

ORIGINAL ARTICLE

Knowledge Regarding Adverse Effects of Cosmetics among Teenagers

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ABSTRACT

Background: A study was undertaken to assess the knowledge regarding adverse effects of cosmetics among teenagers at selected colleges.

Aim: To inform the teenagers regarding the adverse effects of cosmetics through information booklet.

Objectives: The study objectives are, To assess the knowledge of teenagers regarding adverse effects of cosmetics, to determine the association between the knowledge regarding adverse effects of cosmetics with their selected demographic variables, to develop and distribute informational booklet on adverse effects of cosmetics.

Material: Study conducted through descriptive research design, with sample size of 30 selected by simple random sampling method. Structured Questionnaire was used to assess the knowledge level.

The pretest was conducted, after statistical findings the sample were distributed with Information Booklet.

Result: The findings of the study showed that 2 (6.66%) teenagers having inadequate knowledge, 16 (53.3%) having moderate knowledge and 12 (40%) having adequate knowledge, which shows the need of an Information booklet regarding the Effects of Cosmetics.

Conclusion: The study finding concluded that the majority of the teenagers had moderate levels of knowledge regarding adverse effects of cosmetics. The investigator has developed and validated an informational booklet for the benefit of the teenagers.

KEYWORDS

• Knowledge • Cosmetics • Adverse Effects • Teenagers

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INTRODUCTION

Cosmetics are substances used to enhance the appearance or odor of the human body.¹ They are generally mixtures of chemical compounds, some being derived from natural sources, many being synthetic. Makeup has become a necessity for most women and they believe that they can't step out of the house without at least five different kinds of cosmetic products. The cosmetic product has bloomed to such an extent that not only are there different cosmetics for every kind of body part, there are different ones for different seasons too.² An average adult uses nine cosmetic products daily. More than 25% of women use 15 or more. From a dermatologist point of interest, cosmetics may be grouped as skin-care cosmetics like cleansing agents and moisturizing agents. Hair-care cosmetics like shampoos, hair colorants and styling agents.³

Face-care cosmetics like facial foundations, powders, eye shadows, mascara and lipsticks. Nail-care cosmetics like nail varnishes and paint removers. Fragrance products like deodorants, aftershaves and perfumes. Ultraviolet (UV) light screening preparations. Cosmetics, toiletries, and skin-care products, including sunscreens, quite frequently cause adverse reactions, and are commonest single reason for hospital referrals with allergic contact dermatitis. However, perfume and others constituents may cause skin irritation and it also causes allergic reactions.⁴

There have been several reports of immediate allergic and anaphylactic reactions following the use of henna dyes. Most cases have sneezing, running nose, cough, and shortness of breath instead of skin reactions.⁵ Adverse effects to sun-screening agents may result in irritant, allergic, phototoxic, or photoallergic reactions, and caused not only by the active constituents but also by the additives such as fragrances and stabilizers. About 12% of cosmetic reactions occur on the eyelid, mainly due to eye shadow. Mascara is the most commonly used eye cosmetic. Kajal and surma are mainly carbon compounds, but surma also contains mercury or lead and may put at risk of serious health problems.⁶

According to Neutrogena cosmetics group three out of four consumers in the age group of 14 to 17 years are using a foundation product, and usage is actually a bit higher for mascara and lip gloss.⁷

Need for the Study

Yet girls using cosmetics are most vulnerable to the chemical makeup. And these chemicals are linked with the development of breast cancer during the teenage years. Other problems suffered by the teenagers are multiple myelomas, blindness, skin rashes, urinary tract infections, bladder infections, kidney infections, genital disorders and respiratory disorders.

According to WHO study in 2004 Mercury is a common ingredient found in skin lightening soaps and creams. It is also found in other cosmetics, such as makeup cleansing products and mascara. Skin lightening soaps and creams are commonly used in certain African and Asian nations. They are also used among dark-skinned populations in Europe and North America and India. Mercury salt inhibits the formation of melanin, resulting in a lighter skin tone.⁸

According to a report from the Food and Drug Administration, USA, 400 lipsticks on the market were tested positive for containing lead. Few popular brands had the highest level of lead content. An advisory committee to the US Centers for Disease Control and Prevention issued a report stating that there is no safe level of lead for children, yet also stressing the urgency of preventing lead exposure for both children and pregnant women. While lipstick is not sold to children, any mother will tell you it's hard to keep them away from it, writes Forbes magazine on the issue, adding and pregnant women are often not appropriately cautioned about lead levels in lipstick.⁹

