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KNOWLEDGE AND AWARENESS ABOUT SJOGREN's SYNDROME AMONG DENTAL STUDENTS - A SURVEY

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ABSTRACT:

INTRODUCTION: Sjogren's syndrome is an autoimmune disorder identified by its two most common symptoms- dry eyes and a dry mouth. The condition mostly accompanies other immune system disorders, such as rheumatoid arthritis and lupus.

MATERIALS AND METHODS: The study was performed in a sample size of 100 participants. A set of questionnaires was created by the use of google form. The analysis is done with the help of SPSS software. The statistical chi square analysis was done and the significance of p value is <0.05. The representation is by pie charts and bar graphs.

RESULTS: Awareness and knowledge about sjogren's syndrome was well developed between the participants. Excessive dryness, particularly in the eyes and mouth, is one of the main symptoms. Chronic fatigue and pain, especially in the joints, as well as major organ dysfunction are other serious symptoms (p-value<0.05).

CONCLUSION: There is no single way for the disease to develop, which can be difficult for patients and their doctors to understand. While some people only have minor pain, others have crippling symptoms that severely limit their ability to function. Early detection and care are critical because they can help patients avoid severe problems and improve their quality of life. A well developed awareness and knowledge have been created among the dental students.

KEYWORDS: Sjogren's syndrome, dry eyes, dry mouth, dental students.

INTRODUCTION:

Sjögren's syndrome is an autoimmune condition affecting the body's moisture-producing glands, as well as other organs and structures such as the lungs, kidneys, and nervous system. Dryness, discomfort, and exhaustion are the most common symptoms. Dry skin, vaginal dryness, a chronic cough, numbness in the arms and legs, tiredness, muscle and joint pains are all possible symptoms(1). Sjögren's syndrome may cause organ dysfunction in the kidneys, gastrointestinal system, blood vessels, lungs, liver, pancreas, and central nervous system, in addition to dry eyes, dry mouth, weakness, and joint pain. Dry mouth and keratoconjunctivitissicca are the most common symptoms of Sjögrensyndrome(2). Lymphocytic infiltration into skin glands can cause skin dryness in some people with SS. The symptoms can appear gradually, and the diagnosis can not be made for many years because sicca may be attributed to drugs, a dry climate, or ageing, or it may be dismissed as not serious enough to warrant the degree of examination required to confirm the existence of the underlying immune disorder(3).Some patients can develop kidney involvement (autoimmune tubulointerstitial nephritis) leading to proteinuria (excess protein in urine), urinary concentrating defect, and distal renal tubular acidosis(4–6). Other symptoms include vaginal dryness, dry lips, and a dry nose. Other organs of the body, such as the kidneys, blood vessels, lungs, liver, pancreas, and brain, may also be affected(7). Patients are also more likely to develop lymphoma.

Sjögren's syndrome happens about half of the time on its own, and the other half of the time in combination with another autoimmune connective tissue condition like Rheumatoid Arthritis, Lupus, or Scleroderma. Sjögren's syndrome is often misrepresented as a rare condition, but it is estimated that four million Americans suffer from it, making it one of the most common autoimmune diseases(8). As with many other autoimmune disorders, the cause of SS is unclear, but it may be the result of a combination of genetic, environmental, and other causes. It's possible that about 20 autoantibodies are involved. Although the exact cause is unknown, it is thought to be a combination of genetics and a catalyst in the environment, such as exposure to a virus or bacteria. It may happen without any other symptoms or as a consequence of some connective tissue disease. High rates of autoimmune disorders have been observed in families with SS, which has been attributed to a genetic predisposition to the syndrome(9,10). Since SS is more common in women, sex hormones, especially oestrogen, are thought to influence humoral and cell-mediated immune responses, thereby affecting

susceptibility to the syndrome. Autoimmunity is thought to be prevented by androgens(11). Estrogen deficiency appears to promote the presentation of autoantigens, resulting in SS-like symptoms in mice models. In women who have previously been pregnant, microchimerism of foetal cells (offspring lymphoid cells in maternal circulation) can cause autoimmunity.

The generation of an autoimmune potential through microchimerism can result in a switch from a silent form of autoimmunity to a form of autoimmunity with a decrease in self-tolerance with age(12). By molecular mimicry, viral proteins, engulfed molecules, or degraded self-structures may trigger autoimmunity and increase the risk of SS growth. Infectious agents such as Epstein–Barr virus, hepatitis C, and human T-cell leukaemia virus-1 are among the most studied in SS(13). There is currently no clear cause-and-effect association between these pathogens and the production of SS. Damaged self-structures targeted for apoptosis can be accidentally exposed to the immune system, causing autoimmunity in exocrine glands, which are susceptible to autoimmune reactions. A biopsy of the moisture-producing glands and blood tests for particular antibodies are used to diagnose the disease. Women with anti-Ro/SS-A and anti-La/SS-B antibodies who become pregnant have a higher risk of neonatal lupus erythematosus with congenital heart block, which necessitates the use of a pacemaker(14). A recognised SS complication is type I cryoglobulinemia.
Our team has extensive knowledge and research experience that has translate into high quality publications (15–34)
The liver, pancreas, kidneys, lungs, and central nervous system are all affected by SS. SS is linked to a variety of other medical conditions, many of which are autoimmune or rheumatic in nature, such as celiac disease, fibromyalgia, SLE (lupus), autoimmune thyroiditis, multiple sclerosis, and spondyloarthropathy, as well as a number of cancers, the most common of which is non-Hodgkin lymphoma(35).While sjogren's syndrome is a most common autoimmune disorder but it does not have specific medication or treatment, treatment can vary for the individual. Artificial tears, anti-inflammatory drugs, punctal plugs, or surgery to close the tear ducts can be used to treat dry eyes(36). Chewing gum, sipping water, or using a saliva replacement may help with a dry mouth. Ibuprofen can be used to treat joint or muscle pain(37). Antihistamines and other medications that may induce dryness could also be discontinued. The most specific extant diagnostic test requires lip biopsy.Since SS is such a complex autoimmune disorder, there is no way to prevent it, but lifestyle modifications can minimise the risk factors for developing it or the severity of the disease in patients who have already been diagnosed. The inflammation seen in many autoimmune disorders, including SS, is closely linked to diet. According to an experiment, SS patients have a high gluten sensitivity that is linked to inflammation. In SS patients, moderate exercise is also beneficial, as it reduces the effects of lung inflammation(38). There is no remedy or specific treatment for SS that can restore gland secretion permanently. Rather, most treatments are symptomatic and supportive(39). This study aims to know the awareness of Sjogren's syndrome among the dental students.

