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Advances in Bioresearch

ORIGINAL ARTICLE

Survey on Cleft Palate Awareness Among Dental Students

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ABSTRACT
Dental students will learn more about cleft palates as part of this study. Because of an abnormal development of the baby's upper palate (the roof of the mouth), some babies are born with cleft palates. Due to genetic and environmental causes, it is a frequent facial birth defect Based on questionnaires, the study was completed. Dental students (undergraduate) of various academic years were asked 10 questions in a Google form. Twenty-four percent of fourth-year students are aware of cleft palate, based on a sample size of 26 percent. Second-year students, on the other hand, had a lower level of understanding. For correct treatment and prompt care, dental students must be aware of cleft palate.
Keywords*: Cleft palate , cleft lip, innovative, folic acid, palatoplasty*

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INTRODUCTION

Congenital abnormalities of the craniofacial region, such as cleft palate, are among the most frequent. When the roof of the mouth does not fuse properly, it results in a split or opening [1]. Fusion of the palate usually occurs in the second or third month of pregnancy, however this is not always the case. This condition is caused by both hereditary and environmental causes [2]. Pregnancy drugs (Phenytoin and Phenobarbitone) taken by the mother, fetal exposure to viruses or toxins, maternal smoking, maternal alcohol consumption, and a reduced intake of Vitamin B and Folic acid in the mother's diet are all examples of environmental risk factors.

A cleft lip may or may not be present in children born with a cleft palate. The opening or split in the upper lip is visible in cleft lip. Depending on the severity, there may be a single or double cleft. Cleft lip and cleft palate are related with a wide range of health issues. Disabilities in swallowing, facial growth, dental anomalies and aberrant speech and language delay [3] are just some of the problems that patients with cleft palates face. They also have concerns with their mental well-being.

Orofacial clefts occur in around 1 in 700 live births, according to previous research. Males are more likely than females to be born with a cleft lip or cleft palate [4]. From infancy through maturity, children with this disease require multidisciplinary care. These children's care typically includes nursing, plastic surgery, maxillofacial surgery, otolaryngology, speech therapy, audiology, counseling, psychology, genetics, orthodontics, and dental treatment. Cleft palate surgery is known as palatoplasty.

Various researches have been conducted regarding innovative methods in prevention of cleft palate. One among the studies is the use of folic acid. Folic acid as a prophylactic therapy to women of child-bearing age has proven to decrease the incidence of orofacial cleft [5].

The current study aims at assessing the knowledge and awareness about cleft palate, various treatment procedures, complications involved and the method of diagnosis, among dental students.

MATERIAL AND METHODS

Study design

A cross sectional study was conducted through an online survey from February 2021 among undergraduates.

Study subjects

A simple random sampling was used to select the study participants. All the dental students who were willing to participate were included.

Ethical considerations

Returning the filled questionnaire was considered as implicit consent as a part of the survey. Ethical approval for the study was obtained from the Institutional Review Board (IRB), Saveetha Dental College.

Study methods

An online survey "google forms" was used to disseminate a self-administered questionnaire comprising closed-ended questions to dentistry students beginning in February 2021. The collected data was thoroughly analyzed for clarity, competence, consistency, accuracy, and validity. The questionnaire included demographic information as well.

Statistical analysis

Data was analysed with the SPSS version (23.0). Descriptive statistics as percent were calculated to summarise qualitative data. Chi square test was used to analyze the association.

Questionnaire

SL No.	Questions	Option 1	Option 2	Option 3	Option 4
1	Do you know about cleft palate?	yes	no	-	-
2	Have you met any patients with cleft palate?	yes	no		
3	Is this a congenital disorder?	yes	no		
4	What are the causes of cleft palate?	genetic defect	medication taken by mother during pregnancy	deficiency of B vitamins and folic acid in maternal diet.	all the above
5	Diagnosis of cleft palate.	prenatal ultrasound prior to baby's birth	Clinical examination of mouth, nose and palate.	all the above	none of the above
6	What are the complications associated with cleft palate?	Ear infection/ hearing loss	feeding difficulties	abnormal speech	all the above
7	Cleft palate is repaired with surgery called palatoplasty ?	Yes	No		
8	The first surgery to repair the cleft palate usually occur when the baby is	6 to 12 months of age	18 months	3 years	5 years
9	Duration of palate repair surgery	2 hours	3 hours	4 hours	5 hours
10	Does folic acid prevent cleft palate?	yes	no		

