iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** IX **Month of publication:** September 2022

DOI: https://doi.org/10.22214/ijraset.2022.46546

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue IX Sep 2022- Available at www.ijraset.com

Prevalence of Symptomatic Dry Eye Disease Among Above 18 to 50 Years of Age

Dr. Priti Yadav[1], Meghna Verma[2], Jaya Singh[3]
[1]*Assistant professor, Uttar Pradesh University of Medical Sciences, Saifai, Etawah, UP, India*
[2]*Assistant professor, Department of Optometry, SCPM college of nursing and paramedical science, Haripur, Gonda, UP, India*
[3]*Optometry scholar, SCPM college of nursing and paramedical science, Haripur, Gonda, UP, India*

Keywords: Tear film, dry eye disease, questionnaire survey, observational study. Ocular surface disease index, prevalence, dry eye disease, optometry, Symptomatic dry eye disease.

I. INTRODUCTION

When you blink, a film of tears spreads over the eye. Tears provides lubrication, reduce the risk of eye infection, wash away foreign material in the eye and keep the surface of the eye smooth and clear. So, the tear film is important for good vision. Tear film consists of three layers – lipid layer, aqueous layer and mucous layer.

Outer lipid layer makes the tear surface smooth and keeps tear from drying up too quickly. This layer is made in meibomian glands. Middle aqueous layer clean the eye, washing away particles that do not belong in the eye. This layer comes from the lacrimal gland. Inner mucous layer helps spread the watery layer over the surface of eye and keep it moist. This layer is made in the conjunctiva. Normally, our eyes constantly make tears to stay moist. These layers keeps cornea and conjunctiva moist, washes away debris, prevents infection and provides oxygen to the cornea.

Excess tears in the eyes flow into small drainage ducts in the inner corners (puncta) of the eyelids, which drain into the back of the nose. When tear production and drainage is not in balance, dry eye can occur.

Dry eye disease is a common condition that occurs when your tears are not able to provide adequate lubrication for your eyes. Dry eye disease is known as dry eye syndrome or keratoconjunctivitis sicca. The prevalence of dry eye in India is 34%, which is higher than global prevalence. Dry eye is a localized autoimmune disease originating from an imbalance in the protective immunoregulatory and proinflammatory pathways of the ocular surface. DED is a disorder of the tear film due to tear deficiency or excessive evaporation, which causes damage to the ocular surface and is associated with symptoms of ocular discomfort. Over time, corneal scratches due to dry eye can produce scarring and result in severe vision loss.

A. Objective

The purpose of this population based cross sectional study was to evaluate the prevalence of symptoms of dry eye disease among paramedical students as well as professionals.

B. Need Of The Study

Dry eye symptoms is the most common type of ocular problems encountered in the daily practice in today's works. Although, these symptoms lead to one of the most common symptoms decreasing the quality of vision. It is the purpose of present study to examine the prevalence of dry eye symptoms and their association with ocular and general parameters and increased digital work among students as well as professionals.

II. METHODOLOGY

A. Materials & Methods

A cross – sectional survey was done on 292 general educated peoples of the Eastern UP, India. It was done in the time period of April to June 2022. It was done through a questionnaire - based survey using google form. A self -administered questionnaire in English language was made containing multiple choice questions. Patients who participated in this study were between 19 to 50 years of age. All participants were guaranteed anonymity and confidentiality of the responses obtained. Approval was taken before the study from all persons who participating in this study.

B. Study Site
SCPM College of nursing and paramedical sciences, Gonda, UP.

C. Study Design
Observational/ Cross-sectional study

D. Study Population
Students from SCPM paramedical college, Haripur, Gonda
Students of UPUMS, Saifai, Etawah.

E. Study Duration
It was conducted between April 2022 to June 2022.

F. Sample Size
It was included 292 participants from questionnaire/ online survey.

G. Search Engine
Pubmed, Google scholar

H. Sample Criteria
There are two types of criteria-
1) Inclusion Criteria
18-50 years of age, who are willing to participate in the study.
Students and professionals, who are willing to participate in the study.

