

# Cosmetics utilization and its Knowledge among Intermediate Level Female Students of Public Youth Campus, Janakpurdham

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## ABSTRACT

**INTRODUCTION:** Assorted beauty products such as skin care products, hair products, fragrances and nail products that may contain toxic chemicals and that can be harmful to health are especially used by women. The objective of this study was to assess the utilization of cosmetics and its knowledge among intermediate level female students.

**MATERIALS AND METHODS:** The study was conducted at Public Youth Campus, Janakpurdham using descriptive cross-sectional study design. Purposive sampling technique was used. Intermediate level female students were included in the study. The data were analysed using IBM SPSS Version 23. Descriptive and inferential analysis was carried out to find out frequency and association between socio-demographic variables, and knowledge regarding the effects of cosmetics utilization. **RESULTS:** The study revealed that 53.8% of respondents had started using cosmetics at the age of 12-16 years, 20% of respondents had started using cosmetics at the age of 16-20 years, whereas 26.3% had started using cosmetics before the age of 12. Moreover, 68.8% of respondents believed that long-term usage of cosmetic products was beneficial whereas 31.2% of respondents had experienced the adverse effects of cosmetics utilization. Additionally, 28.7% of respondents had a high level of knowledge regarding cosmetics utilization.

**CONCLUSIONS:** The study found that the knowledge regarding the effect of cosmetics utilization was moderate among the respondents. It was also found that the adverse effects of cosmetic use lead to allergic reactions and skin discoloration upon long term usage of cosmetic products. Health education program to the target population is crucial with focus on cosmetic use and its adverse effects on health.

**Keywords:** Cosmetics-utilization, female-students, intermediate level, knowledge.

## INTRODUCTION

Cosmetics are products which are applied to the body or face to improve appearance. The utilization of cosmetics may vary; they cleanse, beautify, promote attractiveness and alter appearance of the body and face. The concept of beauty and cosmetics are deep rooted since the development of mankind and human civilization. Varied beauty products such as skincare products, hair products, fragrance, and nail products which may contain toxic chemicals, that can be harmful to health are especially used by women. Most cosmetic products contain hazardous chemicals like Sodium laureth sulphate, Talcum, Parabens and some heavy metals e.g: lead, arsenic and mercury. The bioaccumulation

of these harmful chemicals and metals in the body over time has been associated with cancer, reproductive and developmental disorder, lung damage, ageing and skin disease [1].

Cosmetic items have long been used by people around the world in order to enhance personal appearance and maintain personal hygiene and safety. Cosmetic items are principal categories of health care products besides the pharmaceutical products, which are mainly used for mitigation of diseases. Cosmetic items are in general known as the chemical substances or sometime the preparation from natural herbs, which are frequently applied to human body exclusively, with

an intention of beautification as well as for cleaning and protection from various hazards. Like the pharmaceutical products, cosmetics are quite likely to consist of various substances as the product ingredients, which in turn may unfortunately further support the growth of a wide range of pathogenic bacteria and fungi. Therefore, these health care products need to be free from pathogens to reduce the possibility of the impairment of skin and mucous membrane [2]. In the last few years, the consumption of cosmetics has touched new heights and the curve is shooting upwards. Along with this, cosmetics are causing alarming adverse reactions to consumers and hence studying their utilization pattern and their impact besides beautifying would be important.

A cross-sectional study on cosmetics usage patterns and concomitant adverse effects at Mekelle University depicted the use of cosmetics on a regular basis. Body lotion was the most commonly used cosmetic product followed by deodorants and hair cosmetics. Adverse reactions to cosmetics were reported by cosmetics users, particularly on the face, hair and skin [3]. In 2017, a descriptive study was conducted to find out the knowledge of girls at Maiya Devi Girls' College in Bharatpur-10, Chitwan, about the negative consequences of cosmetic items. Majority of them had an average degree of knowledge, 17.1% had a poor level of knowledge, and 10% had a high level of knowledge [4]. Different types of adverse effects can occur among cosmetics users. Adverse effects from cosmetics can happen immediately after application or on long-term usage. The adverse reactions from cosmetics include dermatitis, tissue damage, infection, discoloration, bleeding, nervousness, respiratory system reactions, vomiting, diarrhoea, urogenital reactions etc. [5,6]. However, knowledge about undesirable effects of cosmetics utilization at population level is limited due to the absence of formal and reliable adverse effect reporting system. Therefore, the objective of this study was designed to find out the level of knowledge regarding the effects of cosmetics utilization among female students.

