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RESEARCH ARTICLE

PRACTICE, ATTITUDE AND KNOWLEDGE OF CONTACT LENSE USERS AMONG LAHORE POPULATION.

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ABSTRACT

Background: The use of contact lens has seen exponential growth, most of the users are not aware about the post-exposure effects and complications that arises because of improper use. **Objectives:** The main aim of the study is evaluation of knowledge of users and the concerning practices and hence creating awareness about proper use and consequences of improper usage. **Methodology:** This study was conducted in Lahore region of Pakistan for a small population to assess regarding contact lenses use. **Results:** A better knowledge was observed among subjects regarding complications associated with use of contact lens and lack of maintaining improper hygiene**. Conclusion:** Upon provision of necessary training on proper use and reporting of complications adequately to concerned authorities will lead to better quality of lenses and better safety for users.

Keywords: Contact lens, Cross-sectional study, Eye care

INTRODUCTION

Global burden of eye refractive disorders has seen a significant increase and it has been well documented (1). They are clear and transparent, thus making them difficult to handle. Often A slight colour tinge is given in order to make them more perceptible and easier to handle for the wearer. Contact lens has been prescribed for use for more than 100 years now for purpose of correction of refractive errors of eye and cosmetic purposes too (2). Progress in technology and innovation in contact lens materials has caused an increase in usage of contact lenses. Contact lens are effective for correction of vision and they are safe to use as well, but lack of proper hygiene, irregular or no disinfection and improper storage can significantly increase risk of eye infections in wearers (3). According to the FDA various types of contact lens exist for different functionality and uses. Lens that are made from flexible and soft plastic which allows passing of oxygen via the cornea are called Soft Contact Lens (SCL). Rigid Gas Permeable (RGP) show resistant to deposits, are more durable and economical. RGP lens are easier to handle and also provide clearer vision but are less comfortable to wear than SCL (4).

On basis of purpose two type of contact lenses are there namely, Ortho-K and Decorative. Decorative as the name suggest are contact lenses that are used for change of eye appearance and have no role in correction of vision, these types of lenses are also called fashion contact lens or coloured contact lens. Ortho-K or Orthokeratology is an advanced procedure of correcting vision, it uses RGP contact lens that temporarily alters cornea curvature in order to enhance ability of eye for clearer vision. Different Ortho-K lenses are prescribed for day time and night time (5-8). Optometrists prescribe wearing overnight lenses for at least 8 hours per night and are to be removed after waking up, the vision corrected by them is temporary as the cornea returns to its original curvature after usage (9-11).

Complications associated with usage of contact lens can be papillary conjunctivitis, called CLPC. This is one of the most adverse effects which has symptoms like irritation, itching, burning sensation and excess watering of eyes. The small width of Rigid Lens causes abrasions as compared to SCL, contact lens wearing is not prescribed during abrasions, until recovery is achieved. Application of lubricating eye drops can cause reduction in damage (12-14). Symptoms associated with microbial keratitis are cornea inflammation, mainly caused by virus, bacteria or parasites which gets developed in lens due to solution contamination. Acanthamoeba

Keratitis is an infection caused by amoeba, genus Acanthamoeba, it is very serious vision threatening condition of eyes (15, 16). Main symptoms include epithelial damage, photophobia, stromal infiltrates and eyelid edema. Using tap water for cleansing or cleaning lens improperly can become cause of this complication (17, 18). Fungal Keratitis occurs mainly because of trauma during wearing of lens, topical steroids usage. Permeable lens has less risk of this complication (19, 20).

MATERIALS AND METHODS

Study design: This study was conducted in Lahore region of Pakistan for a small population. A total of 96 subjects were involved in study out of which 61% were male and 39% were female.

Criteria for Exclusion: Subjects of age below 15 years and above 45 years were not considered for the study. Also, the subjects who did not agree to consent were not taken into account.

Procedure followed: Participants provided their consent for contributing in this research. Structured questionnaire was sent to the participants in form of a google form. Questionnaire consisted of 4 sections where 1st section recorded details of participants like age, gender and name while 2nd, 3rd and 4th sections consisted of questions regarding practice, attitude and knowledge about contact lens. The questions in practice segment were about duration of usage of contact lens per day, hygiene before using, how frequently they cleaned their contact lens case and solution used for cleaning. The attitude section included questions on personal preferences like recommending contact lens to non-users, what was preferable between contact lens and spectacles and how they felt about looks and performing daily activities using lens. Knowledge section included questions on reporting issues with quality of products, lens use and associated complications, and infections like Acanthamoeba and keratitis. Responses to every question from all 4 sections were recorded and their percentages were calculated.