MATERIALS AND METHODS:

The method involved in this study was an online survey of questionnaires, which involves assessing the awareness and knowledge of Sjogren's syndrome. Approval from the institutional ethical committee and informed consent from the participants was obtained. The total number of participants was 100. Dental undergraduate students, Age group between 18-22 years and those who were willing to participate were included in this study. Postgraduate students and age groups beyond the criteria were excluded from this study. The sampling method used in this study was simple random sampling. A set of 12 questionnaires were prepared in google forms, the link of the same was circulated among the study population and the data was collected for a duration of one month in February 2021. The data collected was exported to google sheet and were analysed by using the software SPSS version 23. The data was analysed and represented by pie charts. The statistical analysis performed in this study were Descriptive analysis and Chi Square analysis and the p value <0.05 was considered statistically significant.

RESULTS:

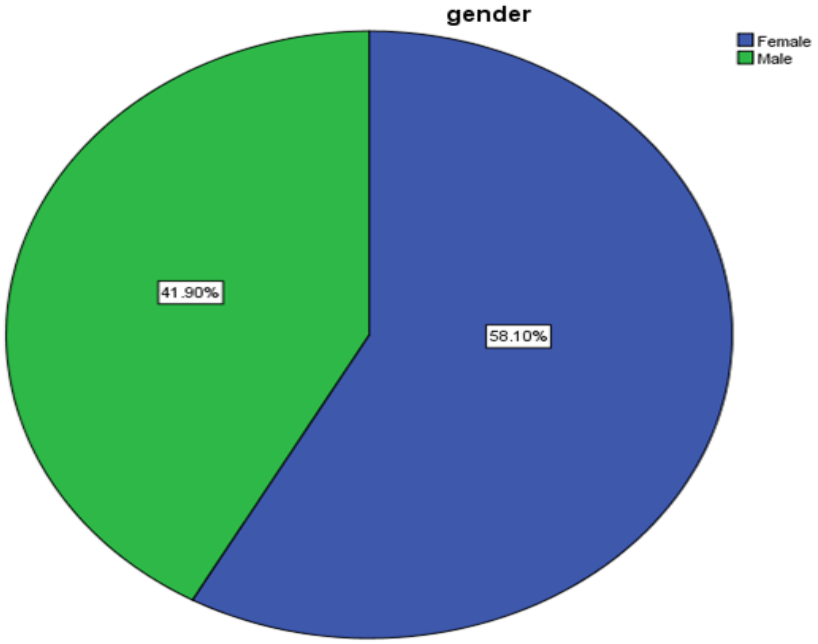

FIGURE 1: Pie chart depicting the distribution of responses towards the gender among the study population. 41.90% male(green), 58.10% female (blue).

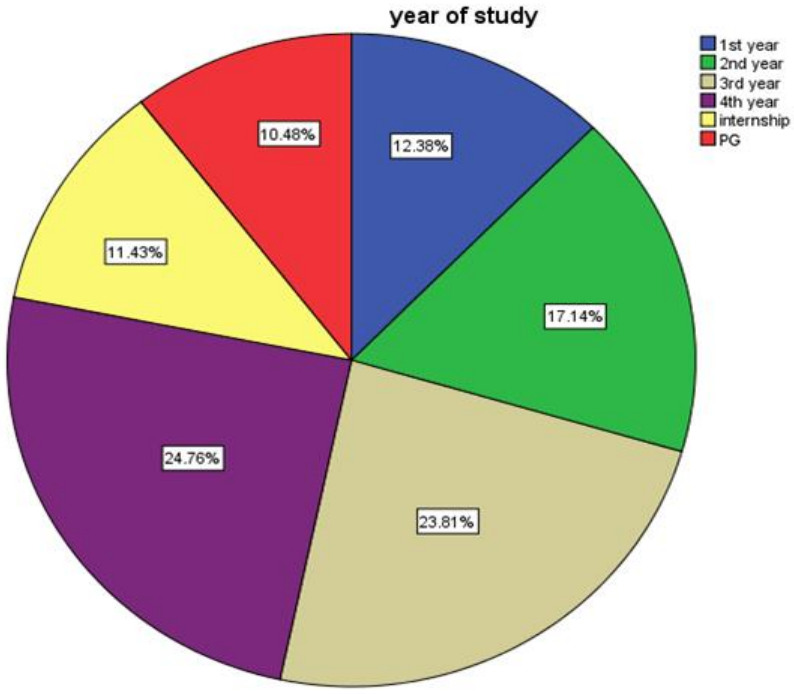

FIGURE 2: Pie chart depicting the distribution of responses towards the year of study among the study population. 12.38% 1st year (blue), 17.14% 2nd year (green), 23.81% 3rd year(beige), 24.76% 4th year (violent), 11.43% internship (yellow), 10.48% PG (red).

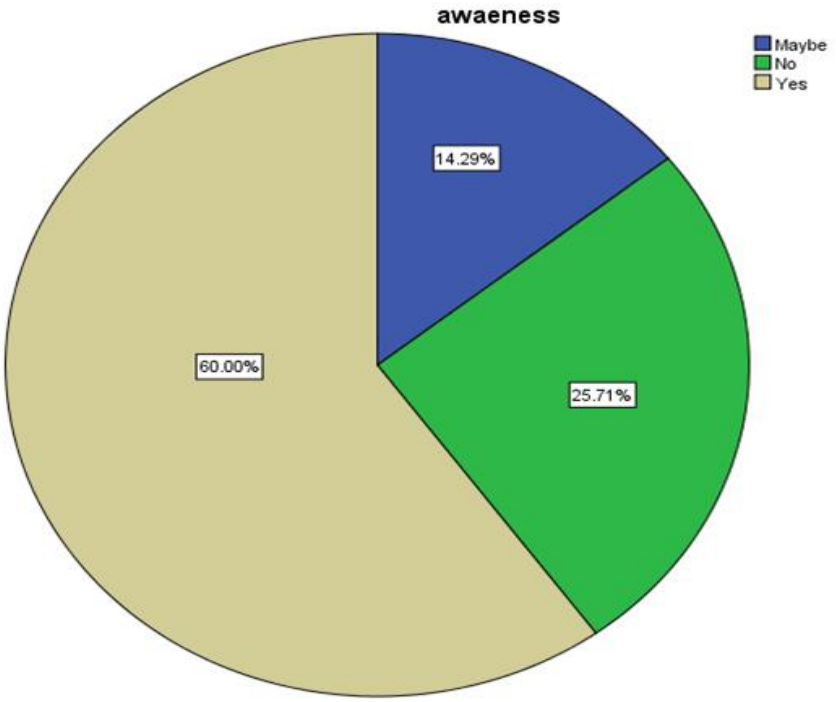

FIGURE 3: Pie chart depicting the distribution of responses towards the awareness among the study population. 60% yes (beige), 25.71% no (green), 14.29% maybe (blue).

