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ORIGINAL RESEARCH

Skin Lightening: Knowledge, Attitude, Practices and the Motivations for its Use Among the Residents of Ikeja Local Government Area, Lagos

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Abstract

Background: Skin lightening has become one of the strongest desires of Nigerian women and men, and its practice keeps increasing despite its numerous side effects.
Objective: To determine the knowledge, attitude, and practices of skin lightening and the motivations for its use among the residents of Ikeja Local Government Area (LGA), Lagos State.
Methods: A community-based, descriptive, cross-sectional study was conducted among 296 residents of Ikeja LGA, Lagos state, using a multistage sampling technique and an electronic, self-administered questionnaire in the Google form format.
Results: The mean age of the respondents was 25.92±6.15 years, with 64.0% being females, 75.0% being single, and 75.2% had at least, a tertiary education. Most (98%) respondents demonstrated a high awareness of skin lightening; 66.9% had good knowledge, while 72% had a positive attitude. About half (52.7%) of the respondents had used various skin-lightening products, while most (71.8%) claimed the main reason for their use was to treat skin disorders. Age, gender and educational level were significantly associated with the use of skin-lightening products (p = 0.001).
Conclusion: There was relatively good knowledge and a positive attitude towards skin lightening but a fair practice. The commonest reason for using skin-lightening products was for self-treatment of skin disorders. Healthcare providers should provide extensive public enlightenment on the adverse effects of skin lightening.

Keywords: Skin lightening, Skin bleaching, Skin toning, Skin cancer.

Introduction

Skin lightening has become a way of life for many Nigerians, and the users of skin lightening products are widespread. Findings showed that skin lightening had become one of the strongest cosmetic desires among Nigerian women and a few men. [1] Today, the obsession for skin lightening can be traced to the fact that some

Nigerians believe that being light-skinned is a sign of beauty and reflects higher social status. [1] Skin lightening, also known as skin bleaching, skin toning, or skin whitening, refers to the practice of applying topical chemical substances to the skin in an attempt to lighten the skin or provide an even skin colour by reducing the melanin concentrations in the skin. A World Health Organization (WHO) Report revealed that Nigeria, with a 77% use rate) leads other countries such as Togo (with a 59% use rate), South Africa (with a 35% use rate) and Senegal (with a 27% use rate). [2]

Skin-lightening products work by reducing the amount of melanin in the skin. [3] Commonly used skin-lightening agents include steroids such as clobetasol, benzene derivatives such as hydroquinone, and metals such as mercury. Others include kojic acid, azelaic acid, glutathione, and ascorbic acid (which increases glutathione levels), all of which adversely affect the body. These adverse effects range from skin irritations and itching to discolouration. [3,4] Recently, there has been a consideration for using herbal extracts or natural skin-lightening agents. These are believed to be less expensive, less toxic, or toxins-free. These biological agents include honey, cow's milk, turmeric, gram flour, milk of tender coconut, liquorice, mint, orange and other citrus fruits, cucumber, almond, papaya, tomato, potato, strawberry, blueberry, blackberry, milk thistle and carrot. Hydroquinone-based products are the most frequently used, while mercury-based agents are the least used. Mercury-containing whitening agents have been scientifically proven to cause chronic kidney disease and neurological disorders, including psychiatric disorders.[4]

Numerous adverse effects are associated with skin lightening; these include exogenous ochronosis, bacterial and fungal infections, eczema, dermatitis, scabies, warts, acne, sun damage, body odour, nail dyschromia, infertility, induced Cushing's syndrome, nephropathy, leukaemia, and other cancers. [5-7] Numerous reports of morbidity and mortality following years of skin bleaching with hydroquinone, corticosteroids and mercury–containing beauty products have been reported. [8,9] Using skin-lightening products may be associated with severe and fatal complications because they are applied on a large body surface area, especially in a warm, tropical environment, which promotes percutaneous absorption of the chemicals.[10]

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. [11] The desire to lighten dark skin can be traced back to colonial mentality and also as a result of low self-esteem.[12] A study conducted in Jordan revealed that 33% of users of skin-lightening products did not know the adverse effects. [13] On the other hand, a cross-sectional survey among undergraduate university students in various Southeast Asian universities showed that most (79.1%) students were aware of the adverse effects of skin-bleaching products on their skin.[14] Skin lightening is a widespread practice globally, gradually becoming a norm among people of all genders and ages. A study conducted among 19,624 students from 27 universities in 26 countries across Africa, Asia, North America and South America revealed that 24.5% of the respondents had applied skin-lightening products within the last year before the study. [15] Another cross-sectional study conducted among undergraduate university students in various universities within Southeast Asia also revealed that 30.0% of female students and 16.7% of male students had applied skin-lightening products over the last year before the study. [14] An epidemiological study conducted in Lagos, Nigeria, among 450 traders in major

markets across the city revealed that 77.3% of the respondents had practised skin bleaching. [16]

