

Original Article

Determination of Factors Affecting the Selection and Use of Makeup Materials

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Abstract

Background: Having a beautiful skin and looking pretty have been always important for women for centuries all over the world. Women have especially focused on make-up applications in order to gain prestige with their physical appearance. Cosmetics that we use most of the time contain several chemical ingredients. The unconscious use of the chemical products without assessing the skin type or checking their ingredients can result with serious side effects.

Objective: The aim of this study was determining nursing students' attitudes and behaviours towards makeup materials and hygiene.

Methodology: This definitive study has been carried out on 130 female students studying in the same faculty. The data collection form has been developed by researchers by using relevant literature. The data collection form consists of 42 questions related to sociodemographic features of the participants, attitudes and behaviours towards cosmetic products.

Results: Cosmetic product usage is high with the rate of 86% among the participants, the reason why the participants wear make up is; to feel good (80%) and to look beautiful (71.6%). The quality (64.6%) and affordability (50.8%) of the products are important for the consumers primarily. The participants consult their friends (53.8%) while purchasing cosmetic products. The rate of those consulting doctors is the lowest (4.6%). Some of the participants (26.9%) reported having side effects and thus 5.3% of them have consulted the doctor. Great percentage of the participants (96.9%) did not consider having permanent makeup.

Conclusions: The cosmetic products have been an indispensable part of our lives for various reasons. Our study has concluded that awareness about cosmetic usage has been found at insufficient level. In order to minimise their side effects increasing awareness about cosmetics with chemical ingredients should be implemented.

Keywords: Cosmetics, makeup, skin care, awareness

Introduction

For centuries, human beings have used various products to spend a healthy life and to own a beautiful appearing skin. They have maintained healthier life thanks to simple applications such as healthy nutrition, regular life and by avoiding bad habits such as smoking and alcohol. In addition to the physiological needs at the bottom of the basic needs hierarchy of Maslow, wearing

makeup express prestige especially for women (Manova et al. 2013). It also enhances acceptance in social life and continuous to be a priority in person's daily life. (Sarikaya et al. 2011).

There are various researches stating that physical appearance provides a person to be perceived positively such as more attractive, reliable, impressive in modern life (Snyder et al. 1977; Dion et al. 1972; Frieze et al. 1991). In this

context, women use cosmetic products in order to clean their skin, to change their looking, to have good smell and protect their skin as well (Tirnaksiz 2005). The cosmetics also raise self-confidence and influence both physically and psychologically in a positive way (Kocaoz & Eroglu 2014). This situation has made the cosmetic products indispensable in our daily life (Cabuk & Dogan Sudas 2013). Selection of cosmetics may be influenced from skin type of the individual, cultural features, educational level and professional values of people (Arica et al. 2017).

The cosmetics can be put on the market easily without being audited strictly nowadays; since there are no medical claims (Dureja et al. 2005). However, many chemical ingredients exist in cosmetic products even in a simple hand moisturizer (Demir et al. 2014). The cosmetics are chemical products in which many components are processed (Atmaca 2018). Due to ingredient privacy of manufacturing companies, they do not have to write all of the ingredients on the packaging (Cabuk & Sudas 2013). Chemicals in the cosmetics may cause changes in structure and functions of skin by passing through the skin barrier. While these may lead to local effects such as allergy, dermatitis, photosensitivity, they may transmit into respiratory and circulatory system by mucosal contact, inhalation way or oral transmission and cause undesired systemic effects (Wormuth et al. 2006). Many people do not consult doctor; they usually prefer stop using the product for a while in case of a mild side effect or decide changing it. When adverse side effects are experienced or their complaints are not decreased, they consult to physician. Consequently it is hard to know the actual frequency of side effects related to the cosmetics (Adams et al. 1985).

It is an important issue to purify the products that we use. The most common products which are used for hygiene are water and soap (Kocakaya 2005). The skin has the ability to renew itself at night. Therefore, skin should be cleaned cosmetics' residues to ease its' breathing and regenerating (Tekkesin 2014). Besides skin cleansing, removing cosmetic products is a vital issue for people. If cosmetic products are not cleaned properly, they tend to cause bacterial growth infect the skin. Thus caps of the products should be closed securely and if possible, tube formed products should be used. Before using

sponges, brushes and applicators, they should be cleaned and if possible, only single use products should be preferred. (Lewis 2004). Since the cosmetics cause transmission of bacteria when they are shared with others special attention should be paid on this issue, (Atmaca 2018) including not using tester products in cosmetic shops (Dawson & Reinhardt 1981).

