareness levels, whereas those aged 20 had the lowest (52%). For awareness of lung damage caused by skin bleaching, 19-year-olds had the highest percentage (72.9%), followed by 18-year-olds (60.3%), with the lowest percentage

among 22-year-olds (33.3%). When considering awareness of the risk of kidney damage, 19-year-old participants had the highest percentage (66.7%), followed by those aged 18 (56.9%), while the lowest awareness was recorded among 22-year-olds (33.3%). Concerning awareness of the increased risk of memory loss due to skin bleaching, 19-year-olds had the highest percentage (43.8%), followed by 18-year-olds (39.7%), 20-year-olds (24%), and 17-year-olds (20%), with the lowest awareness among 22-year-olds (16.7%). This indicates that participants had limited awareness in this area. Participants aged 19 and 20 had the highest awareness (72.9%) that skin bleaching can cause involuntary shaking of body parts, while those aged 18 had the lowest awareness (41.4%). Overall, the findings suggest that most participants had a moderate awareness of the effects of skin bleaching, with older participants demonstrating greater awareness levels.

Table 4: Participants Awareness of the Health Effects of Skin Bleaching across Ages

Variables	N=157			
	Yes	%	No	%
Skin bleaching is dangerous	108	68.8	49	31.2
Skin bleaching increases body weakness	105	66.8	52	33.1
Skin bleaching increases the risk of high blood pressure	95	60.5	62	39.5
Skin bleaching leads to pregnancy problem and stillbirth	92	58.6	65	41.4
Skin bleaching increases risk of skin cancer	116	73.9	41	26.1
Skin bleaching causes lungs damage	95	60.5	62	39.5
Skin bleaching leads to kidney damage or failure	88	56.1	69	43.9
Skin bleaching increases the risk of memory loss	55	35.0	102	64.9
Skin bleaching increases an involuntary shaking of the body parts	92	58.6	65	41.4

The table indicates that 68.8% of female participants were aware that skin bleaching is dangerous. Additionally, 66.8% acknowledged that skin bleaching increases body weakness, while 60.5% were aware of its link to high blood pressure. Furthermore, 58.6% of participants recognized that skin bleaching increases the likelihood of pregnancy complications and stillbirth. A higher percentage (73.9%) were aware of the increased risk of developing skin cancer, while 60.5% acknowledged its potential to cause lung damage. Additionally, 56.1% were aware that skin bleaching could lead to kidney damage or failure. However, only 35.0% of participants were aware of the risk of memory loss associated with skin bleaching. In terms of awareness of involuntary body tremors, 58.6% of participants reported having knowledge of this effect. Overall, the findings suggest that participants had a considerable level of awareness (59.8%) regarding most health risks associated with skin bleaching.

Table 5: Influence of Participants' Area of Specialization on Skin Bleaching Practice

N=157	Arts(n=38)				Languages (n=6)				Sciences (n=113)			
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
Previously used the products	11	28.9	27	71.1	1	16.6	5	83.3	44	38.9	69	61.1
Use local products	9	23.7	29	76.3	5	83.3	1	16.6	49	43.4	64	56.6
Pharmaceutical products	9	23.7	29	76.3	2	33.3	4	66.6	44	38.9	69	56.6

Participants from sciences had the highest percentage (38.9%) of previous skin-bleaching product users compared to other specializations, while those in languages had the lowest (16.6%). Additionally, language students had the highest utilization of local skin-bleaching products among all specializations. Meanwhile, participants from the sciences had the highest usage (38.9%) of pharmaceutical skin-bleaching products compared to other fields. Generally, the table indicates that while skin bleaching is not widely practiced, it is more common among participants specializing in the sciences (40.4%).

Table 6: Influence of Participants' Area of Specialization on the Awareness of Health Effects of Skin Bleaching

	Arts(n=38)				Languages (n=6)				Sciences (n=113)			
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
Skin bleaching is dangerous	16	42.1	22	57.8	2	33.3	4	66.6	90	79.6	23	20.4
skin bleaching increases body weakness	12	31.6	26	68.4	1	16.6	5	83.3	92	81.4	21	18.6
Increases the risk of high blood pressure	20	52.6	18	47.4	2	33.3	4	66.7	73	64.6	40	35.4
Leads to pregnancy problem and stillbirth	15	39.5	23	60.5	2	33.3	4	66.7	75	66.4	38	33.6
Increases skin cancer	21	55.3	17	44.7	2	33.3	4	66.7	93	82.3	20	17.7
Skin bleaching causes lungs damage	24	63.1	14	36.8	2	33.3	4	66.7	69	61.1	44	38.9
Leads to kidney damage or failure	16	42.1	22	57.9	1	16.7	5	83.3	71	64.6	42	37.2
Increases the risk of memory loss	18	47.3	20	52.6	0	0	6	100	37	32.7	76	67.3
Increases an involuntary shaking of the body parts	17	44.7	21	55.2	1	16.7	5	83.3	74	68.5	39	34.5

Participants from the sciences demonstrated the highest awareness (79.6%) that skin bleaching is dangerous. They also had greater awareness of its associated health risks, including increased body weakness (81.4%), high blood pressure (64.6%), pregnancy complications and stillbirth (66.4%), skin cancer (82.3%), and kidney damage (64.6%) compared to other specializations. Surprisingly, participants from the arts had the highest awareness (63.1%) that skin bleaching can cause lung damage. Overall, the table indicates that science students had a greater awareness of the health effects of skin bleaching compared to those in other specializations (66.8%).

