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Overview of the Knowledge Level and Behavior of Contact Lens Use among Medical Students of Universitas Kristen Krida Wacana

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ABSTRACT

Introduction: Contact lenses are intended to treat refractive errors in the eye, as a diagnostic aid, and to support personal appearance. A case study suggested that contact lenses cause eye diseases due to less knowledge and misbehavior when wearing contact lenses. This study was conducted to know the level of knowledge and behavior of using contact lenses among medical students of Universitas Kristen Krida Wacana (UKRIDA), intake 2016.
Methods: It employed a descriptive analysis with a cross-sectional study. A total of 97 students who use contact lenses filled out a questionnaire in Google form.
Results: The result demonstrated that 91 respondents (94%) had good knowledge about using contact lenses. Regarding behavior, 80 (93%) belonged to a good category.
Conclusion: Their good knowledge and behavior towards using soft contact lenses might minimize their risk of red eye incidence upon using them.

Keywords: contact lenses; red eyes; level of knowledge

INTRODUCTION

Contact lenses are used to overcome refractive eye disorders and to support one's look. They are also referred to as substitutes for glasses because both have a similar function.[1] People switch from drinks to contact lenses because they do not interfere with the eye field and vision. Besides, they beautify one's look, making them comfortable, brighter, not easily exposed to water, and not bothersome to activities[1]. Also, the price of contact lenses is lower than that of glasses, so they are more affordable to the public[2]. Contact lenses contain silicone hydrogel lenses (69%), hydrogel (20%), and rigid gas permeable (RGP) contact lenses (9%). Soft contact lenses consist of two main types of lenses: hydrogel and silicone hydrogel. Ordinary hydrogel lenses are made of hydroxyethyl methacrylate (HEMA). These lenses have a high water content but are characterized by a relatively lower oxygen permeability. Silicone hydrogel lenses have better oxygen permeability but are less flexible. Meanwhile, hard contact lenses are RGP lenses made of polymethyl methacrylate. Soft contact lenses have different schedules of use. Some are disposable daily, and others can be used biweekly, monthly, or quarterly[3].

Refractive errors are visual disturbances caused by points of light in the disrupted retinal receptor photocells so that the focus of the cornea and lens towards light becomes inaccurate. It might also occur due to disruption in the refractive media in the eye and damage to the retinal layer[2]. Refractive error in light causes the inability to focus light on the retina even though the refractive

medium is evident[2]. Refractive disorders include myopia, hypermetropia, astigmatism, and presbyopia[2]. In addition, contact lenses may also manage refractive conditions that cannot be solved with glasses, such as aphakia disorders, keratoconus, irregular cornea, and high anisometropia. It can also manage dry eyes in Stevens-Johnson syndrome, even Sjogren's syndrome, rehabilitation after refractive surgery, and persistent epithelial defects. Besides, contact lenses for cosmetics are massively popular today[4]. Contact lens use needs to be considered as they may risk eye infection if they fail to wear, clean, disinfect, and store their contact lenses as advised[5].

Contact lenses can have a pronounced anatomical and physiological effect on the eye surface, leading to other consequences due to biologically active ingredients. Contact lenses interact with the tear film, the eye's surface, the skin, endogenous and environmental microorganisms, components of treatment solutions, and other antigens that can cause diseases specific to contact lens wear, such as metabolic disorders or hypersensitivity[6]. The severity and frequency of contact lens complications vary widely. Contact lens complications are related to three fundamental mechanisms: mechanical trauma to the conjunctiva and cornea, acute and chronic hypoxia due to decreased oxygen transmissibility, and allergic reactions from protein deposits in the contact lens. Many patients have dry eyes or blepharitis, which further harms the surface of the conjunctiva and cornea, increasing the possibility of complications[7].

According to the WHO (*The World Health Organization*, the prevalence of myopia among adults is about 26.5%, with the highest majority in Southeast Asia (32.9%) and the lowest in America (16.2%). The average prevalence of hypermetropia in adults is 30.6%, with Africa as the highest prevalence (38.6) and Europe as the lowest (23.1%)[6]. Meanwhile, the average prevalence of astigmatism in adults is about 40.4%. Based on the latest report, the use of contact lenses in Indonesia keeps increasing up to 15% per year, and 18-year-old women dominate it[3]. Therefore, good care and maintenance are prominent in using contact lenses. Besides, contact lenses cover the eye's outermost layer; when it is left over time, the contact lenses will be dirty and cloudy[8]. It is advisable for contact lens users to perform contact lens care according to the recommended procedures when wearing contact lenses in everyday life[9].

METHOD

This research employed descriptive analysis with a cross-sectional study. Data collection was performed by using a questionnaire via *Google Forms.* The population referred to all students of UKRIDA, Faculty of Medicine, intake 2016, who used contact lenses.

The questionnaire to examine the knowledge level referred to Tania, 2019, regarding the status of knowledge about using contact lenses among students of SMA Negeri 3 Medan[10]. Meanwhile, the questionnaire about the behavior level referred to Nibroos, 2018 regarding using soft contact lenses.[11]

In the sample size, the prevalence (P) was unknown, so this study set the p-value of 50% to maximize the multiplication of PxQ. The sample calculation obtained 97 respondents. Sampling was performed through consecutive selection; each respondent meeting the criteria was included in the study until it reached the required quantity.