2) Exclusion Criteria
Students and professionals, who are not willing to participate in the study.
It was excluded population, age < 18 years or > 50 years.
The questionnaire prepared for this survey is divided in 3 sections. Section A is common for approval. Section B is common for all the participants in which some demographic information were asked to the participants. Section C is for dryness details.

The questionnaire prepared for this survey is the following-

- *Section A (for participation)*

It was related to participation.

- *Section B (for demographic details)*

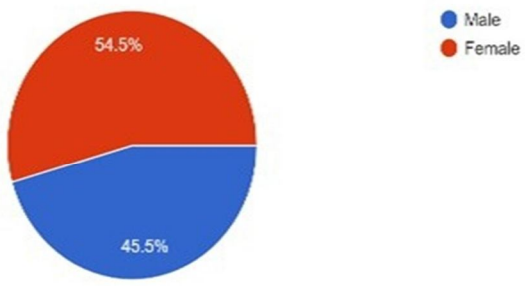
Name
Age/gender
State/district
Educational qualification
Occupation

- *Section C (for dryness details)*

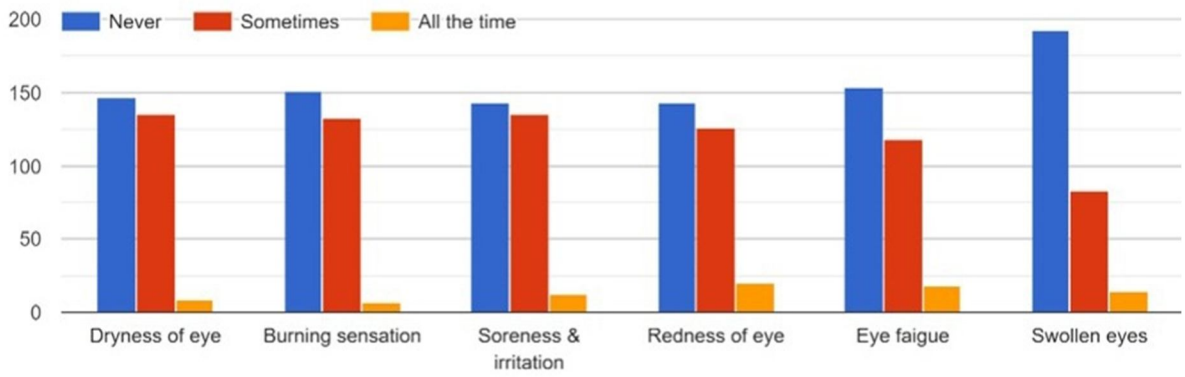
Few questions were asked to the study population such as ant type of systemic history, ocular history, any type of seasonal allergies, type of symptoms during allergy, any limitation of your eyes, feeling uncomfortable with your eyes, severity of your symptoms, duration of digitally display use, any bothering by screen light during digital work
All the data was obtained through the survey statistical analysis was done. The result articulated through the survey was denoting in percentile format.

III. RESULT

Questionnaire were distributed to participants**.** Approval was taken by section A of questionnaire and before the extraction of data. 292 responses were obtained through the questionnaire. Among the participants, 133 (45.5%) were male and 159 (54.5%) were female. Patients who participated in this study were between 19 to 50 years of age. A comparison of statistical analysis on 292 participants (n=292).

