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## A study of consumer awareness about cosmetics label symbols

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### ABSTRACT

The objective of the current study was to find out the consumer attitude and concern about cosmetic safety and their knowledge about the cosmetic label symbols. The survey was distributed to N =100 in Rasalkhaimah , UAE to a population with varied characteristics for demography, gender, education, professions and age. From the result of the study it can be seen that people no doubt concerned about the safety of cosmetics but have a low level of understanding of cosmetic label symbols. There is significant correlation between the three variable i.e, age, gender and qualification and consumer concern about safety, their knowledge of cosmetic label symbols and attitude toward knowing the details of these symbols. Furthermore , those consumer who use cosmetics on daily basis have more tendency to believe that the cosmetics are adequately regulated and are safe to use.

**Keyword** : cosmetics ,symbols, variables , label.

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## INTRODUCTION

The main objective of cosmetic product labeling is to safeguard public health as thousands of people everyday purchase cosmetic .But people use cosmetics without realizing that it can cause damage to human health when applied in case they are allergic or cosmetic product is old enough to harbor germs to cause infections.<sup>1</sup>To protect consumers from unsafe or deceptively labeled or packaged the cosmetics have to be labeled properly. The cosmetics marketed in a country, whether they are manufactured or are imported from abroad, must comply with the labeling requirements of the that region. For example, in UAE European union regulations for cosmetics are followed for labelling.<sup>2</sup>The term “label” means a display of written, printed or graphic matter upon the intermediate container of any article; that any word, statement, or other information appearing on the label shall not be considered to be completed with unless such word, statement or other information also appears on the outside container or wrapper. One of the most prominent features that a human eye notices are the bright, lively and colourful labels that are present on all the products. With the help of these familiar labels a product can be recognized at anyplace in the world. Labels contain a wealth of information about ingredients, possible health impacts, correct usage of a product, expiry date, storage etc. Therefore, reading labels closely is domineering in protecting our health and overall well-being and using products properly.<sup>3</sup> According to a survey carried in 2010, some women keep their cosmetics up to 15 years past their sell-by date .The study has revealed that 89% of us have no idea what these little logos mean. All of which explains why the regulatory authorities goes to great lengths to save us from ourselves by using the symbols we find on the back of packaging. Reading the fine print is probably the last thing you think of when you gleefully rip off the packaging from your brand new beauty buy. Paul Crawford says it's worth taking a few moments to study your goods:<sup>4</sup> “The information will explain how to get the best results out of your products, and how to use them safely”.<sup>5</sup> The 'lid' symbol Figure 2 indicates the recommended number of months within which the product should be used after it's first opened. Figure 3 is the symbol which indicates that further information is included within the packaging. Instructions for use of the product need to be clearly labelled if they're unusual, or specific to that product, or if there are any warnings, such as specific storage instructions and avoidance of use on specific areas.<sup>5</sup>The 'e' symbol refers to the net contents - the amount of product in the package. The logo in Figure 1 is a guarantee that the quantity of the product printed on the packaging is correct, according to EU standards.<sup>5</sup>The Green Dot symbol in Figure 4 doesn't refer to recycling as commonly thought. It is a hallmark of European

legislation that refers to waste management but has no legal meaning in the UK.<sup>5</sup>The image in Figure 4 indicated the typical recycling symbol.



Figure 1: Net Content symbol



Figure 2: Period after opening declaration symbol

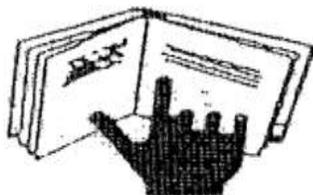


Figure 3: symbol indicates that information include inside the package



Figure 4: Waste management & recycle symbol

Table-1: Qualification and professions of participants

	Frequency
Education :	
High school	45
Diploma	11
Graduate	27
Post graduation	11
Doctorate	6
Profession :	
Student	34
Unemployed/ house wife	11
Pharmacist	10
Nurse	5
Doctor	7
Administration / marketing	16
Librarian	5
Lab technician	4
Engineer	2
Teacher	5
Driver	1
Total	100

## MATERIALS AND METHOD

The objective of the current study was to find out the consumer awareness about cosmetics symbols present on the label in the general population of Rasalkhaimah. The research questions that help in the development of this survey were:

- Are people concerned about cosmetic safety
- Do they read label before buying cosmetics
- Do they understand the meaning of symbols present on the label of cosmetics
- Whether they are interested to know the meaning of these cosmetic label symbols
- Is there any correlation between age, gender, qualification and the knowledge , attitudes and consumer concern about cosmetic safety and cosmetic label symbols recognition.

