

## Knowledges, Attitudes and Practices Regarding the Use of False Eyelashes among Women in the Town of Parakou in 2020

**Codjo Rodrigue Abel Assavedo\***, Amadou Issifou Alfa Bio and Yollande Marie Paule Assokou

*Ophthalmology Teaching and Research Unit, Department of Surgery and Surgical Specialties, Faculty of Medicine, University of Parakou, State of Borgou, Republic of Benin*

**\*Corresponding Author:** Codjo Rodrigue Abel Assavedo, Head of Ophthalmology Teaching and Research Unit and Head of Department of Surgery and Surgical Specialties, Faculty of Medicine, University of Parakou, State of Borgou, Republic of Benin.

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### Abstract

**Introduction:** Eyelashes extension involves the fixing of synthetic eyelashes made of chemical fibers or other materials individually on natural eyelashes.

**Goal:** Assess knowledges, attitudes and practices regarding of the use of false eyelashes among women in the municipality of Parakou in 2020.

**Patients and Methods:** This was an observational cross-sectional study, for descriptive and analytical purposes with prospective data collection which spread out from 01st July to 30th September 2020. It concerned all women at least 18 years old who have lived in municipality of Parakou for at least 6 months and have given their consent to take part at this study.

**Results:** A total of 510 women participated at this study. The extremes ages were 18 and 65 years old with a mean age of  $26 \pm 7.96$  years. 70.78% of the study population had heard about false eyelashes extensions. The frequency of eyelashes extensions was 31.57%. The 20 - 30 years old age group was the most represented (60.87%). The secondary studying level was more represented with 34.16%. Beauty was the main reason for this practice (78.26%). Many women had made eyelashes extensions more than three times, which represent 42.86%. The market was cited as the first place where women had eyelashes extensions applied, which represent 59.63%. Among the women surveyed, 77.64% have already experienced discomforts or eye problems related to eyelashes extensions, but despite of this, 62.73% of them wish to continue this practice.

**Conclusion:** Eyelashes extension is a practice that nowadays gaining popularity for the purpose to enhance eyes beauty. It is urgent to warn women about the undesirable effects related to this practice.

**Keywords:** False Eyelashes Extensions; Consequences; Knowledge; Attitudes; Practices; Parakou

### Introduction

Like a barrier, the eyelashes prevent dust from entering the eye and a very rapid reflex blink occurs as soon as an object approaches the eye or in the event of very high heat [1]. In the absence of naturalness, women have false eyelashes applied, which have become very popular accessories in the world of cosmetics. Many women choose to adopt them for their special makeup occasion's [2]. The practice of these cosmetic improvements is experiencing exponential popularity in the world today. Therefore, the use of eyelashes extensions involves fixing synthetic eyelashes made of chemical fibers or other materials individually on the natural eyelashes. However, there are no

uniform or well-established guidelines for this process. Some consequences of this practice are dermatitis, allergic blepharitis, conjunctivitis and kerato-conjunctivitis, etc. [3]. Orly Avitzur, relying on a report from the British College of Optometrists warned that repeated use of eyelashes extensions can cause tractional alopecia [4].

### Aim of the Study

The aim of this study was to assess knowledges, attitudes and practices regarding the use of false eyelashes extensions among women in the municipality of Parakou in 2020.

### Framework, Patients and Methods

Our study took place in the municipality of Parakou located in the department of Borgou in the Republic of Benin, more precisely in 23 neighborhoods. This was a cross-sectional observational study for descriptive and analytical purposes with prospective data collection which was carried out over a period of 03 months from July 01<sup>st</sup>, 2020 to September 30<sup>th</sup>, 2020.

Included were all women aged at least of 18 years old at the time of our survey, residing for at least 6 months in Parakou municipality and having given their consent to participate in the study.

The dependent variables of the study were: knowledges, attitudes, practices regarding of use of false eyelashes extensions.

Data about the independent variables were collected through the groups of variables: Age, ethnicity, Marital status, socio-professional category, level of education, Religion, personal medical history, personal history of eye surgery, personal history of ailments eye, family medical history, family history of eye conditions.