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. [11] In a 2016 study conducted among females in Abidjan, Ivory coast, 57.5% of users of skin de-pigmenting agents made the voluntary decision to do so, 37.5% were motivated by friends, while 5% were motivated by spousal requests.[17] 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 (34.1%), the quest to find a spouse (5.9%), to cure acne (35.4%) and to cure hyperpigmentation (11.2%).[7]

The adverse effects of skin lightening are numerous and diverse. A study had revealed that the adverse effects included black spots (52.5%), stretch marks (20%), exogenous ochronosis (20%), dyschromia (17.5%) and folliculitis (10%). [17] Another study conducted in Comè, Benin, showed that the majority (84.2%) of the respondents had experienced at least one adverse effect of skin lightening, which included acne (32.3%), dyschromia (14.1%), stretch marks (13.4%), hyperpigmentation (9.1%), dermatophyte infection (2.2%) and cutaneous atrophy (1.2%). [7] The adverse effects of skin lightening become more prominent with increasing age and prolonged usage and tend to burden the health system.[6] The practice of skin lightening keeps growing despite its numerous adverse effects. Therefore, this study sought to determine the knowledge, attitude, practices and motivations for the use of skin lightening among the residents of Ikeja LGA, Lagos, southwest Nigeria.

Methods

Description of Study Area

The study was conducted in Lagos State, southwest Nigeria. Lagos State, the cosmopolitan and economic hub of Nigeria, had a population of 17 552 940 according to the 2006 population census. The state has 20 Local Government Areas (LGAs) and 37 Local Council Development Areas (LCDAs). Ikeja LGA, the political and economic capital of the state, has two LCDAs (Onigbongbo and Ojodu) with an estimated population of 717 614 comprising 371 782 males and 345 832 females. Ikeja LGA has a total land area of 49.92 km^2 and a population density of 7,466 persons /km^2 with ten political wards. [18]

Study Population

The study populations were males and females in the reproductive age group (15 – 49 years) residing in Ikeja LGA, Lagos.

Inclusion Criteria

People who resided in Ikeja LGA for more than six months and consented to participate in the study. Individuals who declined consent were excluded from the study.

Study Design

The study was community-based, descriptive, and cross-sectional in design.

Sample Size Determination

The minimum sample size was determined using the Kish and Leslie formula for a cross-sectional study: $n = Z^2pd/d^2$,

Where p was the prevalence of use of skin-lightening products (= 77.3% or 0.773) in a previous study.[16] At a 95% confidence level, Z = 1.96, q = 1 - p and d = error margin of 5%, leading to a minimum sample size of 269. Using a 10% non-response rate, the minimum sample size was increased to 295 to improve precision.

Sampling Technique

A multistage sampling technique was used to select the respondents.

Stage 1: Ikeja LGA was selected using a simple random sampling technique by balloting.

Stage 2: Two political wards were selected out of 10, using a simple random sampling technique (Anifowose/Ikeja and Opebi/Allen) by cluster random sampling technique.

Stage 3: Using the list of streets in each ward, five streets were selected by systematic random sampling technique from each ward. Oduyemi, Independent, Akinremi, Balogun and Abeokuta streets were selected from Anifowose/Ikeja ward, while Moshood Abiola, Toyin, Sholanke, Osho and Joseph streets were selected from Opebi/Allen ward.

Stage 4: Five houses were selected on each street using a simple random sampling technique by balloting.

Stage 5: Two households were selected in each house using a simple random sampling technique by balloting until the sample size was reached.

Data Collection Tool and Techniques

The questionnaire was derived from a review of several studies. [1,4,8,14] An electronic self-administered Google form questionnaire was used for data collection. Possessing a smartphone or other electronic devices was not required to be eligible for the study, as the research assistants used their electronic devices to access and administer the questionnaire. Face validity was conducted on the questionnaire, which consisted of a short introduction explaining the reasons for conducting the study and five sections. Section A dwelt on the socio-demographic characteristics of the respondents. Sections B, C, D and E took data on knowledge, attitude, skin-lightening practices and the motivations for using skin-lightening products, respectively.