Table 7: Practice differences between Undergraduate and NCE Participants on Skin Bleaching

N =171	UGT (n=92)				NCE (n=79)			
	Yes	%	No	%	Yes	%	No	%
Previously used the product	20	21.7	72	78.3	25	31.6	54	68.4
Use local products	19	20.7	73	79.3	30	37.9	49	62.0
Pharmaceutical products	26	28.3	66	71.7	18	22.8	61	77.2

The data shows that a higher percentage of NCE participants (31.6%) had previously used skin-bleaching products compared to undergraduates (21.7%). Similarly, NCE participants had a greater utilization of local products (37.9%) compared to undergraduates (20.7%). However, when it came to pharmaceutical skin-bleaching products, undergraduate

participants had a higher usage rate (28.3%) compared to NCE participants (22.8%). Overall, the table indicates that while skin bleaching practices were minimal, they were more common among NCE participants (30.8).

Table 8: Awareness differences between Undergraduate and NCE Participants on Health Effects of Skin Bleaching

1	UG(n=92)				NCE (n=79)			
	Yes	%	No	%	Yes	%	No	%
Skin bleaching is dangerous	85	92.4	7	7.6	47	59.5	32	40.5
Skin bleaching increases body weakness	58	63.0	34	36.9	43	54.4	36	45.6
Skin bleaching increases the risk of high blood pressure	58	63.0	34	36.9	46	58.2	33	41.8
Skin bleaching leads to pregnancy problem and stillbirth	63	68.4	31	33.7	40	50.6	37	46.8
Skin bleaching increases risk of skin cancer	83	90.2	9	9.8	56	70.8	23	29.1
Skin bleaching causes lungs damage	51	55.4	41	44.6	51	64.6	28	35.4
Skin bleaching leads to kidney damage or failure	46	50.0	46	50.0	43	54.4	36	45.6
Skin bleaching increases the risk of memory loss	21	22.8	71	77.1	30	37.9	49	62.0

Undergraduate participants demonstrated a higher awareness that skin bleaching is dangerous (92.4%) compared to NCE participants (59.5%). They also had greater awareness of its effects on increasing body weakness (63.0%) compared to NCE participants (54.4%). Similarly, undergraduate participants had a higher awareness (63.0%) of the increased risk of high blood pressure due to skin bleaching than NCE participants (58.2%). Regarding the awareness of skin bleaching increasing the risk of pregnancy complications and stillbirth, undergraduates had a greater percentage (68.4%) compared to NCE participants (50.6%). Additionally, awareness of the increased risk of developing skin cancer was higher among undergraduate participants (90.2%) than among NCE participants (70.8%). On the other hand, NCE participants showed greater awareness that skin bleaching causes lung damage (64.6%), leads to kidney damage or failure (54.4%), and increases the risk of memory loss (37.9%) compared to undergraduate participants, whose awareness levels were lower for lung damage (55.4%), kidney damage or failure (50.0%), and memory loss (22.8%). However, awareness of the risk of memory loss due to skin bleaching was generally low among both undergraduate and NCE participants.

Overall, the table suggests that undergraduate participants had a higher awareness (56.1%) of the health effects of skin bleaching compared to their NCE counterparts (50%).

Discussions

The lack of awareness regarding the dangers of skin bleaching contributes to its widespread practice (Omohwovo & Lucero-Prisno, 2023). Skin bleaching is a serious health concern, linked to an increased risk of skin cancer, skin discoloration, kidney and liver damage, and even depression (Adewoyin, 2020). Numerous studies have also highlighted its association with various other health complications. Previous research reported that up to 60% of individuals who engage in skin lightening experience at least one adverse effect (Alatawi,

2018). Despite these potential health risks, skin bleaching remains prevalent, particularly among African women (Adetoogun et al., 2023). In African countries, an estimated 25–80% of women regularly use skin-whitening products (Adetoogun et al., 2023).

This study revealed that the practice of skin bleaching decreases with age, a finding consistent with previous research (Okoro et al., 2022; Adewoyin, 2020; Chifamba & Murairwa, 2024). Okoro et al. (2022) found that skin bleaching is most prevalent among young adults, with up to 55.9% of individuals under 30 in tertiary institutions engaging in the practice. Similarly, Adewoyin (2020) reported that women aged 20 to 30 are the most active users of skin-lightening products. Likewise, Chifamba and Murairwa (2024) documented that 52% of females aged 31 to 45 also engage in skin lightening.

The findings of this study also indicate that most participants had a moderate awareness of the health effects of skin bleaching, with older female participants demonstrating a higher level of awareness. This suggests that age may be a significant predictor of awareness. Additionally, the study confirmed that the practice of skin bleaching decreases with age.

