

ORIGINAL ARTICLE

Prevalence, Knowledge and Attitude of Contact Lenses Care and Complications Among Hail Region Population, Saudi Arabia

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ABSTRACT

To study the knowledge and attitude of contact lens wearers and the prevalence of CL use. A cross-sectional study was conducted from October 2019 to March 2020 among the population of Hail, Saudi Arabia. We were using an Online questionnaire about contact lens hygiene and complications related to contact lens usage. We included 809 participants in our study. 53.3% (n=431) were contact lens wearers; most of them were females (96.1%). Participants' ages ranged from 16 to 45. The majority wears CL for cosmetic causes 52.8% (n=227), followed by visual correction 46.3% (n=199) and therapeutic causes 0.9% (n=4). There was a significant correlation between age and the cause of contact lens use (p value= 0.029). Participants were asked to point out the complications that may arise from wearing contact lens, 58.5% (n=252) chose eye dryness, 23.9% (n=103) chose keratitis, 13.7% (n=59) chose corneal ulcer, 12.8% (n=55) chose uveitis as a complication, and 7.9% (n=34) chose allergic conjunctivitis. A significant correlation was demonstrated between the level of education and knowledge regarding complications (p value= 0.038). The use of CL is associated with ocular complications. Most of these complications are minor and easily manageable. Contact lens users should adhere to the recommendations of both manufacturer and optometrist to avoid complications.

Keywords: Contact lens, complications, causes, knowledge, awareness.

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INTRODUCTION

Contact lenses (CLs) have been used for visual, therapeutic and cosmetic reasons by many people. They have improved the quality of life, not only by correcting refractive errors, but they also improve the aesthetics of a person. CLs are getting more popular among the younger population. Throughout the world, the number of contact lens (CL) wearers was estimated to be close to 125 million, and approximately 38 million people use the CL in the United States [1, 2]. CL complications will remain an essential part of the ophthalmic and optometric practice; as long as they are used for the correction of different refractive errors. According to a study in 2017, The size of the global market of contact lenses was expected to reach 12,476.3 million US dollars by 2020, at a growth rate of 6.7% [1, 3]. The contact lens can act as a vector for microorganisms to adhere to and transfer to the ocular surface; if not used and cared for properly, it could result in sight-threatening complications(4)(5). Studies have identified several risk factors associated with lens wear complications. The use of contact lenses is increasing day by day, yet people are not fully aware of various merits and demerits of contact lenses. Ignorance of contact lens care leads to serious ocular health problems. Ocular health education especially knowledge in the correct and careful practice regarding contact lens wear can prevent complications resulting from wearer's inappropriate behavior. Amongst the identified risk factors, some are non-modifiable such as gender or age, whereas others are modifiable such as poor hygiene and lens case hygiene, sleeping while wearing CLs and swimming with CL [4, 6]. The most common complications include contact lens discomfort, keratitis, corneal ulcer, dehydration, corneal neovascularization, and superior epithelial arcuate lesion [1, 5]. With the current increase in using contact lenses and serious complications that could arise from

mishandling them, we aimed to evaluate the knowledge and attitude of contact lenses care and complications among the population of Hail in Saudi Arabia.

MATERIAL AND METHODS

Study Design and Sampling

A cross-sectional community-based study was carried out (from October 2019 – March 2020) to determine the prevalence, knowledge and attitude of contact lenses care & complications among the population of Hail region, KSA.

Online questionnaires were distributed for the targeted population who met the inclusion criteria. A convenient sampling technique was used to identify our sampling.

Data Collection

A self-administered multiple-choice questionnaire was designed. It consisted of 18 questions that were guided by study objectives. The questionnaire included two sections: the first section comprises demographic data such as age, gender and education level. The second section includes questions to assess the knowledge and attitude of the users about the care and complication of contact lens wearing. The online questionnaire was sent to targeted population groups. Acceptance consent was obtained from each participant.

Data Analysis

Data was entered and analyzed using the Statistical Package for Social Sciences (SPSS). Complication rates of CLs were calculated. A P-value of 0.05 or less was considered statistically significant. The Chi-square test was determined. All statistical analyses were run on the PC, using the Statistical Analysis System inside SPSS.

RESULT AND DISCUSSION

The use of contact lenses is widely spread among young adults worldwide. Contact lenses are used for various purposes, such as cosmetic, refractive correction, and other medical purposes. CLs users must be aware of how to correctly handle their CLs and what complications could arise from misuse. CLs users wear different types of CLs daily disposable, weekly, monthly and annually.

In our study, A total of 809 participants were included, of which (78.7%,n=637) are females and (21.3%,n=172) are males. (53.3%,n=431) were contact lens wearers. Our findings were similar so close to Bamahfouz *et al.* study conducted in Makkah, which reported a result of 50.1% (6). However, it was higher than a study conducted in India, which reports that their prevalence is 17.1% [7].