It should be noted that the cosmetic products may cause carcinogenic affect due to interaction of chemicals in the formulation phase or depending on conditions of use. Chemicals such as aluminium (McGrath 2003; Darbre 2001; Darbre 2005), triclosan (Darbre 2006), paraben (Darbre 2001; Harvey & Everett 2004): According to literature products that have been used as aniperspirants cause breast cancer. (Guler Demir & Bulut 2016). Moreover, McGrath (2003) detected there is a relation between breast cancer at and using deodorants containing aluminium following shaving armpits (McGrath 2003). Since upper outer quadrant of the breast on which deodorants are applied contains more breast tissue than other parts of breast is seen as a risk factor for cancer (Lee 2005). This part of the breast is relatively subjected to both deodorant/antiperspirant and also other products such as sun creams, shower gels and shampoos. (Nohynek et al. 2013) On the other hand, there are some studies concluding that there is not a relation between breast cancer and cosmetics that are used for underpins (Fakri et al. 2006; Mirick 2002).

At this time when variety of the cosmetics raises, using products that do not contain mentioned substances in line with precautionary principle will be more favourable in terms of protecting health.

Women having an active role in business life may prefer permanent makeup wearing for savings. These applications are time saving but have serious risks for health. Applications using needles pave the way for diseases transmitting by blood. Even if the source of colour giving pigments is inorganic- products allergic reaction may be experienced (De Cuyper 2008).

There is not a study about to which extend cosmetics, whose audits are not carried out sufficiently, influence health of women and society. This study aims to determine the knowledge of university students about using cosmetics and their level of conscious consumption

Material and Method

This study has been carried out with 130 female students who enrol in the same faculty. Since cosmetics usage is more common practice among women male students were excluded. The students who accept to participate in the study constitute sampling of the study. The participants were informed that participation is voluntary data of the study will be used only for scientific purposes.

The data collection form included sections that query sociodemographic features, cosmetic substance use habits, and issues related to hygiene. The data were analysed by using SPSS 20.0 Results were given in means, standard deviations (SD), numbers and percentages.

Results

Thirty six point two percent (36.2%) of the students were second year students. Their average age is calculated as 20.24 ± 2.18 years. Close to half of the students (43.8%) reported living with their females. More than half of the participants have medicare (58.9%) income. Socio demographic characteristics of the participants were presented in Table 1.

Table 2 presents the main reasons for wearing makeup and considerations in purchasing according to participants. Most of the participants stated that they wear makeup usually to feel good (80%), to look beautiful (71.6%) and 25.6% of them reported not wearing makeup since they like their natural look. While purchasing cosmetics, paying attention to the quality (64.6%), affordability (50.8%), originality (41.5%) are the basic topics they consider.

For personal hygiene, hair shampoo usage rate is 88.8%, shower gel usage rate is 65.4%, perfume usage rate is 73.8% and armpit deodorant usage rate is 70.8%.

Some of the students (26.9%) reported experiencing undesired effects followed by using cosmetics. 7.6% of them have suffered from eye itching-watering, 5.3% 4.6% of them have suffered from skin itching and allergic reactions (Table 3)

Majority of the students (77.7%) reported paying attention on makeup removing. They usually prefer makeup cleaning products, 46.9% of them use water and soap. Almost all of the

Participants (96.9%) of them do not prefer permanent makeup (Table 4).

Discussion

Various conducted studies show that cosmetics are highly used. Celebi et al.(2004) carried out a study on 2050 females, this study concluded that 87,5% of females whose ages are between 18 and 25 Matsuoka et al.(2006) determined that 80% of 50 female adults with acnes use cosmetic products In this study 86% of the individuals use cosmetics. These results show that cosmetics usage is high among women. The cosmetics are the products which require medical supervision, which are not included in drug category despite showing drug activity, sold without any prescription and easily accessible (Kapucu et al. 2009). These products that everybody accesses easily and among which they choose in line with their budget should be advices to users by carrying out a risk evaluation. It is essential to consume cosmetics consciously with the aim of reducing health risks.

