



HEALTH RISK ASSOCIATED WITH CONVENTIONAL SKIN LIGHTENERS AND FEMALE CIVIL SERVANTS' COMPREHENSION OF SKIN LIGHTENING INGREDIENT INFORMATION IN ANAMBRA STATE

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ABSTRACT: *Skin-lightening products have been in use for many years to lighten skin colour. However, these products contain chemicals that can alter the skin's chemical structure and inhibit the production of melanin. Therefore, users of these products need to understand the ingredients and the potential health risks associated with their use. A study was conducted to assess the health risks associated with conventional skin-lightening products and to determine how well female civil servants understood the ingredient information on the product packaging. The study aimed to determine how many women read the ingredient information on these products, how many understood the information, and how many were aware of the health risks associated with their use. The study was conducted as a survey of 348 civil servants from 21 Ministries in Anambra State using an online sample size calculator. The study was anchored on the Individual Difference theory and selective perception media effect. The survey found that a significant number of female civil servants in Anambra state do not read the ingredient information on skin-lightening products. It was also discovered that the majority of female civil servants in Anambra State do not comprehend the product ingredient information because of its technical nature. Despite this, the study found that most women were aware of the health risks associated with the use of these products. The study concluded that female civil servants in Anambra State were aware of the ingredient information composition on skin-lightening products, but did not read it, making it difficult for them to understand and interpret the information. However, most of these women were still aware of the health risks associated with the use of skin-lightening products but still used them because of the benefits they claimed to have experienced. The study recommended that manufacturers and brand designers should simplify the technical language used to describe the product ingredients to make it easier for users to understand. Additionally, regulatory agencies like NAFDAC and SON should ensure that manufacturers produce skin products that do not contain harmful chemicals like hydroquinone, corticosteroids, and mercury. If these chemicals are used, users should be informed of the negative side effects.*

KEYWORDS: Health risk, Conventional skin lightener, Ingredient information, Civil servants.



INTRODUCTION

The health risks associated with conventional skin lighteners are a result of the presence of chemical compositions such as hydroquinone, kojic acid, and metals in such products (Osobamiro, Kukoy & Awolesi, 2023). Since the dawn of civilization, cosmetic products have been considered a part of routine body care (Ullah, Noreen & Rehman, 2017). Therefore, direct contact with these materials and human skin causes the absorption of these materials into the human body which can lead to skeletal muscle damage, cancer cell activation, reproductive deficiencies, brain impairment and kidney impairment (Soussi, Gargouri & Feki, 2018).

Although the European Union, United States, and Nigeria have banned the inclusion of these substances in lotions (Iwegbue, Basse, Tesi, Onyeloni, Obi & Martincigh, 2015), yet many manufacturers still add them as part of the constituents of creams because of their effectiveness in skin-whitening (Sani, Gaya & Abubakar, 2016). These substances are highly hazardous to human skin, as they cause severe damage to the human skin, particularly if they stay longer (Arshad, Mehmood, Shah & Abbasi, 2020). Zainy (2017) asserts that there are concerns regarding the presence of harmful chemicals in these products. Hence, the assessment of different chemicals in personal care products has become a public health issue since the use of these products could represent a possible source of human exposure to a variety of chemicals (Soussi, Gargouri & Feki, 2018).

Unfortunately, despite the debilitating consequences of these chemicals, many African women still indulge in the use of products produced with these chemicals. They believe light-skinned women are more attractive, and beautiful and effectively achieve their goals in life than dark-skinned ones (Khan, Ullah, Khan, Zafar, Khan, Mustaqeem, Shah, Wu & Ji, 2021). Alghamdi (2010) as cited in Osobamiro, Kukoy and Awolesi (2023) also postulates that people associate bleaching with higher social status and economic mobility.

Many of these female civil servants are educated, as they can read, analyze, understand and evaluate the risks and benefits of their decisions (Aramide, Olatunji & Ayandele, 2019). The fact remains that the compositions of these harmful contaminants are not fully or usually listed on the product label by their manufacturers, and this gives room for serious concern. (Siyaka, Joda, Yesufu & Akinleye, 2016).

