

# Knowledge, Practices and Use of Contact Lenses Among University Students in Turkey

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## Abstract

### Aim

This study was conducted to determine the prevalence of contact lens (CL) use among university students, their awareness on CL, and CL users' practices for the cleaning and care of CLs.

### Methods

The data of this cross-sectional study were collected between April 2019 and July 2019. The sample consisted of university students who volunteered to participate in the study. The data obtained from the study were evaluated by Statistical Package for the Social Science (SPSS) 22.0 package program in computer environment.

### Results

929 students participated in the study and the average age of them was  $21.99 \pm 1.85$  years (Min. 18 – Max. 24), and it was determined that 36.6% (n=340) of the participants were male, 10.2% (n=95) of the total were using CL, 91.6% (n=87) of them used CL due to visual impairment. When students' levels of knowledge about the hygiene and care in CL use were examined 85.4% (n=82) washed their hands before wearing/removing CL, 85.3% (n=81) cleaned the lens container and filled it with new solution when the solution in the container was reduced, 18.5% (n=17) continued wearing CL while sleeping, 6.5% (n=6) washed CL with tap water, and 28.3% (n=26) of them stated that they swam in the sea with CL. It was determined that the prevalence of CL use was higher ( $p = .045$ ) among smoking students.

### Conclusion

Health professionals are important in the trainings to be given to increase the students' knowledge of hygiene and care regarding the use of CL. More studies are needed on the effect of smoking status on CL use.

**Keywords:** CL use; Care; Knowledge; Prevalence; University students

## Introduction

Contact lenses (CL) are small and less visible structures that are placed in the cornea and used to correct visual defects<sup>1</sup>. CLs can be used for therapeutic and cosmetic purposes as well as correcting myopia, hypermetropia and astigmatism. There are approximately 140 million CL users in the world and around 750,000 CL users in Turkey.<sup>1</sup> While a study conducted in the United States (USA) showed that approximately one-third of CL users required doctor's check<sup>2</sup>, another study conducted in Japan showed that the prevalence of CL use was approximately 37.8% among high school students<sup>3</sup>.

CL-related problems may occur in each patient using CL. These problems are infections (most commonly bacterial, rarely fungal or amebic), allergic problems, long-term (without removal) use (corneal hypoxia and revascularization), toxicity (due to multi-purpose cleaning solutions or improper use of hydrogen peroxide solutions), and corneal erosion (often in rigid gas permeable CLs)<sup>4</sup>.

Young patients are more prone to inappropriate and long-term CL use. They may not change their lenses despite pain

and redness<sup>4</sup>. Based on this information, this study was planned to determine the prevalence of CL wear among university students, their awareness on CL, and CL users' practices for the cleaning and care of CLs.

## Methods

In this cross-sectional study, the population of the research consists of all students (N= 49.955) continuing their education in a state university located in Sakarya province (a metropolitan city located in the north-west Turkey) in the 2018-2019 academic year. The data of the research were collected between April and July 2019.

After the sample formula for computation of the minimum sample size from the group with known population [(n =  $Nz^2pq / [d^2(N-1) + z^2pq]$ ), (n = minimum sample size, N = Population size, z = confidence level at 95% (standard value of 1.96), p = guess for the expected proportion in the population, q = 1.0 – p, d = tolerable margin), (N=49.955, p=0.5, q=0.5, d=0.05, t=1.96)], the minimum sample size was calculated as 382 at the confidence interval of 95% for number of individuals required to be included in the population<sup>5</sup>. We assumed an attrition rate of 10%, which

corresponds to 38 participants, and thus the minimum sample size for the study was  $382+38=420$ . The minimum calculated sample size of 420 was obtained. However, a total of 1240 students were approached and 929 were included in the study (a response rate of 74.9%). Of the students, 311 of 1240 were excluded from the study for various reasons (not accepting to participate in the study, incomplete filling in the data collection forms etc.). Despite the fact that the calculated minimum sample size for the study was 382, 929 students who gave consent were selected to increase the power of the study. The study sample comprised 929 students who accepted to participate in this study and matching the criteria. The students were selected randomly.

Inclusion criteria for the study were: a) Being a university student, b) Students' voluntariness to participate in the study, c) Having no communication problems, d) Being aged between 18-25 years.

