



RESEARCH ARTICLE

Practice, Perception and Problems Associated with Skin Bleaching among Female Secondary School Teenagers in Yaoundé-Cameroon: A Preliminary Study

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Abstract

Introduction: Youths, particularly teenagers in Africa are the target of the growing cosmetics market especially skin-lightening cosmetic products (SLCPs). With an increasing demand, the African adolescent in urban areas is susceptible to engage in skin bleaching (SB). However, little is known about the perceptions of youths on this practice. The objective of our study was to determine the practice of SB and evaluate the perception of users of SLCPs on SB and its complications.

Methods: This cross-sectional study was conducted on female secondary school students in Yaoundé. Informed consent and assent were obtained. A self-administered pre-tested questionnaire was used for data collection. Data analyses used Chi-squared test, $p < 0.05$.

Results: One hundred and fifty-eight participants out of the 600 (26.33%) practised SB. For the 158 participants enrolled for analysis, mean age was 16.3 years (range: 12 -19; SD=1.48) and 33% (52/158) practised voluntary SB. Of these, 52 participants, 42.3% used skin lightening soap plus skin-lightening lotion twice daily. The most frequently used bleaching products were mercury-containing bathing soap: 33 participants (20.9%) and hydroquinone body lotion: 68 participants (43%). Concerning the perceptions, 50% of participants perceived the practice of SB as rendering the skin more beautiful, 34.2% as fashionable and 5.8% as a means of sexual attraction while 55.3% considered the practice as dangerous. With regards to problems associated with SB, participant declarations were: skin infections (65.8%), skin cancer (64.6%), skin irritation (62%), acne (27.2%), stretch marks (20.9%), kidney disease (5.1%) and diabetes (1.9%).

Conclusion: A quarter of female secondary school teenagers in Yaoundé practice SB as a means of beautifying their skin, being fashionable or a means of seduction. Their erroneous perceptions of problems associated with this practice (systemic complications), call for an urgent need for sensitization of the student population on the health dangers of SB in our context.

Keywords: Skin bleaching, Adolescent, Secondary school, Sub-Saharan Africa, Lightening ingredient

Introduction

The cosmetics market generates considerable profits and most of the production comes from the United States of America (USA) and Europe, to meet the growing demand in Africa [1, 2]. In Cameroon, the consumption of cosmetic products was estimated at about 174 million euros in 2012 [3]. Skin bleaching (SB), is the use of natural or synthetic products to reduce the physiological skin tone, and is a frequent and widespread practice in the USA, Asia [4, 5] and Africa. In the latter, it is commonly known as: “tcha-tcho” in Mali, “maquillage” in Congo, “ndjassang” in Cameroon.

The practice of skin bleaching employs several active principles, singly or in combination. Apart from hydroquinone, corticosteroids and mercury salts, with well-known undesirable effects that have led to restricted use in most countries, a new

line of skin-lightening products has been introduced in the sub-Saharan African market [6]. The latter consists of alpha-hydroxy acids (AHA) such as citric, malic, glycolic and mandelic acids, naturally present in several fruits. They are exploited for their exfoliating effects and their undesirable effects are yet to be studied in our context.

The proportion of people practising voluntary depigmentation varies from 25 to 67% depending on the studies [7, 8]. It was previously documented in particularly in adult women aged 20 to 40 years, but it is now experienced by much younger women [9]. Indeed, in 2008, Adebayo identified the African

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teenager residing in urban areas, as the most susceptible to start skin bleaching [10]. Given that the adolescent period is characterised by the construction of personality, we deemed it necessary to determine the practice, perception and problems associated with skin bleaching among female secondary school teenagers in Yaoundé.

Participants, Materials and Methods

This was a cross-sectional study conducted from January 1st 2015 to April 31st 2015 in 4 secondary schools (three public and one private) in the capital city of Yaoundé, Cameroon. The schools were selected conveniently so as to have a broad representation of the socio-demographic strata of the city of Yaoundé. Two of the schools were English-speaking while the other 2 were French-speaking.

We consecutively included female students from form four to the upper-sixth class, practising skin bleaching voluntarily or unconsciously, whose parents had given written informed consent and who gave assent to participate in the study. We focused on female participants because our earlier work in Yaoundé showed that the phenomenon of skin bleaching is more widespread in females than males [11]. Anyone using bathing soap and/or body lotion containing an active skin bleaching or lightening ingredient, was considered as practising skin bleaching. A pre-tested and self-administered questionnaire was used to collect socio-demographic data (age, school grade level) and information on the practice, perception and problems related to SB. The name and utilisation of the bleaching products as well as perceptions and respondent declarations about voluntary or non-voluntary bleaching and its complications were recorded on the questionnaire.

