

## **USE OF EYELASH EXTENSION AND ITS EFFECTS ON THE ANTERIOR OCULAR SEGMENT**

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### **ABSTRACT**

**Background:** Eyelash extensions have become the latest cosmetic trend worldwide. Women with long eyelashes are considered a sign of beauty in various cultures, as a result many women try to improve their appearance by using eyelash extensions. The use of eyelash extensions can interfere with the normal growth and release of eyelashes. It can also cause infection or allergies to the chemicals contained in the glue. The use of eyelash extensions itself also causes many symptoms or complaints that appear in the wearer. Some of the diseases that can be caused are conjunctivitis, blepharitis, and keratitis. **Objective:** to identify and analyze the use of eyelash extensions and their effects on the anterior ocular segment. **Methods:** this study used observational analytic with cross sectional method. Sampling time lasted approximately 2 months and data analysis using the Spearman Test. **Results:** From the results of the study followed by 120 respondents (43 respondents using eyelash extensions and 77 respondents not using eyelash extensions) between the effect of using eyelash extensions and the symptoms of anterior ocular segment abnormalities that arise, it is obtained which means significant results ( $p < 0.05$ ) with the same symptoms. The most common is madarosis (lash loss). **Conclusion:** the use of eyelash extensions can have an effect on the anterior ocular segment.

**Keywords:** eyelash extension, female student, anterior ocular segment.

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## INTRODUCTION

Eyelash extensions have become the latest cosmetic trend in today's era. Women with long eyelashes are considered a sign of beauty in various cultures, as a result many women try to improve their appearance by using eyelash extensions. In the past, before there was an eyelash extension method, women usually wore false eyelashes that had been arranged to resemble eyelashes and could only be used once and the installation was quite complicated. Therefore, many women turn to the eyelash extension method because it is considered more practical.<sup>1</sup>

Eyelash extension is a treatment that can change the eyelashes to become thicker, longer, and thicker using the eyelash extension method. The individual lashes will be glued to the natural lashes with a special eyelash glue. This action can pose a risk that is not profitable for the wearer.<sup>2</sup>

The use of eyelash extensions can affect the normal periodic release and growth of new eyelashes. Basically, the use of eyelash extensions can affect the normal function of the anatomy and physiology of the eyelids and eyelashes. This eyelash extension procedure allows frequent washing of the eyelids which can lead to bacterial and/or fungal infections seen as conjunctivitis. Eyelashes can also slide when wet with water or sweat and are

The sampling of non-probability sampling is quota sampling. In this study, researchers needed 84 respondents. The sample in this study were Widya Catholic University Surabaya students with the criteria of having used eyelash extensions for more than 1 week and also those who had never used eyelash extensions. Data collection took place from August 2021 to October 2021. The total sample that met the inclusion criteria was 120 subjects. The data were analyzed using the Spearman test on SPSS.<sup>3</sup>

considered foreign bodies in the eye. The glue used to attach artificial eyelashes to natural eyelashes can cause conjunctivitis.<sup>1,2</sup>

The results of research conducted by Abah et al in 2017 showed that most eyelash extension users experienced symptoms or complaints after using them. Some serious eye disorders such as conjunctivitis, allergic blepharitis, and bacterial keratitis can arise due to failure in the treatment process.<sup>2</sup> Eyelash extension users often complain of discomfort in their eyes such as itchy eyelids, burning sensation, dry eyes, pain in the eyelids, watery eyes, eyelash loss, feeling of lump in the eye. The use of eyelash extensions causes a lot of complaints that can cause abnormalities in the eye. The majority of the group of women who use eyelash extensions are women in the age group of 20-29 years (68.4%) and most of them are college students. This study aims to determine the effect of using eyelash extensions on the anterior ocular segment.

## METHODS

This research is an observational analytic study with cross sectional method. The data will be taken using a questionnaire containing some initial questions and 14 questions regarding the symptoms that arise. The questionnaire that has been made has been tested for validity and reliability.

