

Original article:

Cosmetics and health: usage, perceptions and awareness

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Abstract

Objectives: Cosmetics are a multi-billion dollar industry today. The present study was designed with an objective to know the extent, purpose, type and awareness for cosmetic in people's daily life in Surat city. **Materials & Methods:** The study was conducted among 500 randomly selected people from the Surat city through convenience sampling. All the participants were interviewed personally, using structured questionnaire. The whole study was conducted from December, to March, 2008. **Results:** Around 73% of the population used cosmetics for protection purpose, while only 37% used it for attraction and 19% for fashion. Only 31% checked whether cosmetic they used were tested on animals or not. 89% of the people are concerned about the brands of the cosmetic and advertisement is an important source in the selection of the cosmetics. People still prefer ayurvedic products which comprise of 44% of the total population. Only 9% of the people use the expired products suggesting that people are aware that expired products cannot be used. 77% of the people are aware about the side effects of the cosmetics. **Conclusion:** Overall prevalence of cosmetic product use is increasing among both males and females. Though, associated increase in awareness regarding safe use of the same was not present widely. The use of other cosmetic services like skin specialist visits, contact lenses usage is also increasing slowly.

Key words: Cosmetic, awareness, side effects

Introduction

The first archaeological evidence of cosmetics usage is found in Ancient Egypt around 4000 BC.¹ Cosmetics are a multi-billion dollar industry today.² Cosmetics included eye makeup, like mascara, eye shadow and eye liner; facial cleansing systems, including cleanser, toner and moisturizer; nail polish; and also lotions, lipsticks, skincare products, powders.¹

The Indian cosmetic business has witnessed swift expansion over the previous couple of decades attributed to two main factors: Increase for the demand and improved purchasing power of the common Indian. There are numerous reasons for the augmented demand for cosmetic products in particular like constant bombardment with advertisements and information on new cosmetic products and

boom in the Indian fashion industry leading to increased awareness of people about their appearance.

Common profitable beauty and cosmetic products frequently hold noxious and chemically-potent substances.^{3,4} While chemical ingredients have in general harmful effects for each customer, some people reveal instantaneous health evils upon use of such products akin to populace with susceptible skin or those who have freshly undergone some kind of cosmetic or plastic surgery tend to react with rashes or have other allergic reactions to the chemical components of such cosmetics.^{3,4}

The rules to confine the use of these have been getting steadily firmer but the fact is most cosmetic products, even those that are manufactured by well-

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reputed brands, may frequently have such detrimental products.^{3,4} For example lead-content in make-up makes the cosmetic last longer and hence cosmetic companies often use this toxic and carcinogenic stuff to produce lipsticks and eye liners that last longer.^{3,4}

Table 1: Pattern of cosmetic usage in daily life of people

Variable	Total no. of people (N=500) (%)	Males (N=212) (%)	Females (N=288) (%)
Monthly expenditure on cosmetics in Rupees			
< 500	385(77%)	167(79%)	216(75%)
500-1000	95(19%)	32(15%)	63(22%)
>1000	20(4%)	13(6%)	9(3%)
Purpose of cosmetic usage by people (Multiple answers)			
Attraction	95(19%)	45(21%)	50(17%)
Protection	365(73%)	123(58%)	197(68%)
Fashion	184(37%)	66(31%)	118(41%)
Others	16(3%)	8(4%)	8(3%)
Routinely used cosmetics (Multiple answers)			
Soap	470(94%)	201(95%)	269(93%)
Shampoo	418(84%)	181(85%)	237(82%)
Deodorant	232(46%)	118(56%)	114(40%)
Perfume	219(44%)	108(51%)	111(39%)
Moisturizer	200(40%)	51(24%)	149(52%)
Fairness cream	88(18%)	39(18%)	49(17%)
Sunscreen	136(27%)	36(17%)	100(35%)
Shaving cream	141(28%)	141(67%)	-
Hair spray	12(2%)	8(4%)	4(1%)
Hair jells	85(17%)	75(35%)	10(3%)
Hair oil	354(71%)	151(71%)	203(70%)
Hair color	45(9%)	25(12%)	20(7%)
Nail paints	103(21%)	-	103(36%)
Kajal	117(23%)	2(1%)	115(40%)
Compact	72(14%)	2(1%)	70(24%)
Lipstick	125(25%)	-	125(43%)
People considering price factor while purchasing cosmetic products			
Yes	336(67%)	137(65%)	199(69%)
No	164(33%)	75(35%)	89(31%)
People feeling that cosmetics make you look more beautiful			
Yes	311(62%)	126(59%)	185(64%)
No	189(38%)	86(41%)	103(36%)