## MATERIALS AND METHODS

### Study design and setting

Descriptive cross sectional study was carried out among female students of Public Youth Campus,

Janakpurdham. Female students who were currently studying in the college were the sampling unit, and complete enumeration was done to collect information from the respondents. The objectives of the study were explained clearly to the respondents. Informed written consent was taken from the participants, and participation in the study was voluntary.

### Participants, sampling and sample size

Intermediate level female students from management stream were enrolled. Students of science and education faculty were excluded. Sampling unit was selected by using purposive sampling technique and complete enumeration was done from the sampling unit. The size of sample for the study was 80.

### Data collection procedure

Semi structured questionnaire was developed to obtain information from the respondents. The questionnaire had socio demographic information in a part, and knowledge regarding effect of cosmetics utilization in next part. The validity of the study tools were maintained by consulting the research supervisor, concerned teacher, statistician, and literature review. The questionnaire were prepared in English and given to the research guide for checking. Reliability was maintained by pre-testing the instrument in 10% of the study population and necessary modifications in the instrument was done accordingly.

### Statistical analysis and data management

The collected data was checked for completeness and correctness. Rechecked and coded at the time of data entry into IBM SPSS version 23. The data was analysed with descriptive statistics using characteristics mean, median, mode, frequency and standard deviation with Chi-square test.

### Ethical considerations

The approval for the study was taken from Sinha Health Foundation Pvt. Ltd. Janakpurdham. A letter of written permission was also obtained from Public youth campus before the commencement of the study.

## RESULTS

The distribution of respondents socio-demographic variables are as shown in Table 1. Majority of respondents (47%) were under the age of 17. Similarly, 23.8% of respondents were under the age

**Table 1** | Distribution of respondents by socio-demographic characteristics

Variable	Number (n=80)	Percentage
<b>Age</b>		
16yrs	10	12.5
17yrs	38	47.5
18yrs	19	23.8
19yrs	8	10.0
20yrs	3	3.8
21yrs	2	2.5
<b>Family structure</b>		
Joint family	50	62.5
Nuclear family	30	37.5
<b>Income/month</b>		
10-20 thousand	17	21.2
20-30 thousand	17	21.3
30-40 thousand	21	26.3
> 40 thousand	25	31.3

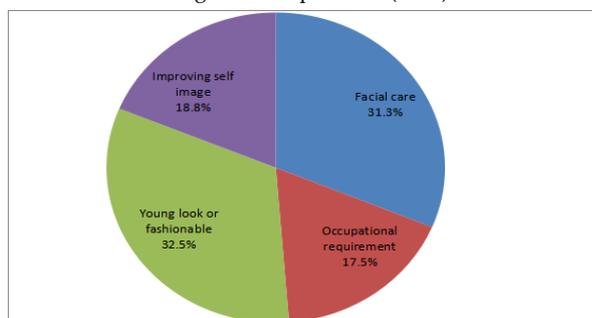
of 18, while the minimum (2.5%) of respondents were over the age of 21. In relation to the family structure, 62.5% of the respondents belonged to joint family and just 37.5 % belonged to nuclear family. In terms of income, maximum respondents (31.3%), family income was over 40 thousand Nepalese Rupees (NPR). Similarly, 26.3 % of the respondents had a family monthly income of 30-40 thousand NPR, while minimum (21.2 %) of respondents had a family income of 10-20 thousand NPR. Majority of respondents (50%) answered that they used cosmetics to look attractive likewise, 17.5 % answered that they used cosmetics because of their bad tone of skin and for the care of their skin whereas minimum (15%) of the respondents said that they used cosmetics to boost confidence. The study reveals interestingly that the majority of participants (53.8%) answered that they had started using cosmetics at the age between 12-16 years. Likewise, 26.3 % had started to use cosmetics before the age of 12 years, similarly 20% of respondents answered that they had started using cosmetics at the age between 16-20 years. Moreover, the study findings tell us that none of the respondents started to utilize cosmetics after the age of 20 years. Other individual interest of cosmetics utilization related information are shown in Table 2.