Purpose of producing cosmetics and reasons why they are used are varied. Especially women use cosmetics in order to be more beautiful, to be more healthy and attractive by improving their look (Kocagz & Eroglu 2014). Kaymak et al., (2007) observed that 67.5% of the participants use cosmetics to look well-groomed and 30.6% of them use these products to look beautiful In our study, 80.0% of the participant reported using cosmetics to feel good, 71.6% to look beautiful (71.6%), 26.1% of them use cosmetics since they feel imperfect without makeup and 14.6% of them use cosmetics since their partner / friends find them beautiful. These rates support the purpose of producing cosmetics.

The studies carried out show that income status affects cosmetics choice. It is stated that in populations whose income levels are low, prices of the products are paid attention (Vural et al. 2003). Cabuk et al. expressed that 60.9% of the individuals pay attention to the prices of the products they purchased (Cabuk & Sudas 2013). In the study of Celebi et al (2004). 82% of the participants allocated 40 TL and less for salary cosmetics. In our study, 50.8% of the participants choose makeup according to their affordability. Since more than half of the (58.9%) individuals participating in our study described their income as medicare income this result may have an influence on quality of preferred products. This also could lead some health problems as well.

Table 1. Sociodemographic Characteristics of Participants

Variable Name		n	%
	Mean \pmSD		
Age	20.22 \pm 1.28 (Range 18-24 years)		
Class	1st class	37	28.5
	2nd class	47	36.2
	3rd class	36	27.7
	4th class	10	7.6
Place of living	With Family	56	43.8
	Dormithory	36	28.0
	With friends	18	14.1
	Other	18	14.1
Family type	Nuclear family	109	83.8
	Large family	15	11.5
	Separated family	6	4.7
Education level of the mother	Illiterate	5	3.8
	Literate	10	7.7
	Primary school graduate	71	54.6
	Secondary school graduate	19	14.6
	High school graduate	21	16.2
	College / university graduate	4	3.1
Education level of the father	Illiterate	1	0.8
	Literate	2	1.6
	Primary school graduate	50	38.6
	Secondary school graduate	24	18.6
	High school graduate	36	28.0
	College / university graduate	16	12.4
Working status of the mother	Working	18	13.8
	Not workig	112	86.2
Working status of the father	Working	105	80.8
	Not workig	23	19.2
Family income	Very good	2	1.6
	Good	49	38.0
	Mediocre	76	58.8
	Bad	2	1.6

Table 2. Participants' reasons for wearing make up and considerations on purchasing them

Variable name	n	%
Are there any individuals in your family who do make-up except you?	88	67.7
Yes	29	23.3
No	13	10.0
Sometimes		
Are there anybody in your family who wears make up other than you?*	29	22.3
My mother	64	49.2
My sister	37	29.5
Others		
Are you wearing makeup?		
Yes	111	86.0
No	18	14.0
Reason for wearing make up?*		
For feeling good	104	80.0
For looking beautiful	99	71.6
Just a habit	34	26.1
Desire to look beautiful to my partner / friends	19	14.6
	Mean ± SD	
How long have you been wearing makeup?	3.24 ± 2.06 years	
What are the reasons for not wearing make up?*		
I like my natural looking	32	24.6
I have no habits	16	12.3
I dont have time	9	6.9
I don't want to spend money	5	3.8
Harmful for health	11	8.5
My family / partner does not allow me to do so	5	3.8
What do you consider when purchasing makeup products?*		
Choosing herbal products	33	25.4
Expiration date	45	34.6
The content (chemical substances)	37	25.8
Side effects	23	17.7
Dermatological tests	31	23.8
Originality	54	41.5
Suitability for my budget	66	50.8
Quality of the product	84	64.6
Buying unoriginal products because they are cheap	1	0.8
Buying small containers	2	1.5
Not buying mineral oil products	2	1.5
Not to buy sodium lauryl sulfate (SLS) containing products	3	2.3
Choosing paraben-free products	27	20.8

*Multiple options are marked.