Individuals, however, who are better educated according to Aramide, Olatunji and Ayandele (2019) are more aware of the health problems the use of lightening creams will cause them, they are also more likely to seek, understand and use information on their health and less likely to engage in dangerous health practices. And because these manufacturers know that skin lighteners alter the chemical structure of the skin, by inhibiting the synthesis of melanin, they deceitfully refuse to write constituents like hydroquinone, mercury and some other deadly chemicals used to manufacture these products on the product ingredient information label (Yayehrad et al., 2023). Cooper, Gasper, Flores, Clarke, Bass, Evans and Ponce (2022) also assert that most manufacturers make their product ingredient information illegible so that users will not be able to read and make useful meaning out of the ingredient information.

Over 75% of consumers report that they read the ingredients list on the product label “sometimes” or “often” when they purchase a product for the first time (Cooper et al., 2022). One major reason consumers read ingredient labels is to identify unfavourable and potentially harmful ingredients. Furthermore, Palotti, Zuccon and Hanbury (2019) indicate that consumers



largely want to detect the presence of artificial ingredients in a food product: 47% of consumers surveyed were either very or extremely concerned about the use of artificial ingredients. Other reasons for focusing on the ingredients list are to avoid or reduce the use of certain chemical ingredients, such as those with skin allergies, individuals with highly sensitive skin, or users with already damaged skin tissues resulting from the use of harsh conventional lightening products (Zhang, 2017).

Therefore, consumers' level of education and exposure to a great extent will help them read and probably comprehend the provided and legible product ingredients composition information on these products. Previous studies by Khalili, Mahvi, Nasser, Yunesian, Yaseri and Djahed (2023) and Yayehrad et al. (2023) show that most females may sometimes know that those products can cause some adverse effects but their awareness of the nature and severity of these complications may be vague; as a result of this, it becomes imperative to address the issue of lack of formal health education and counselling, ignorance, lack of regulatory restrictions, and women's hobbies on beauty and attraction to restore cosmetics safety in females (Soussi, Gargouri & Feki, 2018).

Kamagaju, Morandini, Gahongayire, Stévigny, Ghanem, Pirotte and Duez (2016) observed that most lightening creams do not provide long-lasting results, as users may notice that their skin returns to its original colour after the bleaching effect wears off, yet the complications of these products are very serious and are sometimes fatal. Some other side effects of using these skin-lightening products according to Aramide, Olatunji and Ayandele (2019) can include skin inflammation, fragile skin, tissue discolouration, acne, eczema, poor wound healing, and body odour, among others.

Research Problem

Conventional skin lightening involves the use of topical agents such as creams, gels, or soaps to lighten the skin, or the cosmetic application of topical ointments, gels, soaps and household chemicals to de-pigment or lighten the skin complexion. This has emerged as an increasingly frequent practice during the past decades (Charles, 2020). This practice is known to cause injuries, many of which are potentially life-threatening (Street, Gaska, Lewis & Wilson, 2014). UkoNaku, Inah, Mowang and Ugosor (2020) assert that skin-lightening products are sold to people as skin revitalizers, toners, whiteners, facial cleansers, masks, or moisturizers; and anti-ageing, sun-block, fading, or fairness creams. And many people use these products to remove skin blemishes and have a more uniform lighter skin colour (Wang, Su, Tian, Peng & Ji, 2020). Despite the negative consequences of skin lighteners and their dangerous effects on the physical and mental health of skin bleachers, many individuals still use the deadly products (Soussi, Gargouri & Feki, 2018). The reason for this was found in a study conducted by Osobamiro, Kukoy and Awolesi (2023) which discovered that the concentration of hydroquinone in all the samples used, was above the permissible level of 2% as set by the World Health Organization (WHO)

This however means that the users of these products are not given the complete ingredient information on the beauty product labels they buy (Mukhtar, Yusuf, Nicma, Mahmoud, Rirash, Stoff, Liu & McMichael, 2019). It then becomes imperative for the National Agency for Food and Drug Administration and Control (NAFDAC) not only to enlighten consumers on the hazardous health effects of the use of skin-lightening creams but to also strictly compel the manufacturers of these beauty products to include the composition of metallic contents and



other toxic substances used in manufacturing these products, on the ingredient label of their products.