A study involving 22 lip stick brands found that 55 per cent contained trace amounts of the toxic element lead. It revealed that 12 of the lip products sampled tested positive for lead with the highest levels at 3.22 parts per million. It also reported that a low-level lead exposure posed a serious health risk and could affect mental health.¹⁰

Objectives:

- To assess the knowledge of teenagers regarding adverse effects of cosmetics.
- To determine the association between the knowledge regarding adverse effects of cosmetics with their selected

demographic variables.

- To develop and distribute informational booklet on adverse effects of cosmetics.

HYPOTHESIS

H₁: There will be a significant association between the adverse effects of cosmetics with their selected demographic variable.

METHODOLOGY

The research approach used in this study was quantitative in nature, research design selected for the study was non-experimental descriptive research design, because the present study is intended to assess the knowledge regarding adverse effects of cosmetics. The demographic variables include Religion, Age group, Domicile, Family income, Dietary pattern, Awareness about cosmetics, Frequency of cosmetic usage, how long you are using cosmetics, Education of the mother, Hobbies. For the present study sample size is 30 Teenagers, through lottery method technique selected. Based on the objective of the study the following selection of the tools were developed, Part-A, Demographic variable on the adolescence it consists of religion, marital status, family income, frequency of cosmetic uses, information regarding cosmetics, how long using cosmetics. Part-B, Structured questionnaire to elicit knowledge of health hazards of cosmetic, it consists of 30 items under each selection carrying 6 questions which were objective type, multiple choice, closed ended questions with a single correct response for each question. The sections includes questionnaire to elicit the knowledge regarding general information, utilization of cosmetic, purchasing behavior, adverse effects of cosmetics, preventive measures of adverse effects of cosmetics among teenagers. Each correct answer a score of 1 mark and zero for wrong answer, thus total 30 marks were allotted. Knowledge levels are described as follows, <50% Inadequate knowledge, 50-75% Moderately adequate knowledge, >75% Adequate knowledge. The consent was obtained from the samples. The collected data were formulated in following descriptive and inferential statistics.

RESULTS

Table I: Frequency and percentage distribution of teenager according demographic variable

(n=30)

Demographic Variable	Frequency (F)	Percentage (%)
Age group		
13-14	2	6.66%
15-16	16	53.30%
17-18	12	40%
19-20	0	0
Religion		
Christian	2	6.66%
Hindu	26	86.60%
Muslim	2	6.66%
Others	0	0
Family Income		
5000-10000	14	46.60%
10001-15000	10	33.30%
15001-20000	2	6.66%
Above 20000	4	13.30%
Frequency of cosmetic usage		
Hourly	2	6.66%
Daily	7	23.30%
Vocationally	21	70%
Awareness about cosmetics		
Family members	18	60%
Peer Group	6	20%
Mass Media	6	20%
How long you are using cosmetics		
Less than 6 months Since 1 year	14	46.60%
3 to 5 year	7	23.30%
More than 5 years	9	30%
Domicile		
Rural	17	56.60%
Urban	13	43.30%
Dietary pattern		
Vegetarian	5	16.60%
Non vegetarian	2	6.60%
Both	23	76.60%
Education of the mother		
Illiterate	11	36.60%
Up to 10th class	16	53.30%
Under graduate	2	6.66%
Post graduate	1	3.33%
Hobbies		
Grooming	5	0
Sleeping	15	16.60%

Demographic Variable	Frequency (F)	Percentage (%)
Reading	5	50%
Watching TV	10	33.30%

Table I, depicts that with respect to Age 16 (53.3%) of the study subject belongs to the age group of 15-16 years, Religion 26 (86.6%) of the study subject belongs to Hindu, With respect to the Income of the family per month 14 (46.6%) of the study subject are Rs. 5000 – 10000 as family income, With respect to the Cosmetic usage 21 (70%) of the study subject are using cosmetics vocationally, With respect to the Awareness about cosmetics 18(60%)

of the study subject had awareness from family members, With respect to usage of cosmetics 14(46.6%) of the study subject using cosmetics less than 6 months, 9(30%) of the study subject using cosmetics 3-5 years and 7(23.3%) of the study subject using cosmetics since 1 year, Regarding Domicile 17 (56.6%) majority of the study subject belongs to the rural area, 13(43.3%) of the subject belongs to the urban area, Considering the Dietary pattern 23(76.6%) of the study subject are both vegetarian and non-vegetarian, With respect to the Education of the mother 16 (53.3%) of the mothers pursued the education up to 10th class, With respect to the Hobbies 15 (50%) of the study subject are interested to reading.