RESULTS

Students in their first and second years, as well as those in their third and fourth years, made up the majority of those who responded to the survey (figure1). In the study, 87 percent of the public had heard about cleft palate, whereas only 13% had never heard of it (figure 2). More over a quarter of fourth-year medical students have come into contact with patients with cleft palates throughout their training (figure 11). Thirteen percent of first-year students, seven percent of second-year students, nineteen percent of third-year students, and twenty-six percent of fourth-year students are familiar with the causes of cleft palates. [page needed] (figure 12). Cleft palate is more prevalent in 3rd and 4th year students than in 1st and 2nd year students. A cleft palate can be diagnosed by 11 percent, 8 percent of second-year students, 18 percent of third-year students, and 26 percent of fourth-year students (figure 13).

The overall study shows that the majority of 4thyear students and 3rd year students have more knowledge and awareness about cleft palate compared to 1st year students and 2nd year students.

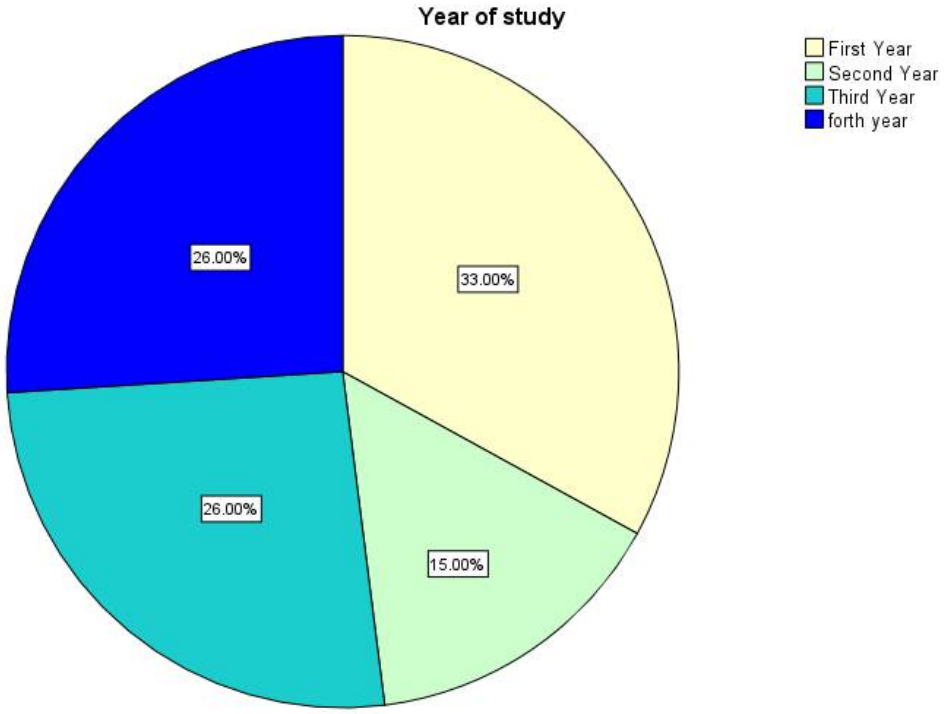

Figure1: The above pie chart represents the percentage of the study population based on year of study. 33% 1st year students, 26% 3rd year students, 26% fourth year students and 15% second year students.