The vast majority of contact lens wearers were females (96.1%,n=414) and it was exactly the same in Ijaz *et al.*, study (8) in comparison to 85.45% in Bamahfouz *et al.* study [6]. Maybe because females usually run after everything appear them beautiful as the most common cause of wearing contact lens is cosmetic with (52.8%,n=227) in agreement with several studies addressing that the most frequent cause of wearing CLs is cosmetic [4, 6, 9].

Causes of CL use are illustrated in Figure 1. This result is in agreement with several studies addressing that the most frequent cause of wearing CLs is cosmetic [4, 6, 9]. This might be because most of the contact lens wearers are young females (i.e. age between 20-30 years). According to our results, we found a significant correlation between age and cause of contact lens use (p value= 0.029), in which cosmetic causes are more common than medical among middle-aged groups, whereas medical causes are more common in 16-20 and 41-45 age groups.

In the education part of the study, we found that (82.6%,n=356) of the wearers had a bachelor's degree, (16.2%,n=70) had a high school degree and (1.2%,n=5) had a middle school degree.

Around a half of our participants (51%,n=220) use monthly CL, (22.7%,n=98) use annual CL, (19.7%,n=85) use daily CL, (3.2%,n=14) use weekly CL and (3.2%,n=14) use permanent CL.

Regarding the period of wearing CL, The highest percentage of our participants (52.4%,n=225) are wearing CL for more than two years, (32.9%,n=141) are wearing them for one to two years, (4.9%,n=21) are wearing them for six to twelve months, and (9.8%,n=42) are wearing them for less than six months. Similar study conducted in Malaysia reported that 23.1% of participants start wearing CLs in less than 6 months, 19.8% from 6-12 months, 17.4% more than 1-2 years, 39.7% more than 2 years (9). The difference in numbers between our study and the Malaysian study might be caused by small sample size and the less availability of CLs of Malaysian study.

About the frequency of wearing CLs, the study found that (31.6%,n=136) of the participants wear CL less than once monthly, 13.5% (n=58) wear them once monthly, (15.8%,n=68) wear them twice monthly, (10%,n=43) wear them once weekly and (29.2%,n=126) wear them more than once weekly.

Table 1 shows the association between the type of contact lens used and age, hours of wearing CL, and complications encountered.

Regarding the wearers attitude towards CL care, always, often, sometimes and never washing their hands percentages are (65.4%,n=282) (19.7%,n=85) (13.7%,n=59) (1.2%,n=5) respectively. A study in Um Al Qura showed that the participants who always wash their hands before handling the CLs 54.5%, sometimes 30.6% and rarely 8.2%, while the remaining 6.6% never wash their hands [6]. However, a higher percentage of 89% and 92.5% of people who wash their hands before using CLs were reported in two different studies in Pakistan [8, 10].

Among the participants, (51%,n=220)exchange their CLs as instructed on the package. (45.7%,n=197) change the solution of CL case weekly, (30.2%,n=130) change it monthly, (7.7%,n=33) change it every six months, (1.4%,n=6) change it annually, meanwhile (15.1%,n=65) wear daily CLs.

The vast majority (89.1%,n=384) of the participants do not sleep while wearing CL, (8.1%,n=35) sometimes sleep while wearing them and (2.8%,n=12) sleep while wearing CL. in comparison to 13.2%,11.6%and 18.5% were sleep while wearing CL in other studies [6, 9, 10].

We asked the participants if they swim with CL or not? (Yes/No/Sometimes). The Arabic terminology of swimming might be mixed with taking shower, -specially in Hail accent-. However, Only (6%,n=26) of the participants answered that they always swim while wearing CL, and (6.7%,n=29) sometimes swim while wearing them which is lower than the percentages described by Sughra et al. (22.5%) and Bamahfouz AY, et al. (21.4%) [6] [10].

Participants were asked to point out the complications that may arise from wearing contact lens, (58.5%,n=252) chose eye dryness, (23.9%,n=103) chose keratitis, (13.7%,n=59) chose corneal ulcer, (12.8%,n=55) chose uveitis as a complication, and (7.9%,n=34) chose allergic conjunctivitis. On the other hand, a study conducted in Malaysia reported that 88.4% knew about corneal ulcer [9].

A significant correlation was demonstrated between the level of education and knowledge regarding complications (p value= 0.038). So, we recommend to make campaigns for this issue in Internet ,Universities and Public places. Our participants experienced some contact lens related complications (Figure 2). A significant correlation was demonstrated between hours of wearing CL and developing complications (P-value= 0.004); nevertheless, the correlation between mishandling CL and having complications was not significant. (5.8%,n=25) of the participants do ophthalmic check up regularly, (9.7%,n=42) do ophthalmic check up occasionally, (49.2%,n=212) do ophthalmic checkup when they face a problem and (35.3%,n=152) never did ophthalmic checkup. The majority of the participants (71.9%,n=310) visit an ophthalmologist when they face a problem, 7.2% (n=31) visit an optometrist, (3%,n=13) visit an optics technician and (17.9%,n=77) don't follow up.In Tajunisah I, et al. study regarding the medical help in the eye problems 38.8% would consult an ophthalmologist and 28.1% would consult optometrist [9].