The minimum sample size (N) was determined using Schwartz's formula. The sample was obtained by the means of a cluster survey.

The data were collected using a pre-established questionnaire during a structured interview with the interviewed investigator.

The data were entered with the software Epi data 3.1 French version and analyzed using the software Epi Info 7.2. The quantitative descriptive variables were expressed as mean  $\pm$  standard deviation and qualitative ones as number and percentage. The chi-squared test was used for the comparisons. The threshold of statistical significance was 5% (P-value < 0.05).

## Results

### Sociodemographic data

A total of 510 women who gave their consent to participate in the study were surveyed. Our final participation rate (100%) reflects the good level of adherence to this study.

### Age

The mean age of the women interviewed was  $26 \pm 7.96$  years old with the extremes of 18 and 65 years. Women aged from 20 to 30 years old made up 60.78% of the study sample.

### Ethnic group

The Fon and related ethnic group represented a proportion of 30.59% in our study, followed by Dendi and relatives with a proportion of 19.02%.

### **Marital status**

In the study sample, 59.61% of the women surveyed were single, followed by married women with a proportion of 29.41%.

### **Educational level**

A frequency of 38.51% of the women questioned had the level of secondary education followed by the level of university studies with a frequency of 25.69%.

### **Socio-professional category**

Among the women surveyed, craftswomen represented 34.71% of the sample, followed by pupils/students with a proportion of 32.75%.

### **Data related to the knowledges of women on eyelash extensions**

#### **Knowledges about the role of natural eyelashes**

Three hundred and fifty-two (352) women reported that natural eyelashes protect eyes against foreign bodies.

#### **Knowledges about false eyelashes**

A total of 361 women had already heard about false eyelashes extensions, which represent 70.78% against a proportion of 29.22%.

#### **Knowledges of the material for making false eyelashes**

Of those who have ever heard of false eyelashes, 81.44% (n = 294) said they are made from synthetic materials.

#### **Knowledges of adhesives used for fixing false eyelashes**

The Hair bonding glue (glue hair) was cited by 263 women or 72.85% as glue used when setting eyelashes extensions.

#### **Knowledges of the chemical composition and the possible toxicity of glues used to fix false eyelashes**

Almost all of the women in the sample had no knowledges of the chemical composition of glues, except 6 who claimed to know the chemical constituents. However, a considerable number of women (n = 141) nevertheless affirmed the possibility of the toxicity of the chemical constituents of the glues used during eyelashes extensions, i.e. 39.05%.

#### **Knowledges of the means used for the removal of eyelashes extensions**

For the removal of eyelashes extensions, most women (45.98%) mentioned the use of water.

#### **Knowledges about the harmful effects of false eyelashes on eyes and eyesight**

73.13% (n = 264) of women said eyelashes extension can have harmful effects on the eyes.

Women who said eyelashes extension can have harmful effects on eyesight accounted for 64.54%.

**Women’s attitudes as concerned the practice of extensions**

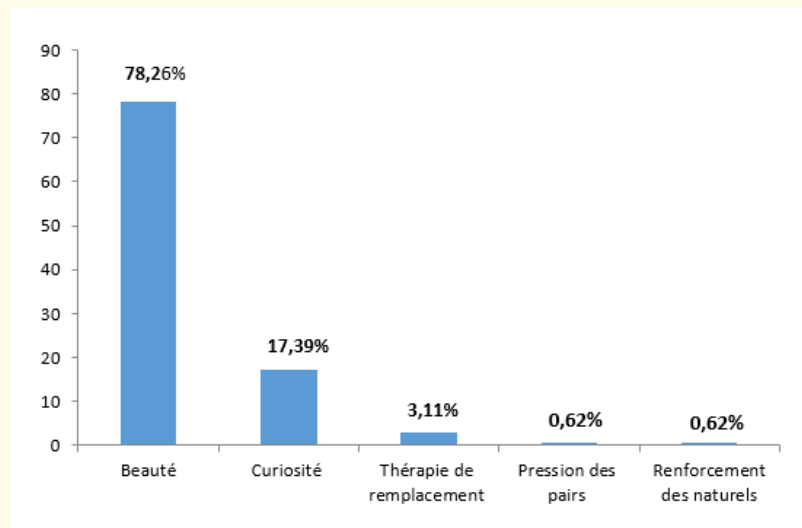
We noted a total of 79 or 21.88% of women who approved the practice of eyelashes extensions against 70.08% who recognized that this practice is bad.

**Frequency of women practicing eyelashes extensions**

We observed a frequency of 31.57% or n = 161 of women who practiced eyelashes extensions in the study sample. As shown in table 1 below.

	Effective	Percentage
Yes	161	31.57
No	349	68.43
Total	510	100.00

**Table 1:** Distribution of women surveyed according to eyelashes extensions practice N = 510 (Municipality of Parakou, July-September 2020).



**Figure 1:** Graphic representation of eyelashes extensions reasons among women surveyed (Municipality of Parakou, July-September 2020).

**Age of women practicing eyelashes extensions**

According to the study, the age group of 20 - 30 years old represented 60.87% of women practicing eyelashes extensions.

**Marital status of women practicing eyelashes extensions**

Among the women surveyed practicing eyelash extensions, 62.73% were single.

### **Educational level of women doing eyelashes extensions**

Of the 161 women practicing eyelashes extensions, 55 or 34.16% had secondary school education.

### **Reasons for practicing eyelashes extensions**

The main reason for this practice was linked to a need to dress up in 78.26% of cases, followed by curiosity in 17.39% of cases.

### **Frequency of eyelashes extensions**

Among women, 42.86% (n = 69) have done this more than three times.

### **Places where women have eyelashes extensions applied**

The market was cited as the first place where the women in the sample had eyelashes extensions applied for 59.63% of the reports, followed by beauty salons in 31.06% of the reports.

### **Average wearing time of eyelashes extensions**

Women reported wearing eyelashes extensions for two weeks in 32.30% of cases.

### **Medium used for eyelashes extensions removal**

For the removal of eyelashes extensions, 122 women or 75.78% declared doing it themselves at home.

### **Harmful effects of eyelash extensions**

A frequency of 77.64% of women who practice the extension have already felt discomforts or had eye problems.

A frequency of 47.82% of women who practice the extension have already felt a sensation of a foreign body in the eyes, followed by itching in the eyes with a proportion of 44.10%.

### **The duration of the onset of eye sensations or problems**

For 82.22% of women, the time to the onset of discomfort sensations or eye problems was less than 24 hours.

### **Attitudes of women towards situations of discomfort or eye problems**

The women found that it is difficult to bear the sensations of eyes or eye discomfort in 63.98% of cases.

### **Women who would like to continue this practice**

Despite of the appearance of discomfort or eye discomfort, 62.73% of women said they wanted to continue the practice of eyelashes extension.

## **Discussion**

At the end of our study, 510 women were interviewed. The mean age of the respondents was 26 years  $\pm$  7.96 years with extremes of 18 years and 65 years. These values approached those found by Abah., *et al.* [5] in Nigeria in 2017 which was 16 years old and 52 years old as

extremes with an average age of 23 years  $\pm$  4.8 years. In addition, the studies by Amano, *et al.* [6] in Japan in 2013 and Koffuor, *et al.* [7] in Ghana in 2012 also found extremes age of 15 - 59 years and 10 - 60 years respectively.

Our study revealed that in the municipality of Parakou, more than two thirds (2/3) or 70.78% of the studied population had already heard about false eyelashes. Our result was similar to that of Abah, *et al.* [5] in Nigeria carried out in 2017 which reported that more than two thirds (2/3) or 85.8% of the students questioned had some knowledges about eyelashes extensions.

Almost all of the women were unawared of the composition of the glue used for eyelashes extensions (98.33%). This then proves the poor knowledges of this practice and the danger related to the eyelashes extensions. Maliha, *et al.* [8] and Crépy [9] mentioned that there are serious eye disorders, including contact dermatitis, toxic conjunctivitis, conjunctival erosion and allergic reactions (allergic blepharitis) due to the chemicals in the glues or solvents (latex, cellulose gum, cyanoacrylates, benzoic acid, formaldehyde, propylene glycol, geraniol) [8,9]. Personen, *et al.* [10] reported a case of contact allergic dermatitis to acrylate glue used by beauticians.