Table 2: Frequency and percentage distribution of teenagers according to Level of knowledge regarding adverse effects of cosmetics

Items	(n=30)					
	Inadequate knowledge (>50%)		Moderate knowledge (50 – 75 %)		Adequate knowledge (<75%)	
	(f)	(%)	(f)	(%)	(f)	(%)
Section-1						
Knowledge regarding general information of cosmetics among teenagers	6	20	10	33.3	14	46.6
Section -2						
Knowledge regarding utilization of cosmetics among teenagers	4	13.3	14	46.6	12	40
Section -3						
Knowledge regarding purchasing habit of cosmetics	3	10	15	50	12	40
Section -4						
Knowledge regarding purchasing habit of cosmetics among teenagers	8	26.6	11	36.3	11	36.3
Section -5						
Knowledge regarding prevention of adverse effects of cosmetics	1	3.3	8	26.6	21	70
Overall knowledge on adverse effects of cosmetics	2	6.66%	16	53.30%	12	40%

Table 2, shows that the maximum 14 (46.6%) of the study subject were having adequate knowledge, 10 (33.3%) were having moderate knowledge, 10 (33.3%) were having moderate knowledge, 6 (20%) were having adequate knowledge regarding the general information of cosmetics. With respect to the knowledge score on utilization of cosmetics 14 (46.6%)

were having moderate knowledge, 12 (40%) were having adequate knowledge and 4 (13.3%) were having inadequate knowledge. It depicts that 15 (50%) were having moderate knowledge, 12 (40%) were having adequate knowledge, 3 (10%) were having inadequate knowledge regarding purchasing habit of cosmetics.

With respect to the knowledge regarding adverse effects of cosmetics 11 (36.3%) were having adequate knowledge, 11 (36.3%) were having moderate knowledge, 8 (26.6%) were having inadequate knowledge.

It is evident that knowledge regarding prevention of adverse effects of cosmetics 21 (70%) were having adequate knowledge, 8 (26.6%) were having moderate knowledge, 1

(33.3%) were having inadequate knowledge. With respect to over all knowledge it was observed that 2 (6.66%) of the study subjects were fall within the range of inadequate knowledge, majority 16 (53.3%) of the study subjects were fall within the range of moderate knowledge, and 12 (40%) of the study subjects were fall within the range of adequate knowledge.

Table 3: Association between knowledge of teenagers regarding adverse effects of cosmetics with demographic variables

(n=30)

Demographic variables	Level of Knowledge			χ^2 value P value
	Below Average (<50%)	Average (51-75%)	Above Average (>75%)	
Age Group				
13-14	0	2	0	$\chi^2 = 4.10$ P=9.45 d.f=4 NS
15-16	2	12	12	
17-18	0	2	0	
19-20	0	0	0	
Religion				
Christian	0	1	1	$\chi^2=0.19$ P=9.49 d.f =4 NS
Hindu	2	6	8	
Muslim	0	9	3	
Others	0	0	0	
Family Income				
5000-10000	1	8	5	$\chi^2 =9.32$ P =12.59 d.f =6 NS
10001-15000	1	5	4	
15001-20000	0	1	1	
Above 20000	0	2	2	
Repetition of cosmetic usage				
Hourly	0	0	2	$X^2=1.09$ P =9.49 d. f=4.NS
Daily	0	6	1	
Vocationally	2	10	9	
Awareness about cosmetic usage				
Family members	2	9	7	$X^2=10.50$ P =9.49 d.f=4, NS
Peer groups	0	2	4	
Mass media	0	5	1	