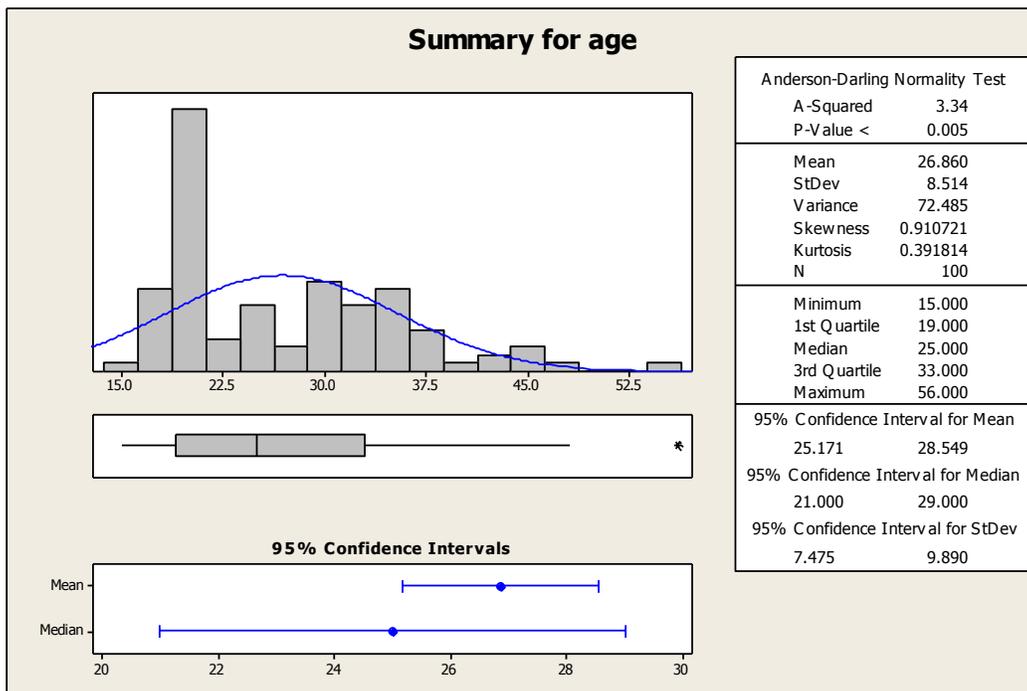
A survey was designed, translated into Arabic and distributed to 129 individuals of general population in the emirates of Rasalkhaimah. The survey was divided into five sections:

1. Demographic information
2. Knowledge
3. Attitude
4. Finally they asked to mentioned any side effect suffered due to cosmetic use
5. In the last section the participants were asked to mark the frequency of using makeup.

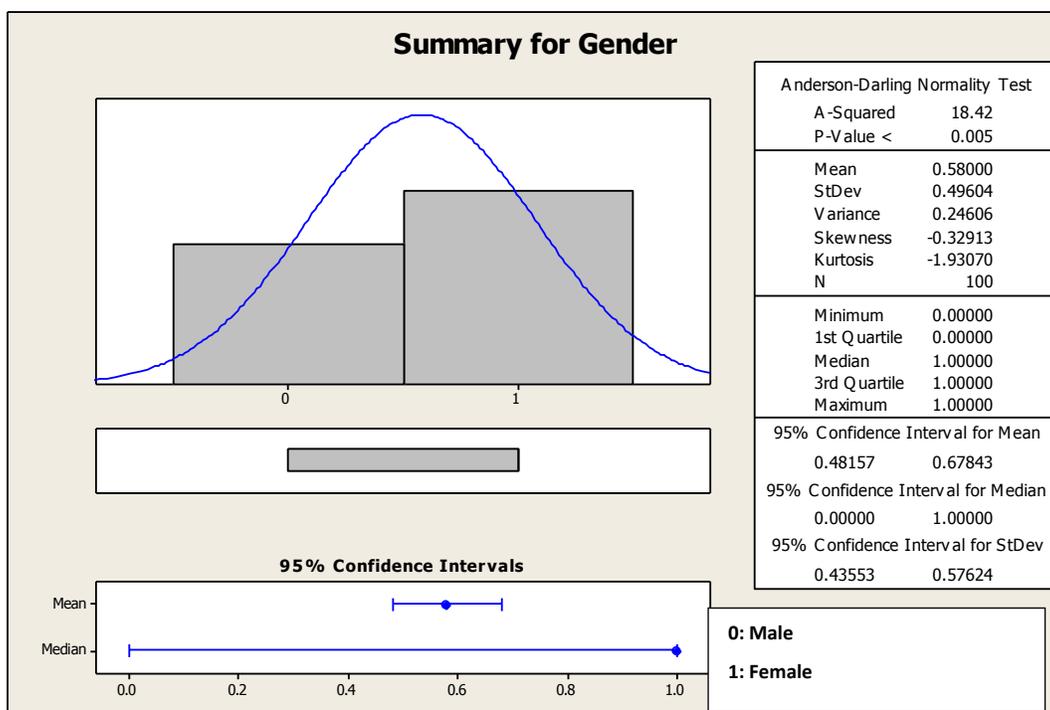
For statistical analysis Minitab software version 16 was used. Before conduction of survey the project was approved by the ethical committee of RAK MHSU.

## RESULTS AND DISCUSSION

The survey was distributed manually and self -administered to randomly selected (N=129) population in emirates of Rasalkhaima.<sup>6</sup> The questionnaire was pre-tested on a randomly selected group of 25 prior to the survey in order to verify the questionnaire and ensure reliability. The final number of participant become 100 (eligible candidates) and the rest of 29 were screened out due to incomplete and incorrect answering of questions. Out of 100 eligible candidates 30 were UAE nationals and 70 were other nationalities residing in UAE which included Canadian, Syrian, Egyptian, Pakistanis, Iraqi, Palestinian, Tanzanian, Yameni, Sudanese and Indians mainly. None of the candidates were native English speakers but all of them have a good command on English language. For age and gender distribution see graph 1 & 2. 57 females and 43 males had participated in the survey and the standard deviation found to be 0.496, median =1, mean=0.5800 and  $p < 0.005$ . Similarly, the standard deviation for age = 8.514, mean = 26.06, median = 25 and  $p < 0.005$ . The population included in the survey was not only from different nationalities but their profession and qualification was also varied details of which can be seen in Table-1. To calculate the response rate the total number of eligible surveys was divided by total number of surveys distributed and the calculated response rate was 77 %.