Scoring System

Knowledge scoring: A scoring system was made to measure the level of knowledge about skin lightening. Five questions were used to assess knowledge. One mark was awarded for the correct answer and zero for the incorrect answer. The total score was converted to a percentage. The scores were graded as good or poor. Scores of 50% and less defined poor knowledge, while scores above 50% defined good knowledge.

Attitude scoring: A 5-point Likert scale assessed attitude towards skin lightening. Respondents could strongly agree, agree, disagree, strongly disagree or be indifferent to each of the five statements in this sub-section. Each statement was scored accordingly, with 5 as the highest possible score and 1 as the least possible score. The maximum possible score was 25, while the minimum score was 5. The mid-point of 12.5 serves as a cut-off score for grading attitude as positive or negative. The scores were converted to percentages: 50% or less defined negative attitude, while scores above 50% defined positive attitude.

Practice scoring: Five questions were used to assess practice: one mark was awarded for correct answers, and zero for incorrect answers. The total score was converted to a percentage, and 50% or less scores defined poor practice, while scores above 50% defined good practice.

Data analysis and management

The data were cleaned, collated and analysed using the Statistical Package for Social Sciences (SPSS) software version 22. Descriptive statistics generated frequency tables, means and standard deviations. Inferential statistics were carried out, and the Chi-Squared test was used to test for the association between categorical variables. The level of statistical significance was set at $p < 0.05$.

Ethical Considerations

Ethical approval for the study was obtained from the Health and Research Ethics Committee of Lagos State University Teaching Hospital, Ikeja (LREC/06/10/1705). The respondents were

informed of the reasons and nature of the study, assured of their right to withdraw at any point of the research and not coerced or incentivised to participate in the study. The respondents were also assured of utmost confidentiality.

Results

Two hundred and ninety-six questionnaires were administered and completed, giving a 100% response rate. Most (198; 66.9%) of the respondents were aged 21–30, with a mean age of 25.92±6.15 years. One hundred and ninety-two (64.2%) were female, and 222 (75%) were single. Most (222; 75%) of the respondents had tertiary education, and 70 (36.4%) were self-employed (Table I). A majority (98.0%) had heard about skin lightening, while 63.1% claimed their sources of information were salespersons. Most (88.3%) knew carrot extract as a type of skin-lightening agent, while 93.4% were aware of the side effects of skin-lightening. Close to two-thirds (65.5%) and another 59.3% identified skin cancer and stretch marks as adverse effects of skin lightening. Less than a third (27.9%) identified kidney failure as an adverse effect of skin lightening (Table II).

Most (66.9%) of the respondents had a good knowledge of skin lightening. Less than half (147; 49.2%) strongly agreed that skin lightening was the use of products to brighten dark areas of the skin, while 140 (47.3%) agreed that skin lightening could be used to achieve an overall lighter complexion. Only (35.5%) agreed that skin lightening was the same as skin bleaching. More than two-thirds (72.0%) had a positive attitude towards skin lightening (Table III).

The motivation for the use of skin-lightening agents in most (71.8%) of the respondents was the need to treat acne (Figure 1). A little above half (52.7%) had used various skin-lightening products, while most (71.8%) claimed the main reason for the use was to treat skin disorders and acne. Age, gender and educational level were significantly associated with the use of skin-lightening products ($p = 0.001$). Respondents who were females, older than 31 years, and those with primary school education were more likely to use skin-lightening products ($p = 0.001$) (Table IV).

Discussion

This study was conducted to determine the knowledge, attitude and practices of skin lightening and the motivations for use among the residents of Ikeja LGA, Lagos State. About two-thirds of the respondents were aged 21-30 years. This study revealed that almost all the respondents had heard about skin lightening, while only about two-thirds had a good knowledge of skin lightening. The finding is similar to a study conducted in Abidjan, Ivory Coast, where just about two-thirds were aware of the complications associated with skin bleaching. [17] A similar survey in Jordan revealed that about two-thirds of users of skin-lightening products knew its adverse effects. [11]

The present study revealed that most respondents knew about using carrot extract as a skin-lightening agent, and a large proportion (93.4%) were aware of the adverse effects of skin-lightening agents. Similarly, a study conducted in Southeast Asia revealed that most (79%) of the respondents were aware of the adverse effects of skin-bleaching products. [14] The similarity in the findings of the two studies might be due to the intense efforts in awareness creation for the adverse effects of skin-lightening agents.