Few people realize that they will be paying for this long-lasting effect with their health and well-being.³ As more people around the planet grow alert of the dangers of using chemical cosmetics however, the demand for certified organic skin care and cosmetics is rising progressively.⁵ However, customers should be cautious of the truth that the guidelines for what The present study was designed with an objectives to know the extent, purpose, type, gender distribution, monthly expenditure, hazard prevalence and awareness with regards to expiry date, safety warning, animal testing, composition and hazardous effects for cosmetic in people's daily life in Surat city.

Materials & methods

It is a cross-sectional study, comprising of face-to-face personal interviews using a semi-structured interview schedule containing both qualitative and quantitative variables pertaining to the study objectives. This study was conducted among 500 randomly selected people from the Surat city, Gujarat through convenience sampling. The study subjects included medical students, interns, doctors of Surat Municipal Institute of Medical Education and Research (SMIMER) and Government Medical College, Surat; students of tuition classes and other colleges of the city; as well as family, friends and neighbors of the investigator. Informed consent was taken from all the participants before interview. The whole study was conducted from December, to March, 2008; spanning over duration of three month. Out of total subjects, 335(67%) subjects belonged to 18-30 years while 165(33%) subjects belonged to more than 30 years age group. Out of the sample selected there were 212(42%) males and 288(58%) females. We included all religion people in our

Table 2: Awareness and practices regarding caution with cosmetics usage

Variable	Total no. of people (N=500) (%)	Males (N=212) (%)	Females (N=288) (%)
People checking for animal testing of cosmetics			
Checked	154(31%)	66(31%)	88(31%)
Not checked	356(69%)	146(69%)	200(69%)
People reading the safety warnings written on cosmetics			
Read	443(89%)	183(86%)	260(90%)
Not read	53(11%)	25(12%)	28(10%)
People checking the mfg/expiry date before buying cosmetics			
Checked	465(93%)	199(94%)	266(92%)
Not checked	35(7%)	13(6%)	22(8%)
People who use expired products			
Yes	45(9%)	17(8%)	28(10%)
No	445(91%)	195(92%)	260(90%)
People who will buy cosmetics products which is near expiry if someone provide it in less price			
Yes	40(8%)	17(8%)	23(8%)
No	460(92%)	195(92%)	265(92%)
People aware of the ingredients of the products they use			
Yes	249(50%)	112(53%)	137(48%)
No	251(50%)	100(47%)	151(52%)
People who are aware about the side effects of cosmetics			
Yes	386(77%)	171(81%)	215(75%)
No	114(23%)	41(19%)	73(25%)
People sharing their cosmetic products			
Yes	248(50%)	106(50%)	142(49%)
No	252(50%)	106(50%)	146(51%)
People removing make up before going to sleep			
Yes	307(61%)	-	261(91%)
No	193(39%)	-	27(9%)

study. We came across the entire range of well educated to less educated people in our study.

Data entry was done followed by data cleaning and analysis with help of Epi Info⁷.