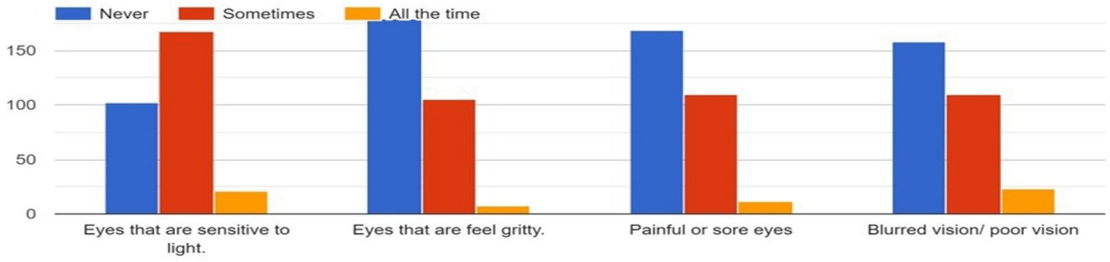


(Graph: 1) Male Female ratio



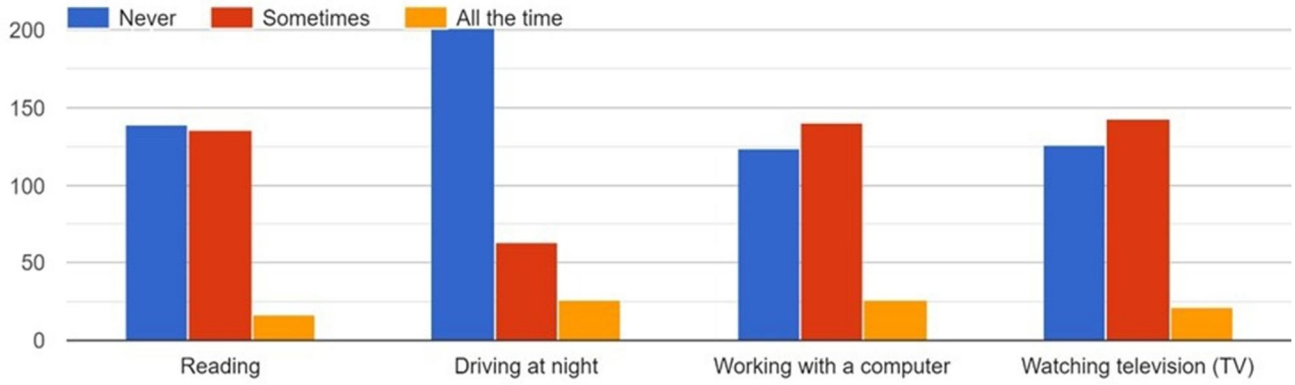
(Graph: 2) Symptoms of eyes

Graph 2 shows that, there is most common symptom is dryness of eye and sometime feels burning sensation, irritation, redness and eye fatigue and 10-20% all the time feels these symptoms



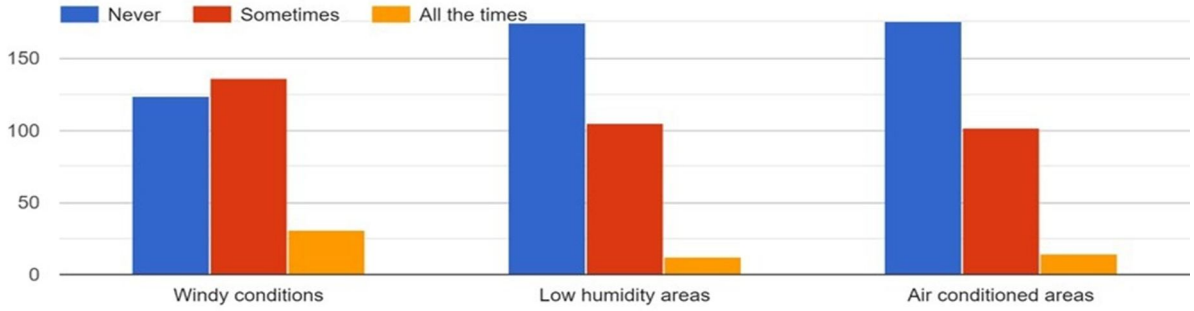
(Graph: 3)

Graph 3 stated that, most common ocular symptom was sensitivity to light, experienced at least some of the time, reported by 80% of participants, 40-45% participants feel grittiness, pain/soreness and blurred vision. 20% participants feel all the time blurred vision and sensitive to light.