**Graph-1**



**Graph -2**

In this study ANOVA was used to determine that is there any correlation between age, gender, qualification and the knowledge, attitudes and consumer concern about cosmetic safety and cosmetic label symbols recognition. <sup>7</sup>ANOVA is an appropriate test for hypothesis testing when there are more than two groups measured on an interval scale. While one way ANAOVA is a

single –factor, fixed- effects model to compare the effects of one factor. <sup>7</sup>This means one-way ANOVA is used to determine the variability of the sample values by looking at how much observation within each group varies as well as how much group mean varies. Pearson correlation was used to analyze the relation -ship between the three variables which were interval scale and ratio scaled. Correlation between age, gender, education and knowledge, attitudes and consumer concern about safety is shown in Table 2.

**Table -2 One way ANOVA between variables**

<b>Variables</b>	<b>Age</b>		<b>Gender</b>		<b>Education level</b>	
Safety concern about cosmetics	sig.=0.267	*r=0.285	sig=0.619	r=0.819	sig=0.527	r=0.797
Noticed Cosmetic label symbols	sig.=0.050	r=0.457	sig=0.195	r=0.424	sig=0.733	r=0.677
Understanding of meaning of symbols	sig=0.915	r=0.256	sig=0.216	r=0.288	sig=0.022	r=0.708
Attitude toward finding the meaning of symbols	sig=0.262	r=0.551	sig=0.670	r=0.636	sig=0.018	r=0.636

\*r= correlation

In response to question 2 that whether people are concerned about the cosmetic safety or not, 81 out of 100 said they yes that they are concerned about the safety of cosmetics and 19 replied No. One of the goals of this survey was to document the beliefs of the general population about cosmetic safety, role of regulating authorities and manufacturer responsibility regarding cosmetic products. For the said purpose the consumers were presented with <sup>8</sup>five statements and they were asked to rate regarding their agreement/disagreement level. Please refer to Appendix A for details. They were given a three-point scale, with 1 being disagree and 3 being agree. Table 3 presents the breakdown of respondents by each response option, as well as the mean rating for the three-point scale. Also included is the standard deviation (SD) for each statement, which represents the amount of variation the responses had around the mean.<sup>8</sup>The smaller the SD, the more tightly the ratings grouped around the mean. Majority of respondents agreed that manufacturers should be responsible for testing all ingredients for health impacts (92%). Interestingly, most of the respondents do not believe that cosmetics are adequately regulated (47%) and over more than half do feel that the ingredients in the cosmetics products are required to be listed on the label (79%). Most of them agreed that (53) they trust the cosmetic product safety they are using and 58 % disagreed that it is not important to regulate cosmetics.

Pearson correlation was used to analyze the relation -ship between the three variables age, gender and education level and the correlation was classified according to the guidelines given

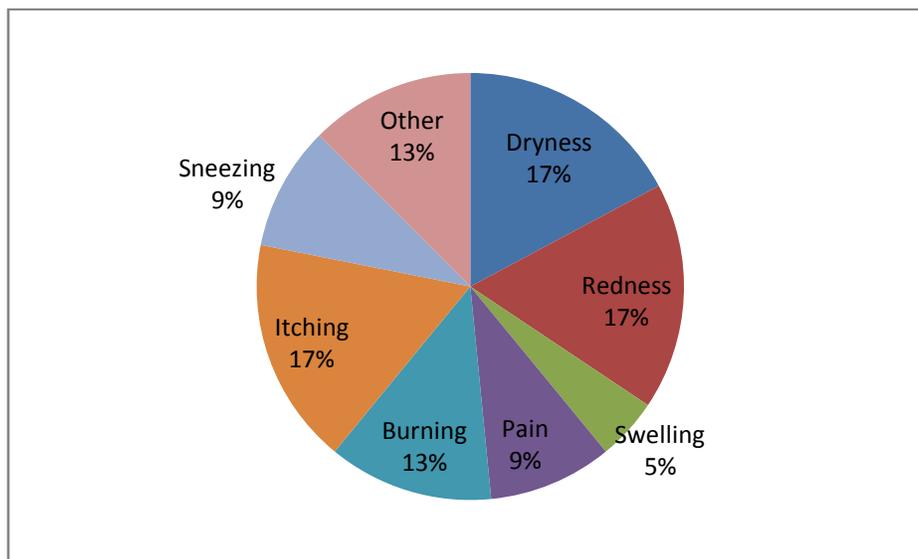
by Cohen<sup>9</sup>. It can be seen that a negligible or no relationship (0.129) has been found between gender and the level of agreement and disagreement at three point scale for the question about the trust of cosmetics (Appendix A). Which indicates that gender has no influence on the consumer trust to use cosmetics. Similarly, the same weak relationship has been observed between genders & other responses for set of five questions presented to consumers (Table 4). Except for question d (Appendix A) which the is list of ingredients of cosmetics on label should be present, a positive very strong correlation (0.762) has been observed. Which indicates that most of the individuals independent of their gender strongly agree that cosmetic label should contain all the ingredients used in the formulation. Similarly, no significant relationship has been obtained between the age of consumer and their level of agreement and disagreement as shown in Table-4. On the contrary, a strong positive correlation has been observed between level of education and level of agreement and disagreement for the five set of questions. For example, 0.477 was considered a positive strong correlation between consumer education and the confidence they use cosmetics, 0.505 correlation was found between the regulation of cosmetics and education, 0.282 weak positive relation between importance of regulating cosmetics and education and a very strong relation (0.974) has been found between consumer belief that manufacturer should be responsible for testing of cosmetics for health effects and level of education. In addition, the findings suggest that those who are using cosmetics on daily basis they have a strong tendency to believe that the cosmetics they are using are safe and they do not agree that it is not important to regulate cosmetics and they strongly believe that all the ingredients of cosmetics should be listed on the label of cosmetics and manufacturers should be responsible for quality control of cosmetics.