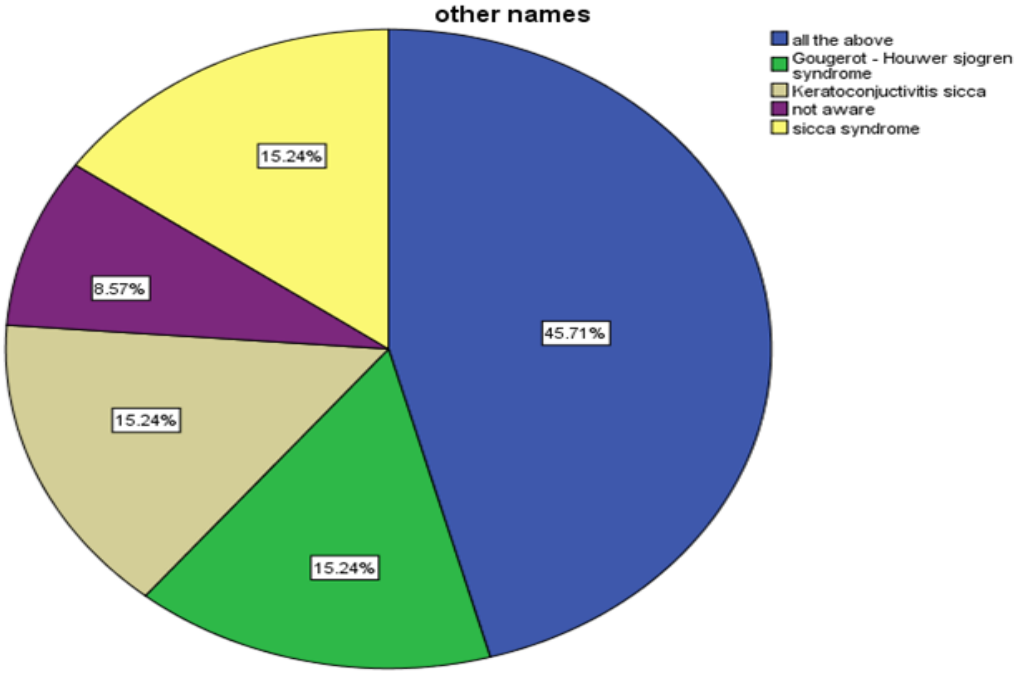

FIGURE 4: Pie chart depicting the distribution of responses towards the question other names for sjogren's syndrome among the study population. 15.24% sicca syndrome (yellow), 8.57% not aware (violet), 15.24% keratoconjunctivitissicca (beige), 15.24% gougerothouwersjogren syndrome (green), 45.71% all the above (blue).

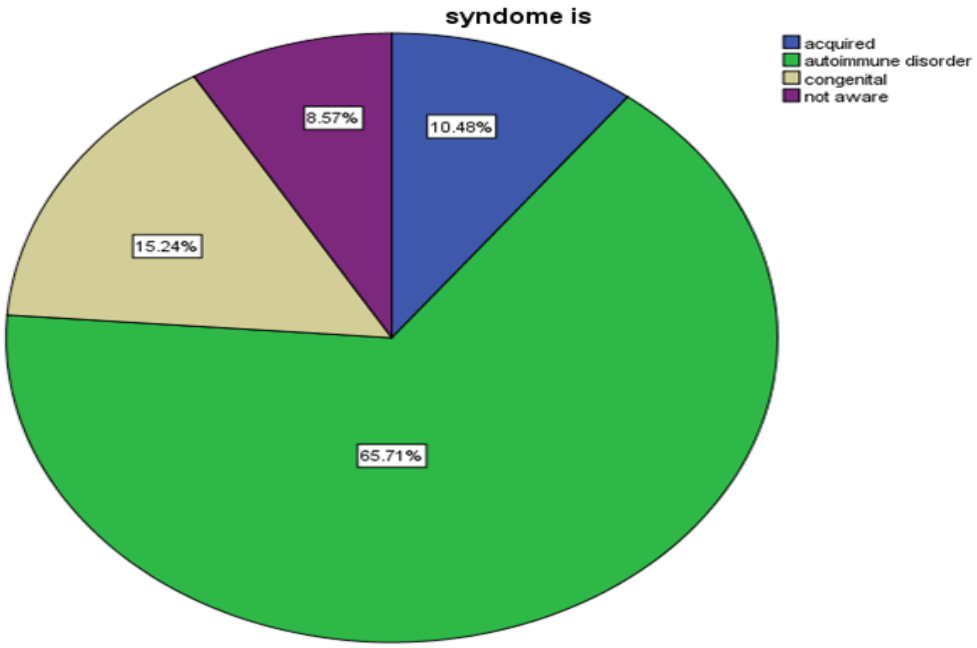

FIGURE 5: Pie chart depicting the distribution of responses about the sjogren's syndrome among the study population.65.71% autoimmune disorder (green), 10.48% acquired disease(blue), 15.24% congenital disease (beige) 8.57% not aware(violet).