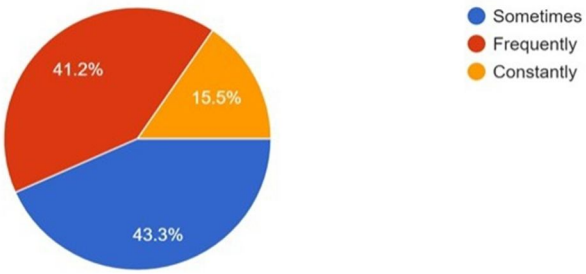
(Graph: 4) Eye limitation

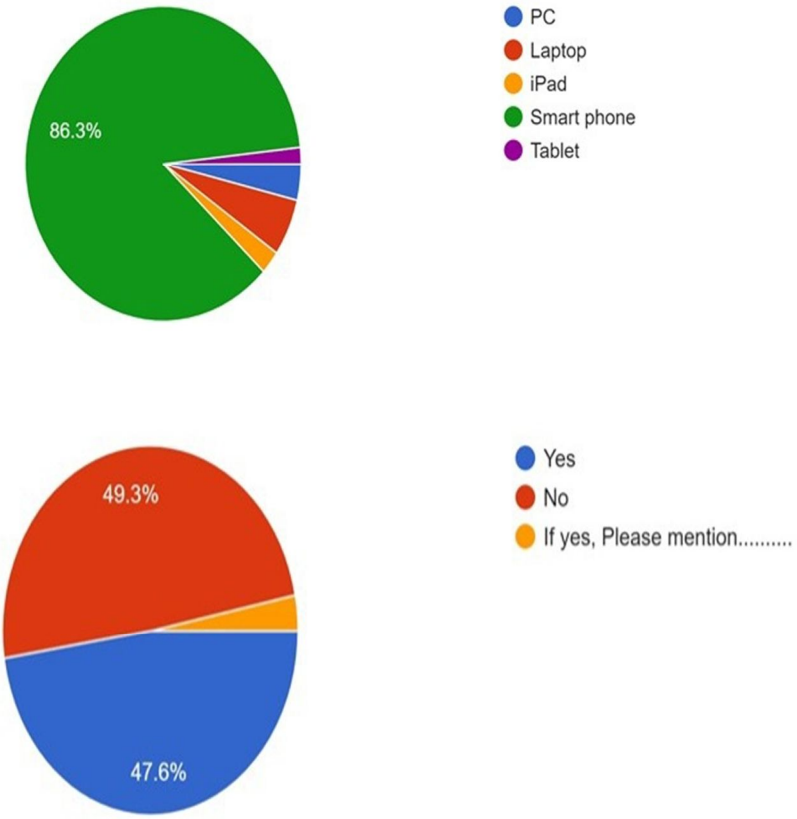
65- 70% of patients faced problems in reading, and working with computer and watching television (TV) while 15-20 % patients, all the time, faced problems with reading, working with computer, driving at night and watching TV.



(Graph: 5) Uncomfortable situations with your eye

Most affected vision related activity was reading (65-70%), most common environmental trigger of dry eye symptoms was windy conditions (60%), experienced some of the time and (20%) experienced all of the time, by participants.





Graph: 6 (I, II, III)

Graph 6 (I, II) 41.2% of participants most of time spent on social media or digital work by the use of smartphone (86.35) while 47.6% of participants feel bothering by smartphone screen light during digital work, Graph 6(III).
Graph 6 (I, II, III) shows that prolonged use of visual display (smartphones) has been suggested as an important risk factor for dry eye disease (DED)

IV. DISCUSSION

The conducted study shows that people have so many symptoms. Most common ocular symptoms of dry eye disease was sensitivity to light, most affected vision related activity was reading, most common environmental trigger of dry eye symptoms was windy conditions. The commonest symptom was dry eyes, followed by burning sensation, irritation, redness, eye fatigue and blurred vision. The possible risk factors such as age, duration and type of digitally work, environmental factors. These symptoms lead to one of the most common symptoms decreasing the quality of vision. In view of their importance for daily life of students. In practice, it is the purpose of present study to examine the prevalence of dry eye symptoms and their association with general and ocular parameters among students with their profession. An additional goal is to investigate its relationship with modern lifestyles and increased digital work in student's life.

V. CONCLUSION

The study "Prevalence of symptomatic dry eye disease among above 18 years of age groups" is very helpful. Everyone who participated in this survey was well educated. Dry eye disease leading to a clinical diagnosis or severe symptoms is prevalent among young and middle age peoples. A classification of dry eye disease based on the distribution of risk factors was recommended for clinical use. The condition is more prevalent among prolonged screen users. Uses of prolonged screen user was a common dry eye risk factors in both female and male genders.