Among the women surveyed in the series, 81.44% said that the false eyelashes are made of synthetic materials. Jessica, *et al.* [11] in their study in 2013 reported the case of a 64-year-old woman wearing eyelashes extensions who came for minor upper eyelid surgery who suffered unexpected inflammation of the eyelashes due to the cautery used for the eyelashes in view to perform hemostasis of bleeding. This indicates the risk that we can run if we do not check for the presence of false eyelashes in the patient before admission to the operating room. Because the materials that helped to make eyelashes extensions are dangerous prove during the proceedings ocular -plastic surgery where heat is frequently used to cauterize. Eyelashes extensions should therefore be considered an important element to add to the prosthetic section of any preoperative eye surgery questionnaire, especially to prevent future injuries to the patient. The distribution of eyelashes extension used among women surveyed in our study was 31.57%. This value is close to that of Abah, *et al.* [5] in 2017 in Nigeria who found a frequency of 38.7% of female students performing eyelashes extensions among all female students surveyed. This frequency is much higher than that reported by Amano, *et al.* [6] in Japan in 2013 in a national report titled "Eyelash Extensions Survey" which found a frequency of 10.3%. This discrepancy would perhaps be due to their study sample, which was larger, i.e. 2000 women against 510 in our study. Among women using eyelashes extensions, the slice of age of 20 - 30 years was the most represented is 60.87%. This age group obtained in our study is similar to that reported by Amano, *et al.* [6] in Japan in 2013, and Koffuor, *et al.* [7] in Ghana in 2012 with a peak in people aged 25 - 29 and 20 - 29, respectively. On the other hand, Abah, *et al.* [5] in 2017 in Nigeria, and Amano, *et al.* [3] in Japan in 2012 found age peaks between 16 - 20 years and 30 - 39 years, respectively.

In our study 34.16% of women had secondary school level; 31.06% university level; 22.36% primary level, with only 12.42% who were out of school. These results are similar to those of Koffuor, *et al.* [7] in Ghana in 2012, who found that 42% had a high school education, 33% of higher education, 18% of primary studies, with only 7% of non schooling. These results allowed us to conclude that eyelashes extensions are much more practiced in educated women.

The majority of women surveyed mentioned beauty as the main reason for practicing eyelashes extension, i.e. 78.26% followed by curiosity with 17.39%. Our results corroborate those found by Abah, *et al.* [5] in 2017 in Nigeria who found beauty, 56.1%, followed by curiosity, 23.2% and Koffuor, *et al.* [7] in Ghana in 2012 who found 81.6% for beauty.

Among women using false eyelashes extensions, 42.86% had done so more than three times. These results were consistent with those of Koffuor, *et al.* [7] in Ghana in 2012 who found that the majority (69.2%) had extended their eyelashes more than once and about 50% of them did so more than three times. Also, Abah, *et al.* [5] in 2017 in Nigeria found that the majority of women had fixed artificial eyelashes two or three times (38.0%). This proves that eyelashes extensions are very common these days. The average wearing time for eyelash extensions was two weeks in our study. Our result was similar to that of Abah, *et al.* [5] in 2017 in Nigeria who also found that eyelashes extensions were used for one to two weeks before their removal.

Eyelashes extensions are not without harmful effects on the eyes. In our study, 77.64% of the women surveyed have already felt dis-

comforts or eye problems linked to eyelashes extensions. The two common problems were the foreign body sensation in eyes (47.82%) and the ocular itching (44.10%). The other problems are tearing, loss of eyelashes, eye pain, burning sensation, shadowing in vision, swollen eyelids, redness of the eye, purulent discharge, misdirected eyelashes, eyelid sore. This finding proves the lack of care surrounding this practice and illustrates the risk run by women who indulge in it. Some studies have concluded the same results. In this case Abah., *et al.* [5] found itching (45.8%) as the main sign. On the other hand, Koffuor., *et al.* [7] found tearing and heavy eyelids as the main adverse effects in their study. The others are itching, burning sensation, pain and swelling of the eyelids, shadow casting on vision, dry eye, purulent discharge, eyelashes falling into the eye and misdirected eyelashes. Amano., *et al.* [6] in Japan in 2013 in their study found that among 205 (10.3%) who performed eyelashes extensions on 2000 women in the national survey, 55 (26.8%) experienced eye problems such as eye hyperemia, pain and itchy swollen eyelids.

In the literature, many authors have worked on eye disorders that eyelashes extensions could cause. In this case Amano., *et al.* [3] in Japan in 2012 studied the records of 107 women who visited eye clinics in Japan with complaints of eye symptoms resulting from eyelashes extensions. It was found that eye disorders due to eyelashes extensions included keratoconjunctivitis due to the invasion of glue or eyelash ablation agents in 64 patients; allergic blepharitis due to glues in 42 patients (4 of these patients developed both keratoconjunctivitis and allergic blepharitis); conjunctival erosion in 3 patients and allergic blepharitis in one patient caused by the eyelid fixation bands, and finally subconjunctival hemorrhage due to compression during removal of the extensions in one patient. Several case reports were presented. Thus, a case report presented by Sangeetha., *et al.* [12] in 2012 who reported the case of a 48-year-old woman who was referred for patch testing with a history of swelling, redness and itching for 4 months affecting her eyelids. It started with an acute episode of periorbital edema after using false eyelashes. Another case report from Ullrich., *et al.* [59] in 2013 presented with bacterial keratitis caused by *Hemophilus influenzae*, due to the presence of permanent eyelashes extensions in a 29-year-old woman. Another more recent case report in 2018 from Moshirfar., *et al.* [14] who presented with bilateral chemical conjunctivitis and diffuse lamellar keratitis (DLK) secondary to epithelial defects following improper application of the eyelashes extensions removal gel.

In our study, the market was cited as the first place where women had extensions applied (59.63%). This implies poor asepsis and therefore could lead to bacterial eye infections due to the lack of hygiene in the places where eyelashes extensions were done. This observation was also made by Koffuor., *et al.* [7] in their study. They claimed that reduced hygienic conditions can cause microbes to enter in the eye or on the eyelid, leading to microbial infections. The majority of the women in our study had the extensions removed at home by their own. This is in contradiction with the optimal technique of removal of the extensions which can create eye damage. Koffuor., *et al.* [7] in their study noted that repeated removal of the extensions injured the hair follicles of the eyelashes. The extra weight added to the eyelashes increases follicular tension and the solvent used to dissolve the sealant is potentially harmful to the follicles and irritating to the eyelids. This could explain why these people experience pain when removing synthetic eyelashes and swelling of the upper eyelid after removal. False eyelashes stick so strongly to eyelids or natural eyelashes that sometimes the more you try to remove false eyelashes, the more they leave with natural eyelashes, causing lashes loss.

Despite of the risks involved in eyelashes extensions; women held it for a specific purpose which was to improve their beauty. In our study, the majority of women wanted to continue the practice of eyelashes extensions despite of the occurrence of discomforts or eye problems encountered (62.73%). This result is similar to that of Koffuor., *et al.* [7] who found that 67.2% of women want to continue eyelashes extensions despite the eye problems encountered.

### Conclusion

This research work made it possible to assess in general the knowledges, attitudes and practices regarding the use of false eyelashes extensions among women in the municipality of Parakou in 2020. As concerned the description of the socio-demographic characteristics of women using false eyelashes extensions, it appears that eyelashes extensions have become a practice that is gaining popularity both



around the world and in our study's city. This practice is especially adopted by young women attending school as a way of emancipation. Their main purpose in applying false eyelashes extensions was to enhance their physical beauty. Unfortunately, it emerged from our study that most women had a very low level of knowledges about eyelashes extensions. Only a minority of the women surveyed had very good practices in this area. It is therefore urgent to put in place a real policy of information, education and communication about the use of these false eyelashes extensions in order to help women, and beyond the entire population affected by the self-destruction of sight. It is only at this price that we could avoid the harmful consequences for the individual and for the whole of society linked to the application of false eyelashes.

### Disclosure

No financial conflicts of interest to disclose.

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