

Raising awareness of health hazards of the practice of purchasing, applying and storing cosmetics commodities marketed in Sudan

Abdalla M, Abdalla Mustafa, Mohamed El Mukhtar A, Aziz

Sudan University of Science and Technology, Khartoum, Sudan.

Abstract

Nowadays, the use of makeup among most Sudanese ladies becomes very popular without being aware about the potential dangers of components of cosmetic products that can threaten their health while using cosmetics. Liquid foundation, face powder, lipstick and eye makeup contain a variety of toxic chemicals. They may be further contaminated with bacteria and toxic metal impurities during everyday use and storage. Mascara is also chemically based and can harbor bacteria, which is then transferred to eyes. Talc in face powder is carcinogenic. Blush and eye shadow often contain talc. Using alpha hydroxy acids to prevent face wrinkles increases cancer risk. Several facial cosmetics available in Sudanese markets are unsafe. The health hazards of lipstick are caused by the ingestion of toxic aluminum and other toxins used to make them colorful and long lasting. A questionnaire survey and statistical analysis were employed in this investigation. Actual participants size (500) were females, university students (70%), employee's ladies (20%) house wives (7.5%) and others (2.5%). It was found that 80% of the participants are used to apply makeup, 32% apply local cosmetic preparations; 40%, share or borrow makeup; 14%, do not store makeup properly; 40%, have never read the ingredients list; the majority, do not use natural and homemade cosmetics; several, suffer from harmful effects due to the use of cosmetics. It is recommended that all users have to follow the right procedures in purchasing cosmetic products from local markets, storage at home, and applying them.

Keywords: Cosmetic Makeup, Cosmetic Hazards, Cosmetic Usage

Introduction

Cosmetics are definitely more widely used by females than males; however, there are numerous useful cosmetic applications that men can also use.

1. Cosmetics have to have ingredient labels that indicate precisely what is included in the product. It isn't specific with regards to fragrances, though, the manufacturer needs to list out the exact composition of his fragrance ⁽¹⁾. Cosmetic markets are growing rapidly on a daily basis. Normally, if the practices are legal, they will add value to the business, but unfortunately there are illegal practices by some cosmetic manufacturers as they work without license from legal authorities ⁽³⁾.
2. Allergic eyelid dermatitis might be more often due to cosmetics put on the fingernails, face or hair rather than that applied right to the eyelids. Historically, women have risked their health for beauty by using cosmetics laden with poisons.
3. In Sudan women, every day absorb, through their skin a lot of chemicals from beauty products and for that they spend a lot of money. Many older women feel that their confidence would decrease if they allow themselves to go gray. They feel that they look older, and thus they would be at a disadvantage in their personal and professional lives if they have gray hair. The usage of cosmetics has become a prevailing fashionable practice for modern females such as students, employees (larger consumers) and house wives.
4. As a daily routine, cleansing, toning and moisturizing are thought to be essential for a healthy and youth complexion, but scientists are now raising concerns about

the damage caused by chemicals in cosmetics to our bodies. Moreover, there are several factors which can contaminate makeup cosmetic products: Sharing makeup, poor handling procedures during manufacturing, bad storage conditions (more likely for bacteria to grow, in addition to poor quality of raw materials of makeup ⁽⁴⁾.

5. Human health is a top priority concern followed by the environmental side-effects. As with most commodities purchased and consumed today, there are excessive amounts of unnecessary packaging, which usually end up festering in a landfill for several life times. When all these chemicals are washed off hair and body and are flushed down the drain, that is, the chemicals which aren't already absorbed directly through the skin, they flow into the wastewater and can disrupt all sorts of micro-ecosystems out there ^[2].

The objectives of this study were to evaluate purchase habits, asses' application methods and raise awareness of health hazards of cosmetic products purchased from local markets by Sudanese ladies.

Methodology

A questionnaire survey and statistical analysis were employed in this investigation:

The self-structured questionnaire was used to measure knowledge, and practice of Sudanese women on cosmetic products usage. The survey was chosen as a simple means of data collection to assess the awareness of Sudanese women for potential cosmetic health hazards, the types of makeup they used, the places from where they purchased them and the

bases upon which selection is made. This cross section study was based on data collected from 500 copies of the questionnaire surveillance that was distributed to volunteers to answer the questions raised. Volunteers were divided into four categories:

1. Female university students, 70%,
2. Employee ladies of different jobs), 20%,
3. House wives (without jobs), 7.5%, and
4. Males, only 2.5%.