The huge burden of dry eye disease (DED) is eastern Uttar Pradesh, India calls for more public health attention and actions. Relevant measures directed against the modifiable risks could provide a positive impact on public health and quality of life of eastern UP peoples. Improved epidemiological studies on dry eye disease (DED) prevalence are still urgently needed.

VI. ACKNOLEDGEMENTS

Author would like to thanks who have guided greatly till the execution of this article. We sincerely thanks the rural and urban subjects for their participation in the study. Authors also grateful to Authors/ Editors/ Publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

REFERENCES

[1] RouenPA, White ML. Dry Eye Disease: Prevalence, Assessment, and Management. Home Healthc Now. 2018 Mar/Apr;36(2):74-83. doi:10.1097/NHH.0000000000000652. PMID: 29498987.

[2] Farrand KF, Fridman M, Stillman IÖ, Schaumberg DA. Prevalence of Diagnosed Dry Eye Disease in the United States Among Adults Aged 18 Years and Older. Am J Ophthalmol. 2017 Oct;182:90-98. doi: 10.1016/j.ajo.2017.06.033. Epub 2017 Jul 10. PMID: 28705660.

[3] Uchino M, Nishiwaki Y, Michikawa T, Shirakawa K, Kuwahara E, Yamada M, Dogru M, Schaumberg DA, Kawakita T, Takebayashi T, Tsubota K. Prevalence and risk factors of dry eye disease in Japan: Koumi study. Ophthalmology. 2011 Dec;118(12):2361-7. doi: 10.1016/j.ophtha.2011.05.029. Epub 2011 Sep 1. PMID: 21889799.

[4] Uchino M, Schaumberg DA, Dogru M, Uchino Y, Fukagawa K, Shimmura S, Satoh T, Takebayashi T, Tsubota K. Prevalence of dry eye disease among Japanese visual display terminal users. Ophthalmology. 2008 Nov;115(11):1982-8. doi: 10.1016/j.ophtha.2008.06.022. Epub 2008 Aug 16. PMID: 18708259.

[5] Uchino M, Uchino Y, Dogru M, Kawashima M, Yokoi N, Komuro A, Sonomura Y, Kato H, Kinoshita S, Schaumberg DA, Tsubota K. Dry eye disease and work productivity loss in visual display users: the Osaka study. Am J Ophthalmol. 2014 Feb;157(2):294-300. doi: 10.1016/j.ajo.2013.10.014. Epub 2013 Nov 1. PMID: 24184225.