The procedures of the study received ethics approval from the "Sakarya University Faculty of Medicine Ethics Committee" (Approval number: E.4529). A written approval was also obtained from the rectorate of the university to conduct the study in the university campus. After the participants were informed about the aim of the study, the confidentiality of the answers, and where and how the data would be used, the participants who volunteered and whose written consent was obtained were included in the sample.

The data were collected by using the questionnaire form consisting of questions about participants' descriptive characteristics and the use of CL obtained as a result of the literature review.

**Questionnaire Form:** It was prepared in Turkish language by the researchers as a result of the literature review and consisted of a total of 35 questions such as participants' age, gender, family type, perceived economic level, faculty, level of income, place of residence, smoking status, the questions measuring awareness on CL, CL wear, and CL's cleaning and care and side effects, and place of purchasing among CL wearers. The first version of the questionnaire form, which included the sociodemographic characteristics and the opinion/ practices of the participants about the use of CL, consisted of 42 questions. First of all, the pilot study of the questionnaire form was carried out with face-to-face interviews on 20 students (>18 years and above), and the questionnaire was finalized with 35 questions by making some minor changes.

**Collection of Data:** After receiving the permissions of the rectorate and faculty deans, the questionnaires were distributed to students at the approved hours and collected in classrooms.

The data obtained from the study were evaluated by SPSS 22.0 package program in computer environment. Number, percentage, mean and standard deviation were used as descriptive statistics. In addition to the descriptive statistics, the Pearson Chi-square test was used to evaluate categorical variables. The results were evaluated at a confidence interval of 95% and the statistical significance ( $p$ ) was evaluated at 0.05.

## Results

This study was conducted with 929 students who volunteered to participate in the study on the date of data collection. The students in medicine, dentistry, nursing and midwifery departments were not included in the sample by considering that it may affect the results of the study.

The average age of 929 students who participated in the study was  $21.99\pm 1.85$  (range 18–25) years. When the sociodemographic characteristics of the participants were examined, it was determined that 340 (63.4%) of them were female, 218 (23.5%) of them were studying in the faculty of engineering, the perceived economic level of 670 (72.1%) of them was income equivalent than expense, 729 (78.5%) of them had a nuclear family type (a family consisting of two parents and their children), 352 (37.9%) of them were staying in a dormitory, and 650 (70%) of them were non-smokers. It was determined that while 95 (10.2%) of the students who participated in the study used CLs, 65 (68.4%) of the participants using CL were female, 25 (26.3%) of them were studying in the faculty of engineering, 38 (40%) of them were staying in a dormitory, and 37 (38.9%) of them were smokers.

Table 1 shows that when descriptive characteristics of the participants were compared by CL use, there was no statistically significant deference in prevalence of CL use between male and female students. Similar were reported with perceived economic level, family type, and place of residence ( $p>0.05$ ). However, there was statistically significant difference between CL use in smokers and nonsmokers. Accordingly, it was observed that the rate of CL use was higher in smokers ( $p=0.045$ ).

When students' levels of knowledge about the hygiene and care of CL were examined in Table 2, 20 (2.2%) of them stated that it would not be a problem to share CL, 75 (8.1%) CL could be sold outside the optical shops, 16 (1.7%) CL would not require the approvals of the Ministry of Health and FDA, 91 (9.8%) it was legal to purchase CL without a prescription, and 204 (22%) CL were used only for better vision purposes.

When the students' characteristics related to CL use were examined in Table 3, it was seen that 79 (83.2%) used glasses before wearing CL, 46 (48.9%) learned to wear/remove CL from an optician, 39 (41.1%) wore CL for an average of 8-12 hours in a day, 55 (57.9%) had been using CL for 2 years and above, 87 (91.6%) used lenses due to visual impairment, 59 (62.1%) purchased the brand recommended by the doctor while purchasing CL, 61 (64.2%) price was important while purchasing CL, 77 (81.1%) also had glasses at home while using CL, 84 (88.4%) purchased CL with a prescription, 8 (8.4%) increased the number of CL by themselves, 79 (83.1%) purchased CL from the optician, 37 (39.4%) had pain/stinging in the eye as a complication/side effect of CL, 65 (71.4%) had pain and redness in their eyes during CL use and 61 (64.2%) used glasses for a while in this case, 69 (74.2%) went to doctor check in the recent year, 50% ( $n=46$ ) were informed about the use of CL by an ophthalmologist, nurse, or optician in the recent year, and 93 (97.3%) not shared their CL.