Among the participants, 32.5% of them answered that the purpose of using cosmetics products was for looking young and fashionable. Likewise, 31.3% utilized cosmetics for facial care, and 18.8 % and 17.5% answered the utilization of cosmetics for improve self-image, and occupational requirements respectively (Figure 1).

**Table 2:** Individual interest of cosmetics utilization related information

Variable	Number (n=80)	Percentage (%)
<b>Distribution of respondents regarding reason to use cosmetics</b>		
Boost confidence	12	15.0
To look attractive	40	50.0
Due to bad skin	14	17.5
Skin care	14	17.5
<b>Distribution of respondents regarding age started use of cosmetic products</b>		
Before 12	21	26.3
12-16	43	53.8
16-20	16	20.0
After 20	0	0
<b>Distribution of respondents regarding belief in cosmetic make person look beautiful</b>		
Yes	59	73.8
No	21	26.3
<b>Distribution of respondents regarding use of cosmetic to keep body attractive</b>		
Yes	61	76.3
No	19	23.8
<b>Distribution of respondents regarding prefer of cosmetic products</b>		
Artificial /chemical	26	32.5
Natural/herbal	43	53.8
Both	11	13.8
<b>Distribution of respondents regarding face washing before applying cosmetic products</b>		
Yes	68	85
No	12	15
<b>Distribution of respondents regarding having positive image of using cosmetic products</b>		
Yes	60	75
No	20	25
<b>Distribution of respondents regarding ever experienced serious adverse effects of cosmetic products</b>		
Yes	21	26.3
No	59	73.8
<b>Distribution of respondents regarding information collection before purchasing cosmetic products</b>		
Always	21	26.3
Sometimes	31	38.8
Rarely	7	8.8
Not at all	21	26.3
<b>Distribution of respondents regarding major adverse effects of cosmetic products</b>		
Skin irritation	26	32.5
Allergic reaction	29	36.3
Cancer	18	22.5
Others	7	8.8
<b>Distribution of respondents regarding long term usage of cosmetics as beneficial</b>		
Yes	55	68.8
No	25	31.3

**Figure 1** | Distribution of respondents regarding purpose of using cosmetic products (n=80)



**Table 3** | Respondents level of knowledge regarding effects of cosmetics utilization (N=80)

Level of knowledge	Number	Percentage	Knowledge score (Mean±SD)
High	23	28.7	35.6±3.59
Average	34	42.6	
Poor	23	28.7	

### Level of knowledge regarding effects of cosmetics utilization

The study shows, 42.6% of respondents had average knowledge, likewise 28.7% had high knowledge whereas 28.7% had poor knowledge regarding the effects of cosmetics utilization (Table 3).

Table 4 depicts that there was no statistically significant association between knowledge regarding effects of cosmetics utilization with the selected socio demographic variables.

**Table 4** | Relationship between levels of knowledge with selected socio demographic variables

Variables	Level of Knowledge								Chi-square	p-value
	High		Average		Poor		Total			
	n	%	n	%	n	%	n	%		
<b>Age</b>										
15-17	18	36.7	20	40.8	11	22.4	49	100	4.635	0.099
18-20	5	16.1	14	45.2	12	38.7	31	100		
<b>Family structure</b>										
Joint	13	26.0	20	40.0	17	34.0	50	100	1.825	0.402
Nuclear	10	33.3	14	46.7	6	20.0	30	100		
<b>Family income</b>										
10-20 thousand	6	35.3	8	47.1	3	17.6	17	100	3.342	0.76
20-30 thousand	6	35.3	7	41.2	4	23.5	17	100		
30-40 thousand	6	28.6	9	42.9	6	28.6	21	100		
>40 thousand	5	20	10	40.0	10	40.0	25	100		