How long you are using cosmetics				
Less than 6 months	1	8	5	χ^2 =5.64 P=9.49 d.f=4 NS
Since 1 year	1	3	3	
3-5 years	0	5	4	
More than 5 years	0	0	0	
Domicile				
Rural	1	9	7	X^2 =2.61 P =5.99 d.f =, NS
Urban	1	7	5	
Dietary pattern				
Vegetarian	0	4	1	X^2 =10.22 P =5.99 d.f =2, NS
Non-vegetarian	1	0	1	
Both	1	12	10	
EducAtion of the mother				
Illiterate	1	7	3	X^2 =4.07 P=12.59 d.f=6 NS
Up to 10th class	1	8	7	
Under Graduate	0	0	2	
Post Graduate	0	1	0	
Hobbies				
Grooming	0	0	0	X^2 =0.39 P=12.59 d.f=6 NS
Sleeping	1	2	2	
Reading	1	6	8	
Watching TV	0	8	2	

S=Significant, NS=Non significant, Significance at * $p < 0.05$ level, ** $p < 0.01$, *** $p < 0.001$

Table 3 shows that there is no statistically significant association found between knowledge of teenagers with Age group, Religion, Family income, Repetition of Cosmetics Usage, Usage of cosmetics, Domicile, Education of the mother and Hobbies. It is interesting to know that there is a significant association between the knowledge awareness of cosmetics and dietary pattern of teenagers at * $P > 0.05$ level.

DISCUSSION

Objective I: assess the Knowledge of Teenagers Regarding Adverse Effects of Cosmetics, Table 2: shows teenagers level of knowledge regarding adverse effects of cosmetics 2 (6.66%) had inadequate knowledge,

16 (53.3%) had moderate knowledge and 12 (40%) had adequate knowledge. **R Shreshtha (2016)¹¹** conducted a descriptive study to find out knowledge regarding adverse effects of selected cosmetic products among higher secondary level girl students. The study was conducted on a total 70 female students. The result revealed that out of 70 respondents, 30% were of age 17 years, 51.4% were studying in grade 12. 34.3% respondents had experienced adverse effects from using cosmetic products, 50% had experienced acne, almost all respondents had experienced adverse effects from using respondents answered that cosmetic products are the substance use to enhance the appearance of body. The study concluded that statistically there was significant association between level of knowledge of the respondents'

regarding adverse effects of selected cosmetic products and grade of respondents.

Objective II: The study findings revealed that on awareness about cosmetics and dietary pattern had seen that significant association with the knowledge, therefore the hypothesis accepted. Regarding the awareness of cosmetics and knowledge, the obtained chi-square value was 10.50 This was founded to be greater than the *P value of 9.49 at the level of 0.05. Thus, the hypothesis is accepted. This indicates that there was significant association between awareness of cosmetics and knowledge. Regarding the dietary pattern and knowledge, the obtained chi-square value was 10.22. This was founded to be greater than the *P value of 5.99 at the level of 0.05. Thus, the hypothesis is accepted. This indicates that there was significant association between dietary pattern and knowledge. **Irankizhai RJ (2016)¹²** conducted a survey-based study to determine the knowledge of cosmetic contamination among adolescent females and spread awareness regarding the different ways to prevent harmful effects that these contaminated cosmetics can have on the health of the users. The results concluded that increase in cosmetic usage patterns and cosmetic contamination knowledge among the adolescent females improved in the past few decades and also by the awareness the students have gain the knowledge regarding prevention of adverse effects of cosmetics in high grade.

CONCLUSION

The study finding conclude that majority of the teenagers had moderate level of knowledge regarding adverse effects of cosmetics. The selected research design was descriptive research design and the target population of the study was teenagers. Simple random sampling technique was used for the study. The size of the sample was 30 teenagers and structured questionnaire was used for data collection. Data was analyzed by descriptive & inferential statistics. The findings of the study have shown that 2 (6.66%) teenagers having inadequate knowledge, 16 (53.3%) having moderate knowledge and 12 (40%) having adequate knowledge. The investigator has developed and validated an informational booklet for the benefit of the teenagers. The informational booklet was distributed to

the sample, which was acknowledged and appreciated by them.

Recommendations:

- A similar study can be conducted on a large scale.
- A similar study can be conducted by using experimental design.
- A structured teaching program can be conducted to assess the effectiveness of teaching program among the teenagers regarding adverse effects of cosmetics.

Conflict of Interest statement: No Conflicts of Interest

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