Most importantly, the comprehension of ingredient information on these skin-lightening product labels is very crucial as it will help the consumers make informed healthier choices and purchases. On the other hand, the ability of the consumers to interpret the ingredient compositions will also help them know the health risks inherent in such products. The issue now is do users of these products read the ingredient information on them. Do they comprehend the ingredient composition information of such products despite the deliberate omission of some ingredient composition facts by the producers? And finally, are they aware of the health risks associated with the use of conventional skin lighteners? The following research questions were designed to guide the study:

1. What number of female civil servants in Anambra State read the ingredient information on skin-lightening product labels?
2. How many comprehend the product ingredient information on skin-lightening products despite the deliberate omission of some ingredient composition facts by the producers?
3. How many know the health risks of using these skin-lightening products?

REVIEW OF LITERATURE

The World Health Organization (WHO, 2011) reports that 77% of women in Nigeria are bleaching their skin. Skin bleaching is a deliberate use of depigmenting agents (skin-lightening products) to achieve a lighter skin colour by altering the chemical structure of the skin to inhibit the synthesis of melanin (Olumide, Akinkugbe, Altraide, Mohammed, Ahamefule, Ayanlowo & Essen, 2019). It is important to know the ingredients contained within a product you want to use because information regarding skin product contents is needed to help the user make informed decisions concerning purchase and use (Arshad, Mehmood, Shah & Abbasi, 2020). Because the first and most accessible source of information about any product is the label, the ingredient information is therefore usually seen on the product labels and producers are required to list their ingredients in descending order of concentration (Cooper et al., 2022).

Jose and Ray (2018) explained that complications due to conditions such as allergies or other sensitivities can be avoided by not using skin products that contain hydroquinone, mercury, corticosteroids, and tretinoin. However, this can only be discovered and avoided if consumers read the product ingredient information on skin-lightening product label. Consumers who are not sure of the product ingredient information can perform a search using the ingredient checker database for help (Osobamiro, Kukoy & Awolesi, 2023).

In the developed world, according to Ayandele and Popoola (2019), when reading a skincare ingredient list, many people follow the first five rules. This rule claims that, because the first five ingredients listed on a label have the highest percentages, they are ultimately what determines the true performance of a product. Those who follow this rule, as stated by Fakorede (2022), claim that any ingredients listed after the first five, will not have a meaningful effect on the skin, because they are included at too low a percentage to perform. Research has shown that while it is true that ingredients are generally listed in order of highest to lowest



concentration, it is almost impossible to tell how well an ingredient will perform based on where it falls on the ingredient label (Chibueze, 2023).

Consumers who want to learn more about a particular lightning product, before buying it, will most likely pay close attention to the ingredient label on the packaging. Meaning, consumer's decision to buy any skin-lightening product is frequently influenced by their perception that the product will meet their desired needs. To determine if the product will satisfy their requirements, consumers will often read the information on the ingredient label to ensure that it is of high quality and contains the appropriate nutrients, ingredients, and expiration date, which can be verified by reading the ingredient label on the packaging (Okoli, Obi, Ono & Chiaghana, 2023).

Despite these ingredient facts panels on creams, a study by Wansink (2020) finds that consumers still have problems comprehending ingredient information. In addition, Moorman (1990), as cited in Okoli et al. (2023), states that consumers do not even utilize ingredient information when buying products. This means there are other factors like the media, friends and relations that influence consumers' use of lightning products.

However, although some users of these products consider their health when deciding on which skin-lightening products to buy, ingredient information on skin-lightening labels is complex and does not always live up to its potential to communicate effectively (Daudi, 2020). Users, as asserted by Chibueze (2023), need to understand the ingredient information on the product packs to use them effectively when making skin-lightening product choices and this understanding has to do with what they know as regards the chemical compositions and terminologies of skin lighteners. However, a study by Asouzu and IHEME (2020) found that consumers experience difficulties understanding the ingredient information on the labels, especially the terminology used on labels.