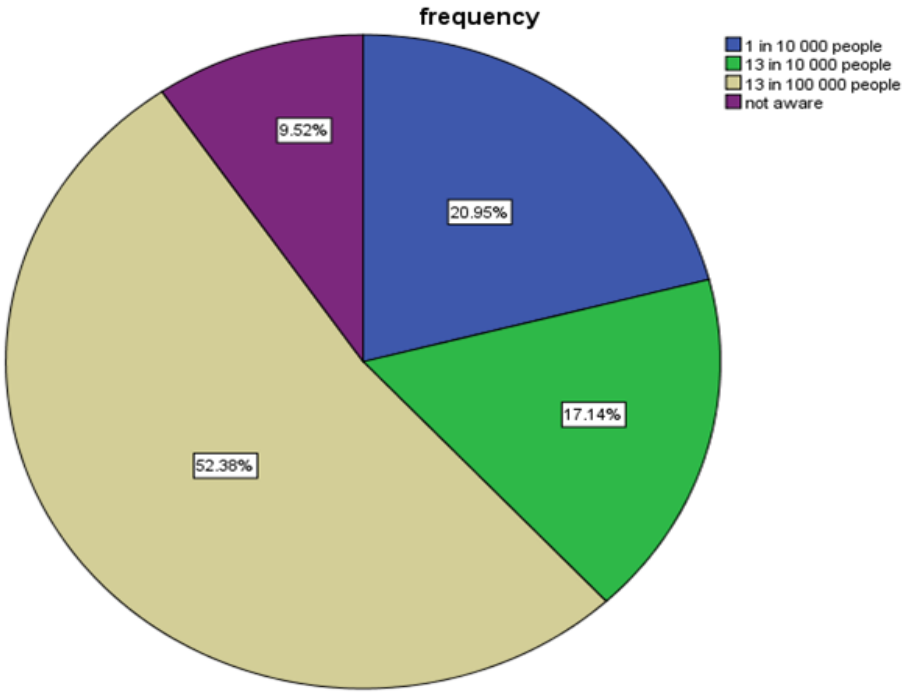

FIGURE 6: Pie chart depicting the distribution of responses about the frequency of sjogren's syndrome among the study population. 52.38% 13 in 100 000(beige), 17.14% 13 in 10 000 people(green), 20.95% 1 in 10 000 people(blue) 9.52% not aware(violet).

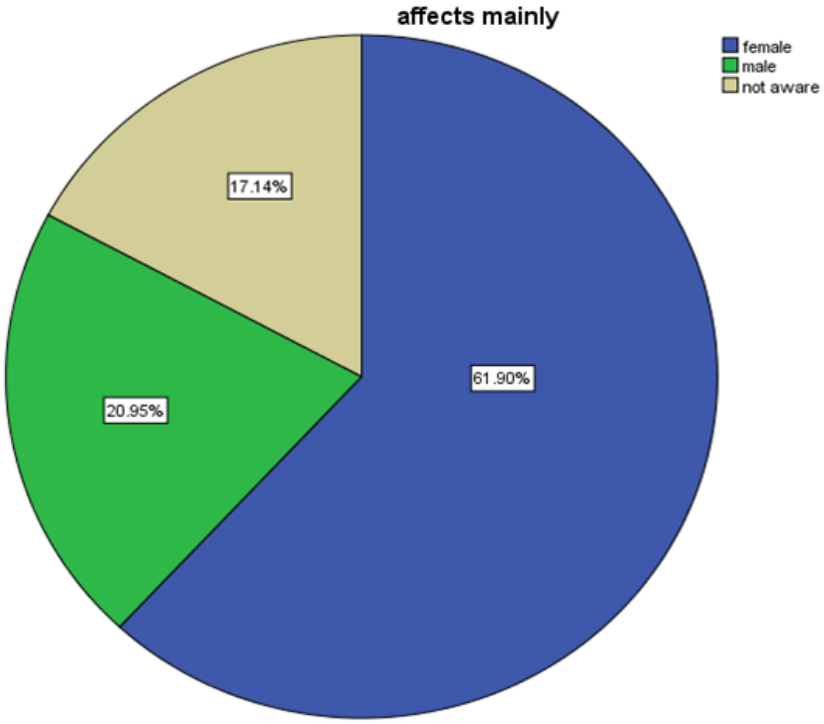

FIGURE 7: Pie chart depicting the distribution of responses about sjogren's syndrome mainly affects among the study population. 61.90% female(blue) 17.14% not aware (beige) 20.95% male (green).

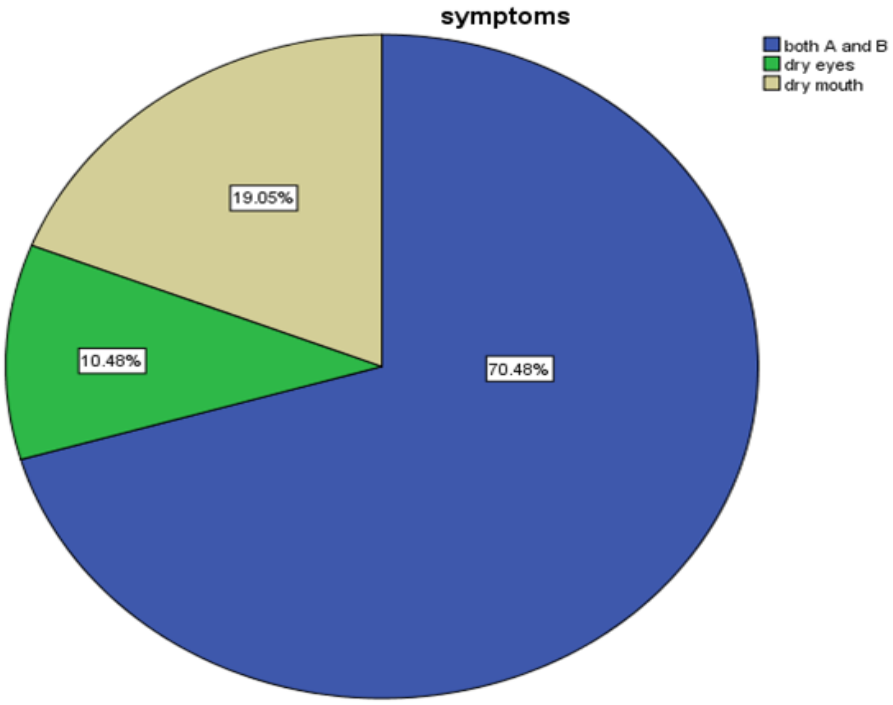

FIGURE 8: Pie chart depicting the distribution of responses about the symptoms of sjogren's syndrome among the study population. 10.48% dry eyes (green) 19.05% dry mouth (beige) 70.48% both (blue).