Ethical approval: The study was approved by ethical committee of Surat Municipal Institute of Medical Education and Research (SMIMER) and Government Medical College, Surat;

Table 3: Commonly occurring side effects among people with cosmetic usage

Side effects	Total no. of people (N=500) (%)	Males (N=212) (%)	Females (N=288) (%)
Acne (pimples)	175(35%)	69(33%)	106(37%)
Allergy	115(23%)	49(23%)	66(23%)
Skin burns	49(10%)	20(9%)	29(10%)
Inflammatory reaction	19(4%)	8(4%)	11(4%)
Itching	62(12%)	33(16%)	29(10%)
Infection	33(7%)	14(7%)	19(7%)
Irritation of eyes	81(16%)	25(12%)	56(19%)
Nasal irritation	35(7%)	18(8%)	17(6%)
Cancer	0(0%)	0(0%)	0(0%)

Results

As per our observation in the table 1, we found that majority spend less than 500 rupees per month on cosmetics; however 4% of them spend more than 1000 rupees every month. On being asked about the purpose for which people use cosmetics, we see (table 1) that majority of them 73% use cosmetics for protection, followed by fashion (37%), for which females are more conscious (41%) as compared to males (31%). If we see attraction (19%), more males (21%) like to be attractive compared to females (17%). Some people (3%) mentioned for some other reasons like looking beautiful. The table 1 shows the commonly used cosmetics in the study group. We can see soap, shampoo, fairness cream, hair oil are being equally used by males and females. Deodorant, perfume, hair gel, hair color are more popular in males while moisturizer, sunscreen, kajal are more used by females. Around 35% of males and 31% don't consider price for purchasing a cosmetic product. Surprisingly around 38% people do not feel that cosmetic make one feel

more beautiful.

As mention in table 2, only 31% of people check whether cosmetics were tested on animal or not, and around 69% of people were not aware about it. As per our studies 86% of males and 90% of females said that they read the safety warnings, while 12% of males and 10% of females do not read safety warnings before purchasing their cosmetics products. As

per table 2 around 93% of both males and females checked the mfg/expiry date before buying cosmetics, while 7% of them don't bother about mfg/expiry date. Around 8% of males and 10% of females use expired products, while 92% of males and 90% of females don't. It was very interesting to know that around 4% of males and 5% of females who check the expiry date actually did not mind using expired product.

They say that, "They buy non-expired products but if they expire, they could not throw away costly expired products." Few of them said, "How cosmetics which are dated past their expiry date can harm? They are not eatable or medicine." Around 8% of males and females would

Table 4: Use of other cosmetic services

Variable	Total no. of people (N=500) (%)	Males (N=212) (%)	Females (N=288) (%)
Visit to (beauty/men) parlor			
Once in a month	396(79%)	166(78%)	230(80%)
Twice in a month	81(16%)	34(16%)	47(16%)
More	23(5%)	12(6%)	11(4%)
People asking what is being used on their skin in parlor			
Yes	365(73 %)	133(63%)	232(81%)
No	136(27%)	80(38%)	56(19%)
Visit to a skin doctor			
Yes	200(40%)	83(39%)	117(41%)
No	302(60%)	131(62%)	171(59%)
Preference for contact lens over spectacles			
Contact lenses	158(32%)	46(22%)	112(39%)
Spectacle	342(68%)	166(78%)	176(61%)
People believing that contact lenses should be removed before going to sleep			
Yes	463(93%)	202(95%)	261(91%)
No	37(7%)	10(5%)	27(9%)

not mind buy cosmetics products which is near expiry date if someone provide it in less price. As per our evaluation 53% of males and 48% of females know the ingredients of their products. As we see from table 2, most of people (81% and 75% of males and females respectively) were aware about the side effects of the cosmetics. Half of the people in our study shared our cosmetics with others.

Table 3 is self explanatory which shows that the commonly occurring side effects among people are acne (33% for males & 37% for females) followed by allergy (23% for males & females). Side effects like irritation of eyes, nasal irritation, skin burns, itching, inflammatory reaction, infection also contribute to minor amount in descending order.