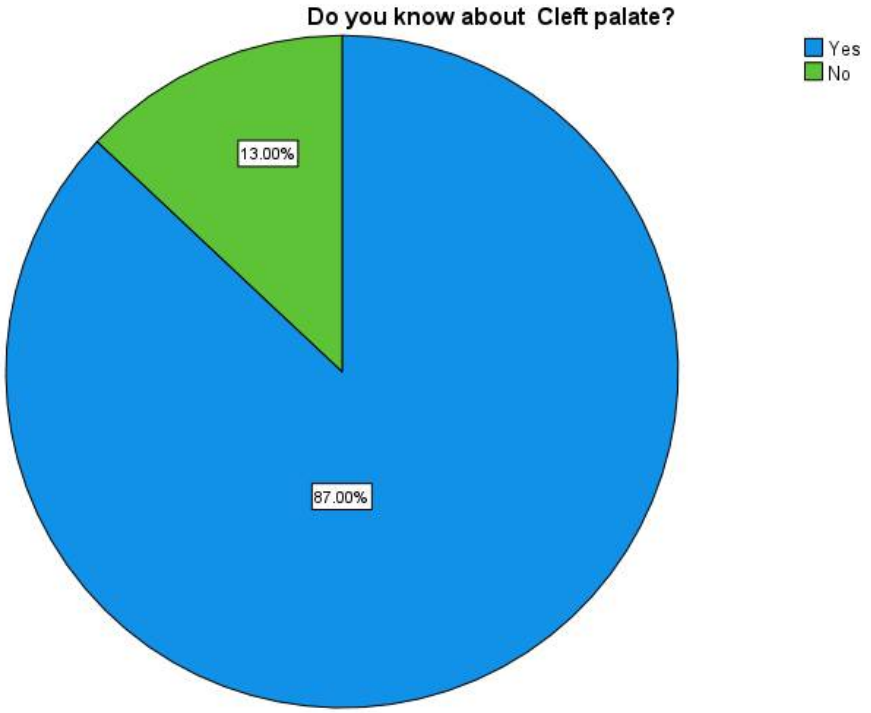

Figure 2: The above pie chart represents the percentage of the study population who know about cleft palate. 87% of the study population have heard about cleft palate and 13% of the study population do not know about cleft palate.

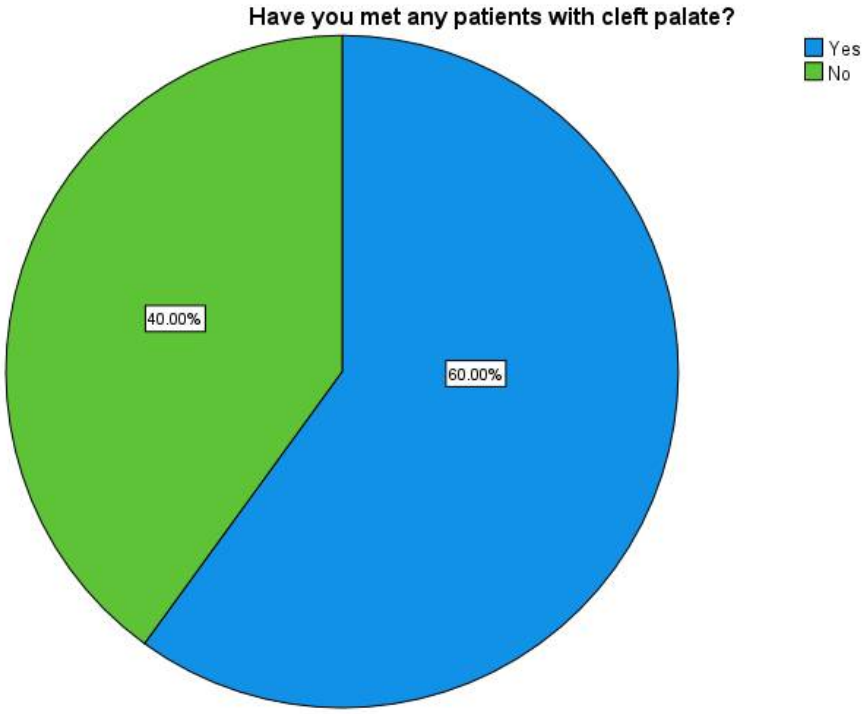

Figure 3: The above pie chart represents the percentage of the study population who have met patients with cleft palate. 60% of the students have met patients with cleft palate and 40% haven't seen patients with cleft palate.

