

Patterns of Contact Lenses Use among female Students at Health Colleges of King Khalid University at Abha, KSA

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Received: September 2020; Accepted: October 2020; Published: November 1, 2020.

Citation: Safar Abadi Al Saleem et al. Patterns of Contact Lenses Use among female Students at Health Colleges of King Khalid University at Abha, KSA. World Family Medicine. 2020; 18(10): 61-68 DOI: 10.5742/MEWFM.2020.93891

Abstract

Objective: to assess how much female students at King Khalid University (KKU) use contact lens and to assess their practices and care of contact lenses.

Methods: A cross-sectional study included 751 female students at Health Colleges of KKU. A self-administrated questionnaire was designed.

Results: Two-thirds (66.2%) used contact lenses, mainly soft lenses (82.7%) and for cosmetic reasons (23.3%) and to correct errors of refraction (29.4%). (56.5%) of participants used contact lenses for 4-7 hours daily. (55.7%) of participants obtained their contact lenses from an optician. More than one third of participants disagree or strongly disagree regarding the importance to consult an ophthalmologist when choosing contact lenses, while 64.2% recommend others to use contact lenses. Most participants (95.8%) clean their contact lenses with a solution. Most participants always remove contact lenses before sleep (89.3%) or swimming (82.3%). (55.9%) do not visit an ophthalmologist for follow up care of their contact lenses.

Conclusions: Most students used them for cosmetic purposes. They mostly obtain them from opticians. Their awareness is suboptimal and lacks proper practice. Their awareness and practice should be increased.

Key words: Contact lenses, female university students, care of lenses, awareness, attitude, practices.

Background

Contact lenses are considered as one of the optical devices worn on the eye, placed directly on the surface of the cornea [1]. The popularity of contact lenses continues to increase with regular improvement in materials and variants suitable for a variety of users [2]. The ideal contact lens for refractive errors has been difficult to find with reports of complications with even the most advanced systems available [3]. Modern studies have shown the use of contact lenses for refractive error correction to be higher and more abundant among the younger strata of the population [4].

Improper use and deficient care of contact lenses may lead to an infection and inflammation of cornea or conjunctiva by different types of microorganisms in the presence of reduced tissue resistance [5]. Complications most commonly correlated with use include dry eye, giant papillary conjunctivitis, corneal abrasion, corneal edema, corneal ulcer, keratitis and neovascularization [6]. The awareness of these complications was found lacking amongst the younger users, and 87% of these users preferred contact lens use in spite of the ocular problems related to their use [7]. Cosmetic benefits and convenience were the most common reasons cited for contact lenses use [8].

One of the major factors that causes contact lens complications is noncompliance to the practitioner's instructions on the use of contact lenses and care products [9]. Problems caused by wearing contact lenses can be prevented by ocular health education, especially knowledge in the right and careful practice related to contact lenses. A person's conception regarding their knowledge and practice of wearing contact lens can be assessed [10].

Aim of study

The aim of the present study was to assess prevalence of female students at King Khalid University using contact lenses and to assess their practices regarding care of contact lenses.

Methods

A cross-sectional study was carried out during the academic year 2019 among 751 female university students at Health Sciences Colleges of King Khalid University. A structured self-administrated questionnaire with close-ended questions was designed by researchers in simple Arabic language and was used to collect data. It included the following:

1. Personal characteristics of the students.
2. Questions to assess awareness and use regarding contact lenses, reasons for and duration of use.

The validity of the study tool was assessed by a family medicine consultant. A pilot study was conducted on 15 students whose responses were not included in the main study. The objective of the pilot study was to test the clarity of questions included in the study tool and to assess the time needed for filling in the questionnaire.

Students were directly interviewed by the researchers during their free time as organized by the college administration. Questionnaire sheets were distributed to participant students and then were collected immediately after being filled.

Collected data were coded, entered into a computer and analyzed using the Statistical Package for Social Sciences (IBM-SPSS version 22). Descriptive statistics (frequency, and percentage) were applied.