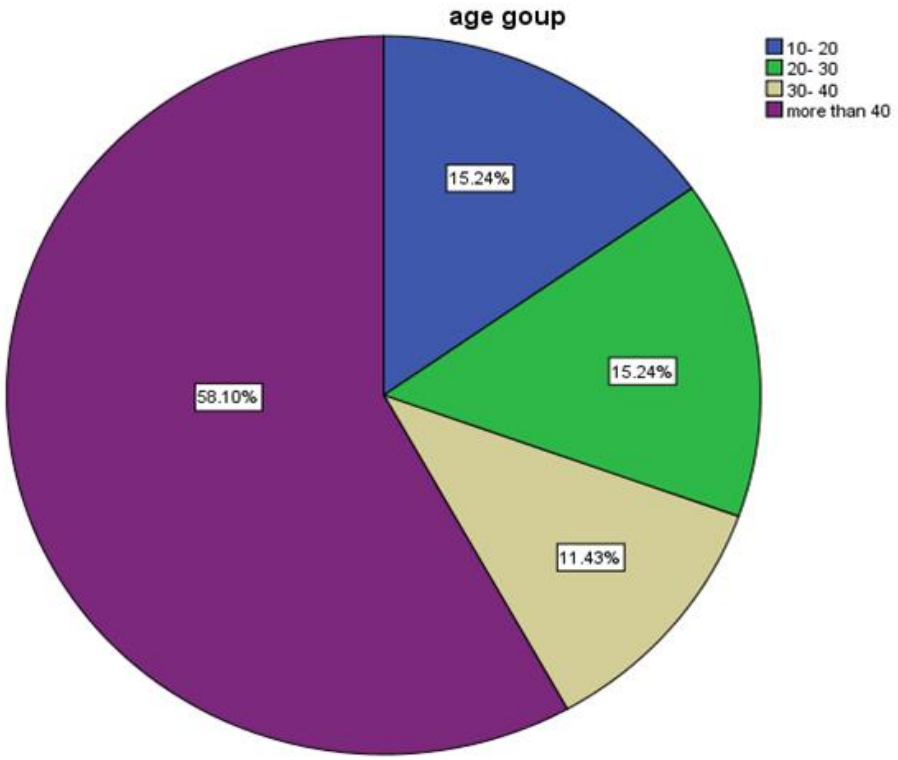

FIGURE 9: Pie chart depicting the distribution of responses about sjogren's syndrome mainly affects the age group among the study population. 58.1% mostly above the age of 40(violet), 11.4% between the age group of 30-40(beige), 15.2% between the age group of 20-30(green) and 15.2% between the age group of 10-20(blue)

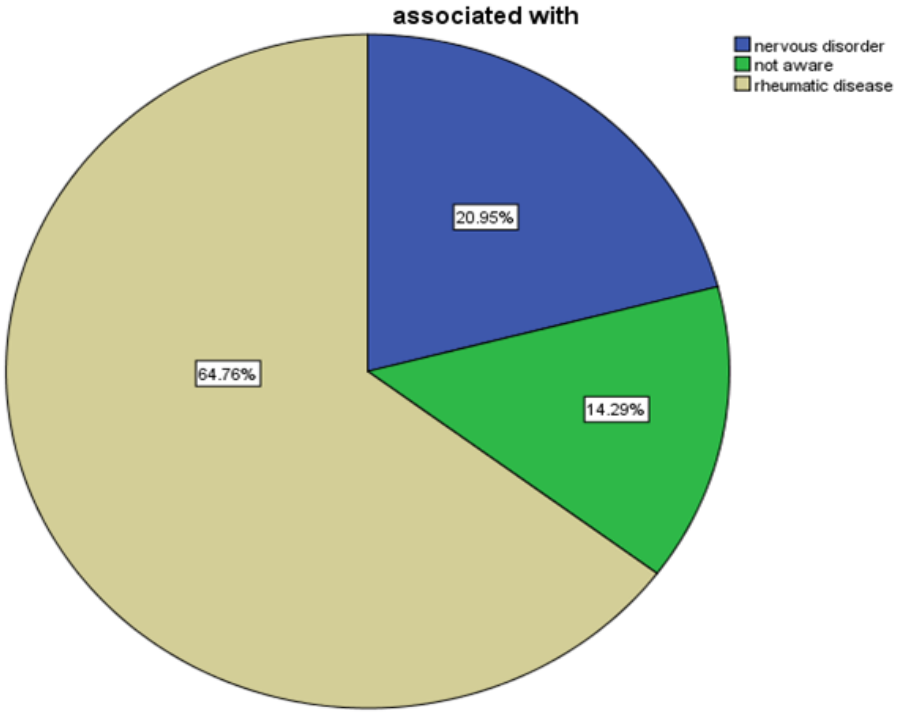

FIGURE 10: Pie chart depicting the distribution of responses about sjogren's syndrome associated with among the study population. 64.76% rheumatic disease(beige), 20.95% nervous disorder(blue) and 14.29% not aware (green)

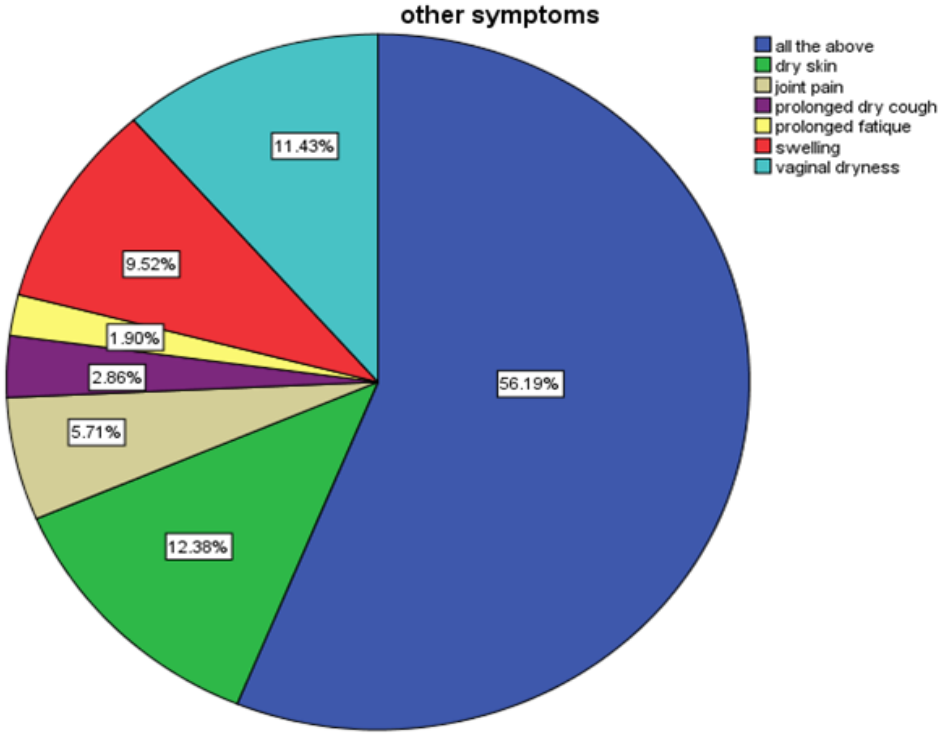

FIGURE 11: Pie chart depicting the distribution of responses about the other symptoms of sjogren's syndrome among the study population. dry skin (12.38%), joint pain (5.71%), swelling (9.52%), vaginal dryness (11.43%), prolonged dry cough (2.86%), prolonged fatigue (1.90%) and 56.19% all the above.