**Table -4: Pearson correlation between age/gender/ education and consumers believes**

<b>Statements</b>	<b>Age</b>	<b>Gender</b>	<b>Education</b>
I trust that the cosmetics I am using are safe	0.162	0.129	0.477
Cosmetic products are adequately regulated by health enforcement authorities	0.336	0.056	0.505
It is not important to regulate cosmetic products	0.047	0.019	0.282
The label of cosmetic should be required to list all the ingredients	0.123	0.762	0.534
Manufacturer should be responsible for testing all the ingredients for health impacts	0.033	0.182	0.974

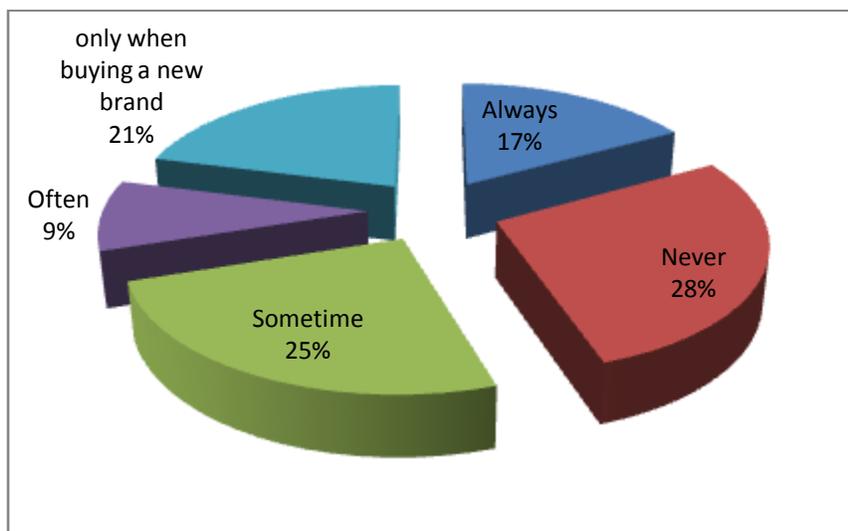
The participants in the survey were asked to mark whether they are allergic to any cosmetic/ingredient and whether they have suffered any side effect with the cosmetic use or not. Out of 100,49 replied yes they are allergic either to a cosmetic or an ingredient in a cosmetic and 51

said no they are not allergic to any cosmetic / ingredient . Most common type of side effect suffered are dryness and redness (17%), burning and itching (13 %), 9% sneezing , 9 % pain and 5 % had observed swelling. The graphical representation can be seen in Figure 5.



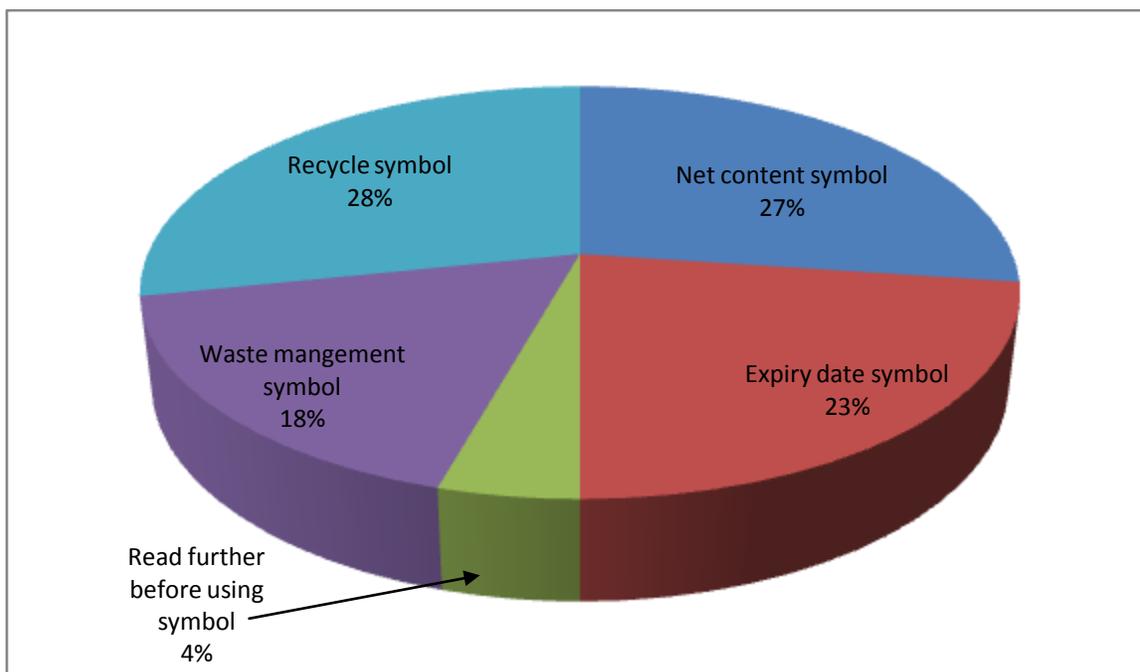
**Figure 5:Types of side effects observed by consumers with cosmetic use**

One of the survey item in this series asked the participant how often they read labels before purchasing cosmetics. They were presented with a five-point rating scale of always, never, rarely/ sometimes, often and only when buying a new brand. The response frequency of individuals who always read labels before buying was found to be very low (17 %), 28% admitted that they never read label, 25 % said they read labels sometimes, 9 said often they read labels and 21 % said they read label only when they are switching to a new brand. Details can be seen in Figure 6.