Table 3. Side effects experienced by participants after wearing makeup

Variable name	n	%
Did you encounter any side effects after using makeup products?		
Yes	35	26.9
No	95	74.1
Side effects experienced by participants*	5	3.8
Skin color change	7	5.3
Skin spills	2	1.5
Skin sores	6	4.6
Skin lubrications	2	1.5
Skin burning	6	4.6
Itching on the skin	1	0.7
Increase in hairing	10	7.6
Irritation of the eyes	6	4.6
Allergic symptoms		
How did you combat with the problems you experienced?		
I went to the doctor	7	5.3
I did not do anything	5	3.8
I did what I heard from my friends	1	0.7
I stopped using the product	22	15.4
I waited	10	7.6
I didn't buy from the same brand	8	6.1
Read instructions	1	0.7
I called the company	1	0.7
I didn't go out until my condition improved	1	0.7
Obtained information from the internet	2	1.5

*Multiple options are marked.

Table 4. Participants's opinions on makeup removing and wearing permanent makeup

Variable name	n	%
Do you pay attention to cleaning when you do makeup?		
Yes	101	77.7
No	1	0.8
Sometimes	13	10
What do you use for makeup cleaning? *		
Water and soap	61	46.9
Makeup cleaner	70	53.8
Special makeup cottons	18	13.8
Make-up wipes	16	12.3
When do you clean your makeup?		
After going home	60	46.2
Before going to bed	59	45.4
The day after wearing make up (in morning)	6	4.6
Have you ever used permanent makeup?	1	0.8
Yes	129	99.2
No		
Are you planning wear permanent makeup?	4	3.1
Yes	126	96.9
No		
Why don't you think wearing permanent makeup?		
I like my natural looking	50	38.5
Harmful to health	87	66.9
My partner does not allow me to do so	1	0.8
I have no money for permanent makeup	13	10
I can't find a safe place to have it done	6	4.6
My family will not allow	5	3.8
I don't think it looks beautiful	36	27.7
Permanent make-up harmful for health	45	34.6

Contact dermatitis is the common problem with cosmetic use.(Ulas 2003). For this reason, providing conscious consumption of cosmetics with suggestion of dermatologist is quite important to achieve its' purposes and to prevent side effects (Dureja et al. 2005). Before using cosmetics; its' ingredient should be read carefully, attention should be paid on warnings and should be checked carefully for dermatologic testing in order to reduce health problems. Students reported obtaining support while choosing cosmetics from their friends(53.8%) however the rate support obtained from dermatologists are relatively low. Celebi et al. showed that while the participants use products with their own decisions (54.65%) is at the first rank, support from friends (18%) is at the second rank, usage along with the suggestion of dermatologist is at a low rank (Celebi 2004). The results of our study is similar with Celebi et al.'s study (20014) These results indicate that those who do not have sufficient information about skin type are highly consulted thus it is thought that this situation facilitates side effects to emerge.

More than half of the participants (65.4%) do not pay attention to expiration date while purchasing cosmetics. This could lead to bacterial growth in the cosmetic products which may result with allergic reactions or skin infections in consumers (Comoglu 2012). There are several side effects that users may face after using cosmetic products (Wormuth et al. 2006). If such a side effects are experienced after use of these products they should be immediately discontinued and consultation from the physician should be emerged (Adams et al. 1985). According to one study 15,6% of the participants faced side effects and only 20% of them consulted the doctor Kaymak et al.(2007) In our study 26.9% of the participants faced side effects but only 5.3% of them consulted doctor. It is seen that there is a lack of information on this issue. Various applications carried out without expert opinion provide the ground for side effects to create permanent damage to the skin.

According to literature it is advised to take advantage of the sunshine in terms of enucleating vitamin D. On the other hand exposing the skin to UV lights could cause skin cancers as well (Cayirli et al. 2013). Thus preventing harmful effects of In the study of Ermertcan et al.(2005) 39.2% of the women reported using sun protectors In our study the usage of sun creams is

not questioned in detail and but usage of it relatively low. Since data were not collected during summer the use of sun protectors may have not come to mind of the participants.

It is vital to remove cosmetics from our body appropriately. In our study 77.7% of participants mentioned that paying attention to makeup cleaning. Clening the cosmetics from the skin help removing residues so the skin can be renewed during the night (Tekkesin 2014). Not using proper techniques and products in cleaning the makeup pores get blocked and skin infections may arise. Almost all of our participants (95.4%) declare that cleaning the makeup. This result shows that participants in this specific study have sufficient knowledge related to clean their makeup. Testers facilitate transmission of infections since they are used by many people(Dawson & Reinhardt 1981) .In our study, 32.3% of the participants use tester product and 76.9% of them allow others to use their cosmetic products. It is observed that their information level is inadequate on this issue.