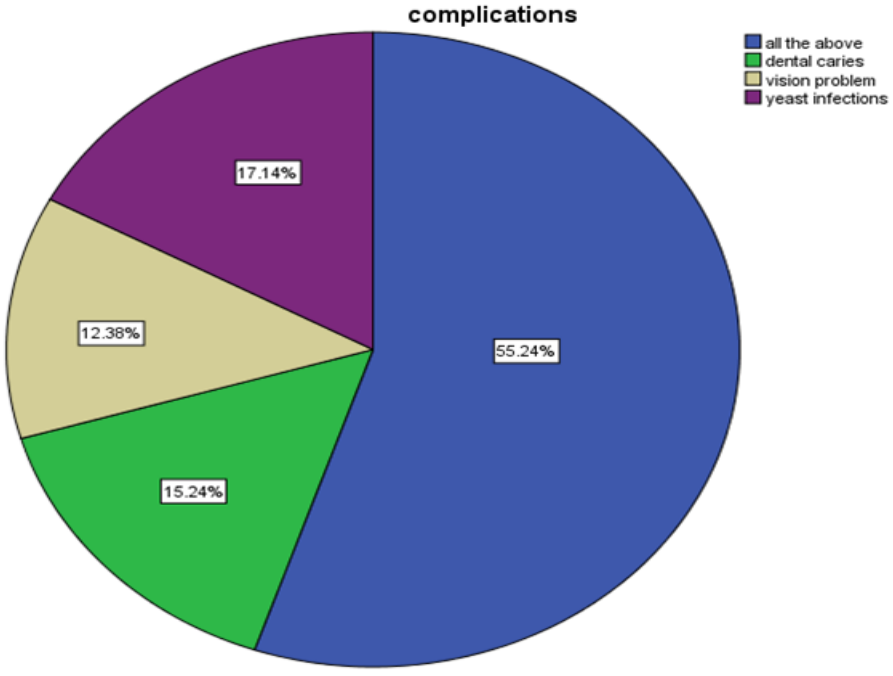

FIGURE 12: Pie chart depicting the distribution of responses about the complications of sjogren's syndrome among the study population. 12.38% vision problem(beige), 17.14 yeast infection(violet), 15.24% dental caries (green) and 55.24% all the above(blue)

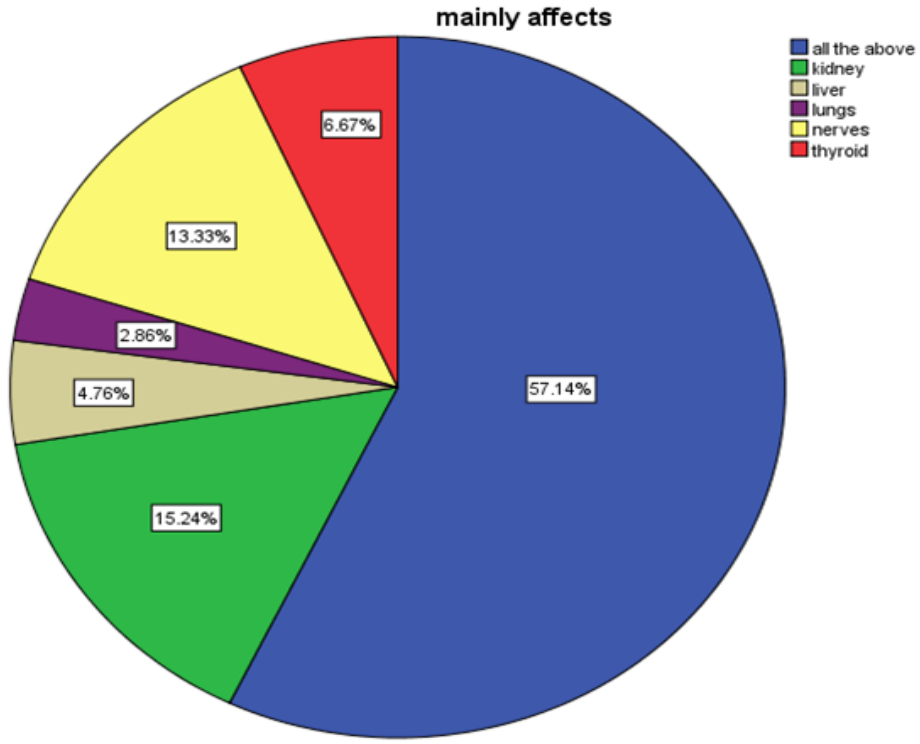

FIGURE 13: Pie chart depicting the distribution of responses about sjogren's syndrome mainly affects among the study population. 13.33% nervous system, thyroid (6.67%), kidney(15.24%), liver (4.76%), Lungs (2.86%), and 57.14% all the above