For those respondents who did not declare a voluntary use of bleaching agents, but were found to use them ignorantly, they were considered as non-voluntary users. Active ingredients for each registered cosmetic product were obtained from the local cosmetic markets or from a Google search (using the proprietary names of the product). In case of a combination of active ingredients in a product, the ingredient with the highest concentration was recorded for that product. Statistical analysis was performed using IBM SPSS Statistics 20. Descriptive analysis was used to describe the socio-demographic information and SB practice. Categorical data were summarized in frequency tables. The Chi-squared test was performed to determine the difference of mean variables between groups. The level of significance was set at $p < 0.05$.

An ethical clearance was obtained from the Institutional Ethics and Research Committee of the Faculty of Medicine and Biomedical Sciences of Yaoundé I and administrative authorisations for research were obtained from the Regional Delegation for Secondary Education for the Centre Region, and from the respective administrations of the secondary schools.

Results

In all, 624 questionnaires were distributed for a larger survey

on cosmetics use and 600 were returned, completely filled (response rate of 96.2%). Out of these, 158 were included in the analysis for this paper, giving a percentage of 26.33% of teenage school girls who practised skin bleaching in the four schools, 33% of them doing so voluntarily.

The age range of our study participants was 12 to 19 years with a mean age of 16.3 (± 1.48) years. The most represented age group was the 16-19 year group. The students in Form five constituted the majority class in our sample 31.6% (Table 1).

The most commonly used bleaching agents were: mercury derivatives in soaps (20.9%) and hydroquinone in body lotions (43%) (Table 2). Regarding the use of bleaching cosmetics, they were mostly applied on a daily basis (67.7%). Among the 52 participants who practised skin bleaching voluntarily, they applied the products twice daily in 42.3% of cases. Furthermore, participants used cleansing skin lotions or lightening soap alone in proportions of 57% and 13%, respectively, whereas 30% used the combination of soap and lightening lotion (Figure 1).

Regarding the perception of skin bleaching, 50% of the 158 students were convinced that it was a practice to beautify the skin, while 34.2% associated it with being fashionable and 5.8% thought it was a practice aimed at seducing men (Figure 2).

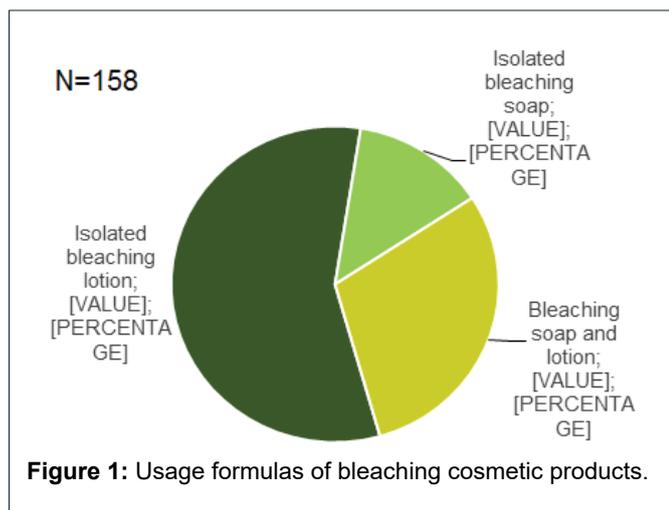
The proportion of the respondents who perceived a problem or danger in the practice of skin bleaching was variable

Sociodemographic characteristics N=158		n	%
Age	12-14 years	15	9.5
	15 years	34	21.5
	16 years	42	26.6
	17 years	37	23.4
	18-19 years	30	19
Class	Lower-sixth	41	25.9
	Form five	50	31.6
	Upper-sixth	41	25.9
	Form four	26	16.5
Total		158	100

Table 1: Sociodemographic characteristics of students using skin bleaching products.