RESULTS

Total number 105 respondents were chosen for the study out of which 96 agreed to participate in this study. Subjects were assessed for practice, attitude and knowledge about contact lens on a questionnaire containing 18 questions. We conducted study through Google forms and circulated it through emails provided by optometrists consulted. Respondents from Lahore region were chosen and taken account into this study.

Distribution -Gender wise

In this study conducted, 61% of the participants were male and 39% were to be female, which is displayed in figure 1.

Distribution - Age wise

Figure 2 depicts sample distribution of this study according to age. Most of the participants were of age group 15-25 years followed by 25-35 years.

Practice, Attitude and Knowledge of contact lens users

In the study it was observed that around 41% (n=39) of subjects had idea about reporting of any quality related issues of their contact lens. Majority of participants 58% knew the possibility of complications related with contact lens while 42% were not aware about the complications. An overwhelming majority 87% of subjects said they do not wear contact lens while having conjunctivitis while rest of 13% wore them. Only 44% of them were aware that using water as cleaning solution might cause Acanthamoeba. A good number of participants 74% knew not to use a lens solution older than 6 months. 48% of participants were unaware of Keratitis which might be caused by using same lens for longer period of time, this is documented in Table 1.

In the study vast majority 85% said they would recommend contact lens to non-users while 65% said they would choose spectacles over contact lens for ease of use and storage as well as cleaning. Majority of participants 62% admitted that routine care of contact lens was problematic. 71% of subjects agreed that contact lens usage restricts their daily activities like swimming and travelling. Only 52% felt that improvement in eye care activities while a considerable majority of 89% felt good and confident after wearing contact lens.

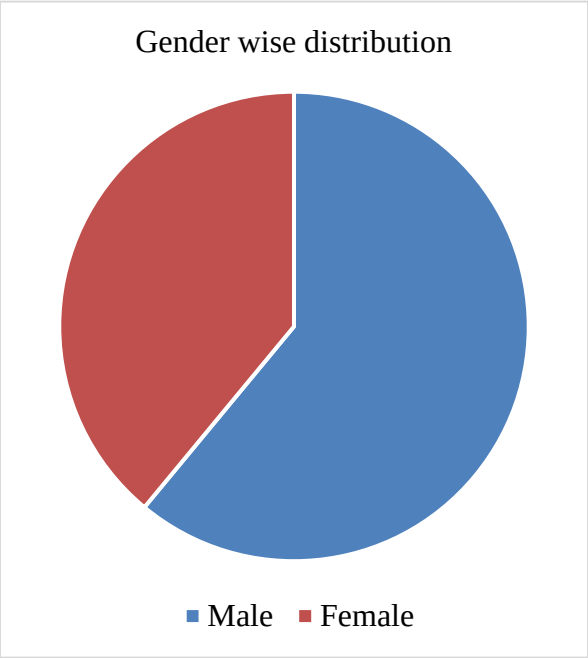
It was also observed that only minority 20% of subjects wore contact lens greater than 10 hours per day. Almost 92% of participants cleansed their hands prior to handling their contact lenses another 8% did not wash their hands. Only a minority subjects 12 % (n=11) used contact lens past their expiry date while only 25% had contact lens for purpose of refractive correction, majority considered it partly for cosmetic use and partly for (n=30) refractive use (82%). 49% (n = 47) of subjects said they clean contact lens daily, while 32% said weekly, 9% monthly and 9% said rarely. 2% participants changed lens solution with saline water multiple times while 9% did

it more than one time, a vast majority of users (89%) never replaced lens solution with saline solution. All the assessments are documented in table 1.