When students' levels of knowledge about the hygiene and care in CL use were examined in Table 4, 82 (85.4%) washed their hands before wearing/removing CL, 81 (85.3%) cleaned the lens container and filled it with new solution when the solution in the container was reduced, 17 (18.5%) continued wearing CL while sleeping, 6 (6.5%) washed CL with tap water, and 26 (28.3%) of them stated that they swam in the sea with CL.

Table 5 shows that, there was no statistically significant deference in the development of complication related to CL use between male and female students. Similarly, no

**Table 1. Comparison of Descriptive Characteristics of the Participants with and without CL Use**

Variables	Non-CL users (n=834), n (%)	CL Users (n=95), n (%)	$\chi^2$ /p value
<b>Gender</b>			
Female	524 (62.8)	65 (68.4)	1.149/0.284
Male	310 (31.2)	30 (31.6)	
<b>Faculty</b>			
Faculty of Engineering	193 (23.1)	25 (26.3)	11.473/0.245
Faculty of Political Sciences	139 (16.7)	13 (13.7)	
Faculty of Science and Letters	134 (16.1)	14 (14.7)	
Faculty of Theology	24 (2.9)	4 (4.2)	
Faculty of Computer and Information Sciences	18 (2.2)	3 (3.2)	
Faculty of Law	103 (12.4)	17 (17.9)	
Faculty of Management	25 (3.0)	6 (6.3)	
Faculty of Education	34 (4.1)	1 (1.1)	
Faculty of Art, Design and Architecture	76 (9.1)	4 (4.2)	
Vocational School of Health Services	88 (10.6)	8 (8.4)	
<b>Perceived Economic Level</b>			
Income less than expense	146 (17.5)	15 (15.8)	0.584/0.747
Income equivalent than expense	602 (72.2)	68 (71.6)	
Income more than expense	86 (10.3)	12 (12.6)	
<b>Family Type</b>			
Nuclear family**	657 (78.8)	72 (75.8)	5.352/0.069
Extended family***	136 (16.3)	13 (13.7)	
Fragmented family****	41 (4.9)	10 (10.5)	
<b>Place of residence</b>			
At home with family	249 (29.9)	27 (28.4)	0.205/0.902
Dormitory	314 (37.6)	38 (40.0)	
At home with a relative/friend	271 (32.5)	30 (31.6)	
<b>Smoking status</b>			
Smoking	242 (29.0)	37 (38.9)	4003/0.045*
Not smoking	592 (71.0)	58 (61.1)	

$\chi^2$  = Chi-square test; \* p < 0.05

\*\* Nuclear family: A family consisting of two parents and their children but not including aunts, uncles, grandparents, etc.

\*\*\* Extended family: A family unit that includes grandmothers, grandfathers, aunts, and uncles, etc. in addition to parents and children.

\*\*\*\* Fragmented family: Family broken up by parents' divorce or death.

**Table 2. Students' levels of knowledge about CL use**

Statements (N=929)	Right		Wrong		No knowledge	
	n	%	n	%	n	%
CLs have a standard size and fits all.	65	7.0	380	40.9	484	52.1
It is not a problem to share CLs.	20	2.2	654	70.4	255	27.4
There is no risk of using CL.	52	5.6	439	47.3	438	47.1
CLs can be sold outside the optical shops.	75	8.1	486	52.3	368	39.6
CLs do not require the approvals of the Ministry of Health and FDA.	16	1.7	511	55.0	402	43.3
Purchase of CLs without a prescription does not increase the risk of permanent eye damage.	41	4.4	504	54.3	384	41.3
It is legal to purchase CL without a prescription.	91	9.8	370	39.8	468	50.4
CLs are used only for better vision purposes	204	22.0	293	31.5	432	46.5
Parasites do not adhere to CLs and do not get in your eyes.	39	4.2	333	35.8	557	60.0

**Table 3. Distribution of students' characteristics related to CL use**

Variables (n=95)		n	%
Glasses-wearing status before wearing CL	Yes	79	83.2
	No	16	16.8
From whom wearing/removing CL is learned	Optician	46	48.9
	On their own	40	42.6
	From healthcare personnel	8	8.5
Daily duration of wearing CL	Less than 8 hours	13	13.7
	8-12 hours	39	41.1
	13-16 hours	23	24.2
	More than 16 hours	20	21.1
Duration of using CL	Less than 6 months	11	11.6
	6-12 months	11	11.6
	1-2 years	18	18.9
	2 years and more	55	57.9
Reason for wearing CL	Visual impairment	87	91.6
	Aesthetic	8	8.4
Would you purchase the brand recommended by the doctor while purchasing CL?	Yes	59	62.1
	No	36	37.9
Is price important to you while purchasing CL?	Yes	61	64.2
	No	34	35.8
Do you have glasses to use with CL at home?	Yes	77	81.1
	No	18	18.9

Table 3 Cont....

