

EYE AND EYELID INFECTION AMONG FEMALES USING KAJAL AND MASCARA

Syeda Salbia Shereen Naqvi ^{1*}, Waqas Akaram ¹, Yasir Mehmood ²,
Irfan Bashir ¹, Novaira Saleem ³

¹ University of Central Punjab, Lahore, Pakistan

² Ameer& Adnan Pharmaceuticals Pvt Limited, Lahore , Pakistan

³ Rashid Latif Pharmacy College, Lahore, Pakistan

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ABSTRACT

Objective: The primary aims of cosmetic survey is to identify the prevalence of use of kajal and mascara in our community, to highlight the eye and eyelid infections among females using kajal and mascara and to identify the prevalence of Cosmetic-induced Eye infections.

Methods: A30 questionnaire quantitative and qualitative (mixed approach) method is used. Data of 100 participants is used to describe the variables. Each participant's score will be summed and calculate the possible points for each answer determining the prevalence of eye infection in females. The frequency of eye cosmetic use is examined and correlated with %age of cosmetic induced eye and eyelid infections.

Results: 28% females have developed eyelid infection after using mascara and kajal. 87% females suffered from cosmetic eye infection for 1 day, 10% for 3 days & 3% for 5 days. 80% females view is cosmetic infection occurs due to others eye cosmetics use, 13% due to use of low branded eye cosmetic & 7% due to use of contaminated cosmetic. 40% female treated eye infection with home remedies, 28% females visit the ophthalmologist and 32% shows carelessness.

Conclusion: The incidence of cosmetic eye infection will be reduced by use of branded eye cosmetic, removing eye make-up carefully at the end of the day, splashing of water and cleaning of eye regularly. Allergic conjunctivitis (Inflammation of cornea), Iritis/Eye inflammation (Inflammation of iris), Eye dermatitis (Inflammation of skin Eye) and Blepharitis (Inflammation of Eyelids) are the commonly cosmetic induced Eye infection.

Key words: Mascara, kajal, cosmetic, infection, inflammation.

*Corresponding Author. E-mail: yasir_dpharm@hotmail.com

INTRODUCTION

Human Eye

The human eye is the organ which gives us the sense of sight. Eyelids are structure covering the front of the eye, which protect it, limit the amount of light entering the pupil, and distribute tear film over the exposed corneal surface [1]. Cornea is a transparent front part of the eye that covers the iris, pupil, and anterior chamber and provides most of an eye's optical power. Sclera is an opaque, fibrous, protective outer layer of the eye ("white of the eye"). Iris pigmented tissue lying behind the cornea that gives color to the eye (e.g., blue eyes) and controls amount of light entering the eye by varying the size of the pupillary opening [2]. Retina is a light sensitive nerve tissue in the eye that converts images from the eye's optical system into electrical impulses that are sent along the optic nerve to the brain. Lens is a

transparent, biconvex intraocular tissue that helps bring rays of light to a focus on the retina [3]. Lacrimal gland is almond-shaped structure that produces tears.

Eye cosmetics can be classified into eyelash cosmetics (Mascara and eyeliner) and eyelid cosmetics.

Traditional women use kajal and mascara on the lid margin. There are mainly carbon compounds and surma contains mercury [4]. Various sensitizing preparations in eye cosmetics include: preservatives such as parabens, phenyl mercuric acetate, imidazolidinyl urea, Quarternium 15 or potassium sorbate, antioxidants, butylatedhydroxytoluene, butylatedhydroxy anisole propyl and resins-colophony. Only 4% of reactions have been proven to be due to eye make-up. Cosmetics are regulated

under the Drugs and Cosmetics Act 1940 and Rules 1945 which states that there no need to mention the ingredients label on cosmetic packs of less than 60 ml for liquids and 30g for solids and semisolids [5]. This poses a problem for eye cosmetics as they generally come in smaller packs. What one needs to be careful about while buying eye make-up is to avoid products which contain mercury, lead and parabens [5]. These are extremely harmful and their prolonged usage can cause various health hazards and may even lead to blindness [6].