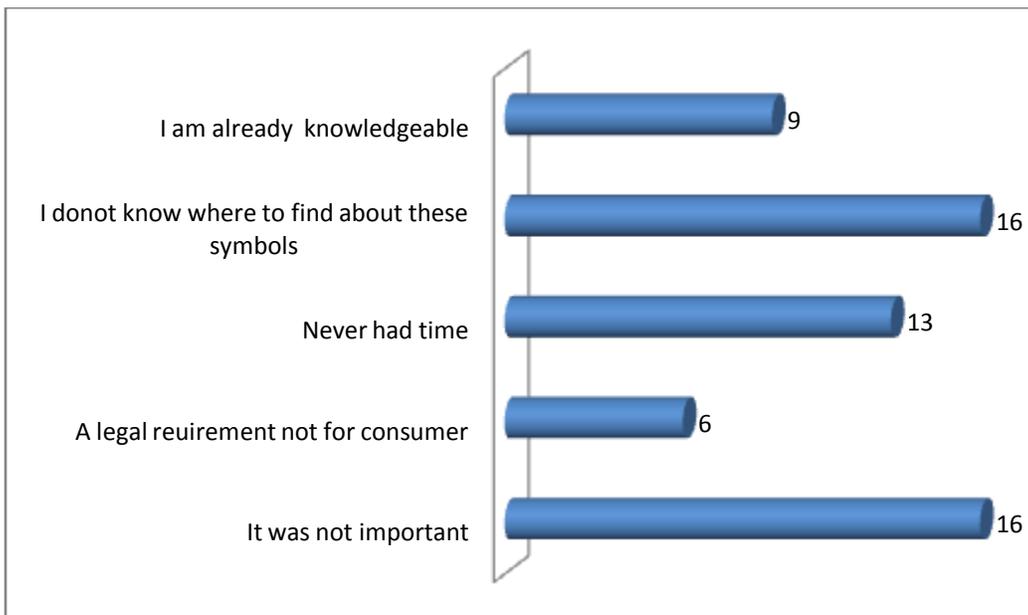
**Figure 6:Response frequency of individuals who read label before buying cosmetics**

31 individuals out of 100, said they cannot recognize the symbols presented in the questionnaire to them and 69 could recognize the symbols. See Figure 1-4 for different kinds of symbols used commonly on cosmetic labels. Then in the next question the participants were asked to circle the symbol they can recognize. Details of this can be seen in Figure 7. Five most commonly used symbols on cosmetics labels included, net content symbol, period after opening symbol, information symbol, recycle symbol and waste management symbol. A high percentage of participant (28 %) could recognize the recycle symbol, 23 % are well familiar with period after opening symbol in which cosmetic can be used safely, only 4 % had recognized the information symbol (Figure 7) which is so commonly present on perfumes and baby cosmetics and 18 % could recognized waste management symbol.

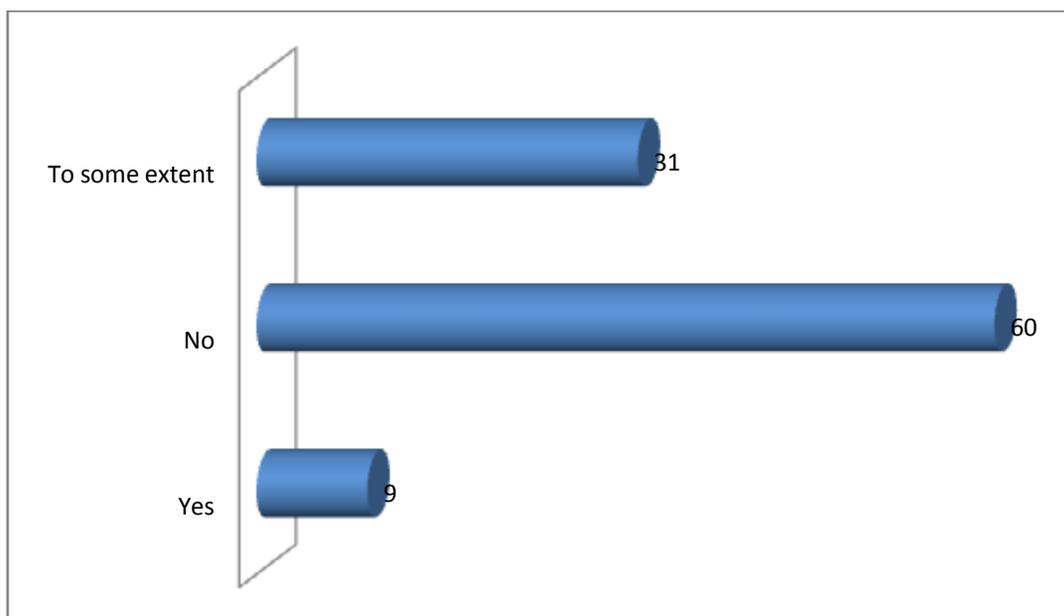


**Figure 7:Percentage of symbols recognition by consumers**

Out of 100, 60 % did not know what is the meaning of these symbols even if they could recognize the symbols. Only 9 % said yes they are knowledgeable about the meaning of these symbols and 31 % could understand the meaning of these symbols to some extent Figure 9.Only 33 % of the individuals tried to find of the meaning of the symbols they could not understand and the rest of the population had never made any effort to find out what is the meaning of these symbols.