Similarly, the study found that, regardless of age, participants had a sufficient understanding of the health effects of skin bleaching for most risks, though awareness of its potential link to memory loss was limited or insufficient.

Additionally, the findings indicated that skin bleaching practices were generally minimal among participants but more prevalent among those specializing in the sciences. This may be attributed to the larger number of science students included in the sample. Likewise, participants from science-related fields demonstrated greater awareness of the health risks associated with skin bleaching compared to those in other disciplines, possibly due to the knowledge gained through their coursework.

The study also revealed that while skin bleaching was uncommon among participants overall, it was most prevalent among NCE students, likely due to their younger age compared to undergraduate students. Similarly, undergraduate participants exhibited a higher level of awareness about the health risks of skin bleaching than their NCE counterparts, which may be explained by the association between increasing age and greater awareness.

Conclusion

Female students in tertiary institutions in Jigawa State demonstrated moderate awareness of the health effects of skin bleaching, with minimal engagement in the practice. Older females exhibited greater awareness and lower involvement in skin bleaching. Participants specializing in science-related fields had higher awareness of the health risks associated with skin bleaching, as well as a higher prevalence of the practice. Meanwhile, NCE participants had lower awareness and engaged in skin bleaching more frequently than their undergraduate counterparts.

Recommendations

Based on the findings, the following recommendations are suggested:

- It is essential to integrate skin bleaching awareness into the general courses of tertiary institutions
- Programs such as seminars, workshops, and student-led initiatives should be implemented to educate younger students.

Acknowledgements

This research was funded by TETFund, Nigeria, under Research Grant No.: TETF/DR&D/CE/GUMEL/IBR/2024/VOL.I. The authors sincerely appreciate TETFund and Jigawa State College of Education, Gumel, Nigeria, for their unwavering support and contributions to the success of this study.

Reference

- Adetoogun, J. I., Aderinto, N., Ashimi, A.A., Akano, D.F., Ogundipe, T.O. & Fikayomi, P.B. (2023). Practice and motivations for skin bleaching among Africans. *International Journal of Surgery* 109:218–219
- Adewoyin, A. A. (2020). Skin Bleaching Among Female University Students. Walden University Dissertations and Doctoral Studies Collections
- Alatawi, Z. (2018). Self-use of Skin Bleaching Products among Female Attending Family Medicine Clinic at Prince Mansour Military Hospital, Taif 2017. *Journal of Women's Health Care*, 7:2
- Bakare, O. Q., Oluwole, E.O., Anyanwu-Iyah, E.H., Aworinde, O. G., & Lawal, E. O. (2023). Skin lightening: Knowledge, attitude, practices and the motivations for its use among the residents of Ikeja Local Government Area, Lagos. *Annals of Health Research*, 9(1). <https://doi.org/10.30442/ahr.0901-01-185>.
- Bilewu, O. O., Taiye, I., Adegboyegba, O., Sulayman, S. B., Alake, I. D., & Raimi, M. O. (2025). Illusions of Beauty: The Psychological Impacts and Prevalence of Skin Lightening Among Young Adults in Ilorin West, Nigeria. Retrieved from <https://www.researchgate.net/profile/Morufu-Raimi/publication/388555420>
- Chifamba, J., & Murairwa, T. (2024). Skin Bleaching, Practices and Associated Adverse Health Effects in Zimbabwe: A Canonical Correlational Study of Harare. *Journal of Pharmaceutical Research International*, 36(6)54–66. doi: 10.9734/jpri/2024/v36i67522.
- Juliano, C. C. A. (2022). Spreading of Dangerous Skin-Lightening Products as a Result of Colourism: A Review. *Applied Sciences*, 12(6), 3177. <https://doi.org/10.3390/app12063177>
- Lu, J., Chua, S. N., Kavanaugh, J. R., Prashar, J., Ndip-Agbor, E., Santoso, M., Jackson, D. A., Chakraborty, P., Raffoul, A., & Austin, S. B. (2024). Impact of Digital Advertising Policy on Harmful Product Promotion: Natural Language Processing Analysis of Skin-Lightening Ads. *American Journal of Preventive Medicine*, 67(6), 811–819. <https://doi.org/10.1016/j.amepre.2024.08.006>
- Okoro, O.E, Barminas, R., Olarinoye, G. ,Magaji, D., & Oseze, H. et al., (2022). Knowledge, Attitude and practice of Skin Bleaching among Adolescents in Keffi, North-central Nigeria *Nigerian Journal of Dermatology*, 12 (2), 37- 45.
- Omohwovo, E. J., & Lucero-Prisno, D. E. (2023). The dangers of skin bleaching in Nigeria: The need for strict safety regulations and consumer awareness. *Public Health Toxicology* 3(2):11. Retrieved from <https://doi.org/10.18332/pht/1683>
- Walkindermatology.com. (2021). Dangers of Skin Bleaching. Why you could be slowly Killing yourself with some products. Retrieved from <https://walkindermatology.com/dangers-of-skin-bleachi>