Figure 1 & 2: Examples of Product Ingredient Information

Active ingredients:		Purpose
Hydroquinone 2%.....	Skin Lightener
Ethylhexyl Methoxycinnamate 0.5%.....	Sun Screen

Inactive ingredients:	
Water, Glyceryl Stearate, Cetearyl Alcohol, Glycerin, Isopropyl Myristate, Allantoin, Tocopheryl Acetate, Fragrance, Ascorbic Acid, Sodium Lauryl Sulfate, Sodium Metabisulfite, Disodium EDTA, Sodium Citrate, Methylparaben, Propylparaben, p-Chloro-m-Cresol.	



According to Kim, Ellison, and Nayga (2020), there are subjective and objective ways to measure consumers' ability to understand information about skin-lightening ingredients. The authors suggest that studies using subjective measures will typically rely on self-reported understanding through a Likert scale. In such studies, participants are asked to rate how easy or difficult it is to understand the ingredient information or to assess their level of comprehension of the product ingredient information.

On the other hand, objective measures involve comparing products or asking consumers to locate nutrition information on the label or manipulate the nutrition information provided on the label to assess their understanding of the product ingredient information.

According to Chibueze (2023), two types of factors affect the readability and comprehensibility of inscriptions: internal and external. Internal factors include individual characteristics such as age, sex, health status, and education level, as well as situational factors like time constraints and special diet status.

Chibueze further explains that these factors can influence how consumers use and understand the ingredients in skin-lightening products. In the long run, they can also affect a consumer's ability to make informed decisions. External factors, however, encompass institutional factors, such as the design, size, colour, placement, style, and language used on the product ingredient label. Labels with large, bold type and vibrant colours as posited by Gomez, Werle and Corneille (2017) are more likely to capture consumers' attention and encourage reading.

The widespread use of skin-lightening products is increasingly recognized as a public health issue (Craddock, 2016). Hence, the intensive use of whitening agents constitutes a real public health risk and can lead to severe pathologies including burns, acne, stretch marks, hypopigmentation, and even cancer. Due to the deleterious health side effects and the potential reinforcement of social inequalities, it becomes important to underline that those whitening treatments are often very long-term ones, and their use over weeks or months produces results that are generally not good for users (Siyaka, Joda, Yesufu & Akinleye, 2016).



<https://punchng.com/we-are-scarred-and-burnt-for-life-users-of-bleaching-creams-cry-out/>

After reviewing the images above, it is evident that there are numerous concerns and questions regarding the information on ingredients found in skin-lightening products. Some of the questions that arise include: Are consumers aware of the ingredient information printed on the packaging of these products? Do they read and understand it? Are they aware of the health implications associated with using these products? A better understanding of the chemical composition of these products can help users make informed decisions on whether or not to use them.

Several authors such as Jose and Ray (2018), Wang et al. (2020), and Siyaka et al. (2016) have identified numerous potentially life-threatening consequences of skin bleaching, which include dermatologic consequences such as skin lesions, epidermal atrophy (thinning of the skin), and exogenous ochronosis (bluish-black tissue discolouration). Also, eczema, bacterial and fungal infections, dermatitis (skin inflammation), scabies (contagious skin disease), warts, acne, sun damage and body odour are parts of the consequences (Ayandele & Popoola, 2019). Some of the agents used in the production of these skin-lightening products as asserted by Osobamiro, Kukoy and Awolesi (2023) are:

1. Mercury-containing compounds: In the early days, toxic compounds, such as mercury-containing compounds have been used for skin whitening purposes because mercury inactivates the enzyme that leads to the production of melanin. Long-term application of mercurial products to the skin makes the skin and nails darker because the mercury is deposited in the epidermis and hair follicles. Mercury poisoning results in acute and chronic toxicity including neurological and kidney damage, as well as acrodynia, which is characterized by pink discolouration of the hands and feet, irritability, photophobia and polyneuritis. These toxic compounds have been banned in the majority parts of the world, and are no longer used in cosmetic products for this purpose. It should be mentioned that there are still some illegal uses of mercury-containing products in developing countries like Nigeria