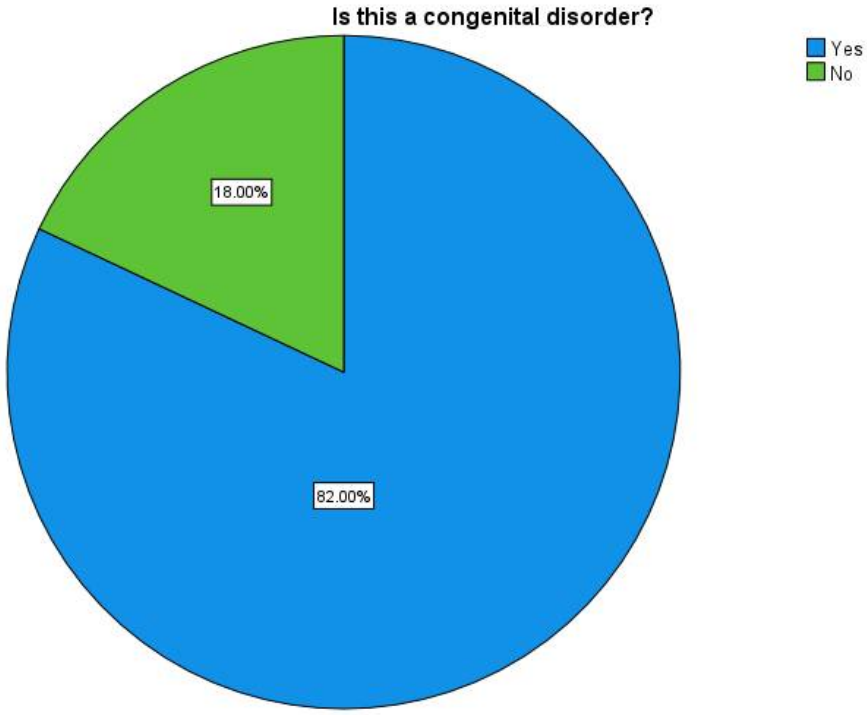

Figure 4: The above pie chart represents the percentage of the study population who knows that cleft palate is a congenital disorder. 82% of students know that it is a congenital disorder and 18% do not know that cleft palate is a congenital disorder.

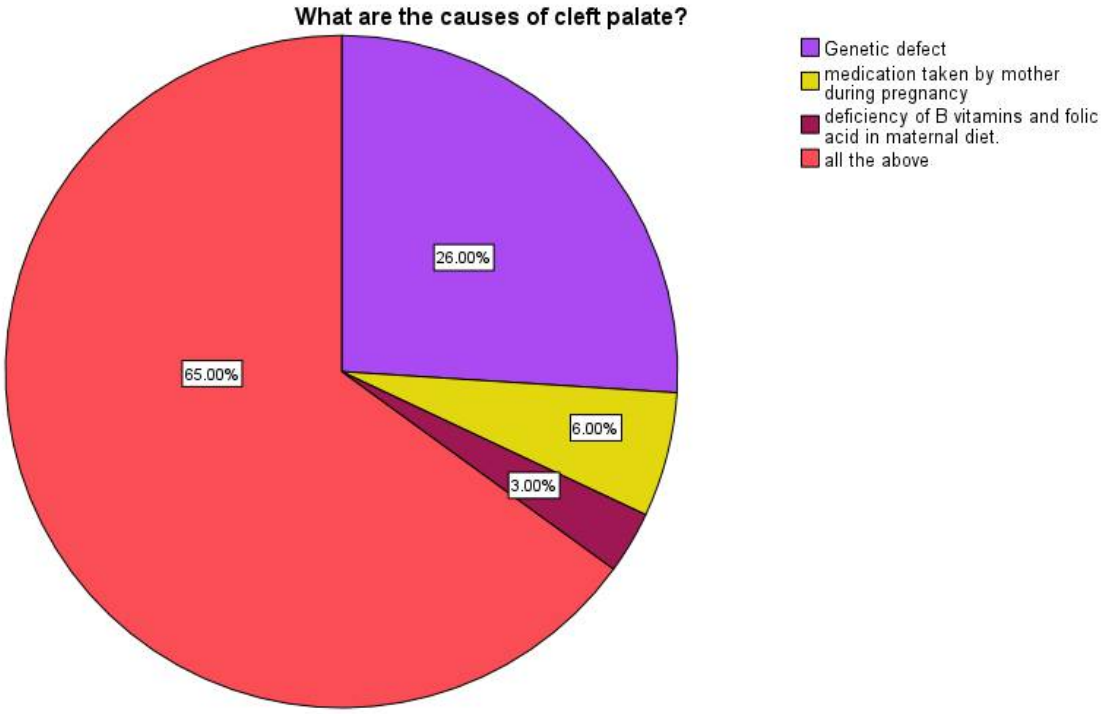

Figure 5: There is a high degree of agreement among participants in this survey that cleft palates can be traced back to several environmental and genetic factors. 65% of students stated that a genetic defect is the cause, 26% stated that medication taken by the mother during pregnancy is the cause, 6% stated that a deficiency of B vitamins and folic acid in the diet is the cause, and 3% stated that all of the above.