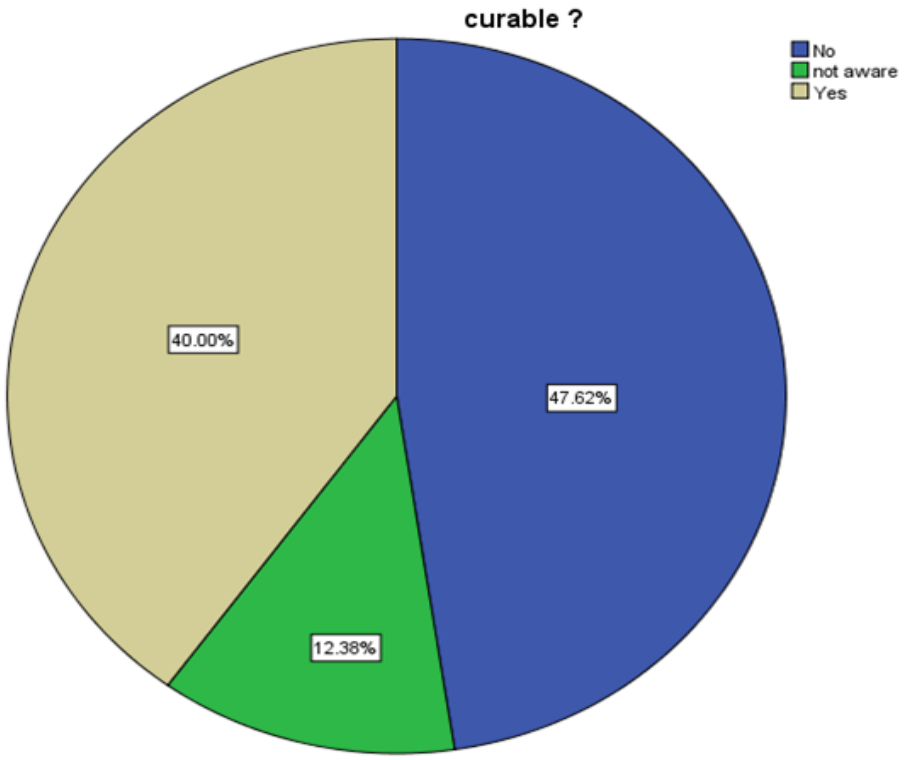

FIGURE 14: Pie chart depicting the distribution of responses about sjogren's syndrome is curable among the study population. 40% yes (beige) 12.38% not aware (green) 47.62% no (blue)

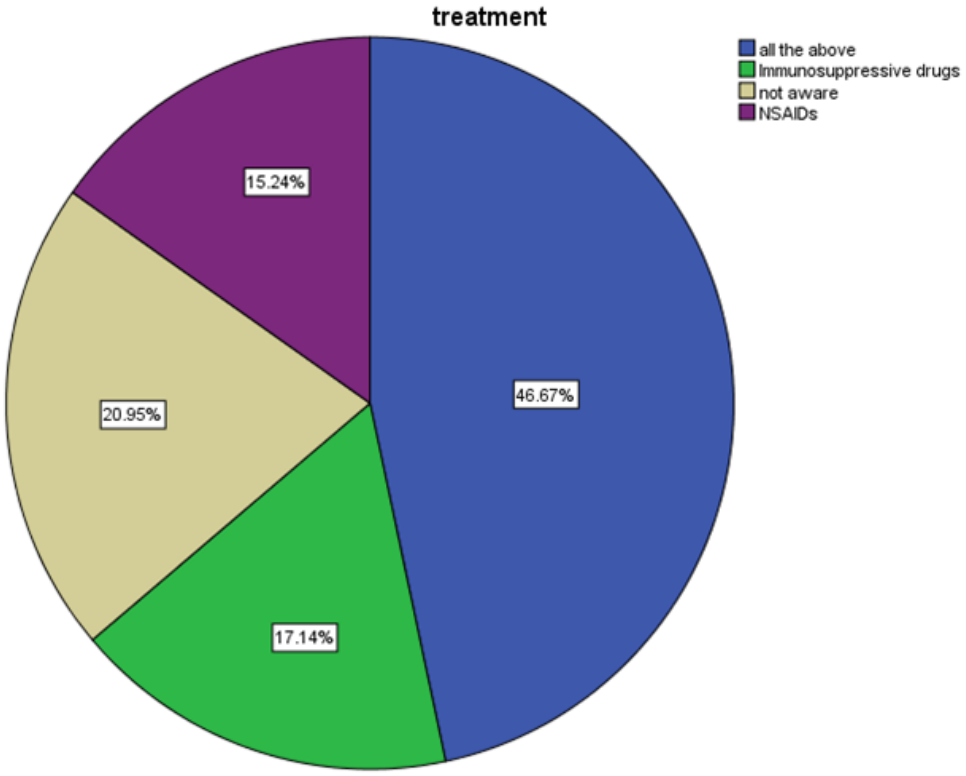

FIGURE 15: Pie chart depicting the distribution of responses about the treatment for sjogren's syndrome among the study population. 17.14% immunosuppressant(green), 15.24% NSAIDs(violet), 46.67% both(blue) and 20.95% not aware(beige).

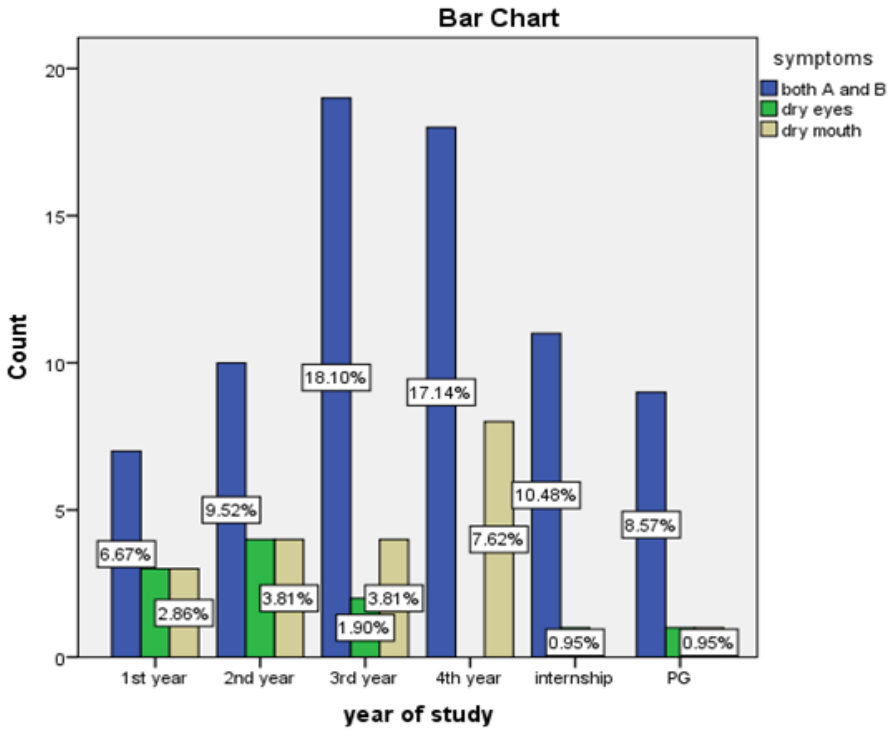

FIGURE 16: Bar graph representing the distribution of response about the symptoms of sjogren's syndrome among the students of various year of study. P value <0.005 (P value 0.000)

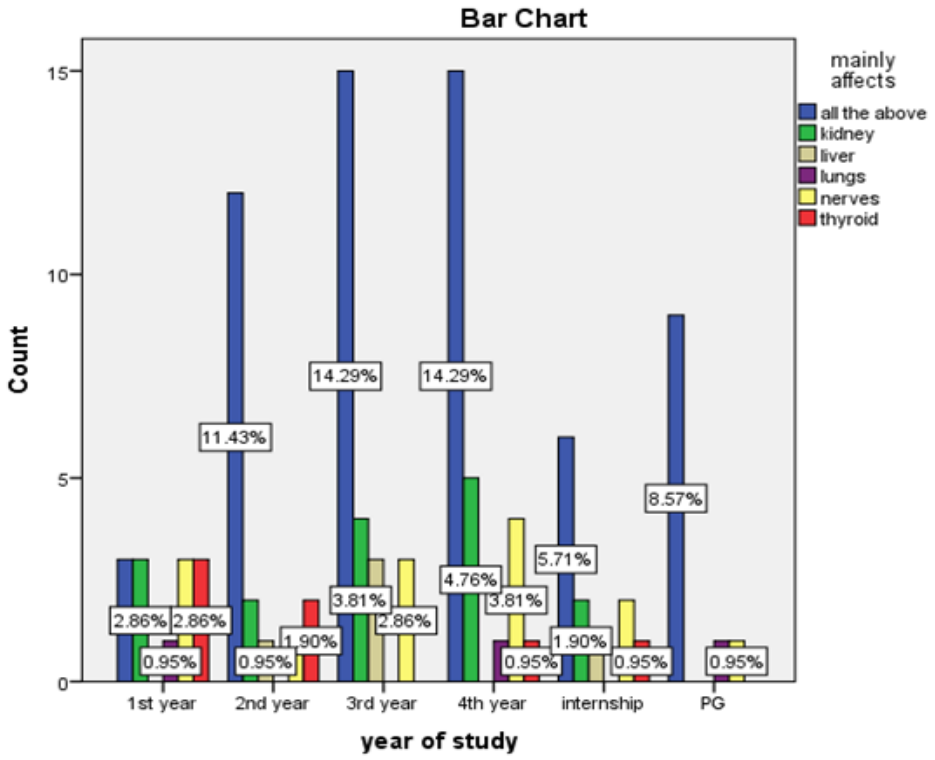

FIGURE 17: Bar graph representing the distribution of response to organs affected in Sjogren's syndrome among the students of various years. P value <0.005 (P value 0.000).

DISCUSSION:

Among the total population 58.1% were female and 41.9% were male. Among the total population 12.4% were studying first year, 17.1% were studying 2nd year, 23.8% were 3rd year students, 24.8% were studying 4th year, 11.4% students were in internship and 10.55 of students were PG. Among the total population 60% of the students were aware about the term Sjogren's syndrome, 25.7% of the population were not aware about the term and 14.3% of the population were not sure about the syndrome. Among the total population 15.2% were answered that Gougerot-Houwersjogren syndrome was another name for this syndrome, 15.2% answered keratoconjunctivitis, 15.2% answered sicca syndrome, 45.7% population answered all the above and 8.6% not aware about the other names.

65.7% answered correctly that the Sjogren's syndrome was an autoimmune disorder, 10.5% answered it was an acquired disease, 15.2% answered it is a congenital disease and 8.6% were not aware about this syndrome. Among the total population 52.4% were answered 13 in 100 000 people was the frequency, 17.1% population were answered 13 in 10 000 people, 21% population answered 1 in 10 000 people and 9.5% were not aware about the frequency of the disorder.This findings are well accepted with a previous study(40) . 61.9% told it mainly affects females and 21% of the population answered male and 17.1% were not aware.A population of 19% answered the symptom of the syndrome was dry mouth,10.5% of the population answered dry eyes and 70.5% of the population answered all the above(41). Among the total population 58.1% answered that it occurs mostly above the age of 40, 11.4% answered that it occurs between the age group of 30-40, 15.2% answered that it occurs between the age group of 20-30 and 15.2% answered that the disorder occurs between the age group of 10-20. 64.8% answered that this syndrome is common for people having rheumatic disease, 21% of the population answered that the syndrome is common for the people having nervous disorder and 14.3% of the population not aware about the syndrome(42).

Our study showed that the other symptoms of Sjogren's syndrome will be dry skin (12.4%), joint pain (5.7%), swelling (9.5%), vaginal dryness (11.4%), prolonged dry cough (11.4%), prolonged fatigue (1.9%) and 56.2% of the population answered all the above. Among the total population 12.4% told the vision problem was also the other complication, 17.1% of the population told yeast infection, 15.2% told it also causes dental caries and 55.2% answered all the above. Among the total population 13.3% answered sjogren's syndrome also affects the nervous system, thyroid (6.7%), kidney(15.2%), liver (4.8%), Lungs (2.9%), and 57.1% answered all the above(9). Among the total population 47.6% thinks that the syndrome is not curable, 40% thinks that the syndrome is curable and 12.4% of the population were not aware. Among the total population 17.1% answered that the treatment for the syndrome was immunosuppressant, 15.2% of the population answered NSAIDs, 46.7% of the population answered both and 21% of the population not aware(39).

When comparing awareness levels among the different years of the study, it was found that third and final year students have higher knowledge than students of first and second years and also the interns and postgradutes. As the students have sjogren's syndrome as a syllabus in their second year, the students have much knowledge on the same in their third and fourth year(41). Dry eyes and a dry mouth are two of the most common signs of Sjogren's syndrome, an immune system deficiency. Other immune system disorders, such as rheumatoid arthritis and lupus, are also associated with the disease. The mucous membranes and moisture-secreting glands of your eyes and mouth are normally the first to be affected by Sjogren's syndrome, resulting in reduced tears and saliva. While Sjogren's syndrome can strike anyone at any age, the majority of those diagnosed are over the age of 40. Women are also more likely to develop the disease. The aim of treatment is to alleviate symptoms.
LIMITATIONS: Limitations of this study considered were, small sample size, limited time duration of the survey. Further studies can be conducted to overcome this limitation.

CONCLUSION:
From the above study results we concluded that the dental students have awareness and knowledge towards the sjogren's syndrome. According to the survey 3rd and 4th year has more awareness than others because the study population was not distributed equally. Furthermore studies will make the students more understanding and knowledge about the concepts and treatment required for the disease.

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CONFLICT OF INTEREST
The author declares that there were no conflicts of interests in the present study.

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- Saveetha Dental College and Hospitals, Saveetha University
- Paani snacks

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