2. Hydroquinone: Its bleaching properties were discovered when it was observed that coloured tanners wearing rubber gloves acquired discoloured areas on the hands and forearms. Hydroquinone is a hydroxyphenolic compound that inhibits the synthesis of melanin by inhibiting the tyrosinase enzyme. It may also function by interfering with the formation or degradation of melanosomes and by inhibiting the synthesis of DNA and RNA within melanocytes. It can be irritating and cause redness and burning; also, it has been shown to cause exogenous ochronosis. Ochronosis may result in loss of elasticity of the skin and impaired wound healing which has resulted in a ban on its over-the-counter use in the USA and many other countries



3. Corticosteroids: Topical corticosteroids whiten the skin by initial blanching due to vasoconstriction, slowing down skin cell turnover reducing the number and activity of melanocytes and reducing the production of melanocyte-stimulating hormone, but their absorption through the skin can cause adrenal suppression and even Cushing's syndrome depending on the area of the body being treated and the duration of treatment. Local side-effects of topical corticosteroids include spread and worsening of untreated infection; irreversible thinning of the skin, contact dermatitis, perioral dermatitis, acne, or worsening of acne or acne rosacea and hypertrichosis.

4. Tretinoin: It is the main topical retinoid that has been used in skin whitening products. The mechanisms for reducing pigmentation include inhibition of tyrosinase induction, interference with pigment transfer, and acceleration of epidermal turnover. They also can disperse pigment granules within keratinocytes. Retinoids may act as penetration enhancers when used with other whitening agents like hydroquinone and mequinol. The most common adverse effects include burning, stinging, erythema, dryness, and scaling. Although the adverse effects are reversible, retinoid dermatitis may itself lead to hyperpigmentation, especially in dark-skinned individuals. It is a prescription medication because of the potential risk in pregnancy. It can be quite irritating and may cause contact irritant dermatitis. Tretinoin is useful for treating inflammatory lesions in mild to moderate acne.

THEORETICAL FRAMEWORK

This study is based on the individual differences theory and the selective perception media effect. The purpose of using these theories is to understand how civil servants in Anambra State comprehend information on skin-lightening ingredients. The individual differences theory suggests that people's psychological composition and perceptions influence how they are affected by media messages. According to Bittner (1998), media messages cannot have a uniform effect on everyone because of these individual differences in personality characteristics. The selective perception media effect theory states that people's interpretation of media messages is crucial in determining their response and influence. People tend to interpret media messages based on their existing attitudes, preconceptions or predispositions. Therefore, the information on skin-lightening ingredients written on these products may not stop users from using them, as people selectively perceive media content according to their preferences. Consequently, the same message could have different effects on users with different psychological makeup.

Selective Perception Effect

Selective process theory involves four steps: selective exposure, attention, perception, and retention. According to this theory, individuals interpret media messages in their way and tend to avoid messages that do not confirm their beliefs (Whitaker, Ramsey & Smith, 2012). However, when people are exposed to mass communication messages, they often interpret them to suit their existing attitudes, perceptions, or predispositions. This theory is relevant to this study because the product ingredient information is intended to inform users about the chemical compositions of lightening products and to encourage them to make informed, healthier choices. However, users may selectively perceive the content of these messages based on their existing attitudes or preconceptions. For example, some users may believe that the



lightening product is good for their skin and therefore ignore the product ingredient information, declaring the chemical compositions as irrelevant. As a result, it is important to understand how users interpret the product ingredient information messages to determine their responses to the messages and the influence of the messages on them.

METHODOLOGY

The research design adopted for this study was a survey. The population of this study covers only the Anambra State Senior Civil Servants. The target Civil Servants in Anambra State were between Grade Level 7 and above. Anambra State Civil Service has a staff strength of 3,598 from Grade Level 7 to 16 which forms the population of this study (Anambra State Civil Service Commission Annual Report, 2018). A sample size of 348 was statistically determined for this study using an online calculator for determining sample size.