Results

Table (1) shows that the age of most participant female students ranged from 20-24 years (76.6%), 11.2% were <20 years old and 12.3% were >25 years old. The academic year of 29.3% of participants was first/second, that of 31.6% was third-fourth and that of 22.9% was fifth-sixth, while interns constituted 16.1% of participants. About one third of participants (34.9%) were medical students, while the college of 27.4% was Applied Medical Sciences, that of 15% was Pharmacy, that of 10.7% was Nursing, and that of 9.9% was dentistry. Average duration of study times was mainly more than 2 hours/day (41.9%), while that of 33% was 1-2 hours/day. More than half of participants (56.7%) had errors of refraction, mainly as myopia (31.3%). Almost half of participants (46.6%) preferred using contact lenses for improving their visual acuity. The mass media was the main source of information for participants about contact lenses (43.8%), followed by family members (31%), and lastly physicians (25.2%).

Figure (1) shows that almost two-thirds of participant students (66.2%) used contact lenses.

Table (2) shows that, among 497 participant students who use contact lenses, 82.7% used soft lenses. Multiple usage lenses were used by 88.3% of participants. Almost half of participants (47.3%) use contact lenses to correct errors of refraction, while 23.3% use contact lenses cosmetically and 29.4% use lenses cosmetically and to correct errors of refraction. More than half of participants (51.7%) use contact lenses for more than 6 months, and 71.9% used contact lenses for more than 2 years. More than two-thirds of participants (68.4%) used lenses on special occasions, while 20.3% used lenses daily. More than half of participants (56.5%) used contact lenses for 4-7 hours daily, while 16.5% use contact lenses 8-12 hours daily and 9.7% use contact lenses >12 hours daily. More than half of participants (55.7%) obtained their contact lenses from an optician, 16.9% obtained their contact lenses from a beauty center.

Table (3) shows that the most frequently stated complications of contact lenses were red eyes, allergy and corneal ulcers (85.1%, 53.1% and 38.2%, respectively).

Table (4) shows that more than one third of participants disagree or strongly disagree regarding the importance to consult an ophthalmologist when choosing contact lenses (18.5% and 19.9%, respectively), while 64.2% recommend others to use contact lenses.

Table (5) shows that the majority of participants (95.8%) clean their contact lenses with a solution. About half of participants (50.9%) clean their contact lenses only while in use, and 80.7% wash their hands before using contact lenses. Most participants always remove contact lenses before sleep (89.3%) or swimming (82.3%). About two-thirds of participants (67.2%) change their contact lenses twice per year. More than half of participants (55.9%) do not visit an ophthalmologist for follow up care of their contact lenses.

Table 1: Personal characteristics of participants

Personal characteristics	No.	%
Age groups		
• <20 years	84	11.2
• 20-24 years	575	76.6
• ≥25 years	92	12.3
Academic year		
• First-Second	220	29.3
• Third-Fourth	238	31.6
• Fifth-Sixth	172	22.9
• Intern	121	16.1
College		
• Medicine	262	34.9
• Dentistry	74	9.9
• Applied Medical Sciences	206	27.4
• Pharmacy	113	15.0
• Nursing	80	10.7
• Others	16	2.1
Average duration of study times		
• <30 minutes/day	68	9.1
• 30-60 minutes/day	120	16.0
• 1-2 hours/day	248	33.0
• >2 hours/day	315	41.9
Having Error of refraction		
• No	325	43.3
• Yes:	426	56.7
• Myopia	235	31.3
• Hypermetropia	19	2.5
• Astigmatism	43	5.7
• Myopia with astigmatism	129	17.2
Preferred method for improving visual acuity		
• Glasses	401	53.4
• Contact lenses	350	46.6
Undergoing surgery to improve visual acuity	41	5.5
Sources of information on contact lenses		
• Family	233	31.0
• Mass media	329	43.8
• Physicians	189	25.2