Table 1: Correlations between age and cause of wearing CL and correlation between complications development and duration of wearing Cl, respectively.

		use of CLs			Total	P-value
		visual correction	cosmetic	therapeutic		
age of the respondent	16-20 years	30	24	0	54	0.029
	21-25 years	90	93	0	183	
	26-30 years	31	37	0	68	
	31-35 years	17	35	1	53	
	36-40 years	10	21	1	32	
	41-45 years	21	17	2	40	
hours of wearing CLs	less than 5 hours	31	100	0	131	<0.001
	6-12 hours	138	124	3	265	
	more than 12 hours	30	3	1	34	
have you got complications	yes	134	93	4	231	<0.001
	no	65	134	0	199	

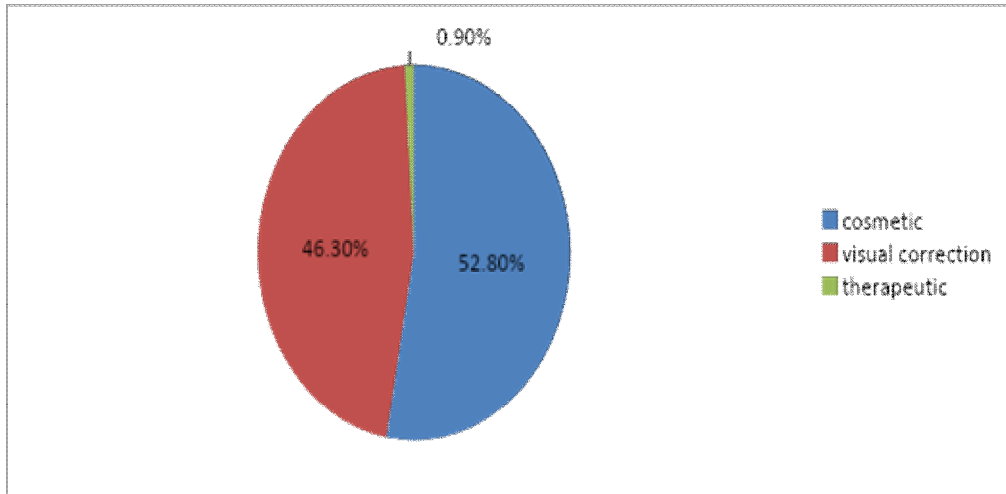


Figure 1: Causes of contact lens wearing

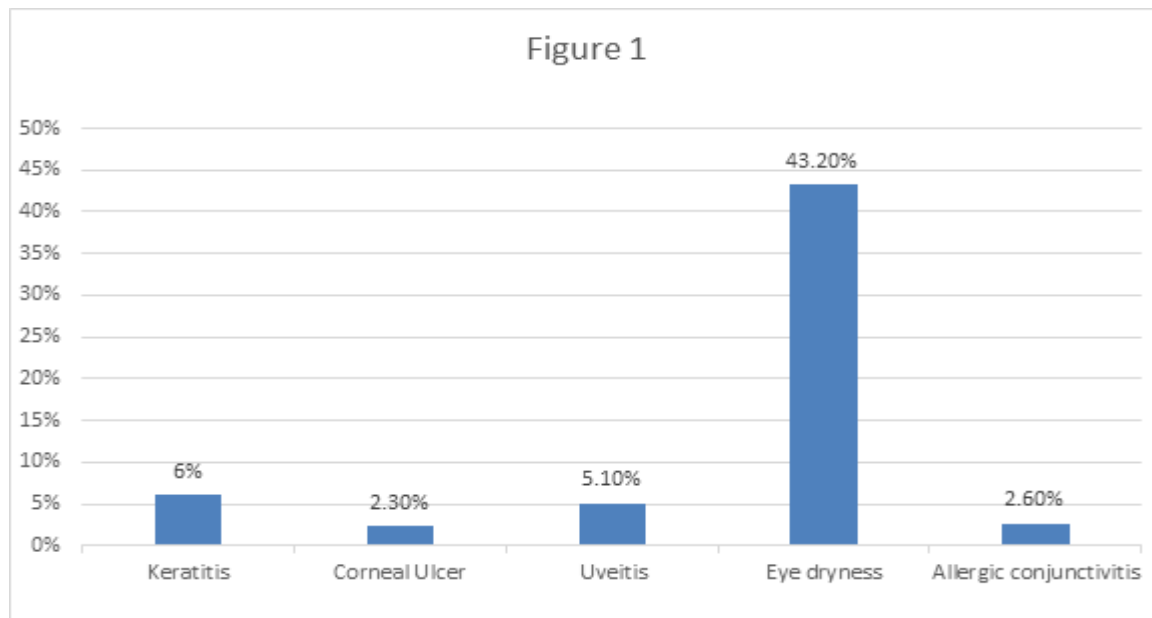


Figure 2: Prevalence of complications among contact lens wearers.

CONCLUSION

The use of CL is associated with ocular complications regardless of lens type or material. The majorities of complications are minor and can be easily prevented and managed while others may be severe enough to cause blindness. It is so important for all lens wearers to adhere to manufacture and optometrist recommendations and get medical management as soon as needed.

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