Relations with cosmetics and cancer have been discussed for years. Many studies have been conducted on this issue. The fact that many factors influence cumulatively in cancer formation and it is hard to distinguish those factors from each other. and not removing them (Nohynek et al. 2013). A 87.7% of our participants think that cosmetics may be effective in cancer formation in our study.

In the modern world where the responsibility of women increase with their active participation to business life, permanent makeup applications providing time savings cause health problems. The high rate of our participants has not had permanent makeup and they do not think to have it. The rate of those who do not wear makeup because of the health risks is found as 8.5%.

Conclusion

Cosmetics are indispensable part of our lives. Using unqualified and unhygienic products have serious damages to individuals. The number of studies carried out in Turkey on this topic is limited. According to this study, it was determined that information level on using cosmetics is insufficient. Consumers' knowledge should be raised by education. Along with suggestions of experts products which have certain dermatological tests done should be selected by consumers. Special attention should

be paid in purchasing and in using the cosmetic products.

References

- Adams, R.M., Maibach, H.I., Clendenning, W.E., Fisher, A. A., Jordan, W.J., Kanof, N., & Storrs, F., (1985). A five-year study of cosmetic reactions. *Journal of the American Academy of Dermatology*, 13(6), pp.1062–1069.
- Arica, D.A., Selcuk, L.B., Aran, T., Ates, E., Yayli, S., & Bahadir, S., (2017). The use of cosmetics and personal care products during pregnancy. *Turkish Journal of Dermatology / Turk Dermatoloji Dergisi*, 11(1), pp.22–27.
- Atmaca, F., (2018). When testing cosmetic products, don't lose your eyes. Available at: <https://www.haberturk.com/kozmetik-urunleri-test-ederken-gozunuzden-olmayin-1829010>.
- Cabuk, S. & Dogan Sudas, H., (2013). An investigation of cosmetics product consumption behavior of female consumers from environmental perspective. *Cag University Journal of Social Sciences*, 10(1), pp.115–132.
- Cayirli, M., Tunca, M. & Acikgoz, G., (2013). Sun Protection and Sunscreens. *TAF Preventive Medicine Bulletin*, 12(2), pp.193–198.
- Celebi, R.C., (2004). Cosmetic consumer behavior in Turkish society. *Online Journal of Cosmetology*, 1(3).
- Comoglu, T., (2012). Cosmetics. *Marmara Pharmaceutical Journal*, 1(16), pp.1–8.
- De Cuyper, C., 2008. Permanent makeup: indications and complications. *Clinics in Dermatology*, 26(1), pp.30–34.
- Darbre, P.D., (2005). Aluminium, antiperspirants and breast cancer. *Journal of Inorganic Biochemistry*, 99(9 SPEC. ISS.), pp.1912–1919.
- Darbre, P.D., (2006). Environmental oestrogens, cosmetics and breast cancer. *Best Practice and Research: Clinical Endocrinology and Metabolism*, 20(1), pp.121–143.
- Darbre, P.D., (2001). Underarm cosmetics are a cause of breast cancer. *European Journal of Cancer Prevention*, 10(5), pp.389–393.
- Dawson, N.L. & Reinhardt, D.J., (1981). Microbial flora of in-use, display eye shadow testers and bacterial challenges of unused eye shadows. *Applied and Environmental Microbiology*, 42(2), pp.297–302.
- Demir, N., Gokturk, T. & Akcay, O., (2014). Determination of heavy metals (Pb, Cd) in some cosmetic products. *SDU Journal of Science*, 9(2), pp.194–200.
- Dion, K., Berscheid, E. & Walster, E., (1972). What is beautiful is good. *Journal of Personality and Social Psychology*, 24(3), pp.285–290.
- Dureja, H., Kaushik, D., Gupta, M., Kumar, V., & Lather, V., (2005). Cosmeceuticals: An emerging concept emerging. *Indian J Pharmacol* |, 37(3), pp.155–159.
- Ermertcan, A. T., Ozturkcan, S., Dinc, G., Yurtman, D., Pala, T., & Sahin, M.T., (2005). Sunscreen use and sun protection practices in students and personnel of Celal Bayar University. *Photodermatology Photoimmunology and Photomedicine*, 21(4), pp.191–197.
- Fakri, S., Al-Azzawi, A. & Al-Tawil, N., (2006). Antiperspirant use as a risk factor for breast cancer in Iraq. *Eastern Mediterranean health journal* ,12(3–4), pp.478–82.
- Frieze, I.H., Olson, J.E. & Russell, J., (1991). Attractiveness and Income for Men and Women in Management. *Journal of Applied Social Psychology*, 21(13), pp.1039–1057.
- Guler Demir, S. & Bulut, H., (2016). Do cosmetic products which are prevent sweating cause breast cancer? *International Journal of Human Sciences*, 13(1), p.309.
- Harvey, P.W. & Everett, D.J., (2004). Significance of the detection of esters of p-hydroxybenzoic acid (parabens) in human breast tumours. *Journal of Applied Toxicology*, 24(1), pp.1–4.
- Kapucu, E., Kahveci, H., Susam, O., & Canta, Y. , (2009). Effects of drugs and cosmetic products on development processes and nature. *Dokuz Eylul University, Faculty of Education Publications*.
- Kaymak, Y., Celik, B. & Simsek, I., (2007). Usage of cosmetics in female students training in different departments of the same faculty. *Turkish Journal of Dermatology*, pp.38–42.
- Kocakaya, A.K., (2005). The effects of the information, attitudes, behaviors and training on the personal hygiene habits of high school students. *Suleyman Demirel University*.
- Kocaoz, S. & Eroglu, K., (2014). Cosmetic products and women's health. *TAF Preventive Medicine Bulletin Review TAF Prev Med Bull*, 1313(55), pp.413–420.
- Lee, A.H.S., (2005). Why is carcinoma of the breast more frequent in the upper outer quadrant? A case series based on needle core biopsy diagnoses. *Breast*, 14(2), pp.151–152.
- Lewis, C., (2004). Thin line between cosmetic product and medicine. *Online Journal of Cosmetology*, 1(3).
- Manová, E., von Goetz, N., Keller, C., Siegrist, M., & Hungerbuhler, K., (2013). Use patterns of leave-on personal care products among Swiss-German children, adolescents, and adults. *International Journal of Environmental Research and Public Health*, 10(7), pp.2778–2798.
- Matsuoka, Y., Yoneda, K., Sadahira, C., Katsuura, J., Moriue, T., & Kubota, Y., (2006). Effects of skin care and makeup under instructions from dermatologists on the quality of life of female patients with acne vulgaris. *Journal of Dermatology*, 33(11), pp.745–752.
- McGrath, K., (2003). An earlier age of breast cancer diagnosis related to more frequent use of antiperspirants/deodorants and underarm shaving.