**RESULT**

**Table 1. Distribution of Research Sample Demographic Area**

	n (%)
<b>Age</b>	
18 years	17 (14%)
19 years old	18 (15%)
20 years	30 (25%)
21 years	49 (41%)
22 years	6 (5%)

**Table 2. Sample Distribution Based on Eyelash Extension Usage**

<b>Use eyelash extensions</b>	
Yes	43 (36%)
No	77 (64%)
<b>Reasons for using eyelash extensions</b>	
Beauty	28 (65%)
Follow friends	5 (12%)
Following the trend	7 (16%)
Curious	3 (7%)
<b>How long have you been using eyelash extensions?</b>	
> 1 week-1 month	13 (30%)
1-3 months	18 (42%)
3-6 months	8 (19%)
> 6 months	4 (9%)
<b>Usage</b>	
First	24 (56%)
Repeat	21 (44%)
<b>Knowing information</b>	
Social media	22 (51%)
Friend	9 (21%)
Parent	5 (12%)
Self initiative	4 (9%)
Internet	3 (7%)
<b>Place for eyelash extensions</b>	
Beauty clinic	18 (42%)
Salon	10 (23%)
Home service	15 (35%)
<b>Knowledge of the disease caused</b>	
Yes	16 (37%)
No	27 (63%)

**Table 3. Comparison of the use of eyelash extensions with symptoms of eye complaint experienced.**

Symptoms experienced	n (%)		p value
	Number of respondents who use eyelash extensions	Number of respondents who do not use eyelash extensions	
Dry eyes	36 (84 %)	30 (39 %)	0.032
Eyes feel tired	32 (74 %)	37 (48 %)	
Red eye	37 (86 %)	32 (41 %)	
Watery eyes	31 (72 %)	34 (57 %)	
Pain in the palpebral area (eyelids)	22 (51 %)	19 (44 %)	
Swelling in the palpebral area (eyelids)	14 (33 %)	12 (15 %)	
Redness in the palpebral area (eyelids)	19 (44 %)	13 (17 %)	
Madarosis (lash loss)	40 (87 %)	37 (48 %)	
The presence of dirt on the eyelids (eyelids)	37 (86 %)	42 (55 %)	
The lids (eyelids) stick together in the morning due to increased secretions	35 (81 %)	25 (32 %)	
Sensation like a foreign object	35 (81 %)	26 (34 %)	
Photophobia (sensitive eyes to light)	15 (35 %)	14 (18 %)	
Blink more often	33 (77 %)	26 (34 %)	
Blurred vision	18 (42 %)	20 (26 %)	

## DISCUSSION

In this study, from 120 respondents who used eyelash extensions, 43 (36%) respondents who used eyelash extensions were aged 20-22 years. The reason for the most use of eyelash extensions is because of beauty as many as 28 respondents (65%). The longest duration of using eyelash extensions is 1-3 months with a total of 18 respondents (42%). From 43 respondents who used eyelash extensions, 24 respondents (56%) used eyelash extensions for the first time and 21 respondents (44%) had repeatedly used eyelash extensions. The respondents know that most of the information about eyelash extensions comes from social media as many as 22 respondents (51%). A total of 18 respondents (42%) prefer to install eyelash extensions at beauty clinics. Of the 43 respondents who have used eyelash extensions, only 16 respondents (37%) know the diseases that can be caused by using eyelash extensions and as many as 27 respondents (63%) do not know the diseases that can be caused by using eyelash extensions. Of the 43 respondents who have used eyelash extensions, most of them experience symptoms or complaints after > 1 week of use.

The results of this study are in line with research conducted by Amano Y conducted in Japan in 2012 regarding eye diseases that occur due to the use of eyelash extensions where respondents who took part in the study were aged 20-29 years, the majority of the respondents were 126 respondents (40.7%). first time using eyelash extensions and the most reason for using eyelash extensions is beauty reasons.<sup>4</sup>

This study was also followed by 77 respondents who did not use eyelash extensions. From the results of data analysis, it was also found that the respondents experienced the same symptoms or complained about the same thing. So it can be concluded that the occurrence of symptoms or complaints in the anterior segment of the eye is not entirely due to the use of eyelash extensions

alone, there are still many other factors that can cause these complaints. Such as lack of hygiene, exposure to external objects such as dust, smoke, chemicals, use of lenses, irritation due to cosmetic ingredients, and others.