The multi-stage sampling technique was used. In the first stage, 21 ministries in Anambra state were divided into 3 groups or clusters according to their functions as follows: administrative sector, economic sector and social sector. To ensure that every civil servant within the ministries in the clusters had an equal chance of being sampled; a simple random sampling technique was adopted, using a “Statistical Random Numbers Table”.

Randomly, each group in the population of study was assigned a number. From the numbers in the random numbers table, two ministries from each sector were randomly chosen as shown in the table below. From each of the ministries, a particular number of respondents were chosen based on the proportion represented by each ministry in the sample (348) calculated as follows:

$$NR = n \times 348$$

N

Where NR = number of units (to be selected from a cluster)

n = total number of units in a cluster.

Table 1

GROUP	MINISTRY	POPULATION	SAMPLE SIZE
Administrative Sector	Office of the Head of Service,	168	47
	Ministry of Diaspora Affairs, Culture and Tourism	134	38
Economic Sector	Ministry of Agriculture,	321	90
	Ministry of Lands	215	60
Social Sector	Ministry of Health,	133	37
	Ministry of Education	270	76
TOTAL	6 Ministries	1241	348



N = population

In distributing the questionnaire, the researcher used a Non-Probability Convenience Sampling, whereby questionnaires were given only to respondents who were available at the time and showed a willingness to be sampled when the researcher visited each of the chosen ministries. The questionnaire which contained 16 questions (open-ended and closed-ended) was used as the instrument for data collection. Data gathered were presented and analyzed using SPSS 19 data analysis software.

DATA PRESENTATION AND ANALYSIS

Findings from this study were drawn from data obtained from 348 respondents, from the 21 ministries in Anambra state.

Demographic Data

The respondents within the 30 to 34 age brackets were predominantly at 85.1% (N=296), more than any other age bracket. They were followed by the age 40-44 bracket at 9.8% (N=34). Those who were 45 and above constituted 3.2% (N=11) of the respondents while those between the 35-39 age bracket were the least at 2.0% (N=7). The data, therefore, indicated that the age bracket that dominated the study was the age distribution from 30 to 34 representing 85.1% of the respondents. The age bracket is mostly young civil servants.

On marital status, 334 of the respondents representing 96.0% were married, while 14 respondents about 4% were single. This shows that the majority of the respondents are married. On the Grade Level of respondents, out of the total 348 respondents surveyed, 222 respondents representing 63.8% were between levels 7-9, 86 respondents representing 24.7% of the entire respondents were between levels 10-12, while 40 respondents 11.5% were in levels 13-16. From the foregoing analysis, a large number of civil servants that are in levels 7 to 12 responded to the questionnaire, possibly because they are readily available and less busy, unlike the top management cadre from levels 13 and above. On the educational level of the respondents, 239 respondents representing 68.7% were degree holders, 102 respondents about 29.3% had master's degrees while 7 respondents, about 2% had PhD degrees.

Research Question 1: What number of female civil servants read the ingredient information on skin-lightening product labels before purchase?

Table 2

Variables	Response	Frequency	Percentage
Have you ever seen ingredient Information compositions Like: hydroquinone 2%, Mercury 0.5%, Fortified With 'AHA' etc.	yes	261	75.0
	partially	40	11.5
Inscribed to these packs?	Not at all	47	13.5
		348	100%



Do you read ingredient information on skin lightening packs?	No	300	86.2
	Yes	48	13.8
Total		348	100%
How often do you read Ingredient Information Compositions on Lightening cream packs?	Sometime	22	6.4
	Always	26	7.4
	Not at all	300	86.2
Total		348	100%
Total		348	100%

Source: Field Survey, 2023

Table 2 shows responses on the number of respondents that read ingredients information on skin-lightening products. While 75.0% said they have seen ingredient information compositions like hydroquinone 2%, mercury 0.5%, and fortified with AHA, written on these packs, few respondents 13.5% assert they have never seen any such information on the lightening products they use, 11.0% affirmed to have partially seen such information. On whether they read the ingredient information, the majority, 86.2% of respondents, say they do not read them, while a few numbers of respondents 13.8% affirm they read the ingredient information on the skin-lightening product pack they use. Responding to how often they read the ingredient information, the majority, 86.2% of respondents say they do not read at all, 7.4% affirmed reading always, while a few respondents, 6.3% say they read sometimes. The import here is that a large number of respondents do not read ingredient information on the skin-lightening products they use.