- European Journal of Cancer Prevention, 12(6), pp.475–485.
- Mirick, D.K., (2002). Antiperspirant use and the risk of breast cancer. *CancerSpectrum Knowledge Environment*, 94(20), pp.1578–1580.
- Nohynek, G.J. et al., 2013. Endocrine disruption: Fact or urban legend? *Toxicology Letters*, 223(3), pp.295–305.
- Sarikaya, N., Altunısık, R., (2011). Personal care phenomenon: A research on factors affecting consumer attitude and choice towards personal care Products, Eskisehir Osmangazi University Journal of Economics and Administrative sciences 6(2), pp.389–413.
- Snyder, M., Tanke, E.D. & Berscheid, E., (1977). Social perception and interpersonal behaviour: On the self-fulfilling nature of social stereotypes. *Journal of Personality and Social Psychology*, 35(9), pp.656–666.
- Tekkesin, N., (2014). Do not risk your health to look nice. Available at: <http://www.saglikveyasamdergisi.com.tr/guzelleseyim-derken-sagliginizdan-olmayin-2.html>.
- Tırnaksız, F., (2005). The importance of cosmetic science in pharmacy. *Journal Of İn-Service Training*, 13–14.
- Ulas, S., (2003). Undesirable reactions due to cosmetics. *Turkderm*, (37), pp.161–169.
- Vural, T., Celebi, C.R., Kahraman, T., Ucar, O., Deger, M., (2003). Hair care and cosmetology habit profile in elderly Turkish women., *Online Journal of Cosmetology*, 1(2).
- Wormuth, M., Vollenweider, M., Hungerbuhler, K., (2006). What are the sources of exposure to eight frequently used phthalic acid esters in Europeans? *Risk Analysis*, 26(3), pp.803–824.