When people were interviewed about did they care for the brands which they are using 9% of females & 14% of males replied negatively (Table 4). We asked people on what basis they select their brands, most of the males and females gave that they select by getting influenced with the advertisements (53% for females & 49% of males). Around 41% females and 37% of males purchase as per use by their friends & some of them consider price factor before their pur-

chase. We also got some different opinion by which they use to purchase the product, like their previous experience, suggested by their doctors, their popularity etc. which constitute minor amount of study. Majority of the people (around 60%) believe that cosmetics of higher brand are not a status symbol. Around 40% of both males and females preferred Indian products. And only 20% of people preferred only foreign products. As per our collected data Indian products are more popular because of patriotism, they are cheaper, they are more suitable for Indian skin, good product, less knowledge about foreign product. People who preferred foreign products believe that foreign products are good quality, more reliable, give best results, good standard, safe etc. Most of the people (42% of males & 46% of females) prefer ayurvedic products. They gave reasons for that like ayurvedic products are safe, no side effects, natural, cures disease totally. People preferred allopathic products because it gives fast results, more potent, doctors preferred and also scientifically approved. Some would like to use both allopathic and ayurvedic products (27% in males & 25% in females).

The table 5 shows, 63% of males & 81% of females ask their beauticians regarding the products used on their skin. Around 40% of both males and females visit their skin doctor. The common reasons for the

visits, we found to be are acne, post acne scars, allergy, urticaria, routine checkup. The data from table 5 showed that despite the availability of superior quality of lenses, majority of people still preferred spectacles. They said that spectacles look smarter, they are easy to use and with the use of lenses, chances of infection increases. While the others, that is those 22% males and 39% females, who prefer lens, say that they look better with lens, lenses are fashionable, there is better field of vision with lens.

Discussion

In earlier days only those cosmetics were used by people which were necessary in their daily life like soap, shampoo, hair oil etc. but as the time

changed other cosmetics are also being used by people widely like perfume, deodorant, moisturizer, hair color, hair gel etc. as can be seen from our stud find-

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ings too. It can also be seen that cosmetics markets are not only for females but males are also equally aware about the use of cosmetics.²

Most of the people thought that there was no necessity to know the cosmetics being tested on animals or not (Table 2). But now every product before being subjected to human they are tested first on animal and their side effects or any long term complications are studied. So the products are subjected to market only if they have been proved safe with their testing on animal which is written on label on cosmetics container.³ The cosmetics which are not tested before on animal are the more probable culprit to cause the harm effect especially after long term use. Every cosmetic has some or the other safety warnings written on it and every person should know about safety warning before using cosmetics products as majority of cosmetics contains chemical component which directly or indirectly can cause adverse effect on human.^{3,4} As per our study, 86% of males and 90% of females said that they read the safety warnings before purchasing their cosmetics products which suggest that besides the use of cosmetics people are also concerned about its hazardous effect.

In the study majority percentage of males (65%) and females (69%) consider price factor while purchasing the cosmetic products, probably in the belief that the products of high price are far better in all ways than the one which has low price.

Fragrance is the main ingredient in cosmetics and most common cause of skin problems.^{3,4} Preservatives in cosmetics are the common element to avert bacteria and fungus from emerging in the product and shielding products from spoil caused by air or light.^{3,4} Preservatives can also cause the skin to become irritated and infected.^{3,4} Some examples of preservatives are Paraben, Imidazolidinyl urea, Quaternium-15, etc.^{3,4} Bithionol, Mercury compounds, Vinyl chloride etc. are some other ingredients in cosmetics causing cancer or other serious health problems and their use in cosmetics is banned or limited.^{3,4} As per our evaluation 47% males and 52% females don't know about the ingredients of their cosmetic products.