Research Question 2: How many civil servants comprehend the ingredient information on lightening product packs?

Table 3:

Variables	Response	Frequency	Percentage
Do you understand the Ingredient Information On Lightning products?	yes	47	13.5%
	partially	40	11.5%
	Not at all	261	75.0 %
Total		348	100%



If not, why?			
(a) Illegibility of fonts		90	26%
(b) Technical nature of chemical compositions		157	45.1%
(c) Language used		48	13.5 %
(d) Laziness		53	15.4%
Total		348	100%
Can you interpret this			
Information?	Yes	48	13.4%
Kojic acid 3%			
Mercury 0.5%	No	300	86.6%
Corticosteroids 0.2%			
Parabens 0.5%			
Sulfates 0.2%			
Artificial Fragrances 5%			
Total		348	100%

Source: Field Survey, 2023

Here, the frequency of the respondents' comprehension of ingredient information on skin-lightening product labels was presented. Data demonstrates that the majority, 75.0% of respondents, do not understand the ingredient information compositions on skin-lightening products, 13.5% affirmed they understand, while a meagre 11.5% of respondents affirmed, they understand partially. On why the respondents do not understand the ingredient information, the majority 45.1% of respondents assert that the way these ingredient compositions are written is too technical, hence their inability to understand them. 26% attribute their inability to understand the illegible nature of the fonts, 15.4% say laziness in reading the inscribed information hinders their ability to understand the product ingredient information while 13.5% affirmed that the language used most often makes comprehension difficult. On the respondents' ability to interpret ingredient information on skin-lightening products, the majority, 86.6%, said they could not interpret while 13.4% said they could. The table above therefore shows that a greater number of the respondents do not understand the ingredient information on skin-lightening products, because of the technical nature of chemical compositions in the products, which is also a contributory factor on why they cannot interpret the ingredient information. This therefore does not agree with the study by Okoli, Obi, Ono and Chiaghana (2023) who found that a great number of consumers read ingredient information on food packs but have their comprehension of this information, constrained by illegible fonts.



Research Question 3: How many are aware of the health risks inherent in using these lightening products?

Table 4: Respondents' Assessment of the Risks Associated with the Use of Skin-Lightening Products

	Are you aware of any potential risks or side effects associated with the use of skin-lightening products?	Do you still use skin-lightening products despite knowing the potential risks involved?	Have you personally experienced any benefits from using conventional Skin lightening products?	Do you think conventional lightening products are Good on your skin?	Are you concerned about the potential long-term effects of using these products?	Have you experienced any negative reactions or side effects from using conventional skin care products?
Yes	74% N = 258	86.2% N = 300	89.6% N = 312	85.6% N = 298	8.9% N = 31	28.4% N=99
No	26% N=90	13.7% N=48	10.3% N= 36	14.3% N=50	91.0% N=317	91.4% N=249
Total	100% N = 348	100% N = 348	100% N = 348	100% N = 348	100% N = 348	100% N = 348

Source: Field Survey, 2023

Table 4 shows that 74% of the respondents are aware of the risks associated with the use of conventional lightening products, 86.2% still use these products despite knowing the potential risks involved, 89.6% said they have experienced lots of benefits using these products, 85.6% affirmed that conventional lightening products though a bit harsh, are still good for their skin, 91.0% of respondents said they are not concerned about the potential long-term effects of using conventional skin lightening products. This is because according to the data in this same table, respondents feel conventional skin-lightening products are good for their skin. A majority, 91.4%, of the respondents said they have not experienced negative reactions and side effects from using skin-lightening products. But a good number, 28.4% of the respondents, affirmed to have experienced negative reactions from using conventional skin lightening products. This however means that female civil servants in Anambra State are aware of the risks associated with conventional lightening skin products, but still use these products despite knowing the potential risks involved because they have previously experienced lots of benefits using the products.