Table 1. Assessment of the subjects

S.no.	Section.	% Subjects saying Yes	% Subjects saying No
	Practice		
1.	Is your average duration of wearing contact lens per day more than 10 hours?	20	80
2.	Do you wash your hands before handling your contact lens?	92	8
3.	Do you use your contact lens after its expiry date?	12	88
4.	Do you use contact lens for correction of vision?	25	75
5.	Do you clean your contact lens on daily basis?	49	51
6.	Have you use saline water instead of lens solution?	11	89
	Attitude		
1.	Do you find routine care like cleaning, carrying, of your contact lens problematic?	62	38
2.	Do you feel using contact lens restricts you from carrying out daily activities (traveling, exercise)?	71	29
3.	Do you feel that contact lens usage has enhanced your eye care activities overall?	52	48
4.	Do you feel confident and positive about your looks after wearing contact lens?	89	11

5.	Would you prefer lens over spectacles?	35	65
6.	Would you recommend contact lens to non-users?	85	15
	Knowledge		
1.	Do you report quality issues, if any, of your contact lens?	41	59
2.	Are you aware of Symptoms and Complications associated with contact lens?	58	42
3.	Do you wear contact lens if you have conjunctivitis?	13	87
4.	Are you aware of Acanthamoeba infection that might can be caused by using water as cleaning solution?	44	56
5.	Do you use lens solution that is 6 months or older for clearing lens?	26	74
6.	Are you aware about long-term use of same contact lens might cause microbial keratitis?	52	48



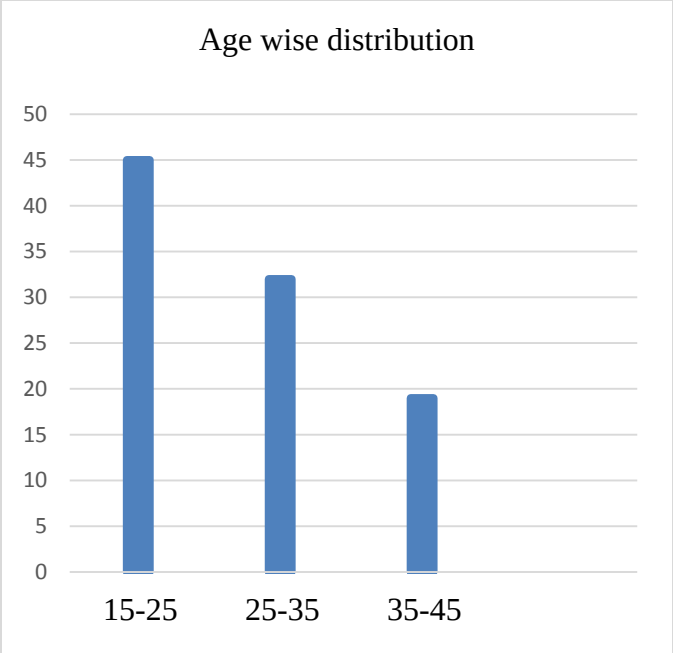


Figure 1.

Figure 1. Demographic information of the subjects

DISCUSSION

This study is aimed to assess practices, attitude and knowledge of contact lens users. Majority of population has adequate knowledge about reporting issues related to product quality, microbial keratitis and complications related with usage of contact lens. They have improper knowledgeabout Acanthamoeba infection and use of lens solutions. A considerable amount of people chose spectacles over lens in our study which shows the discomfort and uneasiness surrounding the usage of contact lens (4, 6, 8).

Proper guidance and instructions regarding quality of product and information about infections caused by unhygienic use and improper handling and storage will improve the effectiveness, ease of use and comfort among users and promote more non users to shift to contact lens. Steps taken for Public health like reporting of adverse effects of contact lens use to PNPv (Pakistan National Pharmacovigilance) by health care professionals and contact lens users will provide better data

regarding contact lens safety and hence raise awareness among the wearers regarding usage of contact lens (14, 16, 20).

CONCLUSION

Even though the use of the contact lens has seen significant growth, the literature regarding use of contact lens is quite less. The number of people using contact lens is increasing because they provide aesthetic comfort along with refractive correction and cosmetic elegance. Information on contact lens issues and appropriate recommendations should be disseminated in Lahore, Pakistan. Despite all the guidelines and basic knowledge available digitally, it is responsibility of pharmacists to assist in this as a part of materiovigilance.

Authors' contributions

ASR contributed to study concept; SFA, MU, MUM, RA, SA and ST contributed to study design, data collection, data analysis and interpretation, literature review, write and critically review the manuscript. All the authors read and approved the final manuscript.

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Declarations

Ethics approval

Not applicable.

Consent

The data were collected after taking consent from the participants.

Competing interests

The authors declare that they have no competing interests

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