Table 2: Characteristics of used contact lenses (n=497)

Characteristics	No.	%
Type of used contact lenses		
• Soft	411	82.7
• Hard	86	17.3
Frequency of contact lenses usage		
• Single usage	58	11.7
• Multiple usage	439	88.3
Reasons for use of contact lenses		
• Cosmetic	116	23.3
• To correct errors of refraction	235	47.3
• Cosmetic and for correction	146	29.4
Use of contact lenses for more than 6 months	257	51.7
For how long you have been using contact lenses		
• <6 months	30	6.0
• 6-12 months	57	11.5
• 1-2 years	102	20.5
• > 2 years	308	71.9
Occasions for using contact lenses		
• Daily	101	20.3
• Weekly	56	11.3
• Special social occasions	340	68.4
Duration of daily use of contact lenses		
• <4 hours	86	17.3
• 4-7 hours	281	56.5
• 8-12 hours	82	16.5
• >12 hours	48	9.7
Sources for obtaining contact lenses		
• Beauty center	84	16.9
• Glasses shop (optician)	277	55.7
• Hospital	13	2.6
• Online purchase	72	14.5
• Others	51	10.2

Figure 1: Prevalence of using contact lenses among students of Health Sciences Colleges at King Khalid University

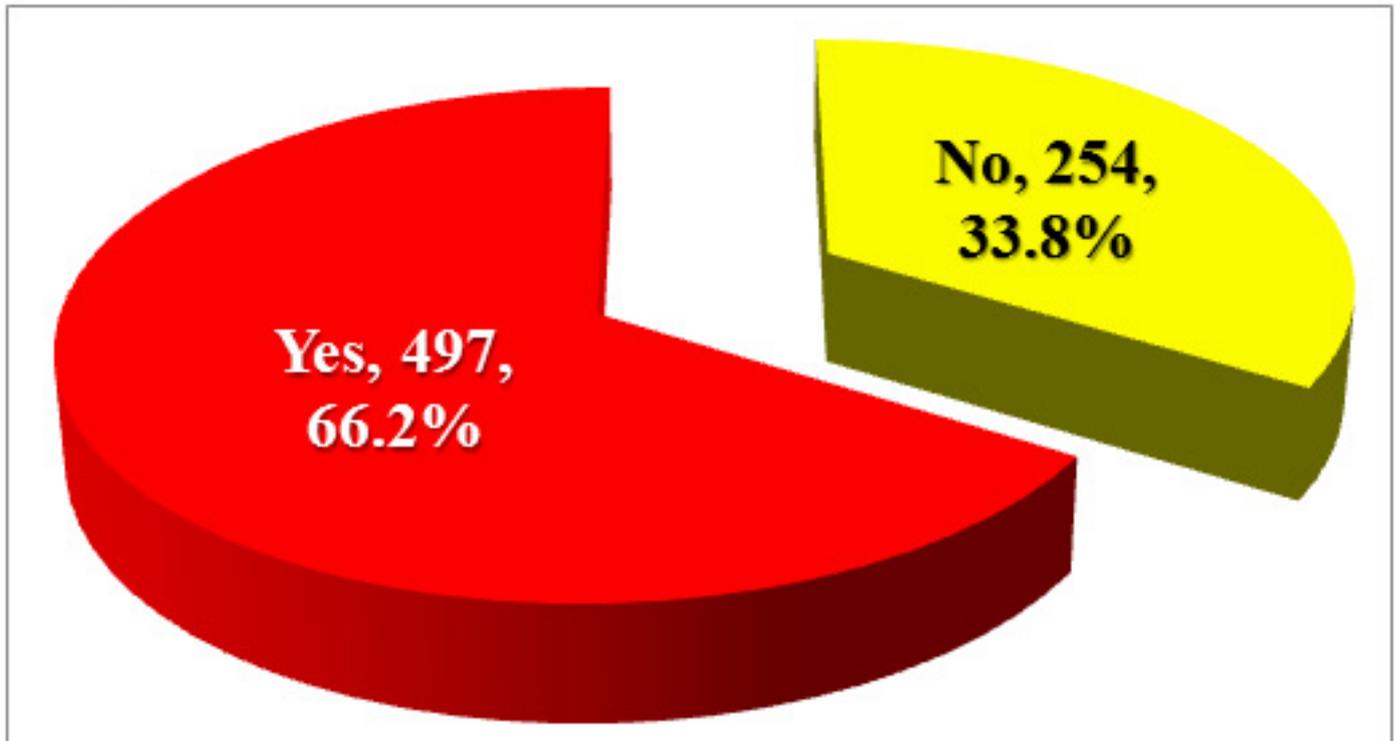


Table 3: Participant students' awareness regarding complications of using contact lenses (n=497)

Complications	Yes		No		Do not know	
	No.	%	No.	%	No.	%
Allergy	264	53.1	70	14.1	163	32.8
Conjunctivitis	166	33.4	92	18.5	239	48.1
Red eyes	423	85.1	32	6.4	42	8.5
Corneal opacity	146	29.4	100	20.1	251	50.5
Loss of vision	157	31.6	138	27.8	202	40.6
Corneal ulcers	190	38.2	100	20.1	207	41.6

Table 4: Participant students' attitude toward choosing and using contact lenses (n=497)

Attitude	No.	%
It is important to consult an ophthalmologist when choosing contact lenses		
• Strongly agree	123	24.7
• Agree	183	36.8
• Disagree	92	18.5
• Strongly disagree	99	19.9
Recommending others to use contact lenses?		
• Yes	319	64.2
• No	178	35.8

Table 5: Participant students' activities for care of contact lenses (n=497)

Activities	No.	%
What do you use to clean your contact lenses?		
• Water	21	4.2
• Solution	476	95.8
Cleaning contact lenses		
• Always	120	24.1
• Sometimes	105	21.1
• Rarely	19	3.8
• Only while use	253	50.9
Washing hands before using contact lenses		
• Yes	401	80.7
• No	14	2.8
• Sometimes	82	16.5
Removing contact lenses before sleep		
• Yes	444	89.3
• No	4	0.8
• Sometimes	48	9.9
Removing contact lenses before swimming		
• Yes	409	82.3
• No	33	6.6
• Sometimes	55	11.1
Rate of changing contact lenses		
• Daily	23	4.6
• Weekly	11	2.2
• Biweekly	9	1.8
• Monthly	105	21.1
• Biannually	334	67.2
• Annually	15	3.0
Visiting an ophthalmologist for follow up care of contact lenses		
• Biweekly	3	0.6
• Biannually	57	11.5
• Annually	159	32.0
• I do not	278	55.9

Discussion

Findings of this study showed that about two-thirds of female students at Health Sciences Colleges of King Khalid University used contact lenses, mainly of the soft type, for multiple usage for more than two years. More than half of students use contact lenses either cosmetically or cosmetically and to correct errors of refraction. Moreover, most participants wear their contact lenses only during special social occasions. For errors of refraction, contact lenses were used mainly to correct myopia, which was prevalent among 31.3% of participants.

These findings are in accordance with those reported by Abahussin et al. [11], who reported that 70.2% of Saudi female university students in Riyadh City used contact lenses for different purposes, mainly cosmetic reasons (63.3%) or refractive purposes (19.1%). Similarly, Maqsood and Algalban [12] found that female students at King Saudi University, in Saudi Arabia used soft contact lenses, mainly for cosmetic purposes (68%).

Almost half of participants in the present study preferred using contact lenses for improving their visual acuity and about two-thirds recommended others to use contact lenses.

Abokyi et al. [13] stated that despite advancement in surgical refractive corrective procedures, corrective eyewear, including contact lenses, remains the most popular modality for vision correction even in developed countries. Contact lens wearers report better quality of life than spectacle wearers [14-15].