Anterior ocular segment abnormalities are the most common. This eye disorder affects the conjunctiva, cornea, aqueous humor, iris, pupil, and lens.<sup>5,6</sup> Several diseases included in the anterior ocular segment disorder are conjunctivitis, allergic blepharitis, and bacterial keratitis.<sup>7</sup> In everyday life, the use of eyelash extensions can cause problems with eye discomfort and inflammation of the eyes. This disease can be caused by improper use of eyelash extensions and can occur in women who wear eyelash extensions and are allergic to the content of the eyelash extension glue itself. Some of the symptoms and complaints that can occur in anterior ocular segment disorders are red eyes, itchy eyes, watery eyes, swollen eyelids, pain in the eyelids, tired eyes, photophobia, madarosis, and there is discharge in the eyes.<sup>8</sup>

In this study, out of 43 respondents who used eyelash extensions, almost all respondents experienced complaints after using eyelash extensions. The most complaints experienced by the respondents were madarosis (lash loss) as many as 40 respondents (87%), complaints of red eyes and the presence of dirt on the eyelids as many as 37 respondents (87%), dry eyes as many as 36 respondents (84%), complaints palpebra sticking due to the presence of dirt and complaints of sensations such as foreign bodies as many as 35 respondents (81%). The results of this study are in line with previous research conducted by Koffour GA as many as 97.5% of women who wear eyelash extensions experience symptoms or complaints in the eyes. The results of this study are also in line with research conducted by Abah et al in Nigeria at least one or several symptoms have been experienced as a side effect of using eyelash extensions.<sup>1,2</sup>

In this study, after analyzing the data using the Spearman test on the SPSS program, the correlation coefficient was 0.196. This means that the level of strength of the relationship (correlation) between the symptoms experienced and the use of eyelash extensions is very weak with a p value of 0.032 ( $p < 0.05$ ) which indicates a significant (mean) relationship between the symptoms of eye abnormalities and the use of eyelash extensions.

The results of this study are also in line with previous research conducted by Rosalina A. Fatem in 2019, a student at Trisakti University Jakarta regarding the relationship between the use of eyelash extensions and the incidence of skin irritation in women in salon X. The results of the Chi-Square test showed that there were 46 (63.8 %) respondents who used eyelash extensions and experienced skin irritation with p value = 0.026. The P value states that there is a significant relationship between the use of eyelash extensions and the incidence of skin irritation in women at salon X. The results of this study are in line with previous studies, only the difference between the research of Rosalina A. Fatem examined the incidence of skin irritation that occurred in salon X and the respondent. Those who experienced more irritation were 46 respondents (63.8%).<sup>9</sup>

The incidence of various complaints of anterior segment abnormalities felt by eyelash extension wearers can vary. In patients with keratoconjunctivitis and keratitis, the symptoms that occur can be caused by the invasion of the glue during the removal process, the glue is not completely dry and then enters the eye during rinsing. Patients with blepharitis due to the use of eyelash extensions will appear a few hours to five days after the eyelash extension installation procedure.<sup>4</sup>

The eyelid margins are very sensitive to various external factors, various types of systemic and topical drugs and

cosmetic ingredients such as glue so that they can pose a threat and irritation.<sup>10</sup> Overall, the eyelids are responsible for tear production and protection of the eye from external trauma. Almost all users of eyelash extensions have various problems such as dryness of the eyes, itching of the eyelids, redness, burning sensation and sensation of a foreign body that is blocked are symptoms that arise and can cause anterior segment abnormalities in the eye. The case reports showed that there were 42 cases of blepharitis, four cases of keratoconjunctivitis, three cases of conjunctival erosion, one case of bacterial keratitis, and one case of subconjunctival erosion that occurred with the use of eyelash extensions.<sup>11</sup>

The use of eyelash extensions has an effect on the incidence of anterior ocular segment abnormalities and many respondents who have used have experienced symptoms and complaints. These complaints and symptoms usually occur due to infection and allergies to the ingredients used. Knowledge and understanding of eyelash extension wearers' hygiene care is very important to reduce the number of complaints that occur. In addition, understanding of the correct procedure when installing eyelash extensions, which are mostly done by salons or beauty clinics, must also be improved so that women who want to use eyelash extensions do not experience unwanted complaints. This increase in understanding can be done by participating in training with experts and also conducting training to employees who will carry out procedures for patients. Handling that can be done after using eyelash extensions and experiencing complaints is to improve hygiene, conduct consultations regarding the symptoms you are experiencing, and immediately remove the eyelash extensions you are using.

## CONCLUSION

Based on the results of research that has been carried out using eyelash extensions

can cause various symptoms or complaints in the anterior segment of the eye with the most complaints being madarosis (lash loss) (87%), red eyes (86%), dry eyes (84%). The results of data analysis using the Spearman test stated that there was a significant (mean) relationship between symptoms of eye abnormalities and the use of eyelash extensions ( $p < 0.05$ ).

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