

Prevalence, Perceived Benefits and Health Implications Awareness of Skin Bleaching Practices among Adults in Delta State, Nigeria

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ABSTRACT

Regardless of the numerous side effects of skin bleaching, the phenomenon is assuming popularity among individuals across different regions and cultures in Nigeria. The study sought to assess the prevalence, perceived benefits and health implication awareness of skin bleaching practices among adults in Delta State, Nigeria. To achieve this objective, the theoretical framework was anchored on the assumptions of Health Belief Model (HBM), Social Learning Theory and Social Comparison Theory. The study adopted the descriptive research design and multi-stage sampling technique was employed to select study participants, covert observation and intercept were used to recruit 284 respondents from different settings, such as shopping malls, markets, workplaces, recreation parks and street corners in the selected locations, but 238 copies of questionnaire were distributed to respondents that gave verbal consent to participation, giving a response rate of 83.8 per cent, suitable for analysis. Ages of the respondents ranged from 18 to 49 years with a mean age of 31.2 SD± 7.3, the study revealed a 60.9 per cent prevalence rate of skin bleaching, the perceived benefits were grouped into enhanced attractiveness (40.8%), improved self-esteem (20.2%), social acceptance (22.3%) and professional advantages (4.6%) and commonly used skin bleaching products and brands were identified. The formulated hypotheses were tested using Chi-square and T-test statistical tools at 0.05 level of significance, the result ($X^2 = 36.76$, $df = 3$, $t\text{-value} = 7.815$, $P < .00001$) revealed a significant association between perceived benefits of skin bleaching and the prevalence of skin bleaching practices among adults in Delta State and ($t_{Stat} = 0$, $df = 3$, $t_c = 3.18$, $P = 1$) no significant difference in awareness of health implications associated with skin bleaching among adults engaging in the practice in Delta State. Implementation of regulations and guidelines, development of evidence-based interventions and awareness campaigns that promote safe and informed choices regarding skincare practices were recommended.

INTRODUCTION

Skin bleaching (SB) which otherwise could be called skin whitening, skin lightening or skin toning is the process of brightening the skin colour (complexion) by lowering the amount of melanin in the skin using substances, combinations or other physical procedures. Skin bleaching can be considered to be a process of permanent or temporary alteration of the outer layer of the skin, otherwise known as epidermis (Andrew, 2007). In a similar opinion, Street *et al.* (2014) and Olumide (2010) described skin bleaching as the cosmetic application of creams, lotions, gels, soaps and household chemicals to lighten the skin complexion, which may have resultant effects of temporary or life-threatening dangers. Adow (2017) and Darj *et al.* (2015) viewed skin bleaching as the deliberate lightening or whitening of the skin, most often done with the use of various agents and techniques or procedures. By implication, the application of substances or solutions that could remove the upper surface or top layer of the skin in an effort to lighten its colour constitute skin bleaching.

Skin bleaching is not a novel phenomenon in human society. According to Olumide (2006), skin bleaching has evolved with time, from routine maintenance and upkeep of the natural complexion to completely changing the colour of the skin to become lighter or fairer. Durosaro, Ajiboye and Oniye (2012) note that skin bleaching is a long-standing practice that transcends all demographic categories, including ages, ethnic and cultural groupings, as well as beliefs and ideologies.

Early in the 20th century, skin bleaching gained popularity in Europe and the United States of America (USA) most likely as a way of maintaining skin tone or for other sophisticated as-yet-unidentified motives. With the introduction of skin bleaching cosmetics in Philadelphia between 1950 and 1965, the practice gained more traction on a global scale across different regions and cultural contexts, particularly common among Africans and Asians (Durosaro, Ajiboye and Oniye, 2012). In Africa, the practice of skin bleaching varies, studies such as Egbi and Kasia (2021) and Amodu *et al.* (2018) reports high prevalence among Nigerians. Sagoe *et al.* (2019) reported that about 55.9 per cent of people who are below 30 years of age have actively engaged in the practice of skin bleaching. Yusuf *et al.* (2019) and Amodu *et al.* (2018) reported 48.1 per cent used bleaching cream among young female while Atadokpédé *et al.* (2015) reported 36.6 per cent use bleaching cream among adolescents.

Skin bleaching can be performed with a variety of techniques and products, Juliano (2022) notes that the cosmetics and pharmaceutical industries have developed various skin bleaching products and substances in recent years. Although, Dlova, *et al.* (2015) argued that some skin lightening products are medically formulated for the treatment of hyperpigmentation, Sagoe *et al.* (2019) notes that skin lightening products are mostly used for cosmetic objectives without the guidance, supervision or consultation of healthcare specialists and dermatologists.

Regardless of the technique used to carry out the practice. The individual and the reason for involving in the practice are important factors in determining the style or pattern of skin bleaching. It is amply demonstrated in literature that

the motivations behind skin bleaching differs; however, they frequently revolve around societal beauty standards. In the views of Islam and Hani (2021) and Darj *et al.* (2015), one of the main possible reasons for the use of skin bleaching agents (SBAs) is cultural and social perceptions that equate beauty with fairer skins. Similarly, Nyoni-Kachambwa *et al.* (2021), Dlova *et al.* (2014) and Kpanake, Muñoz Sastre and Mullet (2010) identified that social prejudice and cultural beliefs on lighter skin complexions as more attractive, more reflective of high social status and important for finding a marriage partner or job also motivate people especially female to practice skin bleaching. Many societies including Nigeria have the belief and perception that having lighter skin translates to beauty, success, and social acceptance.