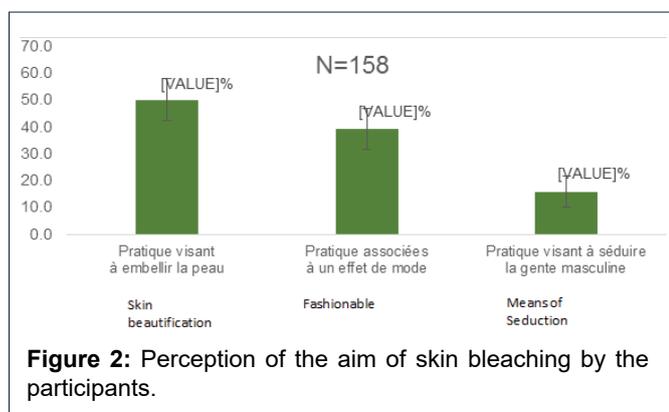
Bleaching Agents Found in Lotions	n	%
Hydroquinone	68	43
Fruit acids	62	39.2
Mercury derivatives	7	4.4
Steroids	2	1.3
Bleaching Agents Found in Soaps		
Hydroquinone	21	13.3
Mercury derivatives	33	20.9
Fruit acids	13	8.2
Steroids	2	1.3
Total	158	100

Table 2: Bleaching agents in cosmetic products.



Complications N=158	n	%
Skin infections	104	65.8
Skin cancer	102	64.6
Skin irritation dermatitis	98	62
Pigment disorders (face)	92	58.2
Acne	43	27.2
Pruritus	39	24.7
Stretch marks	33	20.9
Hypertrichosis (face)	20	12.7
Hypertension	8	5.1
Renal disease	8	5.1
Diabetes	3	1.9

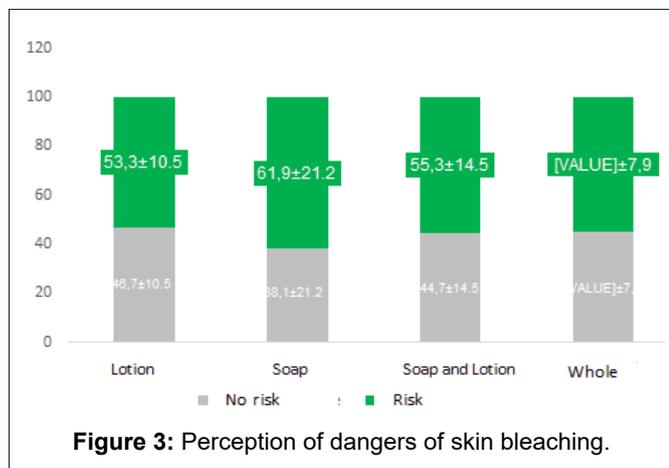
Table 3: Pathologies perceived as complications of skin bleaching.



Discussion

I. Practice of skin bleaching in teenage school girls

Our study showed that 26.33% of female teenagers in some secondary schools in Yaoundé practise skin bleaching as early as from age 13 years. A similar school-based study conducted in Benin by Atadokpédé et al. [9], found a higher proportion (36.6%) among students of both sexes [9]. However, in the study in Benin, the youngest participant was 18 years; although it is not clear at what age the practice was initiated. Nevertheless, the fact that skin bleaching is started very early in teenagers constitutes a serious threat to the health of these adolescents. In our study, we focused on female students given that the practice of skin bleaching is more pronounced among female Cameroonians than males as opposed to what is observed in Africans from other nations [11, 12].



The data from our study showed that 33% reported voluntary use of skin bleaching products, with 42.3% of the girls using them in combination (soap and lotion) and frequently (twice-daily), suggesting a strong determination to engage in skin bleaching. Our findings suggest that although the practice occupies an important place in the habits of these teenagers, the phenomenon is not yet as established as in Benin three-quarters of female students are reported to be applying skin-lightening cosmetic products twice daily and in 70% of cases, parents are said to provide for the purchase of the cosmetic products [9]. The role of parents was not investigated in our current study.

depending on the product used: body lotion (53.3%) and toilet soap (61.9%) in isolation, lotion and toilet soap combined (55.3%) (Figure 3). However, these differences were not statistically significant ($P=0.51$). The respondents highly perceived the following pathologies as related to the use of skin bleaching products: local skin infections (65.8%), skin cancer (64.6%) and skin irritation (62%). Local side-effects of bleaching agents such as acne and stretch marks were less often mentioned (27.2% and 20.9%, respectively) while systemic complications of skin bleaching such as kidney disease and diabetes were rarely mentioned (5.1% and 1.9% respectively) (Table 3).

The rampant use of hydroquinone lotions in our participants is similar to a study conducted in West Africa [7, 13]. This may be explained by the fact that this bleaching agent is cheap and therefore more accessible to those committed to the practice of skin bleaching. A study in Malaysia reported that female university students selected bleaching cosmetic products as a function of the cost with respect to their monthly income [14].

One in five of our respondents declared using mercury-containing cosmetic products especially in the form of antiseptic soaps. Although the commercialization and use of

these products have been banned in several countries because of the risk of toxicity, they are still available on the African market in the form of “antiseptic soaps” [15]. This raises the question of the effectiveness of quality control and regulatory services in our environment.