Results and Discussion: The data collected through the questionnaire were statistically analyzed using SPSS program, (Statistical Package for Social Science). From 428 the copies of 500 copies survey were returned, within which only 314, were used because 114 were invalid due to incomplete data and incorrect answers of the questions. The results obtained from the questionnaire are shown in Tables (1) to Table (7). Table (1) shows that almost (80%) participants 251 affirmed that are using makeup and only (20.1%) declared that they are not using any type of cosmetics.

Table 1: Distribution of Sudanese ladies participants according to the percentage of using makeup

Makeup Usage	Number of participants	Percent (%)
Non -users	251	79.9
Users	63	20.1
Total	314	100.0

Table -2 shows that 31.5 % of the participants are using local preparation makeup, 21%, lip-makeup, 16%, eye liner and 11%, foundation.

Table 2: Distribution of the frequency of the participants according to the type of makeup are using.

Makeup	Number of participants	Percentage (%)
Lip – makeup	66	21.0
Eyeliners	50	16.0
Powder	24	07.5
Local Preparation	100	31.5
Mascara	13	04.0
Foundation	35	11.0
Eye Shadow	28	09.0
Total	314	100.0

Table - 3 shows that 65.24% of the participants suffer from allergy and 34.76 % from dark spots on their faces which appear after removing makeup.

Table 3: Distribution of the percentage of the participants according to the type of complaint from the use of facial makeup

Type of complaints	Number of participants	Percent (%)
Allergy	205	65.24
Darkening of skin color	109	34.76
Total	314	100

Sudanese ladies were also asked about the types of personal care products that they are using on a regular base. The personal care products generally used include a number of hygienic, skin care, and cosmetic items. This includes over-the-counter personal care products, but does not include prescription products. Hygienic products include items like toothpaste, shampoo and conditioner, deodorant, body and face wash. Skin – care products include things such as

moisturizing lotions, Lip-palm, acne items, and other related products^[5]. The answer of the most important questions in this survey, was the classification and type of cosmetic products preferable among Sudanese ladies (local or imported whitening cream) is shown in table Table-4.

Table 4: Sudanese ladies choice of different brands of Skin – lightening cream.

Brand of lipsticks	Number of participants	Percent (%)
1- Dove	40	10.02
2- Tazol	29	7.27
3- Pond’s	10	2.51
4- Nivea	50	12.53
5- Garnier	08	2.00
6- Holly	24	6.02
7- Laurent	12	3.00
8- Local Preparation	125	31.34
9- Avon	19	4.76
10- Fare & Lovely	27	6.77
11- White Face	39	9.77
12- Top Beauty	16	4.01
Total	399	100.0

Table 4, shows that the majority of ladies (31.34%), are using local preparation of whitening their faces to look brighter and attractive. No one knew how these preparations are prepared. This is done by estimation without any control for the active ingredients or the preservatives. Most of these preparations are prepared in the local market by common people having no idea about what they are doing. Even in the pharmaceutical stores no control for the quantity of raw materials of the prepared cosmetic products is carried out.

The distribution of percentages of the participants according to their makeup storage behavior is shown in Table – (5).

Table 5: Distribution of the percentages of the participants according to their makeup storage behavior

Storage behavior	Number of participants	Percent (%)
Proper	204	65.0
Not Proper	44	14.0
Sometimes proper	66	21.0
Total	314	100

Cosmetics are usually safe when you buy them, but bad handling can allow dangerous bacteria or fungi to grow on them. Then when applied to the eye area, a cosmetic can cause an infection^[6]. In rare cases, a woman has been temporarily or permanently blinded by an infection from an eye cosmetics. Some types of bacteria, which might grow in cosmetic products, such as, Candida albicans, Escherichia coli, Pseudomonas aeruginosa, specific, nonspecific microorganisms, and, most important Staphylococcus aureus, were detected,^[7, 8] Most of the Sudanese ladies questioned (65%) stored makeup properly, and used applicators properly; meanwhile 14% of the ladies, did not, (Table -5).