Commonly Eye and Eyelids Infection among females using Kajal and Mascara

Conjunctivitis (Pink Eye)

Conjunctivitis refers to any inflammatory condition of the membrane that lines the eyelids and covers the exposed surface of the sclera. It is the most common cause of "red eye". Conjunctivitis is commonly caused by bacteria and viruses. Neisseria infection should be suspected when severe, bilateral, purulent conjunctivitis is present in a sexually active adult or in a neonate three to five days postpartum. Conjunctivitis caused by Chlamydia trachomatis or Neisseria gonorrhoeae requires aggressive antibiotic therapy, but conjunctivitis due to other bacteria is usually self-limited [7] Chronic conjunctivitis is usually associated with blepharitis,

Keratitis (Inflammation of Cornea)

Keratitis refers to inflammation of Cornea of Eye. In general, keratitis could be infective and non-infective. Non-infective keratitis may become infective by pathogenic or nonpathogenic microbes and may result in sight-threatening complications. Infective keratitis could also be suppurative and non-suppurative [8]. Suppurative keratitis is frequently caused by bacteria and fungi. Nonsuppurative infective keratitis could be viral, spirochaetal, parasitic or immune-related stromal necrosis.

Iritis and Eye Inflammation

Iritis is inflammation that affects your eye's iris, the colored ring surrounding your pupil [9]. Iritis often cause by use of contaminated Eye cosmetic (kajal, mascara, eye liner) or toxicity of eye to any chemical ingredient in it. (e.g. lead) Iritis that develops suddenly, over hours or days, is known as acute Iritis.

Eyelid Contact Dermatitis (Eyelid Eczema)

Eyelid contact dermatitis is an inflammatory reaction involving the eyelid skin that is caused by contact with a trigger substance. It may be due to allergy (allergic contact dermatitis) or irritation (irritant contact dermatitis). Eyelid dermatitis is also called eyelid eczema.

Blepharitis (Inflammation of Eyelids)

Blepharitis is an inflammation of the eyelids causing red, irritated, itchy eyelids and the formation of

dandruff-like scales and dark scars on eyelashes [10]. The prevalence rates of serious ocular sensitization to cosmetics were 2.2% in Denmark during 1939–58, 4% in France during 1973–80, and 4.4% in the USA. The aims of this research are to examine the impact of Eye cosmetic usage, investigate the migration of eye cosmetic product in eye and tear film, determine the clinical effects of cosmetic on eye & examine the biochemical effects resulting from eye cosmetic application [7].

METHODOLOGY

Study Population

The study population should be defined in advance, stating unambiguous inclusion (eligibility) criteria. The impact that these criteria will have on study design, ability to generalize and participant recruitment must be considered.

Study Area

The study area was based on Feasibility, Generalizability, Risk/Benefits and Subject Characteristics. Females from Johar Town, University of Central Punjab and Metro cash and carry, Lahore were included in the research. 3 types of female were included in our study survey on the bases of daily consumption of eye cosmetic and their own choice and need i.e. Student Community, Working Women and Housewives

The Inclusion & Exclusion criteria depend upon age, BMI, gender, disease state etc.

Inclusion Criteria

Females with age groups (15-45)

Urban females

University students

Healthy individuals

No previous eye disease history

Exclusion Criteria

Female with primary and secondary eye disease

Old age female

Alcoholic

Rural female because they use very less make up

Females having allergy with some brands of Eye cosmetic

Sample Size

59 respondents are needed as calculated from sample size formula.

Data Collection Tools

Data collected in this study came from a 30 questionnaire survey that was given to females. Participants were asked to check off the answers that applied to them in the questionnaire. A survey is used as a means of data collection because it provided the best possible way to determine the awareness of female regarding the use of cosmetics. The responses elicited will be coded from a point scale of A & B.A meaning, yes or the most likely it is to develop an infection B meaning, least or No likely it is to

develop an infection. Each participant's score will be summed. After factoring in the recommended procedures for using makeup and calculating the possible points for each answer determining the prevalence of Eye infection in specific calculated no. of female population.

Questionnaire Detail

The survey comprise of 30 questionnaire having 4 sections. All the questions are arranged in proper way in logical manner and analytical form.

- Section 1: Established demographics and base line data
- Section2: Assign all question related to the general information about Eye and Eyelid Infections.
- Section 3: Assign all question related to the general information about the commonly

used of Eye cosmetic (kajal and mascara) in our Pakistani community.

- Section 4: Established common home remedies and 1st line view of female after having cosmetic eye infection.

RESULTS AND DISCUSSION

Analysis of Data

Data obtained from the cosmetic survey is downloaded as Microsoft Excel worksheet. These data is examined to find demographics of respondents. The frequency of Eye cosmetic use is examined and correlated with %age of cosmetic induced Eye and Eyelid infections. The no. of non-cosmetic user are also be found. Lastly, opinions of cosmetic user to questions relating to perception of eye infection are explored.

Table 1: Result analysis sheet

Sr. No.	Nature of Question	Option A (%)	Option B (%)	Option C (%)
1	Category of female	43	37	20
2	Likeness about eye cosmetics	78	22	-
3	Itching in eye after applying kajal and mascara	11	89	-
4	Swelling after applying kajal and mascara	8	92	-
5	Any previous eye disease history	38	62	-
6	Eye sight weakness	43	57	-
7	Use of eye glasses	76	24	-
8	Eye cosmetic mostly like to use	60	31	9
9	Daily application of kajal and mascara	95	3	2
10	Perception about cosmetic Eye's Glow	98	2	-
11	% of eyelid infection occurs	28	72	-
12	Common side effect after eye infection	28	55	17
13	Pink eye	90	7	3
14	Duration of cosmetic Eye infection	87	10	3
15	Visit to ophthalmologist	68	32	-
16	Common home remedy to treat eye infection	68	19	13
17	Occurrence cosmetic induced eyelid infection	11	18	71
18	Female group mostly suffered with infection	27	63	10
19	Common cause of cosmetic eye infection	80	13	7
20.	Commonly precaution to avoid eye infection	50	34	16
21	Brain damage due to eye infection		8	-
22	Dark circles after eye infection	73	27	-
23	Safety of eye equipment's	84	16	-
24	Wearing of Eye patch during infection	89	11	-
25	Sunlight contact increase risk of infection	70	30	-
26	Repeated mascara Side effects to Eyelids	48	16	-
27	Water more soothes your infected eyes	4	3	93
28	Eye infection can cause headache	88	12	-
29	View of community for treated eye infection	40	28	32
30	Eye infection common in Pakistani community	30	50	20

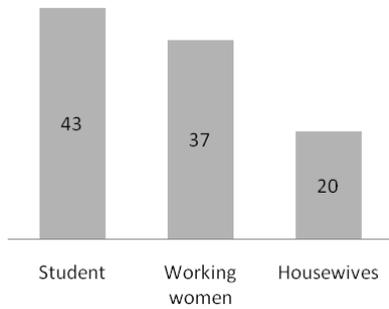


Figure 1: Percentage of females include in cosmetic survey

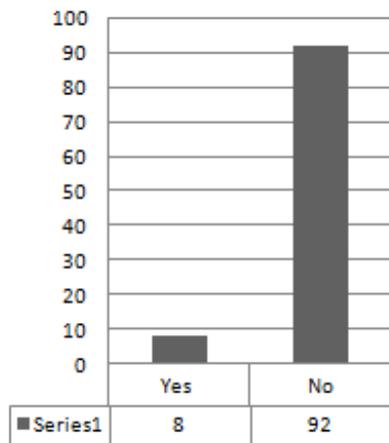


Figure 2: Swelling percentage after kajal and mascara application

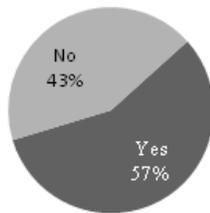


Figure 3: Illustrating that 57% females say “Yes” they have weak eye sight & 43% say “No” incidence of weak eye sight

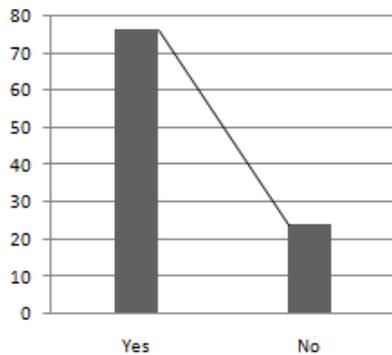


Figure 5: Illustrating that 76% females say “Yes” they use Eye glasses & 24% say “No” they don’t use eye glasses

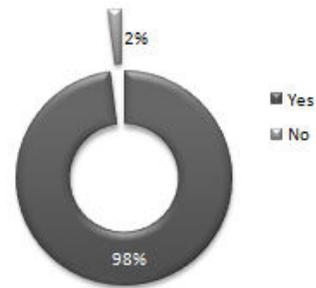


Figure 4: Illustrating that 98% females think that kajal and Mascara can increase the inner Glow of Eye, 2% female say “Not”

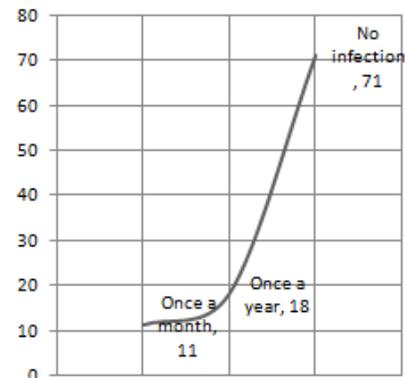


Figure 6: Illustrating that 11% females have develop cosmetic induced eyelid infection once a month, 18% females say once a year and 71% female having no incidence of Eye infection

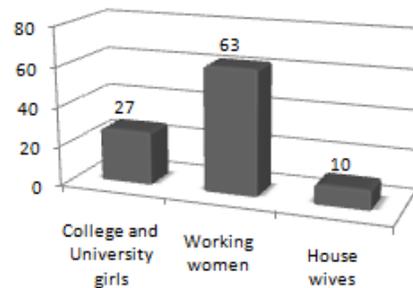


Figure 7: Illustrating that cosmetic eye infection is 63% developed in working women, 27% in girls’ student and with least ratio 10% in housewives

Around 100 females coresponded to the questions. The frequency of Eye cosmetic use is examined and correlated with %age of cosmetic induced Eye and Eyelid infections. The opinions of cosmetic user to questions relating to perception of eye infection are explored and the results concluded that a number of people do suffer from cosmetic induced eye infection.

Females include in cosmetic survey are 43% are university students, 37% are working women and 20% are housewives. 78% females like to use kajal and Mascara. 18% females say feels itching while

applying kajal and Mascara and 82% females don't feel itching while applying kajal and Mascara. 28% females develop Redness, 55% females Itching & 17% females have to develop Inflammation. 87% females suffered with cosmetic eye infection for 1 day, 10% for 3 days. 68% females visit to ophthalmologist after developing Eye infection & 32% females don't Visit to ophthalmologist. 50 % female view that Bacterial infection are more common in Pakistan, 30% Allergic infection & 20% Viral infection.

Although proper detection of eye and eyelid infection cannot be made through a questionnaire, but the symptomatic study suggested that we reduce the incidences of cosmetic eye infection by precautionary measures like use of branded Eye cosmetic, removing eye make-up carefully at the end of the day & Splashing of water and cleaning of eye regularly.

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CONCLUSION

Every year, many women end up with eye infections from cosmetics. In rare cases, women have been temporarily or permanently blinded by an eye cosmetic, according to the FDA. There are some recommendations to keep eyes healthy as well as beautiful: Throw away eye makeup after three months. Infection-causing bacteria grow easily in creamy or liquid eye makeup. Never share eye makeup. Avoid products that contain untested or harmful chemicals. Before applying makeup, be sure your face and eyelids are very clean. Never apply makeup while in a moving vehicle. Glitter eye makeup is a common cause of corneal irritation or infection, especially in contact lens users. Remove all eye makeup at night before sleeping, especially mascara that can stick to the lashes. Brush a clean cotton swab along the base of the eyelashes to remove all makeup remnants. Thoroughly rinse remover off your eyelids.