**Figure 8:Reasons for not finding the meaning of cosmetic label symbols**



**Figure 9:Response frequency of individual who could understand the meaning of symbols**

In response to the last question of the survey, which was related to determine the attitude of people toward knowing the unknown symbols, varied response were obtained Figure 8 . In this question people were asked to circle the reason that why they never to find tried to find out the meaning of these symbols.16 % thought that it was not important to know about these symbols, 6 % never tried to find out the meaning of these symbols because for them it's a legal requirement not meant for consumer,13 % said due to shortage of time they could not explore these symbols, 16 % said they do not know where to find out about these symbols and 9 % of the individual marked that they are already knowledgeable about these symbols.

A very strong correlation (.797) has been observed between the level of education and consumer safety concern and consumer ability to recognize label symbols(0.677),a positive strong correlation(0.708) has been found between and consumer understanding of meaning of labels and a strong relation can be seen (0.636) between education and consumer attitude to learn about unknown cosmetic symbols. Weak to moderate relation- ship (0.267) has been found between age of consumer and their concern about cosmetic safety, their ability to notice symbols on cosmetics and their attitude toward finding out the meaning of cosmetic label symbols. Interestingly, a strong positive correlation (0.810) between gender and safety concern about the cosmetics and understanding the meaning of symbols(0.288)has been observed. On the other hand a weak to moderate relationship can be seen between recognition and attitude toward knowing the meaning of cosmetic label symbol and gender. Details can be seen in Table 2. Age on the other hand has influenced the attitude (0.551) to find out the meaning of the label and a moderate relation has been seen between age and the ability of consumer to notice symbols on labels (0.457).

To answer the research questions mentioned in the methodology the data was subjected to analysis by the one way program in minitab for windows. This program handled one-way ANOVA necessary to compare pairs of means. Table 2 contains the output. The independent variable were age, education level and gender.<sup>10</sup>As they say "independent variables" represent the inputs or causes, or are tested to see if they are the cause. Between safety concern, consumer awareness about symbols, their attitude about knowing the symbol and their understanding of meaning of symbol and gender, age and level of education at 0.05 confidence interval difference between the means were significant,  $p=0.000$  ( $p<0.05$ ). For the individual values of significance please see Table 3<sup>11</sup>.

**Table -3 Percentage of agreement / disagreement of consumers believes**

Statements	Disagree	Neutral	Agree	Mean	SD
I trust that the cosmetics I am using are safe	7	40	53	2.404	0.6376
Cosmetic products are adequately regulated by health enforcement authorities	47	11	42	2.323	0.6520
It is not important to regulate cosmetic products	58	17	25	1.6566	0.8471
The label of cosmetic should be required to list all the ingredients	15	6	79	2.778	0.5062
Manufacturer should be responsible for testing all the ingredients for health impacts	6	2	92	2.848	0.5023

A statistically significant finding is one that is determined to be very unlikely to happen by chance. Statisticians are able to calculate the likelihood that any observed relationship between

two variables could have happened by chance or random variation. If it is calculated that there is less than a one in twenty chance (.05 or 5%) that the observed relationship could have happened by chance, the findings are designated as significant. If there is less than a one in one hundred chance (.01 or 1%), they are designated as highly significance.

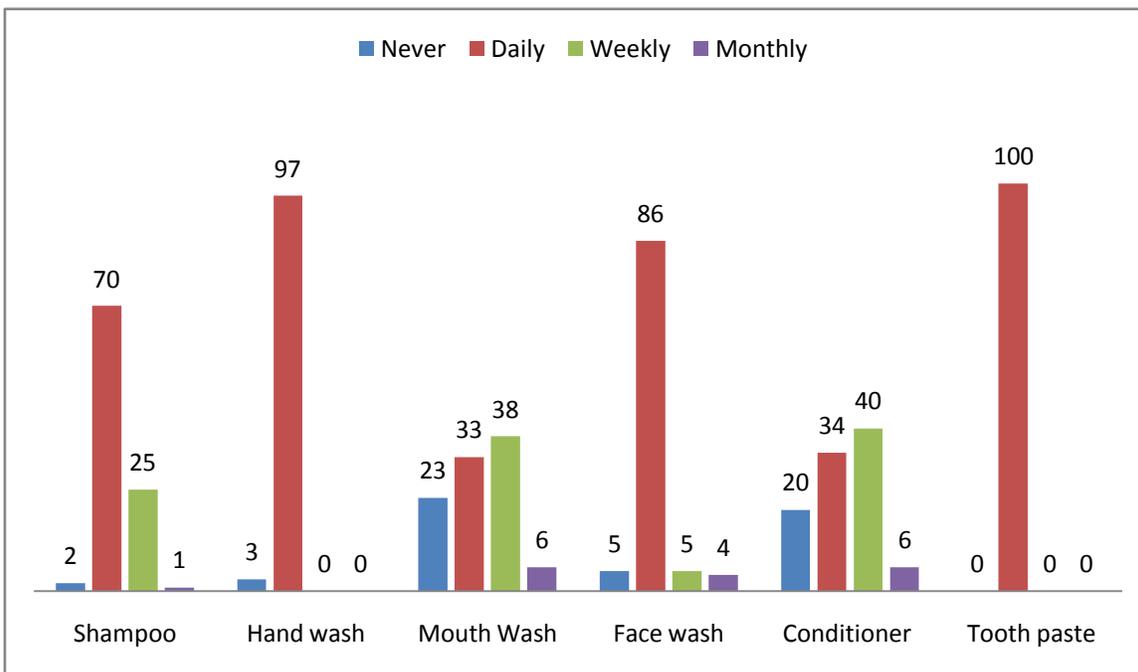
The objective of this analysis was to find out whether there is a significant relationship between the variables. From the table2 it can be seen that there are three significant values for three different variables and three different questions (0.050),(0.022) &(0.018). In all cases, the p value shows probability of .05, it means that there is a 95% chance that the answers given by different groups are different. A value of .022, it means that there is a 98% chance that the two means being compared would be truly different if looked at the entire population. Similarly, a value of 0.018 indicates the same. This finding indicates that age is a significant factor to notice the presence of cosmetic label symbols. Similarly, education has influenced in understanding the meaning of the cosmetic label symbols and consumer attitude to find the meaning of these symbols if they donot know the meaning.