Table 5: Negative skin reactions were experienced by respondents who use conventional skin-lightening products

	Frequency	Percentage
Dermatitis	13	3.7%
Liver spot	10	2.9%
Recurrent skin infections	60	17.2%
Allergy	20	6%
Skin Burns	135	38.7%



Eczema	70	20.1%
Exogenous Ochronosis	40	11.4%
Total	348	100%

Source: Field Survey, 2023

Table 5 shows different negative skin reactions experienced by respondents while using conventional skin-lightening products. Majority 38.7% of respondents said they have experienced burns of all kinds, especially facial burns, 20.1% eczema, 17.2% recurrent skin infections, 11.4% exogenous ochronosis, 6% allergy, 3.7% dermatitis, and 2.9% liver spot. This means that a large number of female civil servants in Anambra State have experienced at one time or another different health risks associated with conventional skin-lightening product use, but have experienced skin burns more than any other adverse effect.

Analysis of Research Question

The first research question sought to find out the number of female civil servants in Anambra State who read the ingredient information on skin-lightening product labels.

Data in Table 2 show that the majority, 75.0% of the respondents are aware of the ingredient information compositions on the product label, and 86.2% do not read the ingredient information at all. The major finding of this study is that female civil servants in Anambra state are aware of the ingredient information, but don't read them. This therefore disagrees with the findings of Cooper et al. (2022) that over 75% of consumers read the ingredients list on the product label "sometimes" or "often" when they purchase a product for the first time.

The second research question sought to determine the number of female civil servants in Anambra state that comprehend the product ingredient information on skin-lightening product labels, despite the deliberate omission of some ingredient composition facts by the producers.

Data in Table 3, shows that a great number of the respondents do not understand the ingredient information on skin-lightening products, because of the technical nature of the chemical compositions in these products, which is also a contributory factor to why they cannot interpret the ingredient information. This therefore does not agree with the study by Okoli et al. (2023), who found that a great number of consumers read ingredient information on food packs but have their comprehension of this information, constrained by illegible fonts. Against this backdrop, it is safe to conclude that the majority of female civil servants do not understand the ingredient information on skin-lightening product labels.

The third research question sought to determine the number of female civil servants who are aware of the health risks associated with using these skin-lightening products.

In providing answers to this research question, data in Table 4 indicate that the majority of the female civil servants in Anambra State are aware of the risks associated with conventional lightening skin products, but still use these products despite knowing the potential risks involved because they have previously experienced lots of benefits using the products. Furthermore, table 5 shows that a large number of female civil servants in Anambra State have experienced at one time or another different health risks associated with conventional skin-lightening product use, but have experienced skin burns more than any other adverse effect. Against this backdrop, this study concludes that female civil servants in Anambra State are



aware of the associated risks with conventional lightening products, and have experienced skin burns more than any other adverse effects.

CONCLUSION AND RECOMMENDATIONS

This study concludes that civil servants in Anambra State are aware of the ingredient information composition on skin-lightening products, but do not read them, making it difficult for them to understand and interpret such information. However, the majority of these women are also aware of the health risks associated with the use of skin-lightening products but still use them because of the benefits they claim to have experienced while using them. The study, however, found that female civil servants, also have experienced lots of these health risks with skin burns reoccurring most as the most experienced side effects.

The study recommends the following:

1. Manufacturers of these products should ensure that the ingredient information on product packs is bolder and more legible for consumers to read without much difficulty.
2. Manufacturers and brand designers should reduce the technicality involved in writing the product ingredient compositions so that the users will be able to read and comprehend this information.
3. Agencies like the National Agency For Food and Drug Administration and Control (NAFDAC) and Standards Organization Of Nigeria. (SON) should ensure manufacturers produce skin products devoid of deadly chemicals like hydroquinone, corticosteroids, and mercury. In a situation where the above-mentioned chemicals are used, users should be informed of the negative side effects

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