This research has been approved and registered in the Ethics Commission, Number 1215/SLKE-IM/UKKW/FKIK/KE/III/2022.

RESULT

In this study, the reliability test obtained a Cronbach's Alpha value of 0.901, so the questions regarding the knowledge level were said to be highly reliable.

Meanwhile, in the column of Corrected Item-Total, each value (r-count) was compared with the value of the r-table. Then, the result of the r table was (n-2=10-2=8) = 0.730, so based on the comparison between the value of r-count and r-table, all questions about the knowledge level were valid.

In analyzing the questions about behavior, the reliability test obtained Cronbach's Alpha value of 0.901, so the questions regarding the knowledge level were said to be very good. Meanwhile, in the column of Corrected Item-Total, each value (r-count) was compared with that of the r-table. Then, the result of the r-table is (n-2=10-2= 8) = 0.601, so based on the comparison between the value of r-count and r-table, all questions about the knowledge level were valid.

Table 1. Frequency data results based on knowledge level about the use of contact lenses

Knowledge	Knowledge Level Frequency (n)	Percentage
Good > 7.5 or > 75%	91	94 %
Average 6 – 7.5 or 60-75%	6	6 %
Poor < 6 or < 60%	0	0 %
Total	97	100 %

Based on Table 1, the above results demonstrated that, in terms of the knowledge level about the use of soft contact lenses among the students of UKRIDA, Faculty of Medicine, intake 2016, there were 91 (94%) respondents in a good category, 6 (6%) in an average. None of them (0%) were in a poor class.

Table 2. Frequency results based on knowledge level about the use of contact lenses

Behavior	Behavior Level Frequency (n)	Percentage
Good	80	83 %
Poor	17	17 %
Total	97	100 %

Table 2 above demonstrated that, regarding the behavior level regarding the use of *soft contact lenses* among students of UKRIDA, Faculty of Medicine intake 2016, 80 respondents (83%) belonged to a suitable category, and 17 students (17%) were in a poor class.

Table 3. Frequency result based on the incidence rate of a red eye on the use of contact lenses

Red-Eye Incidence	Red-Eye Incidence Rate Frequency (n)	Percentage
Yes	10	10 %
No	87	90 %
Total	97	100 %

Table 3 showed that in terms of red-eye incidence among the students of UKRIDA, Faculty of Medicine, intake 2016, only 10 (10%) respondents experienced red eyes while using soft contact lenses, and the remaining 87 (90%) did not.

DISCUSSION

The previous research conducted on students of the Faculty of Medicine, University of North Sumatra, showed that in terms of the knowledge level, 62.2% of the respondents belonged to a good category, and 37.8% were in an average class[12]. Another study on medical students at the University of Jakarta suggested that 63 (64.9%) were in a suitable category[13]. Therefore, before using contact lenses, it is advisable to consult an ophthalmologist to ensure the contact lens product corresponds to its use,

which is also completed with information regarding how to use and care for it[14]. People who use contact lenses should also understand the risks and complications of wearing contact lenses[14]. The knowledge is used to check the eyes routinely so they can recognize early dangerous symptoms that require the treatment of an ophthalmologist[15]. Contact lens users also need to check their eyes with an ophthalmologist at least twice a year to check their eye condition[15].

Contact lenses disrupt the protective function of the mucin layer, which is resistant to bacterial attachment, and inhibit the release of antimicrobial factors. During insertion, removal, and cleaning, contact lenses are often touched by the fingertips and palms of the hands, which take care of everything else around us, including the ubiquitous cell phones. As a result, the risk of colonization and eye infections is considerable[16]. And if there happens discomfort in the eyes, continuous discharge of tears or a lot of eye dirt, red eyes until there is swelling, or followed by pain, feeling excessive glare when looking at light, touching itchy or burning eyes or blurred vision, immediately remove, discard contact lenses, and consult with an ophthalmologist[17, 14].

People who use contact lenses with extended wear are highly recommended to check the presence or absence of the above symptoms regularly every morning[18]. Healthy eyes show as not red, eyes feel comfortable, and vision is good[19]. If no symptoms are left unchecked, the possibility of infection and blindness can increase up to four times[14]. Complications must be prevented by maintaining good contact lens hygiene, including not sleeping, bathing, or swimming while wearing contacts to reduce the risk of serious complications[19].

CONCLUSION

The study result shows that 91 (94%) out of 97 students of UKRIDA, Faculty of Medicine, have a good knowledge of using soft contact lenses. Regarding the behavioral level, 80 (83%) students perform good behavior regarding using soft contact lenses. On the incidence rate of red eyes, ten out of 97 students (10%) have experienced red eyes while using soft contact lenses. The remaining 87 (90%) never share it. The good knowledge and behavior towards using soft contact lenses might affect the red eye incidence rates when using soft contact lenses among the medical students of UKRIDA.

CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

REFERENCES

1. Idayati R, & Mutia F. (2016). Gambaran Penggunaan Lensa Kontak (Soft Lens) pada Mahasiswa Universitas Syiah Kuala Ditinjau dari Jenis Lensa, Pola Pemakaian, Jangka Waktu dan Iritasi yang Ditimbulkan. Jurnal Kedokteran Syiah Kuala, 16(3), 129–134. https://doi.org/10.24815/jks.v16i3.6474

2. Simanjuntak, A. A. M. (2020). Durasi Penggunaan Lensa Kontak dengan Risiko Terjadinya Keratitis: Tinjauan Pustaka. Intisari Sains Medis, 11(1). https://doi.org/10.15562/ism.v11i1.561

3. Solomon A. (2016). Allergic Manifestations of Contact Lens Wearing. Current Opinion in Allergy and Clinical Immunology. 16(5):492-7.

4. Alipour F, Khaheshi S, Soleimanzadeh M, Heidarzadeh S, Heydarzadeh S. (2017) Contact Lens-Related Complications: A review. Journal of ophthalmic & vision research. 12(2):193.

5. Ibrahim NK, Seraj H, Khan R, Baabdullah M, Reda L. (2018). Prevalence, Habits, and Outcomes of Using Contact Lenses among Medical Students. Pakistan Journal of Medical Sciences. 34(6):1429.

6. Stapleton F, Bakkar M, Carnt N, Chalmers R, Vijay AK, Marasini S, Ng A, Tan J, Wagner H, Woods C, Wolffsohn JS. (2021). CLEAR-Contact Lens Complications. Contact Lens and Anterior Eye.44(2):330- 67.

7. Prasannakumary C, Jyothy PT. (2017). Complications of Contact Lens. Kerala Journal of Ophthalmology. 29(2):68-70

8. Re, S. N., Udijono, A., Wuryanto, A., & Setyawan, H. (2020). Faktor- Faktor yang Berhubungan dengan Praktik Penggunaan Lensa Kontak dalam Pencegahan Komplikasi Gangguan Kesehatan Mata Pada Mahasiswa Universitas Diponegoro. MEDIA KESEHATAN MASYARAKAT INDONESIA, 19(1). https://doi.org/10.14710/mkmi.19.1.57-61

9. Amalia, H. (2018). Lensa kontak: Keamanan dan Pencegahan Komplikasi. Jurnal Biomedika Dan Kesehatan, 1(3), 170–171. https://doi.org/10.18051/jbiomedkes.2018.v1.170-171

10. Tania, PT. (2019). Gambaran Tingkat Pengetahuan tentang Penggunaan Lensa Kontak pada Siswi SMA Negeri 3 Medan. Diakses pada https://repositori.usu.ac.id/handle/123456789/26794 pada tanggal 13 januari 2022

11. Nibroos, N. (2018). Gambaran Perilaku Pemakaian Lensa Kontak Lunak di Eka Hospital Bsd pada Tahun 2018. Diakses pada https://repository.uinjkt.ac.id/dspace/bitstream/123456789/53875/1/NABILA%20NIBROOS%20-%20FK.pdf pada tanggal 13 januari 2022.

12. Narainasamy, D., & Eyanoer, P. C. (2013). Tingkat Pengetahuan Mahasiswa/i Fakultas Kedokteran yang Menggunakan Lensa Kontak tentang Penjagaan yang Benar. The Knowledge of Medical Students Using Contact lens on its Proper Care. E-Journal FK USU, 1(1).

13. Wahdini, S., D. Shanti, A., & M. Sinaga, H. (2019). Pengetahuan dan Perilaku Mahasiswa Kedokteran di Sebuah Universitas di Jakarta tentang Penggunaan dan Perawatan Lensa Kontak. Jurnal Ilmu Kedokteran, 13(1). https://doi.org/10.26891/jik.v13i1.2019.67-72

14. DEVI PRATIWI. (2020). Analisis Penggunaan Lensa Kontak Mata pada Remaja. Journal of Chemical Information and Modeling, 53(9).

15. Handini, W. (2017). Hubungan Perawatan Lensa Kontak Dengan Penyakit Mata Yang Ditimbulkan Oleh Lensa Kontak. Jurnal Kesehatan Pena Medika, 7(2), 127–130.

16. Lua'i AI, Wisam S, Sana J. (2021). Antimicrobial Susceptibility of Bacterial Isolates from the Conjunctiva, Storage Cases and Mobile Phones of University Students Using Contact Lenses. Contact Lens and Anterior Eye.44(1):62-6.

17. Lalitha, C. S., Nayak, B., Hallur, V., & Kharolia, A. (2020). Invasion of the Therapeutic Contact Lens by a Rare Fungal Species Presenting as the Acute Red Eye: A Case Report. Indian Journal of Ophthalmology, 68(11). https://doi.org/10.4103/ijo.IJO_1634_20

18. Sitompul, R. (2015). Perawatan Lensa Kontak untuk Mencegah Komplikasi Ratna Sitompul. EJournal Kedokteran Indonesia, 3(1). https://doi.org/10.23886/ejki.3.4811

19. Kates MM, Tuli S. (2021). Complications of Contact Lenses. JAMA.11;325(18):1912-.