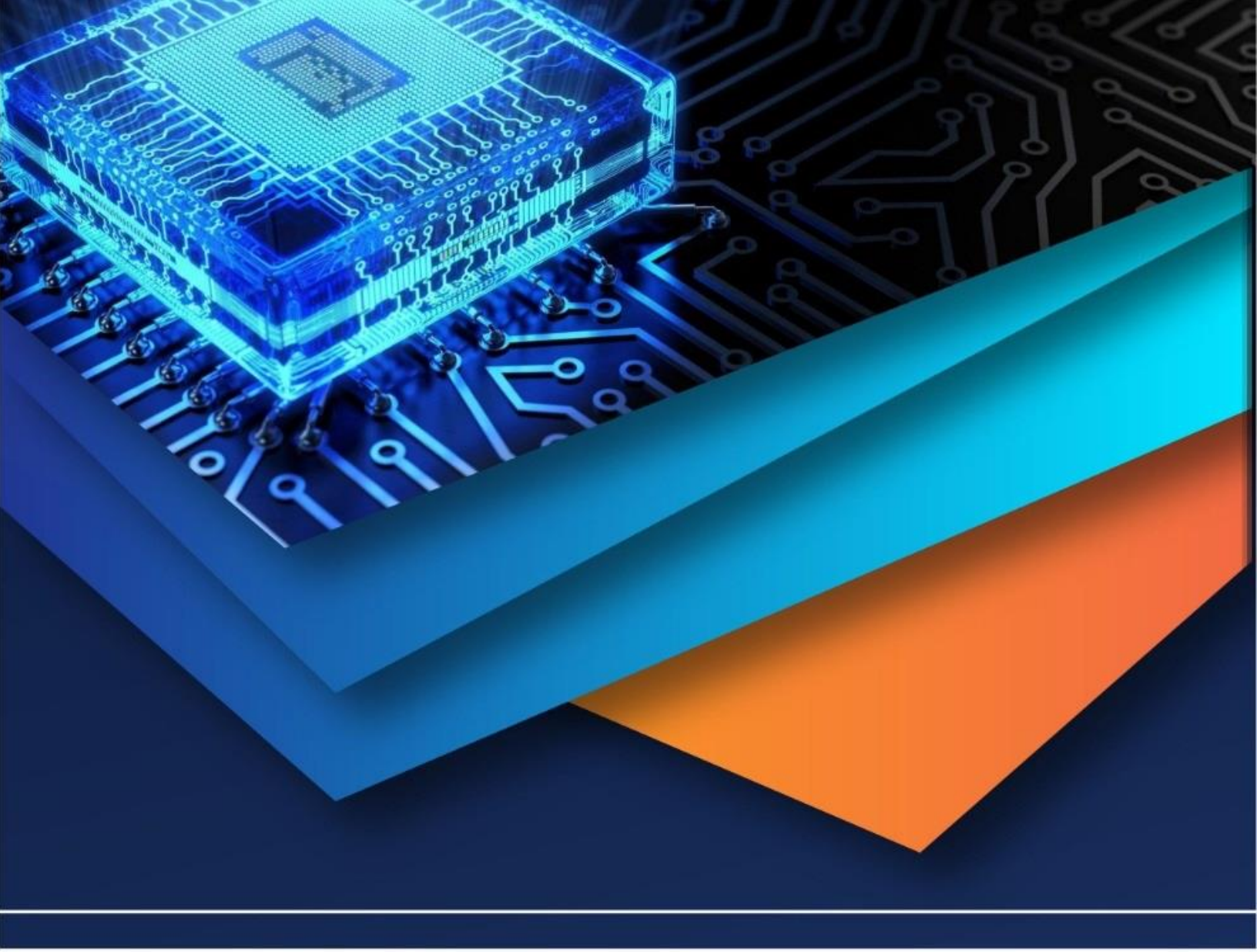
[6] Abdulmannan DM, Naser AY, Ibrahim OK, Mahmood AS, Alyoussef Alkrad J, Sweiss K, Alrawashdeh HM, Kautsar AP. Visual health and prevalence of dry eye syndrome among university students in Iraq and Jordan. BMC Ophthalmol. 2022 Jun 14;22(1):265. doi: 10.1186/s12886-022-02485-w. PMID: 35698109; PMCID: PMC9192247.

[7] Chatterjee S, Agrawal D, Sanowar G, Kandoi R. Prevalence of symptoms of dry eye disease in an urban Indian population. Indian J Ophthalmol. 2021 May;69(5):1061-1066. doi: 10.4103/ijo.IJO_1796_20. PMID: 33913832; PMCID: PMC8186626.

[8] Song P, Xia W, Wang M, Chang X, Wang J, Jin S, Wang J, Wei W, Rudan I. Variations of dry eye disease prevalence by age, sex and geographic characteristics in China: a systematic review and meta-analysis. J Glob Health. 2018 Dec;8(2):020503. doi: 10.7189/jogh.08.020503. PMID: 30206477; PMCID: PMC6122008.

[9] Li J, Zheng K, Deng Z, Zheng J, Ma H, Sun L, Chen W. Prevalence and risk factors of dry eye disease among a hospital-based population in southeast China. Eye Contact Lens. 2015 Jan;41(1):44-50. doi: 10.1097/ICL.0000000000000064. PMID: 25232992.

[10] Zhang X, Wang L, Zheng Y, Deng L, Huang X. Prevalence of dry eye disease in the elderly: A protocol of systematic review and meta-analysis. Medicine (Baltimore). 2020 Sep 11;99(37):e22234. doi: 10.1097/MD.0000000000022234. PMID: 32925801; PMCID: PMC7489743.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY