Journal of Pharmaceutical Research International

33(60B): 1119-1130, 2021; Article no.JPRI.77539
ISSN: 2456-9119
(Past name: British Journal of Pharmaceutical Research, Past ISSN: 2231-2919, NLM ID: 101631759)

Awareness of Dry Eyes Disease among Dental Students - A Survey

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2021/v33i60B34723

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/77539

Original Research Article

Received 15 October 2021
Accepted 20 December 2021
Published 23 December 2021

ABSTRACT

Introduction: Dry eye is a common condition that affects 85 percent of adult students worldwide, has no effective treatment, and results in significant loss of productivity at work.
Aim: This study aims to assess the knowledge and awareness of dental students about dry eye disease.
Materials and Methods: An online google form was used to distribute a questionnaire based study with 12 questions to 100 people. The study began with the participants being briefed on the trial's details. The study used a 100-person sample size. The information was gathered and statistically examined.
Results: In this study, 96% of the students were aware that lack of sleep causes Dry Eyes Disease and 4% of the students were unaware of it. Around 83% of the students were aware that dry eye is reversible and 17% of the students were not aware of it. The overall result was positive, most of them were aware of the dry eye disease. This proves an outright positive result.
Conclusion: The present study shows that the students under 75% were aware of Dry Eyes Disease but 25% were unaware of dry eye disease. There is no sufficient awareness among dental students. So, by this survey, we create more awareness among dental students.

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Keywords: Awareness; dry eye disease; dental students; innovative method.

1. INTRODUCTION

Dry eye disease (DED) is a chronic ocular pathology and a major global health concern with symptoms such as burning, photophobia, weeping, and grittiness. Visual Display Terminal use is one of the etiologies of dry eye [1]. Working for hours on a computer monitor, laptop, or digital display has become commonplace in today's workplace. Patients with DED (dry eye disease) have difficulty doing daily activities, lowering their quality of life [2]. When the eye does not produce enough tears or when the tears evaporate too quickly, dry eye develops. Keratoconjunctivitis sicca refers to a severe form of dry eye illness [3].

Reduced tear production and increased tear evaporation are two causes of dry eyes. Dry eye disease is caused by a variety of factors that cause the healthy tear film to be suspended [4]. Discomfort, visual disturbance, eye dryness, irritation, foreign body sensation, light sensitivity, and itching are all signs of tear film unpredictability and ocular surface inflammation, which eventually diminish a person's quality of life [5]. The tear film was once thought to be made up of three distinct layers: an innermost mucin layer covering the corneal and conjunctival epithelium, an intermediate aqueous layer produced by the lacrimal glands, and an outermost lipid layer produced by the meibomian glands of the eyelids; however, this theory has been significantly revised [6]. A metastable tear film, consisting of an aqueous gel with a gradient of mucin content decreasing from the ocular surface to the under-surface of the outermost lipid layer, is the current notion of the tear–the ocular surface structure [7]. The latter structure interacts with the underlying aqueous and mucin components, preventing aqueous tears from evaporating and contributing to the tear film's stability between blinks [8].

Dry Eyes Disease is essentially a lifestyle issue; prolonged staring and reduced blinking as a result of activities such as reading and exposure to air conditioning can cause tear film instability [9]. This distribution normally retains the surface of your eyes lubricated, smooth, and clear. Risk factors for the evolution of dry eye disease incorporate advanced age, female sex, hormonal imbalance, autoimmune disease, abnormal corneal innervation, vitamin deficiency, environmental stress, contact lens use, infection, medication use, and ophthalmic surgery. Dry Eyes Disease can be caused by deficiency of the tear film components and can be systemic diseases, including Sjogren syndrome, Lupus, and Stevens - Johnson syndrome [10]. The majority of patients with Dry Eyes Disease experience minor discomfort with no long-term consequences. However, if the problem is not addressed or gets serious, it can lead to consequences that result in eye injury and reduced vision [11].

Dry eye complications include eye irritation, corneal abrasion, corneal ulcers, and vision loss. Aside from the use of topical eye drops, there is a need for more than one modality of treatment for lenient-to-average dry eye patients. In fact, only a small percentage of dry eye patients utilise artificial tears on a regular basis. Tear evaporation may be reduced by wearing wrap-around glasses that fit tight to the face. Standard objective testing for dry eye illness have flaws as well [12]. The Schirmer test, which has been widely used in clinical settings for over a century, has been chastised for its high variability and tendency to show considerable intrasubject, day-to-day, and visit-to-visit variance [13]. The tear emissions reduce in more advanced diseases, the results become more reproducible. This study aims to assess the knowledge and awareness of dental students about dry eye disease.

2. MATERIALS AND METHODS

An online survey was done using a self-administered questionnaire with a sample size of 100 dentistry students. The institutional review board granted ethical approval prior to the start of the trial. The questionnaire contains questions that aid in the collection of socioeconomic data, questions that aid in the education of participants, and questions about facts. Three pathologists validated the questionnaire. To reduce sample bias, measures such as randomly selecting participants, taking precautions to avoid asking irrelevant questions, and imposing constraints on participants are implemented. The Google Forms web tool was used to distribute the questionnaire. The statistical software SPSS VERSION 23 was used for descriptive analysis. The results were analyzed and represented in a pie chart and bar chart.

3. RESULTS AND DISCUSSION

In the present survey, many of them were aware of the importance of dry eye disease. The survey results were collected and statically analyzed. The majority 77% of the survey population responded to the abrasion of the corneal surface, (11%) responded to eye inflammation and (11%) responded to all of the above for dry eye damage (Fig. 1). Similar findings were not found in a previous study [14].

Around 98% of participants were aware that drinking water helps the dry eye and 2% were unaware of it (Fig. 2), which was similar to the findings of the previous study [15]. Around 96% of people were aware that lack of sleep causes dry eyes and 4% were unaware of it (Fig. 3) which was similar to the statement proved in the previous study [16]. Around 83% of people were aware that dry eyes are reversible and were unaware of it (Fig. 4) which was homogenous to the existing studies [17].

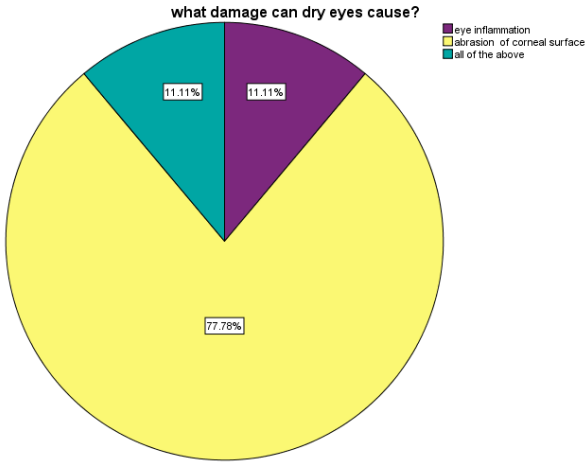

Fig. 1. Pie chart representing the percentage distribution of awareness of the causes of dry eye damage. The majority of participants (77%) responded to the abrasion of the corneal surface (yellow), (11%) responded to eye inflammation (violet) and (11%) responded to all of the above (violet)

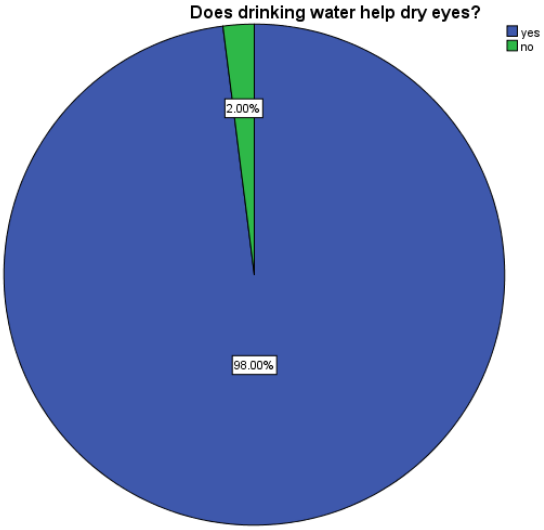

Fig. 2. Pie chart representing the percentage distribution of awareness among drinking water helps the dry eye. Majority of participants (98%) responded yes (blue); (2%) responded no (green)

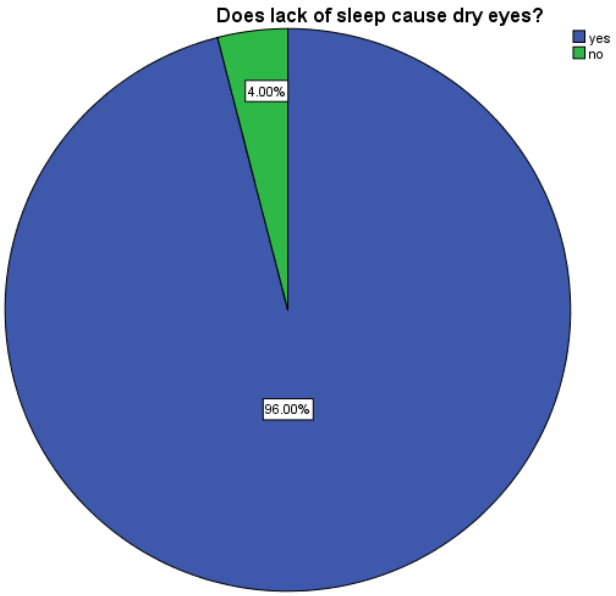

Fig. 3. Pie chart representing the percentage distribution of awareness among lack of sleep causes Dry Eyes Disease. Majority of participants (96%) responded yes (blue); (4%) responded no (green)

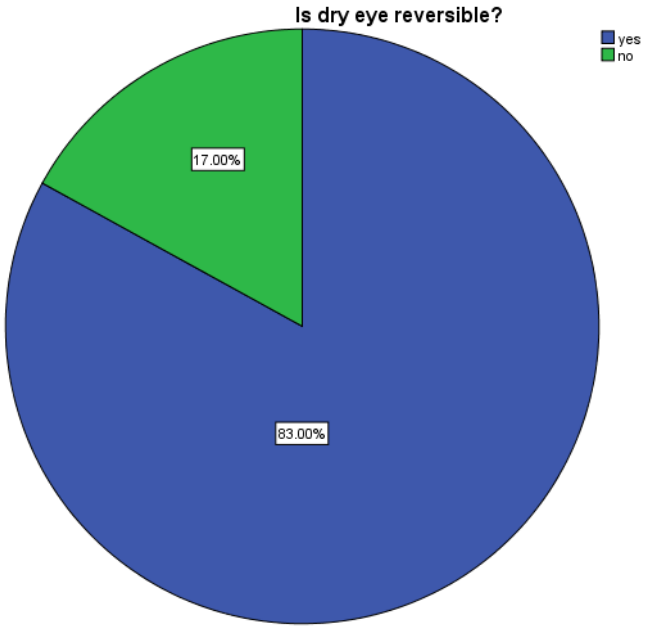

Fig. 4. Pie chart representing the percentage distribution of awareness among Dry Eyes Disease is reversible. Majority of participants (83%) responded yes (blue); (17%) responded no (green)

The prevention of Dry Eyes Disease was that 76%responded to all of the above, 19% responded to take eye during long tasks, 4% responded to add moisture to the air. Majority of the participants prefer all the above (Fig. 5), which was also stated by previous studies [17].

The best vitamins for dry eye was that 89% responded to omega-3 fatty acids, 9% responded to vitamin C, 1%responded to vitamin-D. Majority of the participants preferred omega-3 fatty acids (Fig. 6), which was similar to findings of the previous studies [4].

The risk factors of Dry Eyes Disease was that 42% responded to all of the above; 26% responded to xerophthalmia; 16% responded antihistamine; 16% responded to rheumatoid arthritis. Majority of the participants (Fig. 7). A similar finding was also found in a previous study [19].

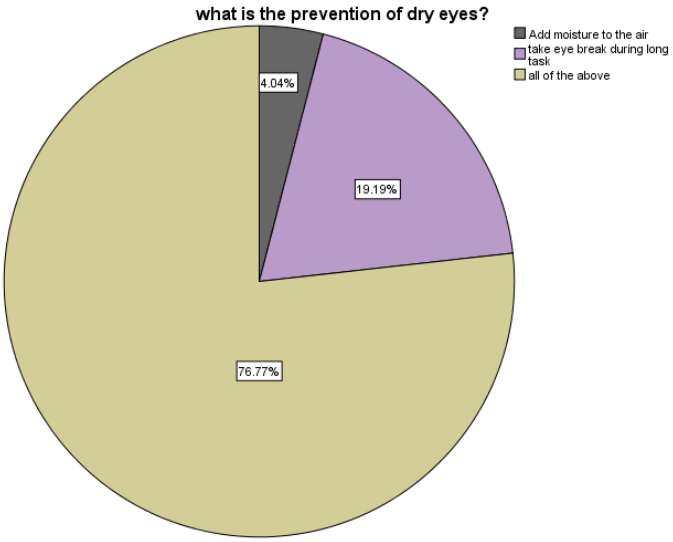

Fig. 5. Pie chart representing the percentage distribution of awareness among prevention of Dry Eyes Disease. The majority of participants (76%) responded to all of the above (ye); (19%) responded to take eye during long tasks (light violet); (4%) responded to add moisture to the air (grey).

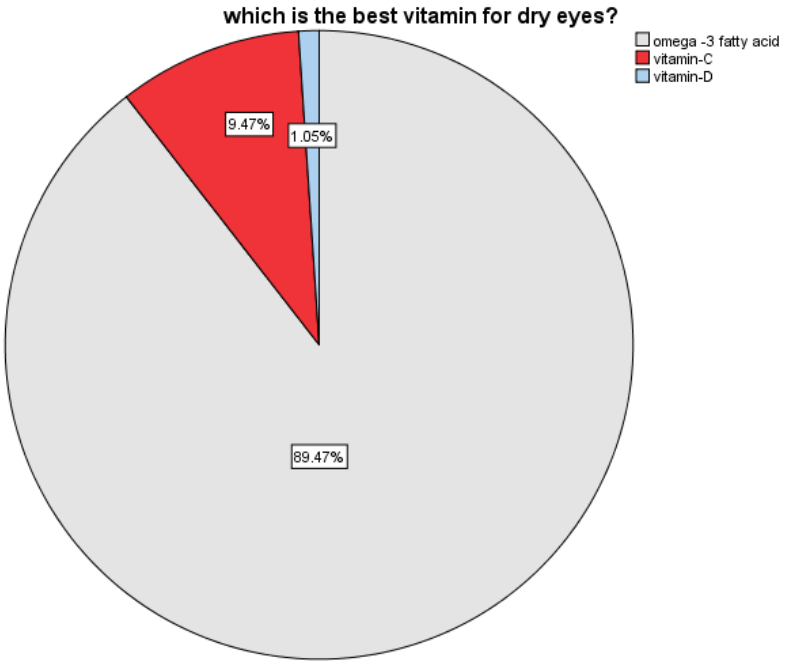

Fig. 6. Pie chart representing the percentage distribution of awareness among best vitamins for Dry Eyes Disease. Majority of participants (89%) responded to omega-3 fatty acids (white); (9%) responded to vitamin C (red); (1%) responded to vitamin-D (blue)

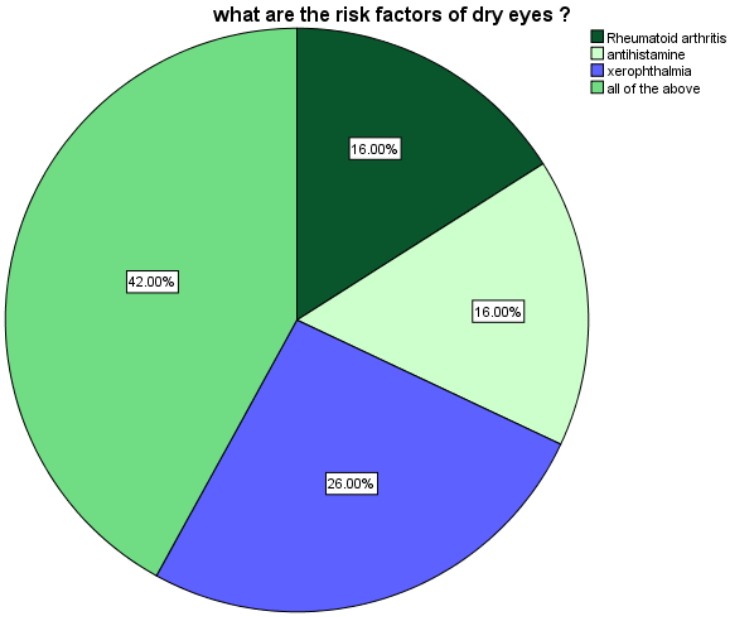

Fig. 7. Pie chart representing the percentage distribution of awareness among risk factors of Dry Eyes Disease. Majority of participants (42%) responded to all of the above (apple green); (26%) responded xerophthalmia (blue); (16%) responded antihistamine (sage green); (16%) responded rheumatoid arthritis (dark green).

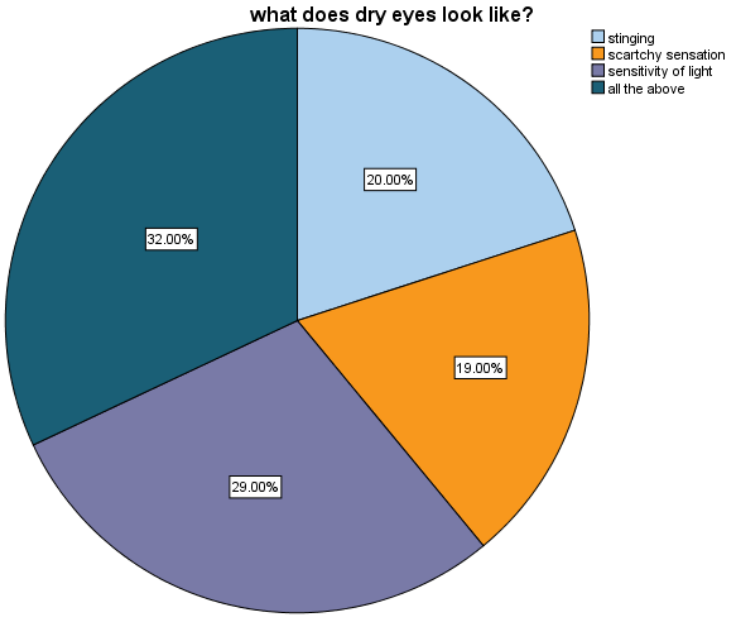

Fig. 8. Pie chart representing the percentage distribution of awareness among Dry Eyes Disease look. Majority of participants (32%) responded to all of the above (olive green); (29%) responded to sensitivity of light (grey); (20%) responded to stinging (light blue); (19%) responded to scratchy sensation (orange)

The Dry Eyes Disease look was that 32% responded to all of the above ; 29% responded to sensitivity of light ; 20% responded stinging ; 19% responded to scratchy sensation .Majority of participants prefer all of the above (Fig. 8) as shown by the previous study. In this study, an

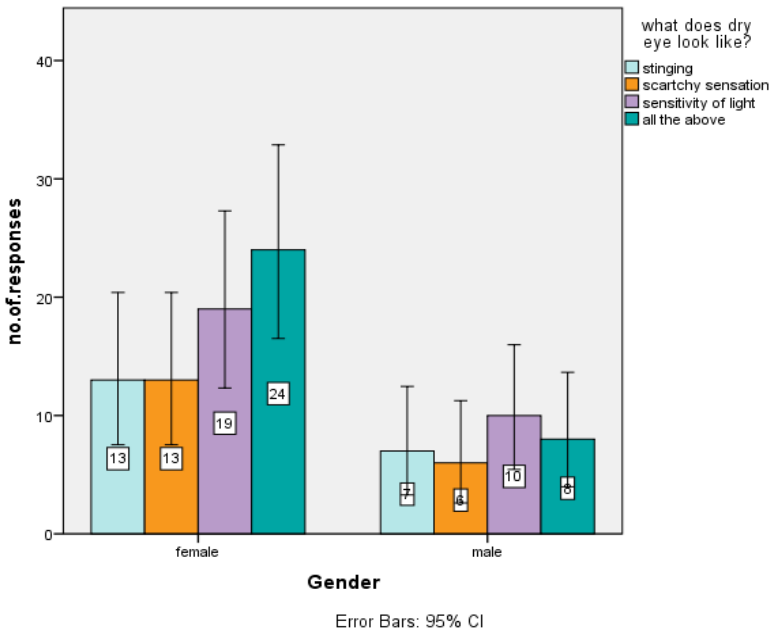

Fig. 9. Bar chart represents the association between gender and awareness of dry eye look. The X-axis represents gender and Y-axis represents the percentage of participants who were aware 32% responded to all of the above (olive green) ; 29% responded to the sensitivity of light (grey); 20% responded stinging (light blue); 19% responded to scratchy sensation (orange).Pearson's Chi-Square: 0.836, p-value: 0.174 (>0.05) hence not statistically significant

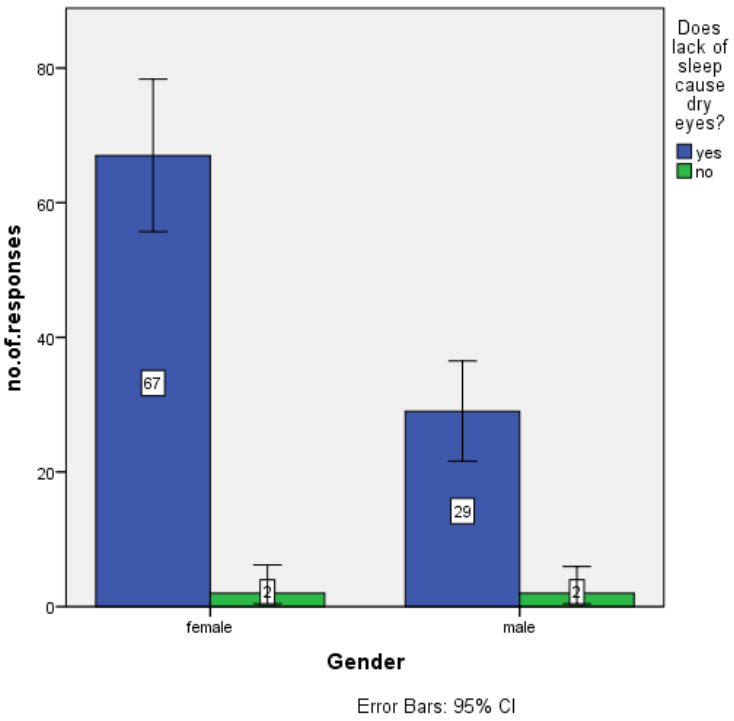

Fig. 10. Bar chart represents an association between gender and awareness of lack of sleep causes Dry Eyes Disease. The X-axis represents gender and Y-axis represents the percentage of participants who were aware 96% responded yes (blue); (4%) responded no (green).Pearson's Chi-Square: 0.528, p-value: 0.130 (>0.05) hence not statistically significant

