AWARENESS OF DRY EYES AMONG DENTAL STUDENTS -A SURVEY

Running title: A survey on Dry eyes among dental students

Abstract:

Introduction: Dry eye is a highly prevalent disorder, affecting 85%of the adult population worldwide, does not have effective therapy, and causes significant loss of productivity at work.

Aim: This study aims to assess the knowledge and awareness of dental populations about dry eye disease.

Materials and Methods:-A questionnaire based study, comprising 12 questions was circulated to 100 people through an online google form. The study begins, the study detail was explained to the participants. The sample size of this study was 100. The data were collected and statistically analyzed.

Results:-In this study, 96% of the population were aware that lack of sleep causes dry eyes and 4% of the population were unaware of it. Around 83% of the population were aware that dry eye is reversible and 17% of the population 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 population under 75% were aware of dry eyes but 25% were unaware of dry eye disease. There is no sufficient awareness among dental populations. So, By this survey, we create more awareness among dental populations .

Keywords: Awareness; Dry eye disease; dental populations, innovative method.

Introduction:

Dry eye disease is a persistent ocular pathology and a vital global health problem that exhibits a plethora of symptoms such as burning, photophobia, tearing, and grittiness. One of the etiology of dry eye is visual Display Terminal use (1). Working on a computer monitor, laptops, or digital displays for hours has become a part of the modern work day. Patients with DED experience difficulties in daily routine activities thus compromising their quality of life (2). Dry

eye occurs when either the eye does not produce sufficient tears or when the tears evaporate too rapidly. Dry eye disease is also known as keratoconjunctivitis sicca(3).

Dry eye etiology includes diminished tear production and increased evaporation of tears. Dry eyes are caused by a diversity of reasons that suspend the healthy tear film. Tear film unpredictability and ocular surface inflammation give rise to symptoms of discomfort, visual disturbance, eye dryness, irritation, foreign body sensation, light sensitivity, and itching, all of which eventually reduce a person's quality of life(4) .Frequently , the tear film has been thought to comprised of three discrete layers, with an innermost mucin layer covering the corneal and conjunctival epithelium, an intermediate aqueous layer produced by the lacrimal glands, and an outermost lipid layer, the product of the meibomian glands of the eyelids; this concept has been revised substantially(5). The contemporary concept of the tear–the ocular surface structure is that of 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(6). The latter structure interacts with the underlying aqueous and mucin components, retarding evaporative loss of aqueous tears and contributing to the stability of the tear film between blinks(7).

Essentially, dry eyes can be a lifestyle problem; prolonged gazing and reduced blinking due to activities such as reading and exposure to air-conditioning can result in instability of the tear film(8). This distribution normally retains the surface of your eyes lubricated, smooth, and clear. Patients with dry eye disease are more likely than the general population to experience symptoms of anxiety and depression. 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 can be caused by deficiency of the tear film components and can be systemic diseases, including Sjogren syndrome, Lupus, and Stevens-Johnson Syndrome(9). Majority of people who have dry eyes incident mild irritation with no long-term effects. However, if the condition is left untreated or becomes severe, it can produce complications that can cause eye damage, resulting in impaired vision(10).

Complications of dry eye infections lead to eye inflammation, abrasion of the corneal surface, corneal ulcers, and vision loss. There is a need for more than one modality of treatment for lenient-to-average dry eye patients, aside from the utilization of topical eye drops. Indeed only a small portion of dry eye sufferers use artificial tears regularly. Wrap-around glasses that

fit close to the face may decrease tear evaporation. Standard objective tests for dry eye disease also have shortcomings(11). The Schirmer test, which has been in extensive clinical use for more than a century, has been criticized for its variability and its tendency to exhibit wide intrasubject, day-to-day, and visit-to-visit variation(12).

As tear emissions reduce in more advanced diseases, the results become more reproducible. In lense to average disease, however, has limited usefulness.

Our team has extensive knowledge and research experience that has translated into high quality publications (13-18) (19-26) (27-32). The present study aims to create an awareness of dry eyes among dental students.

Materials and methods:

An online survey was conducted with a self-administered questionnaire with a sample size of 100 participants comprising the dental population. The questionnaire consists of questions that help in socio-economic data, questions that help in providing awareness among the participants, and also consist of questions related to facts. The questionnaire was validated in a standard manner. Measures such as a selection of participants randomly, steps to prevent asking irrelevant questions, placing restrictions over the participants are followed to minimize the sampling bias. The questionnaire was circulated using the online platform Google Forms. Descriptive analysis was carried out using the statistical software SPSS VERSION 23. The results were analyzed and represented in a pie chart and bar chart.

Results and Discussion :

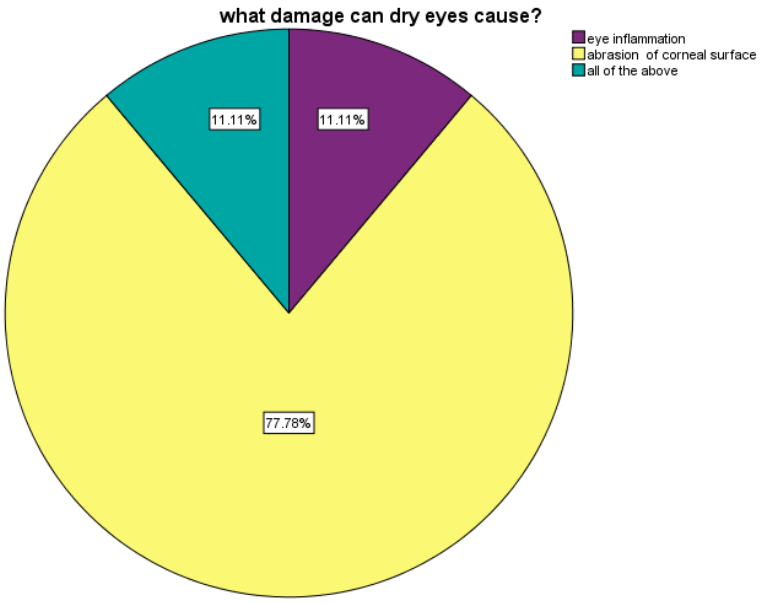

Figure 1: Pie chart representing the percentage distribution of awareness among causes of dry eye damage. The majority of participants (77%) responded to the abrasion of the corneal surface (yellow), (11%) responded to eye inflammation (violet) and (11%) responded to all of the above (violet).

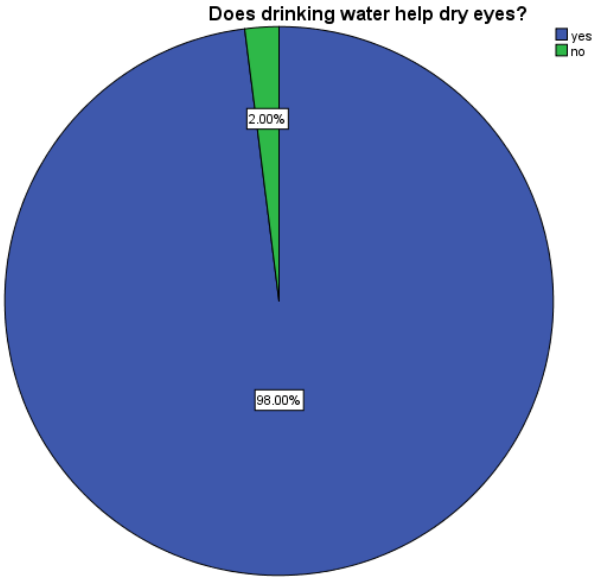

Figure 2: Pie chart representing the percentage distribution of awareness among drinking water helps the dry eye. Majority of participants (98%) responded yes (blue); (2%) responded no(green).

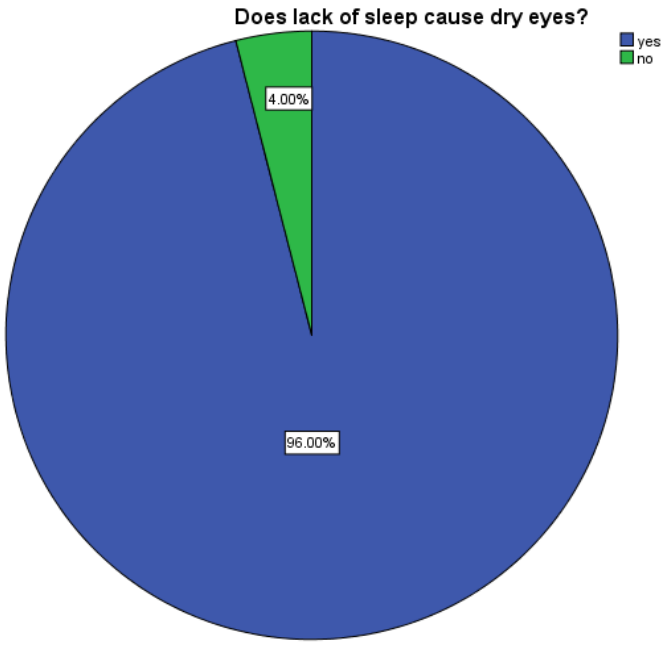

Figure 3: Pie chart representing the percentage distribution of awareness among lack of sleep causes dry eyes. Majority of participants (96%) responded yes (blue); (4%) responded no(green).

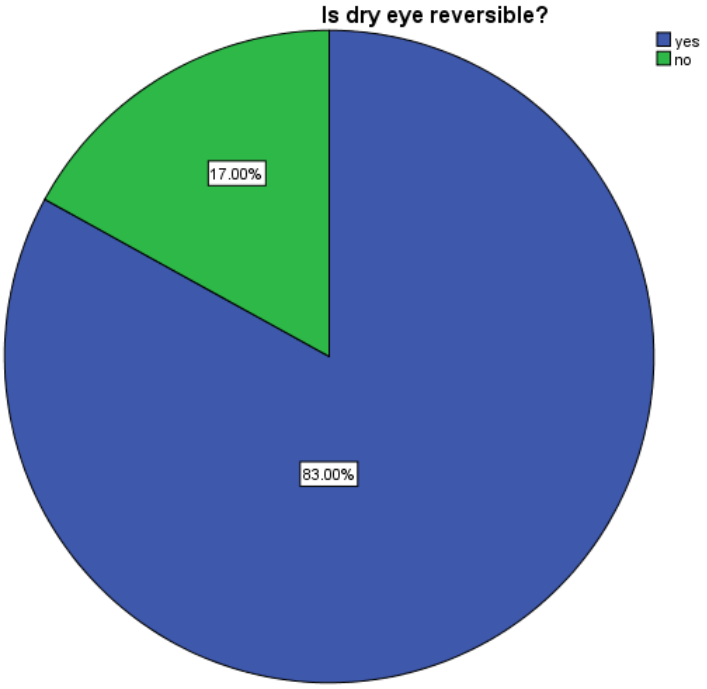

Figure 4: Pie chart representing the percentage distribution of awareness among dry eyes is reversible. Majority of participants (83%) responded yes (blue); (17%) responded no(green).

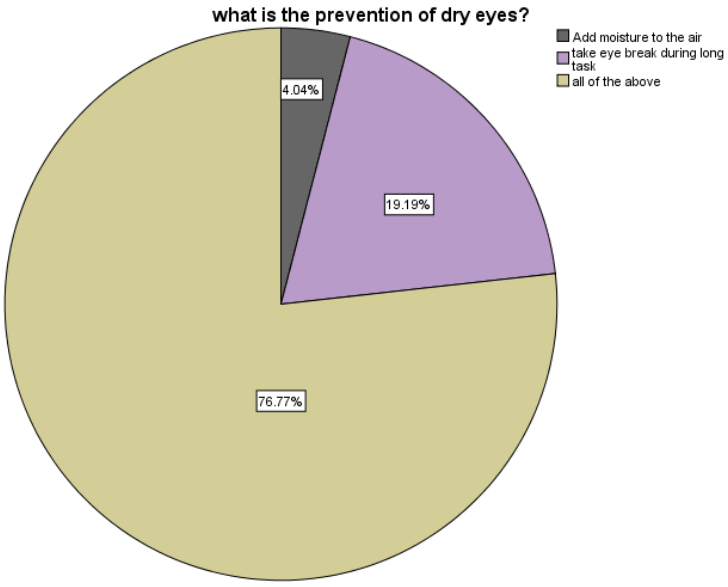

Figure 5: Pie chart representing the percentage distribution of awareness among prevention of dry eyes. The majority of participants (76%) responded to all of the above (ye); (19%) responded to take eye during long tasks(light violet); (4%) responded to add moisture to the air(grey).

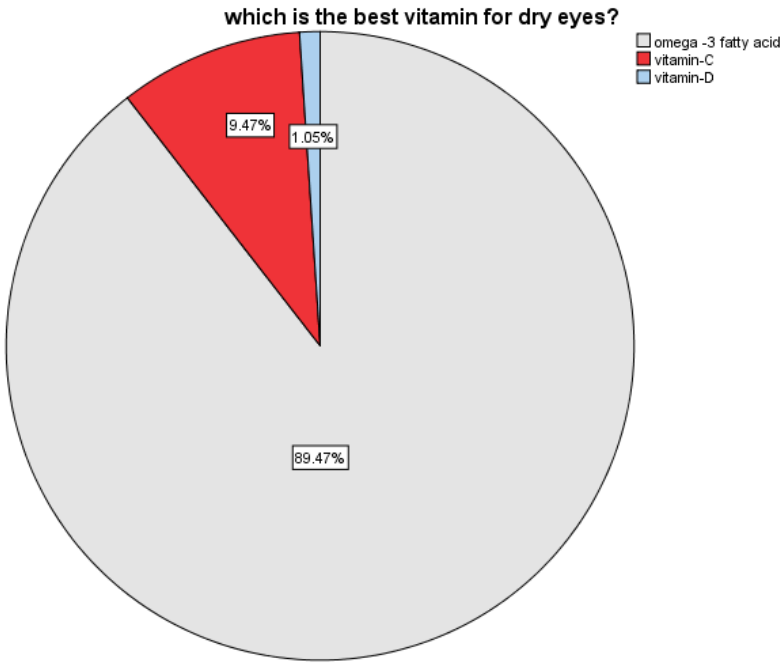

Figure 6: Pie chart representing the percentage distribution of awareness among best vitamins for dry eyes. Majority of participants (89%) responded to omega-3 fatty acids (white); (9%) responded to vitamin C (red); (1%) responded to vitamin-D(blue).

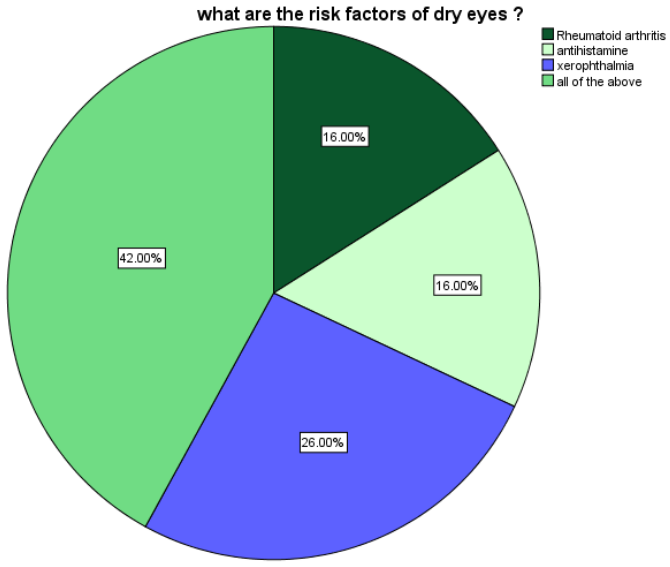

Figure 7: Pie chart representing the percentage distribution of awareness among risk factors of dry eyes. Majority of participants (42%) responded to all of the above (apple green); (26%) responded xerophthalmia (blue); (16%) responded antihistamine (sage green); (16%) responded rheumatoid arthritis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

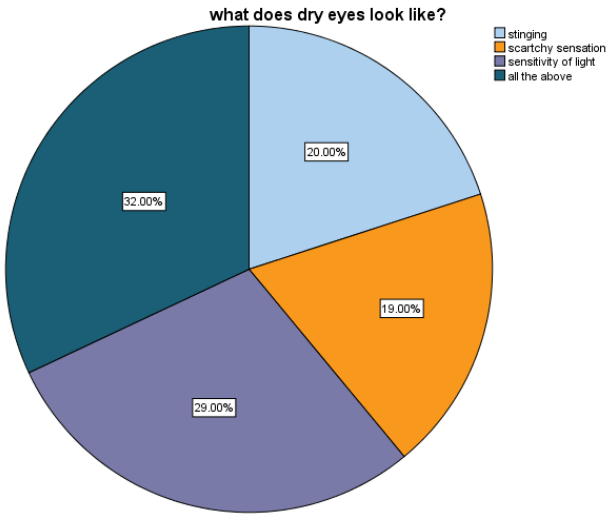

Figure 8: Pie chart representing the percentage distribution of awareness among dry eyes look. Majority of participants (32%) responded to all of the above (olive green); (29%) responded to sensitivity of light (grey); (20%) responded to stinging (light blue); (19%) responded to scratchy sensation (orange).

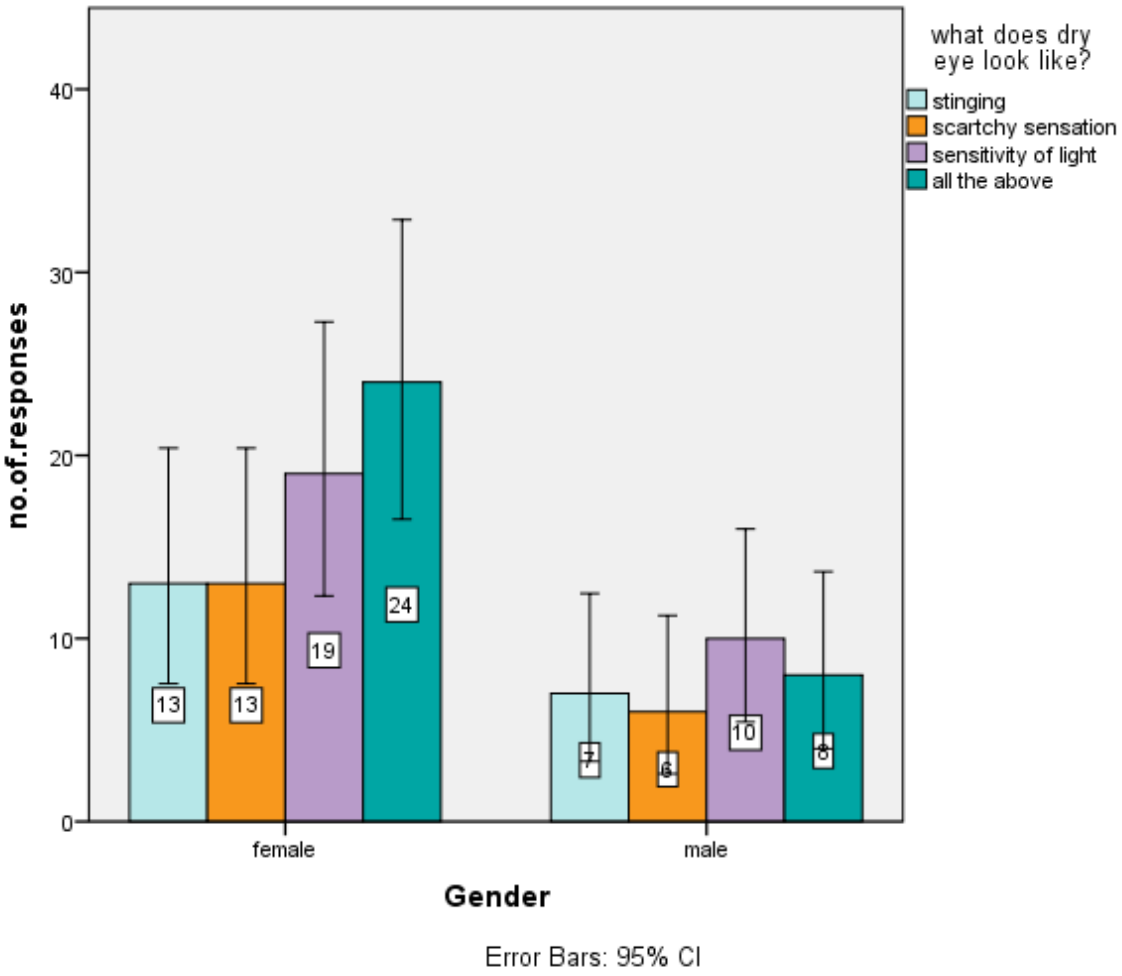

Figure:9 Bar chart represents the association between gender and awareness of dry eye look. The X-axis represents gender and Y-axis represents the percentage of participants who were aware 32% responded to all of the above (olive green) ; 29% responded to the sensitivity of light (grey); 20% responded 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.

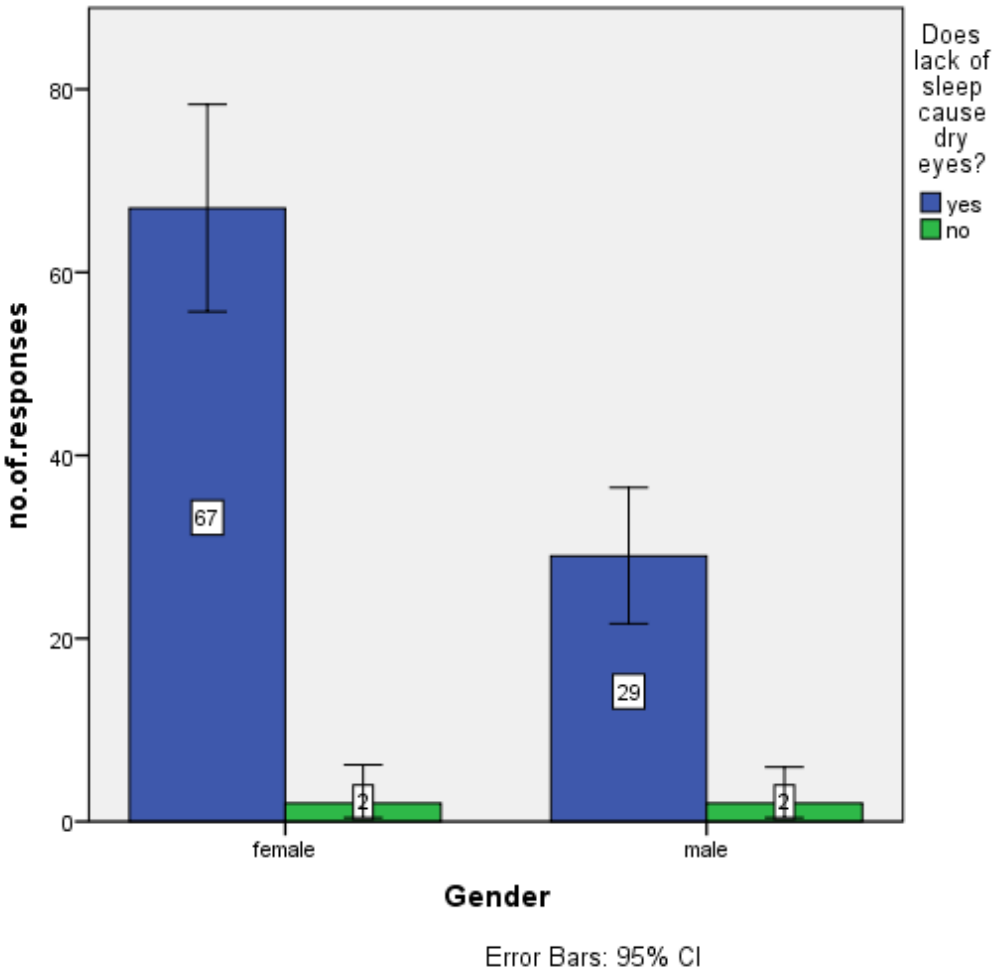

Figure 10: Bar chart represents an association between gender and awareness of lack of sleep causes dry eyes. The X-axis represents gender and Y-axis represents the percentage of participants who were aware 96% responded yes (blue); (4%) responded no (green).Pearson's Chi-Square: 0.528, p-value: 0.130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

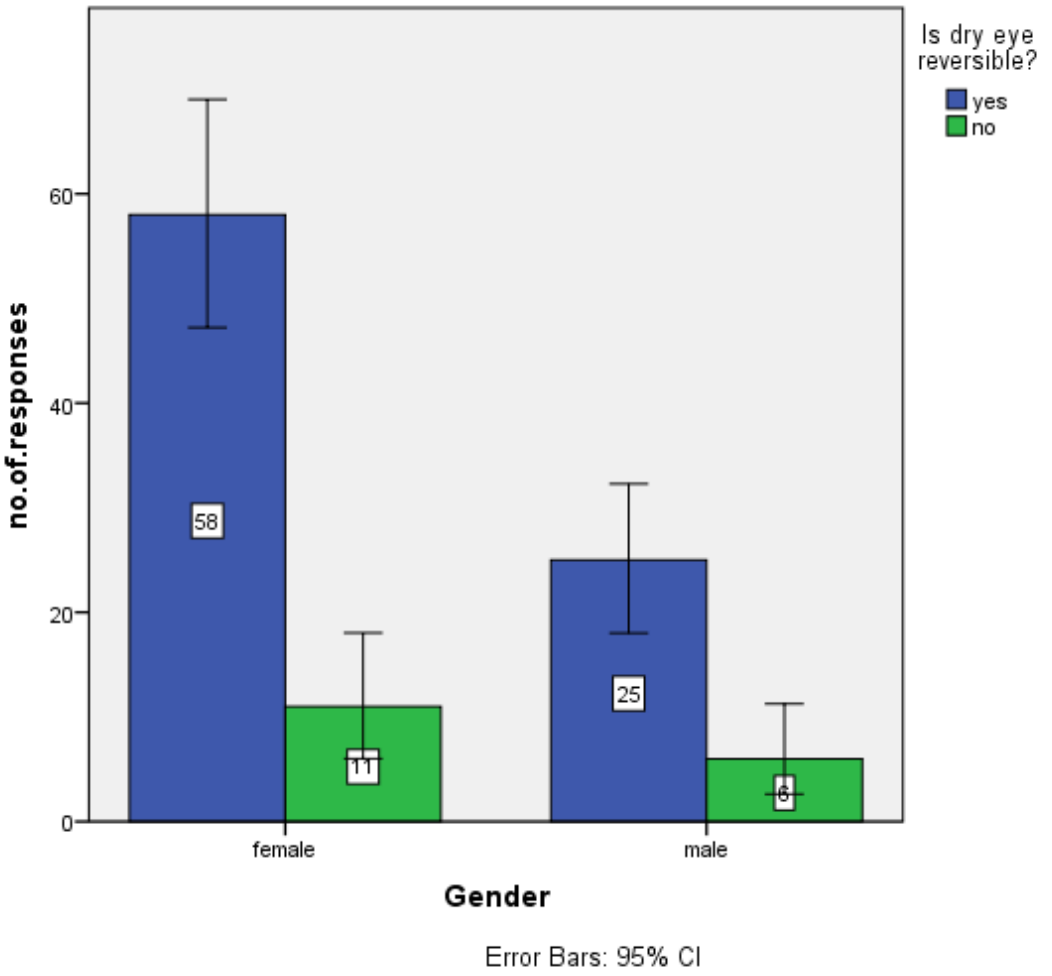

Figure 11:Bar chart represents an association between gender and awareness of dry eyes is reversible. The X-axis represents gender and the Y-axis represents the percentage of participants who were aware 83% responded yes (blue); 17% responded no (green). Pearson's Chi-Square: 0.373, p-value: 0.285 (>0.05)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

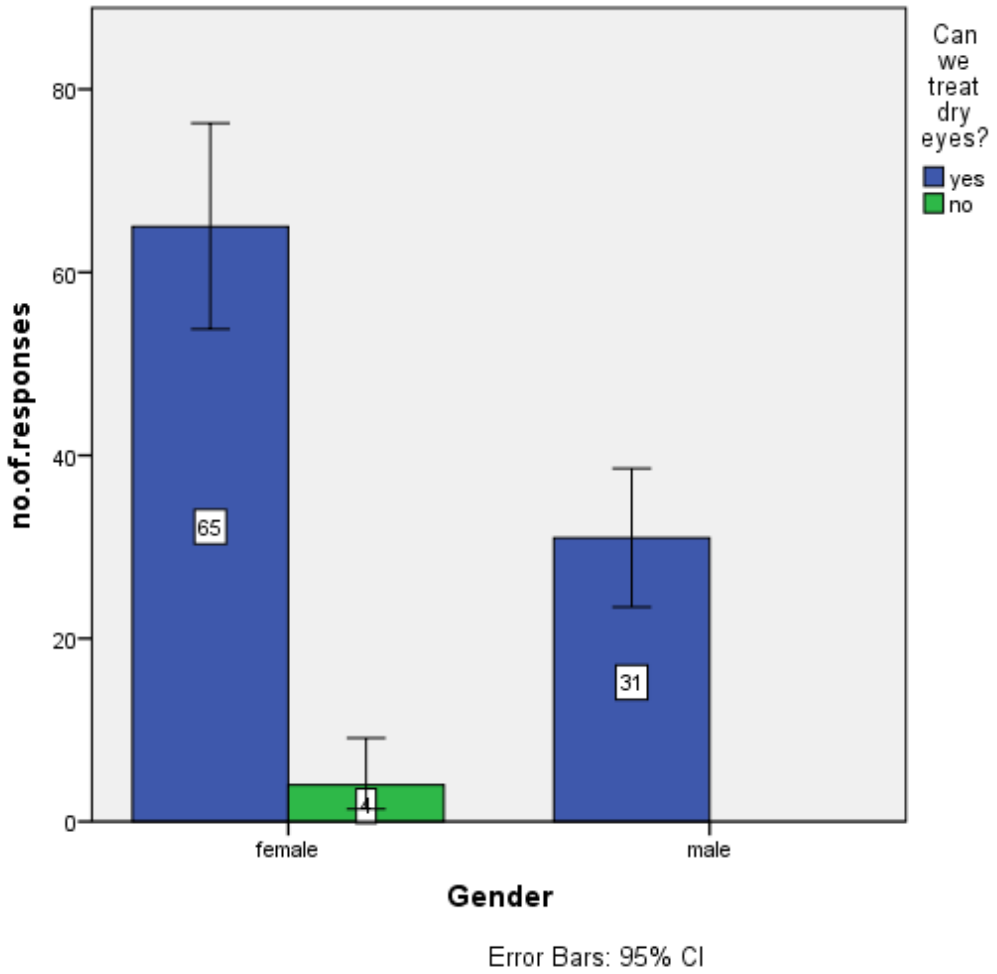

Figure 12: Bar chart represents an association between gender and awareness of dry eyes can be treated. The X-axis represents gender and Y-axis represents the percentage of participants who were aware 96% responded yes (blue); 4 % responded no (green). Pearson's Chi-Square: 0.382, p-value: 0.536 (>0.05)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

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 (figure1). Similar findings were not found in a previous study (33).

Around 98% of participants were aware that drinking water helps the dry eye and 2% were unaware of it (figure 2), which was similar to the findings of the previous study (34). Around 96% of people were aware that lack of sleep causes dry eyes and 4% were unaware of it (figure:3) which was similar to the statement proved in the previous study (35). Around 83% of people were aware that dry eyes are reversible and were unaware of it (figure 4) which was homogenous to the existing studies(36).

The prevention of dry eyes 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 (Figure:5), which was also stated by previous studies(37) . 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(figure 6) ,which was similar to findings of the previous studies (38).

The risk factors of dry eyes 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 (figure 7). A similar finding was also found in a previous study(39).

The dry eyes 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 (figure8) as shown by the previous study. In this study, an 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 (figure: 9). Association between gender and awareness lack sleep causes dry eyes as done using Chi-Square test. Out of 75% of the participants were aware, females were more aware than males (figure:10), Association between gender and awareness of dry eyes is reversible as done using the Chi-Square test. Out of 73% of the participants were aware, females were more aware than males (figure:11) Association between gender and awareness dry eyes can be treated as done using Chi-Square test. Out of 96% of the participants were aware, females were more aware than males (figure:12). These findings were well correlated with the previous study(40).

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

Conclusion:

The study shows the awareness among dental students about dry eyes. People under 75% were aware of dry eyes but 25% were unaware of it. Therefore, the study was done to create awareness and to aim at those who are unaware of the dry eye. The prevalence of dry eye is more in females than males. Females are more aware of the causes, symptoms, and risk factors of dry eye than males. Females were more aware than males, however statistically not significant.

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.

CONFLICT OF INTEREST:

The authors would like to declare no conflict of interest in the present study.

FUNDING:

The present project is supported by:

- Sri Sambanda Agency Pvt Ltd.
- Saveetha Dental College and Hospitals,
- Saveetha Institute of Medical and Technical Sciences,
- Saveetha University

Reference:

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