Do you purchase CLs with a prescription?	Yes	84	88.4
	No	11	11.6
Have you ever increased the number of CL by yourself?	Yes	8	8.4
	No	87	91.6
Where do you purchase CL?	From optical shop	79	83.1
	From the internet	13	13.7
	From the doctor	2	2.1
	From the hospital	1	1.1
What are the side effects/complications due to CL use? (Multiple options are marked)	Eye pain/eye stinging	37	39.4
	Hypersensitivity to light	11	11.7
	Red, swollen eyes	13	13.8
	Itchy watery eyes	17	18.1
	Other (Vision problem, Blindness, Corneal scratches/abrasions, Conjunctivitis (pink eye), Corneal ulcer)	8	8.6
Type of CL used	Daily (disposable) Lenses	4	4.2
	Monthly Lenses	85	89.5
	Annual Lenses	6	6.3
Pain or redness in the eyes while using contact lenses	Yes	65	71.4
	No	26	28.6
What do you do when you have pain and redness in your eyes? (Multiple options are marked)	I continue to use my lens	8	8.4
	I remove my lens and use glasses for a while	61	64.2
	I consult my doctor	30	31.6
Have you gone to an ophthalmologist in the recent year?	Yes	69	74.2
	No	24	25.8
Has your ophthalmologist, nurse, or optician informed you about the use of CL in the recent year?	Yes	46	50.0
	No	46	50.0
Do you share your CL or use someone else's CL?	Yes	2	2.1
	No	93	97.9

Table 4. Students' levels of knowledge about the hygiene and care in CL use

Practices	Yes		Sometimes		No	
	n	%	n	%	n	%
I wash my hands before wearing/removing CLs	82	85.4	14	14.6	0	0
When the solution in the container is reduced, I clean the lens container and fill it with a new solution.	81	85.3	14	14.7	0	0
When the solution in the lens container is reduced, I add new solution to it.	42	44.7	28	29.8	24	25.5
I do my eye care after removing CL	35	37.2	39	41.5	20	21.3
I change CL when it expires	69	72.6	22	23.2	4	4.2
I continue wearing CL while sleeping	17	18.5	25	27.2	50	54.3
I wear CL while swimming or having bath/shower	24	25.5	30	31.9	40	42.6
I swim at sea with CL	26	28.3	13	14.1	53	57.6
I wash my CL with tap water	6	6.5	3	3.2	84	90.3
I swim in a lake or stream with CL in my eyes	21	22.6	6	6.5	66	71.0

**Table 5. Comparison of the groups between the development complications due to CL use according to some variables**

Characteristics (n=95)	Development of complications due to		Total n (%)
	Yes n (%)	No n (%)	
<b>Gender</b>			
Female	29 (70.7)	35 (66.0)	64 (68.1)
Male	12 (29.3)	18 (34.0)	30 (31.9)
$\chi^2 = 0.234$ $p = 0.628$			
<b>Perceived economic level</b>			
Good	6 (14.6)	9 (17.0)	15 (16.0)
Moderate	31 (75.6)	36 (67.9)	67 (71.3)
Bad	4 (9.8)	8 (15.1)	12 (12.8)
$\chi^2 = 0.787$ $p = 0.675$			
<b>Student's place of residence</b>			
At home with family	12 (29.3)	14 (26.4)	26 (27.7)
Dormitory	15 (36.6)	23 (43.4)	38 (40.4)
At home with a relative or friend	14 (34.1)	16 (30.2)	30 (31.9)
$\chi^2 = 0.447$ $p = 0.800$			
<b>Smoking status</b>			
Smoking	15 (36.6)	21 (39.6)	36 (38.3)
Not smoking	26 (63.4)	32 (60.4)	58 (61.7)
$\chi^2 = 0.090$ $p = 0.832$			
<b>Use of CL while sleeping</b>			
Generally	6 (15.0)	11 (21.2)	17 (18.5)
Rarely	9 (22.5)	16 (30.8)	25 (27.2)
Never	25 (62.5)	25 (48.1)	50 (54.3)
$\chi^2 = 1.898$ $p = 0.387$			
<b>Use of CL while swimming or having bath/shower</b>			
Yes	29 (41.4)	41 (58.6)	70 (74.5)
No	12 (50.0)	12 (50.0)	24 (25.5)
$\chi^2$ Test= 0.534 $p = 0.465$			