Table I: Socio-demographics characteristics of the respondents

Socio-demographic characteristics	*Frequency (n = 296)*	*Percentage*
Age group (years)		
≤20	43	14.5
21 – 30	198	66.9
31 – 40	45	15.2
> 40	10	3.4
Gender		
Female	192	64.2
Male	104	35.1
Highest Level of Education		
No formal education	1	0.3
Primary	29	9.8
Secondary	44	14.9
Tertiary	222	75.0
Marital Status		
Single	222	75.0
Married	59	19.9
Divorced	12	4.1
Separated	2	0.7
Widowed	1	0.3
Currently Employed		
Yes	192	64.9
No	104	35.1
Occupation	(n=192)	
House maker	9	4.7
Students	51	26.6
Government workers	62	32.3
Self-employed	70	36.4

This study also showed that most (82.4%) respondents did not believe lighter-skinned individuals were more beautiful and successful. This contrasts a study conducted in Abidjan, Ivory Coast, where 80% of the respondents thought that light-skinned persons were more attractive. [17] This contrast in findings could be due to the increasing acceptance of darker-skinned individuals in advertisements and entertainment programs on the mass media. Further, a little above half (52.7%) of the respondents in the present study used cosmetic products to lighten their skin. This finding is similar to a survey conducted in Jordan, where 60.7% of the respondents had used skin-lightening products.[11] In addition, the present study revealed that 64.2% of females and 35.1% of males had used skin-lightening products. This finding is similar to a study conducted in Southeast Asia, where 30.0% of females and 16.7% of males had used skin-lightening products. [14] Although both genders are known to use skin-lightening products, the higher rate recorded in the present study might be attributed to the innately darker complexion of the respondents compared to that of Asians.

Two-thirds of the respondents in the present study applied the skin-lightening products on their whole body, similar to the findings in a Senegalese survey, where 92.0% did the same.[19] The lower rate in the present study might be

attributed to the increasing cost of procuring these skin-lightening products, hence, the tendency to apply the products on chosen body parts, especially the face.

Table II: Distribution of respondents according to their knowledge about skin lightening

Knowledge	*Frequency (n=296)*	*Percentage*
Ever heard of skin lightening		
Yes	290	98.0
No	6	2.0
Aware of side effects of skin lightening		
Yes	271	93.4
No	19	6.6
***Source of information**		
Television	97	33.4
Radio	25	8.6
Salesperson	183	63.1
Internet	107	36.9
Doctor	42	14.5
Magazines	75	25.9
Products marketing	88	30.3
***Types of skin-lightening agents**		
Corticosteroids	96	33.1
Mercury	79	27.2
Glutathione	52	17.9
Hydroquinone	188	64.8
Kojic acid	41	14.1
Ascorbic acid	112	38.6
Turmeric	26	9.0
Cow's milk	109	37.6
Carrot extract	256	88.3
Papaya extract	122	42.1

***Multiple responses**

The motivation for using skin-lightening products in the present study was to treat skin disorders, similar to a Ghanaian study, where the products were mainly used to treat skin disorders. [15]

Socio-demographic characteristics such as age, gender and educational level were significantly associated with the use of skin-lightening products. The frequency of use increased with age, just as more females used skin-lightening products compared to males. It is plausible that females adopted these products to enhance their beauty to be more attractive to males. Respondents with primary education used skin-lightening products more than those with higher educational qualifications, presumably to the poor knowledge of the adverse effects of the products because of low education.

Limitations of the study

Two out of ten wards in the LGA were studied, which might not accurately represent the population within Ikeja LGA.

Conclusion

There was a relatively good level of knowledge and positive attitude towards skin lightening among Ikeja LGA, Lagos residents. Unfortunately, this did not reflect in good practices, as about half of them used skin-lightening products. Age, gender and educational level had significant associations with the practice of skin lightening. The rising prevalence of skin lightening has implications for individuals, society and the health system. Policies to regulate and control skin-lightening products' sales and use should be promulgated and implemented. In addition, public enlightenment on the adverse effects of skin lightening should be intensified.