Acetone used in cologne, detergent, nail enamel remover acts primarily as a central nervous system

(CNS) depressant also causes dryness of the mouth and throat, dizziness, nausea.^{3,4} Benzaldehyde used in perfume, cologne, hairspray etc. acts as local anesthetic, CNS depressant, irritant.^{3,4} Similarly Benzyl Acetate in perfume, cologne, shampoo etc. is carcinogenic (linked to pancreatic cancer), as well as irritant to eyes and respiratory passages.^{3,4} Many such other ingredients like Benzyl Alcohol, Camphor, Ethanol etc. used in different cosmetics like perfume, hairspray, shampoo etc. cause varied side effects ranging from fatigue and irritation to CNS, kidney, liver disorder to cancers.^{3,4} Around quarter of people (19% of males and 25% of females) in our study were not aware of the adverse reaction with the cosmetic usage. Around 35% of people in our study had also experienced acne and 23% had experienced allergy with cosmetic usage. Sharing cosmetics is not only about sharing cosmetics, but about sharing all the infections which may be present on the skin of the users who share cosmetics, particularly eye irritation with the use of common kajal pencils, eyeliners etc. Even sharing of soap may lead to this. Sharing make-up can also lead to grave harms.^{1,4} Cosmetic brushes and sponges pick up bacteria from the skin and if you dampen brushes with saliva, the trouble can be shoddier. Still half of the people in our study shared their cosmetics with others.

Around 60% considered brands as their status symbol showing that how much the standard of people is increased & how much they are concerned with their products. Today there is a big market of cosmetics for Indian as well as foreign products. But our study shows that Indian products are more preferred than foreign products.

All ayurvedic products are exempt from animal testing and chemicals and are made exclusively from organically grown herbs, roots and plant extracts. Ayurvedic products usually do not contain harsh preservatives, synthetic ingredients, alcohol, artificial fragrances and colors and animal ingredients. Hence they are devoid of the side effects that can occur with allopathic products. Still only around 40% people were found to be using ayurvedic products.

Many of the beauticians, to reduce their costing, don't use the standard products, which can be harmful to customer, so it is good habit to have a look at

the product beforehand in parlors. In our study 38% of males & 19% of females still do not ask for the products used on their skin.

Contact lenses are amongst the safest forms of vision rectification when patients follow the appropriate care and wearing directives provided by their eye surgeon.⁶ Still only around 30% people prefer contact lenses in our study.

If makeup is left on skin for all night, it will harm more.^{1,4} Still 9% of ladies leave makeup as it is whole night. Sleeping as it is with lens in eyes may lead to infection, reduced oxygenation to eye, may be blindness. Still 9% of females and 5% of males, do not believe in removing lens before going to sleep.

Summary

Around 73% of the population used cosmetics for protection purpose, while only 37% used it for attraction and 19% for fashion. Only 31% checked whether cosmetic they used were tested on animals or not. From the study 89% of the people are concerned about the brands of the cosmetic and advertisement is an important source in the selection of the cosmetics. People still prefer ayurvedic products which comprise of 44% of the total population. Only 9% of the people use the expired products suggesting that people are aware that expired products cannot be used. 77% of the people are aware about the side effects of the cosmetics.

References

1. Make-Up USA. Make-Up Tips [Internet]. USA: Make-up USA; 2011. Available from: <http://www.make-upusa.com/>
2. Indianetzone. History of cosmetics [Internet]. India: Indianetzone. Available from: http://cosmetics.indianetzone.com/1/history_cosmetics.htm
3. Safe Cosmetics Action Network. What's in your products? [Internet]. USA: Safe Cosmetics Action Network; 2011. Available from: <http://www.safecosmetics.org/section.php?id=33>
4. US Department of health & human services. Cosmetic & your health fact sheet [Internet] USA: US Department of health & human services. Available from: <http://www.womenshealth.gov/publications/our-publications/fact-sheet/cosmetics-your-health.cfm#a>
5. The beaubeau. Its not easy being green [Internet]. USA: The beaubeau; 2012. Available from: <http://www.4women.com/blog/?p=874>
6. American Optometric Association. Contact Lenses [Internet]. USA: American Optometric Association; 2012. Available from: <http://www.aoa.org/contact-lenses.xml>