$\chi^2$  = Chi-square test; \*  $p < 0.05$

significant deference was found with perceived economic level, place of residence, smoking status, using CL while sleeping/ swimming/ bathing/showering, and development of complication ( $p > 0.05$ ).

## Discussion

In this study conducted to determine university students' awareness on CL, the prevalence of CL wear, and CL users' practices for the cleaning and care of CLs, it was determined that 10.2% of the students used CL and that 68.4% of the participants using CL were female. While this prevalence was reported to be 5.01% in Australia<sup>6</sup> which is low compared to the prevalence in this study, it was found to be 9% in Singapore<sup>7</sup> which is similar to this study, and it was found to be 14% in Malaysia<sup>8</sup> and USA<sup>9</sup> which is higher than this study. Another study found the prevalence of current and previous CL users to be 15.1% and 32.5% (Alzahrani 2021), which are higher than this study. According to the results of the study conducted by Qiuorong Zhu et al., (2018) with the participation of 1500 university students in Chengdu, the prevalence of CL wear was reported to be 19.8% among

females which is higher than this study result<sup>11</sup>. In the same study, the prevalence of CL wear was found to be 82.15%<sup>11</sup> in female gender and 83%<sup>9</sup>, 59.2%<sup>12</sup> in other studies, which are similar to this study. In this study, the prevalence of CL use was found to be higher among smokers ( $p = 0.045$ ). Similarly, in the study of Berenson et al. (2019), it was determined that the use of CL was higher among smoking students ( $p = 0.008$ ), which is similar to this study<sup>9</sup>. The damages of smoking on all systems have been proven. The tar and nicotine accumulated in the smoker's fingers can contaminate the CLs while wearing/removing lenses, which may also endanger eye health by causing burning sensation in the eyes. There is need to create awareness among students who wear CLs to stop smoking.

In this study, the view that CLs do not have a standard size (40.9%) was found to be common. In a study conducted in the USA, the view that CLs have a standard size was common by more than 70%<sup>9</sup>, which is not similar to this study. In Turkey, prescription is compulsory when CLs are intended to be purchased from a pharmacy or optician, these

prescriptions are valid for one year. However, CLs are also sold on the internet, and in this case, the requirement of prescription is eliminated. While 52.3% of the students who participated in this study indicated that CLs should not be sold outside the opticians, 55% of them indicated that CLs should be sold with the approvals of the Ministry of Health and FDA, and 39.8% of them indicated that it was not legal to purchase CL without a prescription. The purchase of CL without a prescription does not constitute a crime in the USA<sup>13</sup>. In the People's Republic of China, there is no requirement of prescription for CL sales and CLs can also be sold outside the optician<sup>11</sup>.

In the study, while 48.9% of the students using CL stated that they learned to wear/remove CL from the optician, 91.6% of them stated that they wore CL due to visual impairment. In a study, 55.5% of the CL users reported getting the information from ophthalmologists<sup>14</sup>. In the studies, the prevalence of CL wearers for aesthetic purposes were reported to be 57.91%<sup>11</sup>, 58.3%<sup>15</sup> which is not similar to this study.

In this study, it was reported that while 89.5% of the students using CL used monthly lenses, 57.9% of CL wearers reported that they wore CL for more than 2 years. While the prevalence of monthly use of disposable lens was found to be 72% among the students studying in the faculty of medicine in Malaysia<sup>8</sup>, it was found to be 47% in Brazil<sup>16</sup>. Similarly, the other studies in the study of Qiurong Zhu et al. (2018), the prevalence of monthly use of disposable lens was found to be 43.75%<sup>11</sup>, 63.8%<sup>17</sup>. These results are similar to this study.