In the last section of the survey the respondents were asked to list different cosmetic products they most commonly use on daily, weekly and monthly basis. Overall, respondents identified 22 different types of cosmetics they are using on a daily basis. A set of three survey items were presented to respondents to determine how often they use various cosmetic products. For each of the products, respondents were asked to identify frequency of use on the following scale:

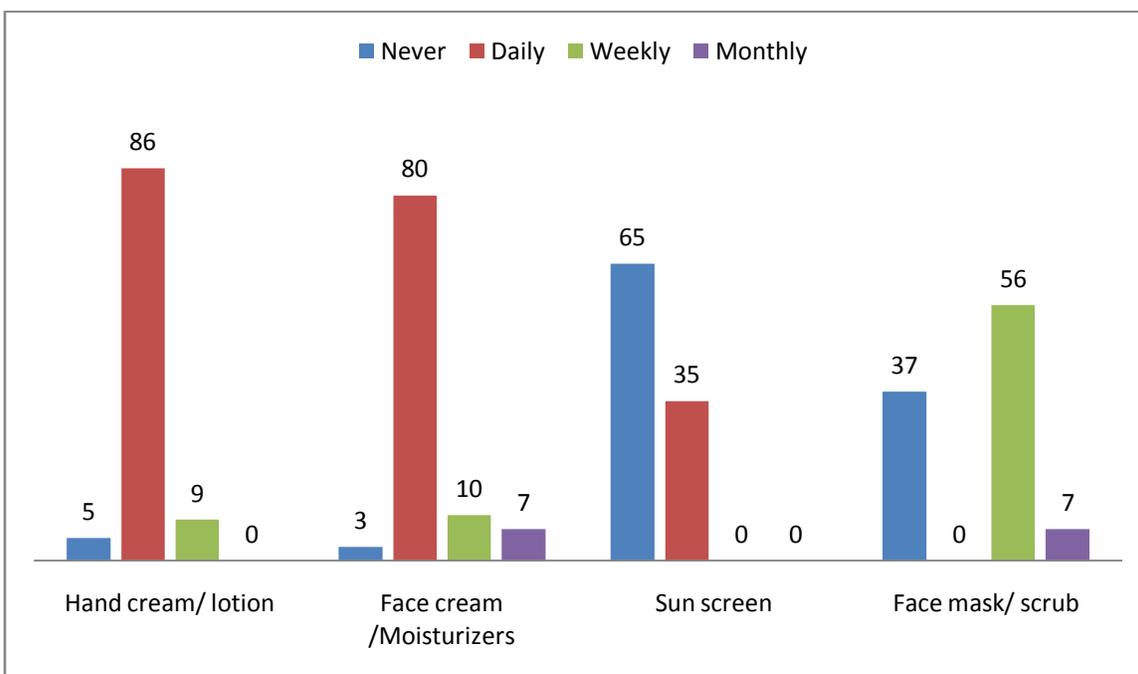
- 1) Never
- 2) Daily
- 4) Weekly
- 5) Monthly

The details of the results obtained from this question can be seen in from Figure10 to Figure 13. it is clear from the results that most people use shampoo, hand wash and tooth paste on daily basis with a small percentage of people who do not use shampoo or hand wash at all. Similarly, a high percentage of people use face cream and hand creams on daily basis with 35 % of individuals using sunscreen on daily basis and 65 never used, 56 % use face mask /scrub on weekly basis, 7 % on weekly basis and 37 % with never use tendency which is very obvious as respondents were male too.26 % of the male are using shaving gel/ cream and after shave lotion on daily basis, 60 5 of the population is using deo/antiperspirant and perfume on daily basis. 50 % of the female population is using lipstick , 39 % is using mascara, 27 % eye liner, 37 % is using foundation and blush on daily basis. The purpose of this question was not only to