The present study revealed that awareness of most university students regarding contact lenses and the complications associated with their use was suboptimal.

Kumar and Preetha et al. [16] stated that raising awareness of the population toward proper use of contact lens is a very important determinant of the health behavior of an individual, and, therefore, health education is regarded as an effective tool for health promotion.

Results of several studies in different populations consistently reported poor awareness regarding contact lenses. Abokyi et al. [13] found that about two-thirds of spectacle wearers in Ghana were unaware of proper contact lens wear. In Nigeria, Ayanniyi et al. [17] reported that more than half of the study population were poorly aware about contact lenses. Also, in Iran Saber et al. [18] reported poor awareness of contact lenses among most study participants.

Findings of the presents study showed that more than one third of participants do not agree that it is important to consult an ophthalmologist when using contact lenses. Moreover, participants' improper practices regarding contact lens care were common, e.g., more than one-quarter of participants use their contact lenses for 8 hours or more, about half of participants clean their contact

lenses only while in use, only 80.7% wash their hands before using contact lenses, only two-thirds of participants change their contact lenses twice per year and more than half of participants do not visit an ophthalmologist for follow up care of their contact lenses.

These findings are in accordance with those reported by Maqsood and Algalban [12], who found that most female students at King Saud University wear contact lenses for 8-12 hours or more daily, while 73% used to replace their contact lenses with new ones as per the schedule according to the manufacturer, 27% were not following the time schedule of replacing the soft contact lenses, 59% wash their hands before handling the contact lenses and 45% clean their contact lenses according to the instructions.

Maqsood and Algalban [12] emphasized that the lack of proper practice regarding care of contact lenses may increase the risk of complications associated with wearing and improper cleaning of contact lens which can lead to eye problems. Therefore, the awareness and practices regarding contact lenses care should be increased by all contact lens providers so that the prevalence of eye complications associated with wearing contact lenses can be minimized.

It is to be noted that most participants in the present study obtained their contact lenses from opticians , online purchase, or a beauty center.

Abahussin et al. [11] stated that 80.2% of stores that sell contact lenses in Saudi Arabia dispense contact lenses without a prescription, since over-the-counter obtaining of contact lenses is not illegal. However, it is considered a federal offence in certain countries [19]. Therefore, to minimize this unhealthy practice, the Saudi Food and Drug Agency should take the necessary steps to ensure that contact lenses are strictly dispensed by eye care practitioners at authorized shops after verifying the patient's prescription.

Conclusions

Most female Health Sciences college students at King Khalid University used contact lenses, mainly for cosmetic reasons, especially at social occasions. Although they mostly agree regarding the importance to consult an ophthalmologist when choosing contact lenses, they mostly obtain contact lenses from opticians , online purchase, or a beauty center. Their awareness regarding contact lenses is suboptimal and most of them lack proper practices regarding care of contact lenses. Therefore, their awareness and practices regarding contact lenses care should be increased by all contact lens providers.

Abbreviation:

King Khalid university (KKU), Research ethical committee (REC)

Declarations:**Ethics approval and consent to participate:**

Informed consent was obtained from all residents prior to data collection. All the selected respondents were given assurance of confidentiality that the information gathered will be used exclusively for research purposes. This study was approved by the Institutional Review Board of King Khalid university (KKU) (Reference #:(ECM#2019-56)-(HAPO-06-B-001). All necessary official approvals to conduct this study were obtained.

Consent for publication: Not applicable.

Availability of data and materials:

The data that support the findings of the current study are available from the corresponding author on reasonable request.

Competing interests: The authors declare that they have no competing interests

Funding: None

Acknowledgments:

The authors would like to thank all the resident physicians, who despite their tight schedules agreed to participate in this seminal work. Without their contribution, this study would not have been possible. We also acknowledge the support of all those who facilitated this work.

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