Table III: Distribution of respondents according to their attitude towards skin lightening (n = 296)

Attitude towards skin lightening	*SA* *Freq (%)*	*A* *Freq (%)*	*N* *Freq (%)*	*D* *Freq (%)*	*SD* *Freq (%)*
Skin lightening was the use of products to brighten dark areas of the skin	147 (49.7)	119 (40.2)	15 (5.1)	9 (3.0)	6 (2.0)
Skin lightening can be used to achieve an overall lighter complexion	111 (37.5)	140 (47.3)	33 (11.1)	9 (3.0)	3 (1.0)
Skin lightening reduced the prominence of skin discolouration	66 (22.3)	88 (29.7)	91 (30.7)	44 (14.9)	7 (2.4)
Skin lightening was the same as skin toning	51 (17.2)	95 (32.1)	77 (26.0)	59 (19.9)	14 (4.7)
Skin lightening was the same as skin bleaching	77 (26.0)	105 (35.5)	52 (17.6)	52 (17.6)	10 (3.4)

(SA - Strongly Agree, A -Agree, N - Neutral, D - Disagree, SD - Strongly Disagree); Freq – Frequency.

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Table IV: Association between skin lightening and socio-demographic characteristics of the respondents (n = 140)

Socio-demographic Characteristics	*Skin lightening*					
	No Freq (%)	*Yes Freq (%)*	*Total Freq (%)*	*X^2*	*Df*	*p-value*
Age group (years)				17.328	3	0.001
Less than 20	14 (70.0)	6 (30.0)	20 (100.0)			
20 – 25	77 (45.6)	92 (54.4)	169 (100.0)			
26 – 31	34 (63.0)	20 (37.0)	54 (100.0)			
> 31	15 (28.3)	38 (71.7)	53 (100.0)			
Gender				28.289	2	0.001
Female	69 (35.9)	123 (64.1)	192 (100.0)			
Male	71 (68.3)	33 (31.7)	104 (100.0)			
Highest level of education				19.492	4	0.001
None	1 (100.0)	0 (0.0)	1 (100.0)			
Primary	3 (10.3)	26 (89.7)	29 (100.0)			
Secondary	22 (50.0)	22 (50.0)	44 (100.0)			
Tertiary	94 (50.0)	94 (50.0)	188 (100.0)			
Post-graduate	20 (58.8)	14 (41.2)	24 (100.0)			

Freq – Frequency; X2 – Chi-Squared; df – Degree of Freedom; p - level of significance

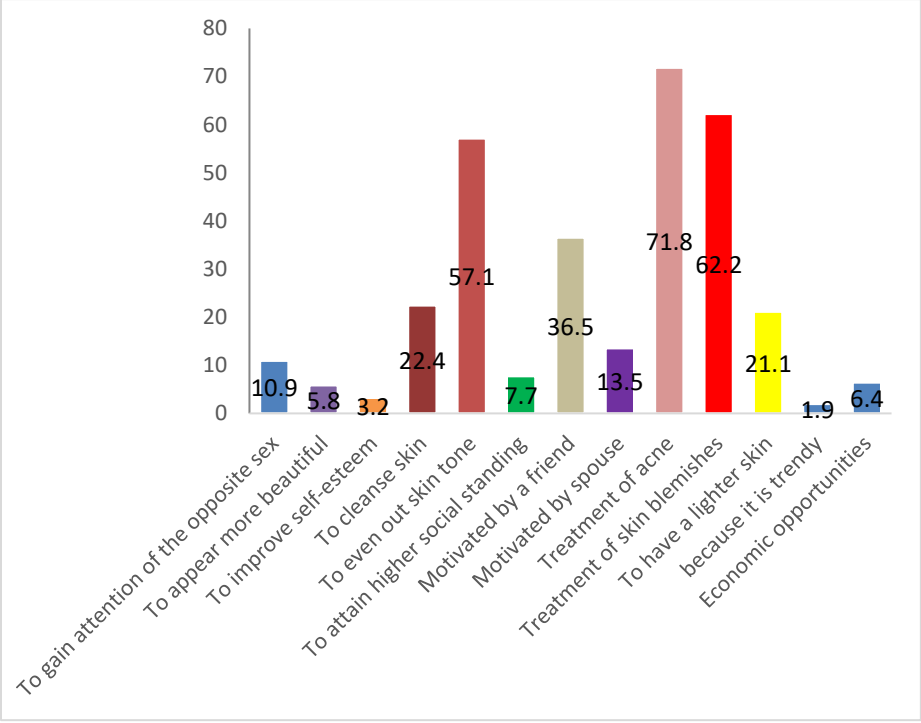

Figure 1: Motivations for skin lightening among the respondents

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