## DISCUSSION

The findings of this study shows that nearly half of the respondents (47.5%) belonged to 17 years of age and maximum respondents belonged to joint family whereas only 37.5% of the respondents belonged to nuclear family. Regarding the income, nearly half of the respondents (31.3%) family income was above 40 thousands and minimum (21.2%) of respondent's family income was between 10-20 thousands. 100% of the respondents answered that they used cosmetic products which is similar to the findings of research conducted in Mekelle University, where 97.8% of the participants had habit of using cosmetic products. Maximum (50%) of the respondents reported that they use cosmetic

products to look attractive. Majority (53.8%) reported that they started using cosmetic products between the age of 12-16 years. 73.8% of the respondents believed that cosmetics make people beautiful and lovely. Majority of respondents (32.5%) used cosmetics to keep their skin looking fresh and attractive. Similarly, this study reports that natural/herbal cosmetics were preferred by 53.8% of the respondents, whereas both artificial and natural cosmetics were preferred by 13.8% of the respondents. More than half (60%) of respondents consider quality of products before buying any kind of cosmetic products. Similar findings were reported in a Community based cross-sectional survey conducted in Jijiga town,

Eastern Ethiopia where, 70% of the participants claimed that quality was their main selection criteria. Highest percentage of respondents (75%) answered that they had positive image of cosmetic products and only (25%) of respondents reported that they had no positive image of cosmetic products [8]. Research conducted in Wollo University, among female students showed that 31.8% of cosmetic users had experienced adverse effects of products which is similar to the findings of this study where 26.3% of the respondents experienced adverse effects of cosmetic products [5]. 35% of the respondents reported acne as the most common side effect of cosmetic utilization. Similar finding was reported in the study done in Surat city where maximum respondents (35%) reported most common side effects as acne [12].

A research conducted on Eastern Ethiopia showed that, 68% of the respondents purchased cosmetic products from shopping mall, however in this study, only 27.5% of the respondents purchased cosmetic from shopping mall. Majority of respondents (35%) purchased cosmetics from medical shop or pharmacies [8]. Regarding the selection of cosmetic products majority of the respondents (52.5%), were influenced by family, 28.7% were influenced by advertisements, 13.8% were influenced by peer groups and 5% were influenced by store environment. Similarly this study shows that, 38.8% of the respondents collected information sometimes before purchasing cosmetic products whereas 26.3% of the respondents collected information always or not at all and 8.8% rarely collected information. In this study, maximum respondents (36.3%), reported allergic reactions as the major adverse effects of

cosmetic use. Similarly, 37.5% of the respondents reported skin discoloration on long term use of cosmetics while 8.8% reported that it could lead to death. 40% of the participants reported that users were responsible for their safety, whereas 68.8% of the participants reported that long term usage of cosmetics was beneficial and 31.3% participants reported that long term usage of cosmetics was not beneficial. Majority (42.6%) of respondents had average level of knowledge, 28.7% had high level of knowledge while 28.7% had poor level of knowledge about cosmetic utilization.

## CONCLUSIONS

The study concludes that knowledge regarding the effect of cosmetic use was moderate among the respondents and reported that adverse effect of cosmetic use lead to allergic reaction and skin discoloration upon long term usage of cosmetic products.

Further, studies of large population of people from various institution, school and universities with a case control study design with a longer time periods is recommended to generalize the results. In terms of cosmetics, students should have knowledge, about how to use them in order to reduce the number of reported adverse reactions. Practice, attitude and purchasing behaviour along with other factors that influence cosmetics use can also be studied. Interventional health education programme targeted to females, focusing on cosmetics use adverse effects on health and harmful effects on skin can be carried out. Due to time constrictions and a small sample size, it was conducted only one institution. As a result, the finding may not be generalizable to other settings

## ADDITIONAL INFORMATION AND DECLARATIONS

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### Author Contributions:

Study design, reviewed literatures, inscription of 1st and final draft of manuscript- LS, PS; Sample collection, data analysis,

involved in writing first draft-LS, PS, MG, SSG; revision and amended 2nd draft of manuscript- LS, PS, MG, SSG; intellectual critics in scripting, editing and final decisive revision of final draft of manuscript- LS, PS, MG, SSG. All authors have read and agreed with the contents of the final manuscript towards publication.

### Data Availability:

Data will be available upon request to corresponding authors after valid reason.

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