In this study, 41.1% of the students using CL reported that they wore CL between 8-12 hours in a day. In another study, it was reported that 54.21% of CL wearers wore CL between 6-12 hours in a day<sup>13</sup>. In the cross-sectional observational case series conducted by Reiko Arita et al. (2009), 121 eyes of 121 patients with CL use and 137 eyes of 137 patients without CL use as a control group were included in the study<sup>18</sup>. The tear break-up time in patients was recorded by examining the Schirmer's test, meibomian gland changes (Meiboscore), and the stability of tear film. Meiboscore was found to be significantly higher in CL users compared to the control group<sup>18</sup>. It was observed that meiboscore increased as the duration of using CL increased. Meibomian glands are responsible for lipid secretion and plays an important role in creating surface tension<sup>19</sup>.

In this study, it was reported that while 39.4% of them described eye pain/eye stinging as a complication of CL, and 71.4% of them had pain and redness in their eyes during CL use. In a study, dry eye, allergic conjunctivitis and corneal erosion were determined as the complications of CL<sup>20</sup>. In a study conducted in the USA, it was reported that 39.6% of CL users had eye pain, 47.2% of them had itching and watering of eyes, and 18.9% of them had redness and swelling in the eyes<sup>9</sup>. Şengör et al. (2018) reported that the most common complaints of CL users were dry eye and discomfort in the evening<sup>14</sup>. The lipid layer in front of the lens is thinner among CL users compared to non-CL users. In CL users with dry eye complaints (burning, stinging, foreign body sensation in the eye, pain,<sup>21</sup> tear thinning time in front of the lens is directly proportional to the severity of dry eye. It is considered that the increase in tear evaporation rate is not caused by the impairment of lipid release from the meibomian glands, but by the change in the lipid

composition. In CL users, a decrease in contrast sensitivity is observed due to the rapid thinning and breaking of the tear in front of the lens<sup>22</sup>.

In this study, 85.3% of the students (who use CLs) washed hands before wearing/removing CLs. In studies conducted in the UK and Germany<sup>23</sup>, it was reported that the proportion of students who were washing hands after removing their CL was 62% and 53% respectively. Those who washed hands before wearing CL was 77% and 72% respectively. Hand hygiene was found to be 11% among CL users in Australia<sup>24</sup>. In another study, the prevalence of washing hands while wearing CL was reported to be 86.20%<sup>11</sup>. Bacterial and fungal keratitis development due to poor hand hygiene are known complications in CL users. However, not only bacterial and fungal agents, but also viral pathogens are transmitted through poor hand hygiene, which is especially important in this period during which the SARS-CoV-2 pandemic is being experienced.

In this study, the ratio of those who gave the answer "When the solution in the container is reduced, I clean the lens container and fill it with a new solution" was found to be 85.3%. This ratio was found to be 64.64% in a study conducted in the People's Republic of China<sup>11</sup>. As a result of insufficient cleaning of CL containers, permanent microbial contamination is common and associated with microbial keratitis and sterile corneal infiltration<sup>25</sup>. The result of this study indicated that it also decreased the risk of microbial contamination.

In this study, the ratio of those who continued to wear CL while sleeping was found to be between 18.5-27.2%. In a study, this ratio was found to be approximately 30%.<sup>11</sup> Sleeping by wearing CL poses a risk for microbial keratitis<sup>26</sup>,<sup>27</sup> and corneal infiltration<sup>27,28</sup>.

In this study, it was determined that male students had more pain and redness due to CL use compared to female students ( $p = .024$ ). Burning in the eyes, stinging, foreign body sensation, and pain are the conditions that mostly affect females, one of the reasons of which is the low androgen, high estrogen level in serum. Low levels of androgen and high levels of estrogen in serum are risk factors for dry eye.<sup>29,30</sup> Our result is incompatible with the literature. It is recommended to conduct relevant large-scale studies.

## Limitations

The survey is included only university students in Sakarya, which may not be represent of the whole community. More comprehensive, multicenter studies could be done.

## Conclusion

It was observed that the students using CLs obtained knowledge about the care and hygiene of CLs from reliable sources at a very low level. There is need to create awareness among students who wear CLs to stop smoking that healthcare professionals should provide more training on the care and use of CLs, and that the sales of CLs over the internet without a prescription should be prevented.

## Conflict of Interest

The authors declared no conflicts of interest.

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