Table 6: Percentage behavior of ladies reading ingredients list of cosmetic product before purchasing them.

Reading behavior	Number of participants	Percent (%)
Never	127	40.44
Rarely	31	09.87
Sometimes	53	16.88
Often	64	20.38
Always	39	12.43
Total	314	100.00

Table 7: Distribution of the percentages of female university students sharing or borrowing makeup cosmetics.

Sharing or borrowing behavior	Number of female students	Percent (%)
Never	26	08.50
Rarely	56	17.50
Always	84	27.00
Often	74	23.50
Sometimes	74	23.50
Total	314	100.00

The first question in the survey asked the women how often they read ingredient lists on personal care products before purchasing them. Table-6 indicates the percentage of behavior of ladies reading ingredients list of cosmetic product before purchasing them. The distribution behavior spreads quite broadly with approximately 12.5% of the participants *always* read labels, 20% of the participants *often* read labels, about 17% *sometimes* read labels and 40% of the participants *rarely or never* read labels. Most of them, however, were concerned only with the Brand Name.

The survey reveals that more than a quarter of the female university students questioned admitted that they always share or borrow makeup cosmetics (Table-7)

It is strongly advised that female students should refrain from sharing or borrowing makeup cosmetics to avoid spread of skin, hair and eye infections.

The risk of infection may be even greater with “testers” at retail stores, where a number of people are using the same sample product. If one feels that she must sample cosmetics at a store, she should use a disposable applicator, such as a clean cotton swab. As the skin is extremely permeable, cosmetic ingredients are most certainly are absorbed through it. Some chemicals may penetrate the skin in significant amounts especially when left on the skin for long periods, as in the case of facial makeup. A previous study showed that 13 percent of the cosmetic preservative butyrate hydroxytoluene (BHT) and as much as 49 percent of the carcinogenic pesticide DDT (which is found in some cosmetics containing lanolin) was absorbed through the skin [9, 10]. In the present study seven percent of the people questioned reported that their faces or eyes had been infected as a result of the use of makeup cosmetics. In addition, four percent did not remember whether they had get on infection caused by the use of makeup, or not. Few females reported that they had an allergic reaction to the makeup. Few others said that their eyes became swollen and rashes developed on their faces but they do not know whether that effects were due to makeup or to something else. Another female said that she had facial and eye infections but did not specify what kind of infection. One person suffered from itchy, and watery eyes due to the use of the eyeliner. Several other people also said that they had red eyes and one person even had pink eye, due to sharing makeup. An additional student said that she had an eye infection which turned her eye red and puffy as she used a new eye liner for the first time. The most important common infections cited by makeup cosmetics users in this survey included swollen, puffy, red, pink, itchy eyes, acne on the face and rashes on the skin.

The survey revealed that the majority of the females preferred the use of readymade and imported cosmetics, despite the fact that they might contain lard, toxic and carcinogenic materials, over the safe natural and homemade cosmetics.

Conclusion

Evaluation of data obtained from the questionnaire strongly indicates that Sudanese ladies are unaware of cosmetic products health risks. They do not follow the right procedures when purchasing them from local markets, storing them at home and applying cosmetic products. However, it is important to point out that toxic heavy metals can cause chronic toxicities as it can accumulate in the body. Therefore, cautious use of these preparations should be considered. It is strongly advised that females should refrain from sharing, borrowing makeup cosmetics to avoid spread of skin, hair, and eye bacterial and viral infections.

From the collected data it evident that it will lead to studies to determine the toxicological and microbiological hazards and developing of analytical methods for the identification and determination of harmful of ingredients and microbial contaminants.

Recommendations

1. All concerned authorities should be aware of all types of cosmetics prepared locally without license in small shops, mainly for selling clothes and perfumes and also even in some pharmacies.
2. Regular strict inspection for behind the doors of local cosmetic preparation and for under the table of illegal cosmetic products trade, becomes necessary.
3. Development of screening and field methods of analysis for toxic ingredients and bio-contamination should be attempted.
4. Strict laws and rules for cosmetic products similar to those of drugs and poisons should be set.

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