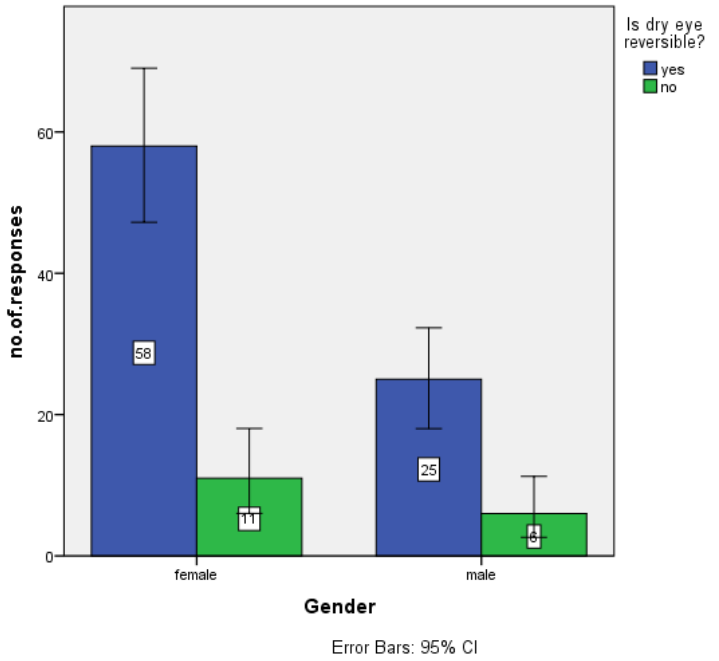

Fig. 11. Bar chart represents an association between gender and awareness of Dry Eyes Disease is reversible. The X-axis represents gender and the Y-axis represents the percentage of participants who were aware 83% responded yes (blue); 17% responded no (green). Pearson's Chi-Square: 0.373, p-value: 0.285 (>0.05) hence not statistically significant

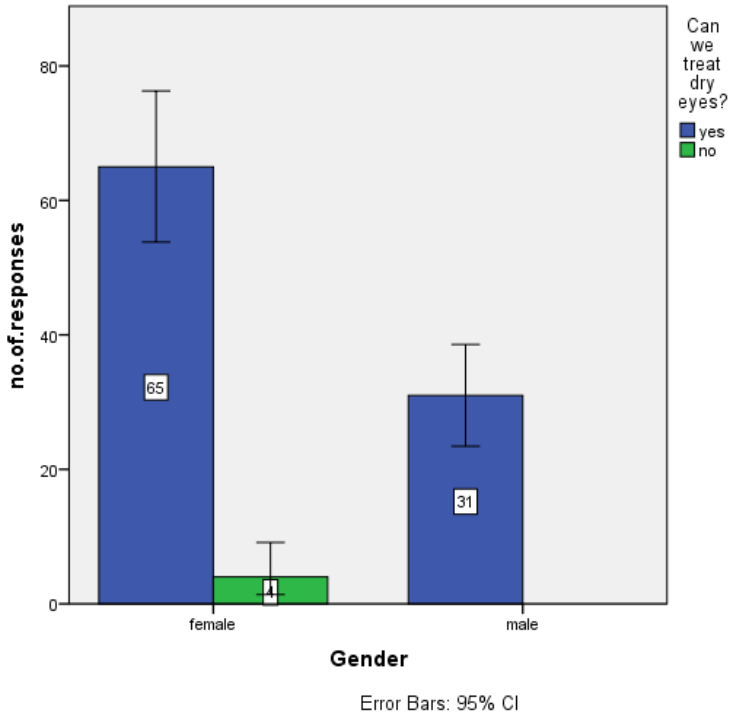

Fig. 12. Bar chart represents an association between gender and awareness of Dry Eyes Disease can be treated. The X-axis represents gender and Y-axis represents the percentage of participants who were aware 96% responded yes (blue); 4 % responded no (green). Pearson's Chi-Square: 0.382, p-value: 0.536 (>0.05) hence not statistically significant

association between gender and awareness of dry eye look was done using the Chi-Square test. Out of 69% of the participants were aware, females were more aware than males (Fig. 9). Association between gender and awareness lack sleep causes Dry Eyes Disease as done using Chi-Square test. Out of 75% of the participants were aware, females were more aware than males (Fig. 10), Association between gender and awareness of Dry Eyes Disease is reversible as done using the Chi-Square test. Out of 73% of the participants were aware, females were more aware than males (Fig. 11) Association between gender and awareness Dry Eyes Disease can be treated as done using Chi-Square test. Out of 96% of the participants were aware, females were more aware than males (Fig. 12). These findings were well correlated with the previous study [20-41].

The limitation of the present study is less the number of sample sizes, only a particular students was included. In future to assess awareness about the importance of dry eye among the large scale dental students and different sample students may be included.

4. CONCLUSION

The present study shows that the students under 75% were aware of Dry Eyes Disease but 25% were unaware of dry eye disease. There is no sufficient awareness among dental students. So, by this survey, we create more awareness among dental students.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

The institutional review board granted ethical approval prior to the start of the trial.

ACKNOWLEDGEMENT

The authors are thankful to Saveetha Institute of Medical and Technical Sciences, Saveetha Dental College and Hospitals, Saveetha University for giving a platform to conduct the study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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