The practice of skin bleaching is associated with various problems. These problems are associated with the potentially harmful ingredients such as hydroquinone, mercury and steroids found in most bleaching products and these harmful ingredients can lead to adverse effects on the skin and overall health of the users. Skin irritability, rashes, thinning skin, uneven pigmentation, increased ultra violet (UV) susceptibility, and long-term health issues are common side effects linked to skin bleaching. Despite the danger of these side effects, the practice of skin bleaching is nevertheless widespread in Nigeria. Therefore, this backdrop necessitates this sociological appraisal on the prevalence, perceived benefits and health implications awareness of skin bleaching practices among adults in Delta State, Nigeria.

Statement of the Problem

Skin bleaching practice varies from society to another and spans the years of human existence. Durosaro, Ajiboye and Oniye (2012) claimed that the earliest archaeological evidence of skin bleaching agents were discovered in Ancient Egypt around 4000 BC. According to Glenn (2008), Pitché, Kombaté and Tchangai-Walla (2005), Charles (2003) and Hall (1995), skin bleaching products are produced and marketed on a multi-billion dollar global scale, serving all regions of the world, especially the low- and middle-income countries (Punch, 2023).

Over the years the practice of skin bleaching has evolved. In the past, as evident in literature, the practice has always been domiciled among women but the involvement of men recently has shifted the trend. The common practice has been the use of various creams and lotions containing substances such as hydroquinone, mercury, and steroids (Okoro *et al.*, 2022); but, more recently, the use of kojic acid, arbutin and other novel agents have become increasingly popular (Ladizinski and Mistry, 2011). Okoro *et al.* (2022) and Kamagaju *et al.* (2016) reported that in Asia and most African nations, the use of intravenous or oral versions of glutathione and vitamin C is widespread, Okoro *et al.* (2022) furthered that various types of substances are sometimes used in conjunction with topical medications.

del Giudice and Yves (2002) reported that most African skin bleachers use various skin bleaching products like over-the-counter creams, and possibly hazardous local mixtures made from common household chemicals (such as automotive battery acid, bleach, laundry detergent, toothpaste), and making

them more vulnerable and chanced to a variety of adverse health outcomes. In Nigeria, the situation is exacerbated by the apparent unrestricted importation of substandard goods and products into the country and the rampant local production of cosmetics products.

Skin bleaching is an understudied phenomenon in public health (Sagoe *et al.*, 2019; Regencia *et al.*, 2023). Although, gathering information on the prevalence and statistics on skin bleaching practices can be challenging, some studies have made strides in establishing rates in different regions of the world. Prevalence of skin bleaching ranges from 24 per cent of women in Japan (Glenn, 2008), 27 percent in Senegal, 35 per cent in South Africa (Punch, 2023,), and 30 per cent of women in Ghana (Blay, 2010), 59 per cent in Togo (Kpanake, Muñoz Sastre and Mullet, 2010) to alarming rates in India where 60–65 per cent of women use skin bleaching methods (Glenn, 2008), and even higher prevalence in cities like Lagos, where 77 per cent of women have used skin bleaching products (Punch, 2023).

People are involved in skin bleaching for various reasons they perceived as benefits, nevertheless, these perceived benefits do not negate the potential disadvantages of the practice. Durosaro, Ajiboye and Oniye (2012) noted that the bleached skin becomes very light, fragile, tears easily and often vulnerable to infections. Also, excessive or prolonged use of bleaching creams could cause spots, patches, stretched marks and blemishes on the skin. These spots, patches, stretched marks and blemishes give the skin surface a rough and unattractive texture and appearance.

Over the past twenty years, skin bleaching has become one of the most cosmetics and beauty aspirations among Nigerians, despite the identified and the obvious numerous adverse side effects on the skin and physical health of most skin bleachers (Punch, 2023). The widespread bleaching practices and indiscriminate use of skin bleaching products in Nigeria is a phenomenon that raises social and public health concern. Although, there are several studies on skin bleaching in Nigeria, none has been reported in Delta State where the behaviour is becoming alarming due to the unfettered access to different substances that are readily available and obtainable from vendors of major cosmetics companies, medicine shops, cosmetics shops, local convenience stores, street traders, hawkers, freelancers and influencers over the internet without prescriptions.

It appears that a rising trend is the usage of various and numerous natural or herbal substances that are collectively referred to as “Organics”. These types of products are marketed as skin-lightening soaps (tablets, bars and body washes), bathing scrubs, skin-evening creams, skin lighteners, skin brighteners, skin whiteners, skin tones, fading creams, or fairness creams. This is a worrying trend, and many people who are bleaching their skins may not be conscious of the dangerous implications involved with their behaviour. Therefore, the aforementioned, require sociological investigation to assess the prevalence, perceived benefits and health implications awareness of skin bleaching practices among adults in Delta State, Nigeria.

Objectives of the Study

The main aim of the study was to assess the prevalence, perceived benefits and health implications awareness of skin bleaching practices among adults in Delta State, Nigeria. This, the study sought to achieve the following specific objectives:

- i. to determine the prevalence rate of skin bleaching practices among adults in the study area.
- ii. to assess the perceived benefits that necessitate skin bleaching among adults in the study area.
- iii. to identify the skin bleaching products commonly used by adults in the study area.
- iv. to ascertain the level of awareness regarding the potential health implications associated with skin bleaching among adults in the study area.

Research Questions

The following questions were posed to guide the study:

- i. what is the prevalence rate of skin bleaching practices among adults in different districts of Delta State?
- ii. what are the perceived benefits that necessitates skin bleaching among adults in Delta State?
- iii. what are the skin bleaching products commonly used by adults in Delta State?
- iv. to what extent are adults engaging in skin bleaching aware of the potential health implications associated with these practices?

Research Hypotheses

The following hypotheses were formulated:

- i. There is no significant association between perceived benefits of skin bleaching and the prevalence of skin bleaching practices among adults in Delta State.
- ii. There is no significant difference in awareness of health implications associated with skin bleaching among adults engaging in the practice in Delta State

Significance of the study

The significance of the study cannot be over emphasised considering the relevance of the study in the following ways:

Theoretically, the study would contribute to the existing body of knowledge on skin bleaching practices by providing data and insights specifically focused on the Nigerian context. It would enhance theoretical frameworks related to beauty standards, cultural influences, and the social construction of skin tone, adding depth to our understanding of the phenomenon.

The research explores the psychological aspects of skin bleaching, such as self-esteem, body image, and identity, and to offer theoretical insights into the complex interplay between societal norms, individual aspirations, and beauty ideals.

Practically, the findings of the study would inform the development of targeted interventions and educational programs aimed at raising awareness about the health implications associated with skin bleaching practices among adults in Nigeria. It would guide and help healthcare professionals and policymakers in Nigeria to develop public health initiatives and policy interventions to regulate the availability and sale of potentially harmful skin bleaching products in the market. The study would contribute to the

empowerment of individuals by providing information and resources to make informed decisions about skincare practices and challenge societal beauty standards.

Methodologically, the study utilizes a quantitative research approach, which allows for the collection of systematic data from a large sample size, providing a comprehensive overview of the prevalence, beliefs, and health implications associated with skin bleaching practices among adults in Nigeria. The research design includes appropriate sampling techniques, ensuring the representation of diverse socio-demographic groups and enhancing the generalizability of the findings. The study employs reliable and validated measurement tools to assess variables. The study would also provide intellectual thoughts on the issues raised and stimulate areas for new research.

LITERATURE REVIEW

Studies related to skin bleaching practices in different regions of the world have shown the prevalence of the behaviour. In Jamaica, (Charles, 2003; Robinson, 2011; Edmond, 2014; Harris 2014) reported skin bleaching to be a common practice with men and women actively participating in this practice. Dadzie and Petit (2009) reported that skin bleaching practice was more prevalent in Africa, with prevalence rates ranging between 26 and 67 per cent. Peltzer, Pengpid and James (2016) revealed 24.5 per cent prevalence rate of skin bleaching among university students in 26 countries across Africa, Asia, North America and South. Pelzer and Pegpid (2017) also revealed that among undergraduate university students in various universities within Southeast Asia 30 per cent of female students and 16.7 per cent of male students were using skin lightening products. Dadzie and Petit (2009) also reported prevalent use of skin bleaching products in Asian countries, while among Africans living in Europe ranged between 16 and 28 per cent.

In Nigeria, Ajose (2005) found that 92 per cent of female patients and 5 per cent of male patients who attended a skin clinic, were using skin creams containing high concentration of hydroquinone and other skin-depigmentation agents and had used these creams for a period of 6 months to over 20years. Adebajo (2002) revealed that among traders in major markets across the city Lagos 77 per cent had practised skin bleaching. In addition, the damage from bleaching products is often exacerbated when users mix bleaching products with household chemicals such as toothpaste, laundry bleach, detergents and even automotive battery acid, a very common practice in some settings, to try to enhance their effect (Lewis *et al.*, 2010; Ajose, 2005; Pitché *et al.*, 2005 and Ramsay *et al.*, 2003).

Skin-lightening products are increasing in popularity and demand by women and sometimes men who wish to improve their social status through lighter complexions. In some cultures, having lighter skin is associated with beauty and enhanced social and economic standing. Various medical, social and economic factors motivate people to lighten their skin. A study conducted among 318 Jordan women revealed that the foremost reasons for using skin lightening products were fondness for a lighter skin tone and treatment of hyperpigmentation (Hamed, Tayyem and Nimer, 2010).

In a 2016 study conducted among females in Abidjan, Ivory Coast, 58 per cent of users of skin depigmenting agents made the voluntary decision to do so, 38 per cent were motivated by friends, while 5 per cent were motivated by spousal requests (Kourouma *et al.*, 2016). Similarly, a study conducted in Comè, Benin, among women of reproductive age showed that the motivation for voluntary skin lightening included the drive to appear more beautiful (60.1%), to improve self-esteem (34%), the quest to find a spouse (6%), to cure acne (35%) and to cure hyperpigmentation (11%) (Glèlè-Ahanhanzo *et al.*, 2019). In Sudan a study by Ahmed and Saltus (2015) on body-image perception and beauty practices by Sudanese women found that of the 84 per cent of the women who were interviewed, reported to have practiced skin bleaching amongst other beauty practices, in order to improve their economic standing and to increase social esteem, thereby increasing their employment and marriage prospects. In this study it was noted that skin bleaching and other beauty practices were linked to social identity and cultural belonging and had a great impact on women's sense of self. Therefore, in Sudan beauty practices that enhance a woman's looks are culturally and socially encouraged, thus putting immense pressure on women to engage in this practice.

Studies such as Olumide *et al.* (2008), Ly *et al.* (2007), Ajose (2005) and Mahé *et al.* (2003) have examined the potential dangers of mis- and prolonged use of bleaching agents. Ajose (2005) and Mahé *et al.* (2003) reported that skin bleaching results to dermatologic consequences such as skin lesions, epidermal atrophy (thinning of the skin), exogenous ochronosis (bluish black tissue discoloration), eczema, bacterial and fungal infections, warts, body odour, acne, and sun burn damage. Ajose (2005) further reported that skin bleaching can lead to fragile skin, poor wound healing, scarring and the need for corrective surgery. It can also cause skin inflammation (dermatitis) and contagious skin disease (scabies).

Other more serious health implications as reported by Lewis *et al.* (2010), Petit, Cohen-Ludmann, Clevenbergh, Bergmann and Dubertret (2006), Ajose (2005), Mahé, Ly and Perret, 2005 and Pitché *et al.* (2005) include hypertension, diabetes, infertility, leukaemia (blood cancer), skin cancer, foetal toxicity (foetal poisoning), immunosuppression (suppression of a healthy immune response), renal and liver impairment and failure, Cushing's syndrome (hormone disorder), insomnia, memory loss, tremors, speech and hearing impairment. These harms extend from the acute or chronic long-term exposure to the often hazardous chemical agents that are present in bleaching products. Similarly, Suzuki, Yagami and Matsunaga (2012), de Souza (2008), Ly *et al.* (2007), Toombs (2007), Petit *et al.* (2006), Ajose (2005), Mahé *et al.* (2005), Mahé *et al.* (2003), Adebajo, 2002), and del Giudice and Yves, (2002) reported cutaneous conditions such as acne, burns, and dermatitis associated with skin bleaching. Additionally, Suzuki *et al.* (2012), de Souza (2008), Ly *et al.* (2007), Petit *et al.* (2006), Ajose (2005) and Mahé *et al.* (2003), commonly found skin bleaching to be associated with cutaneous infections caused by bacteria, fungus, and parasites such as dermatophyte infections, skin lesions, and scabies.

Tse (2010), de Souza (2008), Ly *et al.* (2007), Petit *et al.* (2006), Mahé *et al.* (2003), Adebajo (2002), del Giudice and Yves (2002) and Phillips, Isaacson and Carman (1986) also reported skin pigmentation abnormalities such as hypo- and hyperpigmentation, and exogenous ochronosis associated with skin bleaching. de Souza (2008), Ajose (2005) and Mahé *et al.*, 2003) also reported that skin bleaching was associated with epidermal atrophy or thinning and fragility of the skin. Ajose (2005) found that Nigerians who used skin bleaching products over extended periods (6 month to 20 years) had dermatologic consequences including fragile skin, for example extensive “striae and telangiectasia”

Hamed, Tayyem and Nimer (2010) revealed that 33 per cent of users of skin lightening products in Jordan, did not know the adverse effects. On the other hand, Pelzer and Pegpid (2017) a cross-sectional survey among undergraduate university students in various Southeast Asian universities showed that 79.1 per cent of the students were aware of the adverse effects of skin-bleaching products on their skin.

Although, some studies have been conducted on skin bleaching in Nigeria, a discernible knowledge gap exists within the scope of skin bleaching practices in Delta State. Therefore, this study sought to address this gap in literature.

Theoretical Framework

The theoretical framework of this study was hinged on the assumptions of three theories, namely: Health Belief Model (HBM); Social Learning Theory; and Social Comparison Theory.

Health Belief Model was developed by Rosenstock (1974) to explain and predict health-related behaviours based on the beliefs and perceptions of an individual or people. HBM emphasizes the role of perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action in shaping individuals' decisions. The theory suggests that people are more likely to engage in health-related actions if they perceive themselves as susceptible to a health problem, perceive the problem as severe, believe that taking action will reduce the risk, and perceive the benefits of taking action as outweighing the costs.

Bandura (1977) developed the Social Learning Theory to explain how individuals learn and adopt behaviour. The theory emphasizes the role of observation, modelling, reinforcement, and vicarious learning in the acquisition and adoption of behaviours. Individuals learn by observing others, imitating their actions whether in person or through media influences and the consequences and rewards associated with those behaviours shape their decision to adopt or reject them.

In 1954 the Social Comparison Theory was developed by Leon Festinger to explain how people determine and evaluate their own social and personal worth by comparing themselves to others. The theory suggests that people engage in social comparisons to evaluate their abilities, opinions, and attributes, and this process has implications for their self-concept and shape their behaviours. Upward and downward social comparisons play a role, with

individuals comparing themselves to others who are perceived as superior or inferior.

In the context of this study, the HBM provides insights into how individuals' awareness and perception of the health implications associated with skin bleaching, evaluate the severity of those implications, weigh the benefits and barriers, respond to cues; and how these influenced their decisions to engage in skin bleaching. The Social Learning Theory provides insight into how individuals observe and model skin bleaching practices and the role of health, social and environmental factors in shaping their decisions to adopt the skin bleaching practices. The Social Comparison Theory provides valuable insights into how individuals perceive their own skin tone in comparison to societal beauty standards and how these comparisons influenced their decisions to engage in skin bleaching. Therefore, the study synthesized and adopted the assumptions of these theories to provide a theoretical framework for explaining and understanding the phenomenon under discourse.

METHODOLOGY

The study adopted the descriptive survey design. The study area was Delta state, Nigeria. Delta state is located in the South-South geopolitical zone of Nigeria and bordered on the east by Anambra State, on the west by the Bight of Benin, on the north by Edo State and on the south by Bayelsa State. The State is divided into twenty-five (25) Local Government Areas with Asaba as the capital and seat of government. Other major towns include; Warri, Agbor, Ughelli, Sapele, Effurun, Abraka, Oleh, Orerokpe, Kwale, Patani etc.

The population of the study comprises all males and females (18 -49 years) residing in Delta State at the time of the study. This formed the target population from which the representative sample was drawn for the study. The sample size was statistically determined using the Roa (1985) formula cited in Nanjundeswaraswamy and Divakar (2021).

$$n = \frac{4 * p * q}{[L^2]}$$

In this study, the formula was substituted as: P = 77% (0.77) approximate prevalence rate obtained from (Punch, 2023, Amodu *et al.*, 2018 and Adebajo (2002), L = +/-5% (0.05) permissible error estimate/ desired precision, q = 1 - p (0.23); and n = sample size. Therefore, the calculated sample size was 284

Multi-Stage sampling technique was adopted for the study. The procedure began with the cluster sampling technique, Delta State was divided into three (3) Senatorial Districts namely: Delta North Senatorial District composed of nine Local Government Areas, namely: Aniocha North, Aniocha South, Ika North-East, Ika South, Ndokwa East, Ndokwa West, Oshimili North, Oshimili South and Ukwuani; Delta Central Senatorial District composed of eight Local Government Areas, namely: Ethiope East, Ethiope West, Okpe, Sapele, Udu, Ughelli North, Ughelli South and Uvwie, and Delta South Senatorial District composed of eight Local Government Areas, namely: Bomadi, Burutu, Isoko North, Isoko South, Patani, Warri North, Warri South, Warri South-West.

In the second stage, simple random and purposive sampling technique were adopted. The simple random sampling technique was used to select two local government area from each of the three (3) senatorial districts of the state through balloting. The selected Local Government Areas include: Ukwuani and Ika South LGAs for Delta North senatorial district; Ughelli North and Uvwie for Delta Central senatorial district and Isoko North and Patani for Delta South Senatorial district. Purposive sampling technique was used to select the headquarters of the selected LGAs and random sampling technique was applied in selecting one other community from each of the selected LGAs and this gave rise to twelve (12) communities.

In the third stage, convenience sampling technique was used to select 284 respondents from different settings, such as shopping malls, markets, workplaces, recreation parks and street corners in the selected locations. The selected respondents were recruited through covert observation and intercept. The research team covertly observed, identified and intercepted individuals with stretch marks, acne blemish, ochronosis, nails or knuckles discolouration or patchy blue-black skin pigmentation and verbal consent was obtained as inclusion criteria. Intercepted Individuals who refused to give consent were excluded from the study because participation was voluntary.

The sources of data were highly diversified; both primary and secondary data were considered useful for the study. The study made use of questionnaire as the instrument of data collection and questions in the questionnaire were divided into two parts that concentrated on the respondents' socio-demographic characteristics and the study's specific objectives.

The content validity of the questionnaire was established by giving out the draft version of the questionnaire to some experts in the area of Medical Sociology, Public Health Education, Biochemistry and Pharmacy for content vetting. The reliability of the instruments was established by pre-testing the questionnaire among 18 respondents selected from the study area for a pilot survey. To establish the reliability coefficient of the questionnaire, the data collected from the pilot survey was subjected to statistical tests using the Pearson Product Moment Correlation Coefficient at a 0.05 level of significance and the result gives a coefficient of 0.71.

The fieldwork was conducted in July, 2023 and the study adhered to ethical standards, ensuring informed consent, anonymity and confidentiality of data. A one-day virtual training session on research ethical issues bothering on privacy and confidentiality, consent seeking, how to relate with respondents before and after the study, administration and management of questionnaire was organized for five Research Assistants (RAs). After completion of the data collection, the retrieved questionnaires were checked for completeness, sorted and entered into a spreadsheet (Microsoft Excel). Data were presented descriptively in tables, and chi-square and repeated-measures t-Test statistical tools were employed to test the formulated hypotheses at 0.05 level of significance and corresponding degrees of freedom, using Microsoft Excel Analysis Toolpak.

RESEARCH RESULT AND DISCUSSION

Table 1: Socio-demographic Characteristics of the Respondents

(N = 238)		Response rate = 88.3 %	
Characteristics	Frequency	Percentage (%)	
Sex			
Male	73	30.7	
Female	165	69.3	
Age			
19 – 23	26	10.9	
24 – 28	73	30.7	
29 – 33	52	21.8	
34 – 38	33	13.9	
39 – 43	29	12.2	
44 – 48	18	7.6	
49+	7	2.9	
Mean Age = 31.2		SD± 7.3	
Marital Status			
Single	142	59.7	
Married	79	33.2	
Divorced/Separated	13	5.5	
Widowed	4	1.7	
Religion			
Christianity	221	92.9	
Islam	0	0.0	
Traditional Religion	11	4.6	
Others	0	0.0	
Educational Level			
No formal Education	3	1.3	
Primary	16	6.7	
Secondary	132	55.5	
Tertiary	87	36.6	
Employment Status			
Unemployed	83	34.9	
Self-employed	96	40.3	
Employed	59	24.8	
Income Per Month			
< ₦ 10,000	3	1.3	
₦ 10,000 – ₦ 19,000	113	47.5	
₦ 20,000 - ₦ 29,000	32	13.4	
₦ 30,000 >	90	37.8	

Source: Fieldwork (2023).

Table 1 indicates that Two Hundred and Thirty-Eight (238) copies were valid and suitable for presentation and analysis, giving a response rate of 83.8% based on the calculated sample size.

The socio-demographic characteristics of the respondents as presented in the table indicates that 30.7 % (n=73) were male, while 69.3 % (n=165) were female. Ages ranged from 19-49+ years with a mean age of 30.6 (SD±7.8). Majority of the respondents were age 24-28 with 30.7 % (n=73) while 49+ years constituted 2.9 % (n= 7). As indicated in the table, Majority of the respondents 59.7% (n=142) were single, 33.2% (n= 79) were married, 1.7% (n= 4) were Widowed while 5.5 % (n= 13) were divorced/ separated. On religious affiliation, the table indicates that

95.4% (n= 227) of the respondents were Christians, 4.6% (n= 11) practiced African Traditional Religion, while Islam and other forms of religion had no response.

The table indicates that majority of the respondents were literate, as 55.5% (n=132) have completed secondary education, 36.6% (n=87) have attained tertiary level of education, 6.7% (n= 16) had completed primary education while 1.3% (n= 3) were with no formal education at all. Majority of the respondents 40.3% (n= 96) were self-employed, 24.8% (n= 59) were employed while 34.9% (n= 92) were unemployed. Most of the respondents 47.5% (n= 113) reported a monthly income in the range of ₦10,000-₦ 19,000 while 1.3% (n= 3) reported a monthly income in the range that was less than ₦10,000.

Table 2: Respondents Responses for Questions 9, 11, 16, 22 and 30 of the questionnaire

Question No.		Yes	No	Total
9	Have you ever checked the ingredient list of the products you are using/have used?	92	146	238
		38.7	61.3	100
11	Have you ever used skin bleaching products or engaged in skin bleaching practices?	197	41	238
		82.8	17.2	100
12	Are you currently using skin bleaching agents?	145	52	197
		73.6	26.4	100
16	Have you ever combined bleaching creams/products?	169	28	197
		85.8	14.2	100
22	Have you ever used organic or natural skin care products as an alternative to conventional skin products?	211	27	238
		88.7	11.3	100
30	Have you experienced any side effects or health issues related to skin bleaching practices?	203	35	238
		85.3	14.7	100

Source: Fieldwork (2023).

Table 2 show the frequency and percentage distribution of how the sampled respondents responded to Questions 9, 11, 16, 22 and 30 of the administered questionnaire. The table indicates that majority of the respondents 61.3% (n=146) have never checked the ingredient list of skin products, 82.8% (n=197) have used skin bleaching products or engaged in some form of skin bleaching practices, 88.7% (n=211) have used organic or natural skin care products, 73.6% (n=145) and 85.8% (n=169) of the 197 respondents who have ever used skin bleaching products reported current usage of these products/agents and have ever combined bleaching creams/products respectively, while 85.3% (n=203) of the respondents reported to have experienced some form of side effects or health issues related to skin bleaching practices.

Table 3: Respondents Responses for Question 21 of the questionnaire

	N = 197 (This excludes those who have never used skin bleaching products or engaged in skin bleaching practices)	Enhanced attractiveness	Improved self-esteem	Social acceptance	Professional advantages
Question 21	How do you perceive the benefits of skin bleaching practices?	97	48	53	11
		40.8	20.2	22.3	4.6

	* Multiple responses were allowed				
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Source: Fieldwork (2023).

Table 2 show the frequency and percentage distribution of how the sampled respondents responded to Question 21 of the administered questionnaire. The table indicates that 40.8% (n=97) of the 197 respondents who have ever used skin bleaching products, reported “enhanced attractiveness” as the benefit of skin bleaching, 22.3% (n=53) reported “social acceptance” as the benefit of skin bleaching, 20.2% (n=48) reported “improved self-esteem” as the benefit of skin bleaching, while 4.6% (n=11) reported “professional advantages” as the benefit of skin bleaching.

Table 4: Respondents Responses for Questions 25, 26 and 29 of the questionnaire

	N = 238	Very confident	Somewhat confident	Not very confident	Not confident at all
Question 25	How confident are you in identifying potentially bleaching ingredients in skin products?	48	43	95	52
		20.2	18.1	39.9	21.8
	N = 238	Very familiar	Somewhat familiar	Not very familiar	Not familiar at all
Question 26	How familiar are you with the potential health implications associated with the use of certain ingredients in skincare products?	57	88	56	37
		23.9	37.0	23.5	15.5
	N = 238	Very aware	Somewhat aware	Not very aware	Not aware at all
Question 29	How aware are you of the potential health implications associated with skin bleaching practices?	71	52	97	18
		29.8	21.8	40.8	7.6

Source: Fieldwork (2023).

Table 4 show the frequency and percentage distribution of how the sampled respondents responded to Questions 25, 26 and 29 of the administered questionnaire. The table indicates that among the respondents 39.9% (n=95) were not “very confident” in identifying potentially bleaching ingredients in skin products, 37% (n=88) were “somewhat familiar” with the potential health implications associated with the use of certain ingredients in skincare products, 40.8% (n=97) were “not very aware” of the potential health implications associated with skin bleaching practices.

Test of Hypothesis One

H₀: There is no significant association between perceived benefits of skin bleaching and the prevalence of skin bleaching practices among adults in Delta State.

Table 5: Summary of Chi-square test analysis for hypothesis one

	Enhanced Attractiveness	Improved self-esteem	Social Acceptance	Professional advantages
Observed Frequency				
<i>*Currently engaged in skin bleaching</i>	87	42	26	9
<i>***Discontinued skin bleaching</i>	10	6	27	2
Expected Frequency				
*	76.11	37.67	41.59	8.63
***	20.89	10.33	11.41	2.37
$X^2=36.76$ $df = 3$ $Critical\ value = 7.815$ $P-value < .00001$ $Alpha = .05$				

Source: Fieldwork (2023).

Table 4 shows the calculated χ^2 value 36.76 and P -value $< .00001$. The summary of the Chi-square test indicates that at 3 degree of freedom (df) of 0.05 level of significance the table value of $X^2 = 7.815$. The general acceptable decision rule for the application of the chi-square χ^2 test states: accept the null hypothesis if the calculated χ^2 value is less than the table value and reject the null hypothesis if the calculated χ^2 value is greater than the table value. Therefore, since the calculated χ^2 value 36.76 is greater than the χ^2 table value 7.815. The null hypothesis which states that there is no significant association between perceived benefits of skin bleaching and the prevalence of skin bleaching practices among adults in Delta State, was rejected and the alternative hypothesis was accepted.

Test of Hypothesis Two

H_0 : There is no significant difference in awareness of health implications associated with skin bleaching among adults engaging in the practice in Delta State.

Table 6: Summary of t-Test analysis for hypothesis two

t-Test: Paired Two Sample for Means

	Question No. 26	Question No. 29
Mean	59.5	59.5
Variance	445.67	1105.67
Observations	4	4
Pearson Correlation	0.27	
Hypothesized Mean Difference	0	
Df	3	
t Stat	0	
P(T<=t) one-tail	0.5	
t Critical one-tail	2.35	
P(T<=t) two-tail	1	
t Critical two-tail	3.18	
$t\ Stat\ value = 0$ $df = 3$ $t_c\ table\ value = 3.18$ $P-value = 1$ $Alpha = .05$		

Source: Fieldwork (2023). (Microsoft Excel Analysis Toolpak computation)

Table 5 shows the summary of the t-Test indicates that the calculated t Stat value = 0 and P -value = 1, the t_c table value = 3.18 at 3 degree of freedom (df) of 0.05 level of significance

The general acceptable decision rule for the application of the t-Test test states: accept the null hypothesis if the calculated t Stat value is less than the t_c table value and reject the null hypothesis if the calculated t Stat value is greater than the t_c table value. Therefore, since the calculated t Stat value 0 is lesser than the t_c table value 3.18. The null hypothesis which states that there is no significant difference in awareness of health implications associated with skin bleaching among adults engaging in the practice in Delta State, was accepted and the alternative hypothesis was rejected.

DISCUSSION

Objective 1: To determine the prevalence of skin bleaching practices among adults in Delta State.

Findings from the study shows that 82.8% of the respondents have ever used skin bleaching products or engaged in skin bleaching practices and 73.6% of the 197 respondents who reported to have ever used skin bleaching products or engaged in skin bleaching practices were currently using skin bleaching products or engaged in skin bleaching practices as at the time the study was conducted (Table 2). Therefore, among the 238 respondent 60.9% was assumed as the prevalence rate of skin bleaching practices among adults in Delta State and the prevalence of skin bleaching varied slightly across the senatorial districts

The prevalence rate (60.9%) obtained in this study compared with the prevalence rates in previous studies, is higher than (40.9%) Egbi and Kasia (2021), 38% Adebimpe et al. (2020), Ayandele and Popoola (2019), Amodu, 2018, 64.9% Ofili, Eze and Onunu (2006) and lower than (89.3%) Okoro *et al.* (2022), (77.3%) Adebajo (2002).

The findings of the study revealed that most of the respondents 42.6 % have engaged in skin for a period that is less than a year, 8.6% have engaged in skin bleaching for More than 6 years, while 35.5% and 13.2% have engaged in skin bleaching for 1-3 years and 4-6 years respectively. This finding corroborates Badulla, Alshakka and Ibrahim (2022), Amodu et al. (2018) and Alghamdi (2010) on the duration of skin bleaching practices among skin bleachers.

Objective 2: To investigate the perceived benefits that necessitates skin bleaching among adults in Delta State.

The responses on perceived benefits of skin bleaching from respondents who have engaged in bleaching practices were grouped into categories for easy presentation and analysis. The perceived benefits were enhanced attractiveness (40.8%), improved self-esteem (20.2%), social acceptance (22.3%) and Professional advantages (4.6%) (Table 3). Results of Chi-Square test revealed a significant association between perceived benefits of skin bleaching and the prevalence of skin bleaching practices among adults in Delta State, since the calculated χ^2 value 36.76 is greater than the table value 7.815.

This finding is a clear cut indication that the motivation to engage in skin bleaching by adults in the study area is reinforced by a number of perceived benefits therefore substantiating the assertions of Alotaibi *et al.* (2022), Egbi and Kasia (2021) Ayandele and Popoola (2019), (Dlova et al., 2014), Durosaro, Ajiboye and Oniye (2012).

Objective 3: To identify the skin bleaching products commonly used by adults in Delta State

Findings from the study shows that 85.8% of the respondents who have/were engaged in skin bleaching practices have combined bleaching products and methods. It was also revealed that 88.7% of the respondents have used organic or natural skin care products as an alternative to conventional skin products as at the time the study was conducted (Table 2). This is a clear indication that the patronage and use of organic or natural skin care products and locally mixed skincare products is high in Delta State.

It was also revealed that price (55.8%), availability (31%), recommendations from others (28.9%), brand reputation (24.9%) and ingredient safety (10.7%) were factors that influenced the respondents' choice for specific skin bleaching products or methods and the respondents monthly expenditure on skin bleaching products ranged in (37.8%) ₦ 1,000 - ₦ 5,000, (22.3%) less than ₦1,000, (12.2%) ₦ 6,000 - ₦ 10,000 and (10.5%) more than ₦ 10,000.

For easy presentation and analysis, a list of common skin bleaching products and specific brands that have been available in the Nigerian market over time, was used to group the names of skincare products (creams, soaps, organics and others) provided by the respondents into categories. Thereafter, beauty spas and cosmetics shops were consulted for the most current information on the listed products and brands. Findings show that Fair and White, Caro White, Body White, Peau Claire, Lemon Fresh, Top Gel, Carotone, Visila, Skin Light, Bio Claire, Sivo Claire, White Secret, Perfect White, Miss Caroline, G&G Fairness Cream, Tempovate, Dermovate were some the brands that offers a range of skin bleaching products (soaps, creams, lotions, gels, tubes, extracts, scrubs, etc.) that have been prevalent in Nigeria.

Objective 4: To assess the level of awareness regarding the potential health implications associated with skin bleaching among adults in Delta State.

Findings from the study show that most of the respondents (37%) were somewhat familiar, 23.9% were very familiar, 23.5% were not very familiar while 15.5% were not familiar at all with the potential health implications associated with the use of certain ingredients in skincare products. In identifying potentially bleaching ingredients in skin products, most of the respondents 39.9% were Not very confident, 20.2% were very confident, 18.1% were somewhat confident, while 21.8% were not confident at all (Table 4). The findings therefore indicates that although most of the respondents (60.9%) were familiar with the potential health implications associated with the use of certain ingredients in skincare products majority of them (61.7%) cannot identify potential bleaching ingredients in skin products. This is in line with Alotaibi *et al.* (2022),

The findings also indicates that among the respondents 29.8% were Very aware, 21.8% were Somewhat aware, (40.8%) were Not very aware, while 7.6% were Not aware at all of the potential health implications associated with skin bleaching practices. The high level (51.6%) of awareness of the potential health implications associated with skin bleaching practices among the respondents in this study might be connected with their level of education and it corroborates Bakare *et al.* (2023), Egbi and Kasia (2021) and Pelzer and Pegpid (2017).

Most of the respondents 85.1% who have/were engaged in skin bleaching practices have experienced related side effects or health issues (Table 2). This finding is similar to Badulla, Alshakka and Ibrahim (2022), Egbi and Kasia (2021) which show that most skin bleachers still use these products even after knowing or experiencing the related side-effects.

The T-test Results revealed that there is no significant difference in awareness of health implications associated with skin bleaching among adults engaging in the practice in Delta State, since the calculated t Stat value 0 is lesser than the t_c table value 3.18.

CONCLUSION

The study was a sociological inquiry to assess the prevalence, perceived benefits and health implications awareness of skin bleaching practices among adults in Delta State, Nigeria. In line with the set out objectives, the study revealed that Prevalence rate 60.9% of skin bleaching among adults in Delta State was high.

The commonly used skin bleaching products and brands were identified; perceived benefits for engaging in skin bleaching and implications awareness among adults in Delta State were explored. A significant proportion of skin bleachers in Delta State combined different products and methods. This is indeed alarming in view of the possible health hazards and implications associated with the ingredients used in the formulation of these skin bleaching products.

The study revealed a statistical significant association between perceived benefits of skin bleaching and the prevalence of skin bleaching practices among adults in Delta State and no significant difference in awareness of health implications associated with skin bleaching among adults engaging in the practice in Delta State. The high prevalence of skin bleaching practices has serious negative health cost implications for skin bleachers and the society at large.

RECOMMENDATIONS

Based on the findings of the study, it was recommended that:

1. The National Agency for Food and Drug Administration and Control (NAFDAC) and the Pharmaceutical Society of Nigeria (PSN) should develop strategic frameworks aimed at the effective implementation of regulatory policies towards the importation and local production of skincare and cosmetics containing extreme ingredients.
2. The Ministry of Health and the Advertising Regulators should regulate the advertisement of skincare products by ensuring that brand marketers and distributors enumerate the content ingredients and associated side effects on the packaging labels and public advertisements of the products.
3. Public Health Practitioners, National Orientation Agency (NOA) and Non-Governmental Organizations (NGOs) should develop public health awareness campaigns on the dangers of skin bleaching and associated health implications.
4. Healthcare professionals, policymakers, community and Non-Governmental Organizations (NGOs) should collaborate and create campaigns to promote positive body image, encourage self-acceptance. This would foster a more inclusive and accepting society, where diverse skin complexions are celebrated and valued.

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