The place of fruit acids (AHA) in cosmetic products listed by our participants was not negligible, either as soaps (8.2%) or body lotion (39.2%). These cosmetic products are generally “star” products, known to renovate the skin and thus lighten the skin tone by ridding it of dead cells. These exfoliating agents are used in high concentration (20-70%) in dermatocosmetology as an adjuvant treatment in the management of pathologies such as acne, pigment disorders and melasma [16, 17]. In standard soaps and body lotions, the concentrations of AHA vary from 10 to 20%. Although AHA are natural compounds, caution is recommended when using them because of their undesirable effects such as oedema, burns, pruritus and dry skin. Furthermore, their role in worsening photo-induced skin damage is currently becoming more evident, with consequent occurrence of carcinomatous lesions [18]. The advent of AHA therefore imposes an additional challenge in the clinical surveillance of complications of skin bleaching and quality control of cosmetics marketed in our environment.

II. Perception of skin bleaching in teenage school girls

Our survey showed that for female school teenagers practising voluntary or involuntary use of skin-lightening products, they either aimed at obtaining a “beautiful skin”, or desired to be fashionable or intended to attract the attention of men. In 2009, a Togolese study reported that participants routinely bleached the skin to be attractive, fashionable and because they liked “their fair skin” [19]. This preference for a lighter complexion is not exclusive to negroids, as the same phenomenon is observed among Asians [5]. Similar results were reported by Rusmadi et al. [14] in Malaysia among university students [14]. The intention of “seduction” by skin bleachers that appeared last in our study was contrary to the findings of a Nigerian study conducted in schools in Ibadan with 600 students aged 11 to 14 years [20, 21]. The study reported that 85.3% of the female students used skin lightening products primarily to attract the attention of men and secondly to marry the desired partner [22]. This difference can be explained by the higher prevalence of the practice in Nigeria, where it stands out as a “religion” [10, 22]. It would be interesting to investigate the real influence of the male population on this practice in Cameroon.

The issues of “beauty” and “fashion” and “sexuality or sexual attraction” are too complex and interrelated in a manner that is out of the scope of this paper. Nevertheless, in this era of globalization and the exposure of young girls to certain media that streamline “beauty models” through commercials and television series, we are witnessing a harmonization the concept of “beauty”. In this context, what does not fit into this paradigm may become an object of stigmatisation, thus the growing phenomenon of skin bleaching. The new and growing field of behavioural neuroscience may in future contribute to a better understanding of these patterns [23].

III. Problems perceived to be associated with skin bleaching

In our sample, more than half of the participants perceived a danger in the practice of skin bleaching. This danger was reflected in their imaginations by pathologies confined to the skin, especially infections (65.8%), skin irritation (62%) and cancer (64.6%). While they expect the practice of skin bleaching to result to a large extent in an enhancement of the skin, they are afraid of unattractive and unpleasant complications [22].

Our teenagers less often associated skin bleaching with acne (27.2%) and stretch marks (20.9%). This perception could be explained by the fact that acne and stretch marks are common pathologies of adolescence. However, their concern about the risk of skin cancer was unexpected because it is rarely described in people involved in this practice [20, 21]. This could also be the expression of the general fear of having cancer. On the other hand, insidious and serious systemic complications of skin bleaching especially with steroid-containing products such as kidney disease and diabetes were rarely mentioned by our respondents. These complications constitute serious public health problems and are the mainstay of programmes to combat the practice of skin bleaching. One possible approach would be to include lessons on skin care in the academic programme of our schools. The success of such an approach could indirectly influence the behaviour of parents through the changed behaviour of their children.

Conclusion

A quarter of female teenagers in secondary schools in Yaoundé regularly practice SB as a means of beautifying their skin, being fashionable or seduction. This places SB high on the list of health problems amongst this age group in Yaoundé. Their perceptions of problems that could result from this practice are erroneous especially for the systemic complications. There is an urgent need for sensitization of students on the health dangers of skin bleaching. Further studies including the chemical analysis of cosmetics especially those locally produced would contribute to a better understanding of the practice and its related problems.

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Author contribution

Conception: ACZKB and AKN; Design: ACZKB, PIC, MRH and AKN; Data collection: MRH, NG, BA and FMA; Data analysis and interpretation: ACZKB, BA, FMA, MMK and AKN; Writing of first draft: ACZKB, MRH, MMK and AKN; Revision and acceptance of final version: All authors.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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