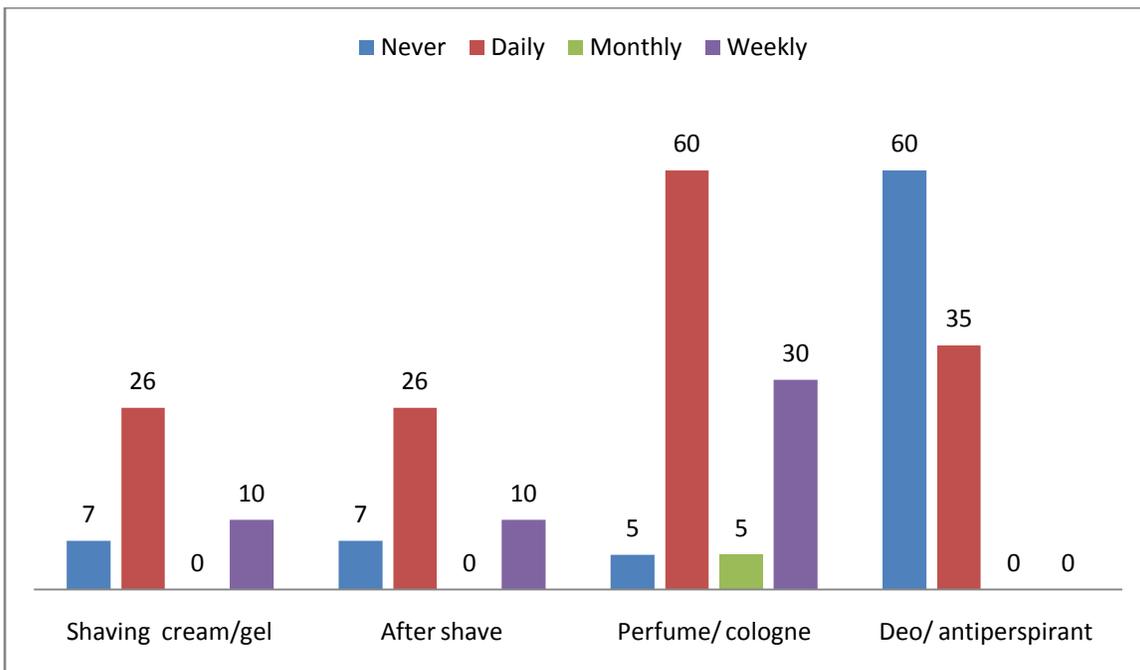
determine the trend of different cosmetics products used on daily/weekly/monthly basis but also to conclude that even people are buying cosmetics products so frequently they fail to notice the cosmetic label symbols even though.



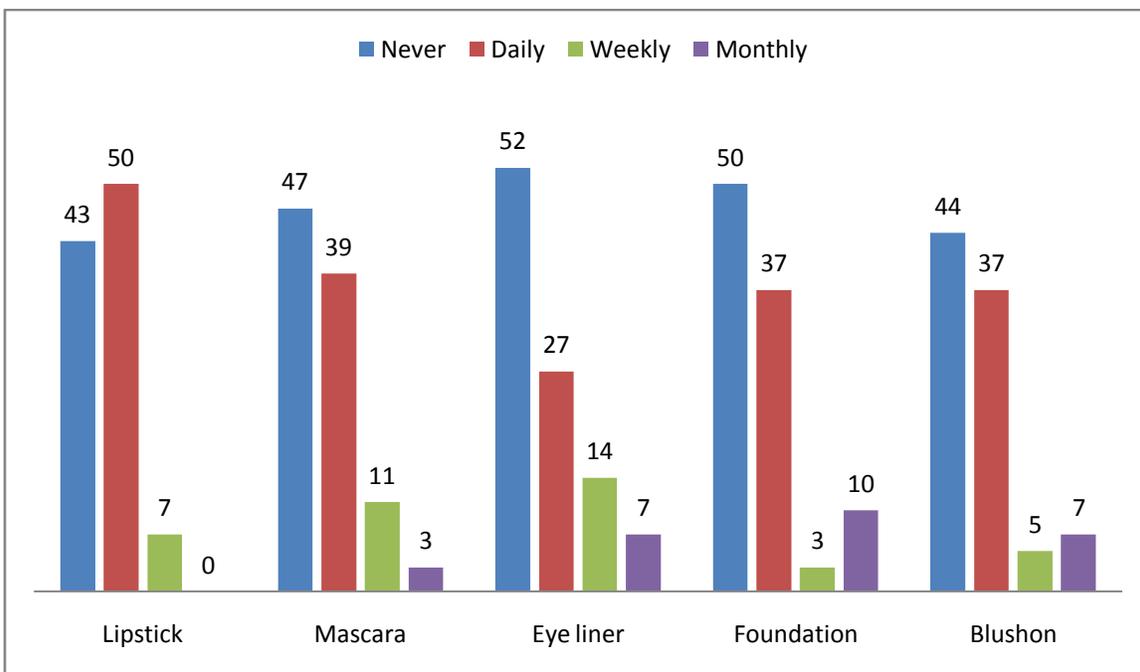
**Figure 10:Percentage of different personal care used by consumers on daily/weekly/ monthly basis**



**Figure 11:Percentage of different facial care products used by consumers on daily/weekly/ monthly basis**



**Figure 12:Percentage of different toiletries/ men care products used by consumers on daily/weekly/ monthly basis**



**Figure 13: Percentage of different decorative cosmetics used by consumers on daily/weekly/ monthly basis**

**CONCLUSION**

This research has provided insight into consumer’s knowledge and attitude about cosmetic label symbols, their safety concerns of the products they are using and believes about the role of

governing bodies in regulations of cosmetics. From the results of the above study it can be concluded that people do concerned about the safety of cosmetics products and correct labelling requirements but their knowledge and understanding of cosmetic label symbols found to be low. Both education and age has a significant effect on the ability of consumer to notice symbols and their attitude to make efforts to know the symbols. Those consumers who are using cosmetics on daily basis are found to be more concerned about the product safety and they believe that governments are adequately controlling cosmetics industry and manufacturers should be responsible for quality check of the cosmetics.

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