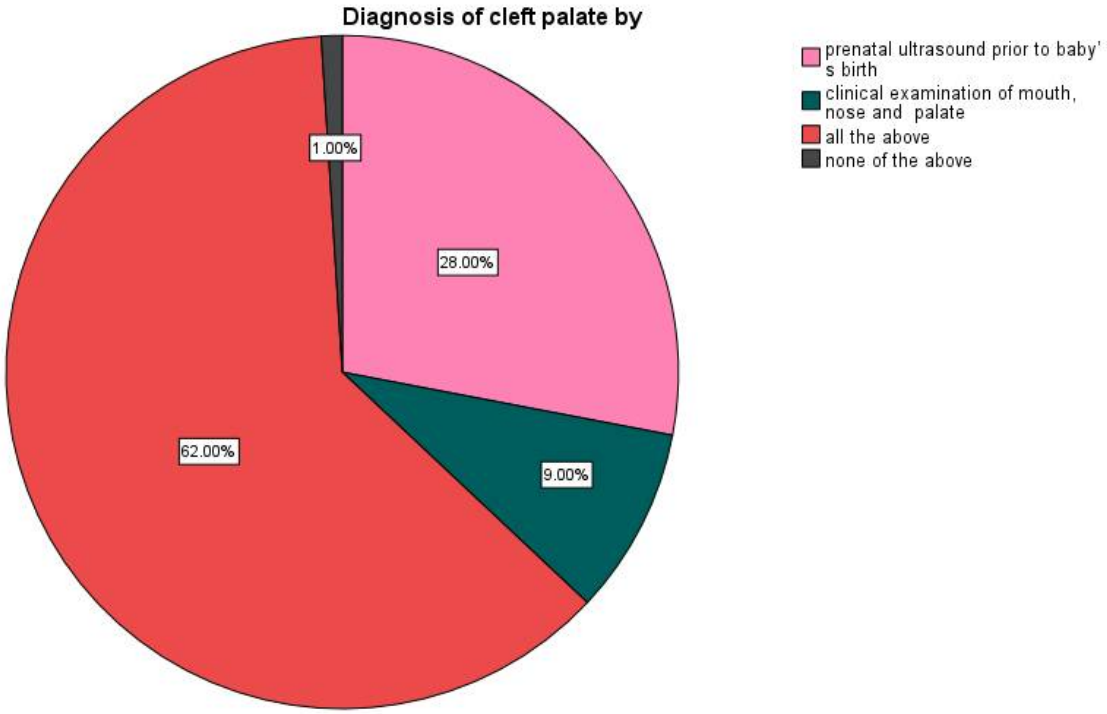

Figure 6: The above pie chart represents the percentage of the study population based on the knowledge about diagnostic method of cleft palate. 28% of the students responded prenatal ultrasound, 9% responded as clinical examination of mouth, nose and palate, 62% responded all of the above and 1% responded none of the above option for the diagnostic method for cleft palate.

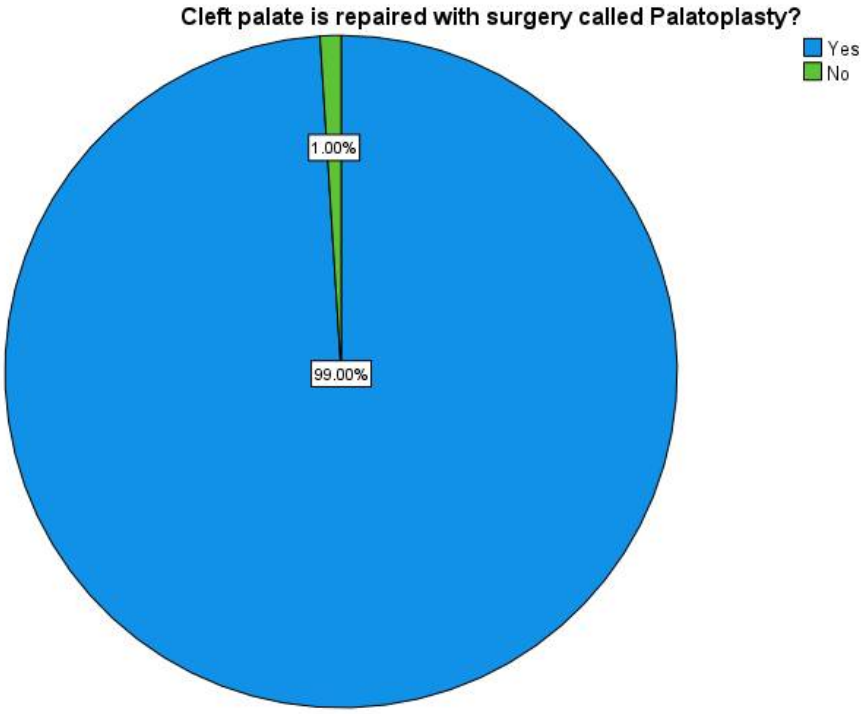

Figure 7: The above pie chart represents the percentage of the study population based on the knowledge about palatoplasty surgery. 99% of the study population know about palatoplasty and 1% do not know about palatoplasty.

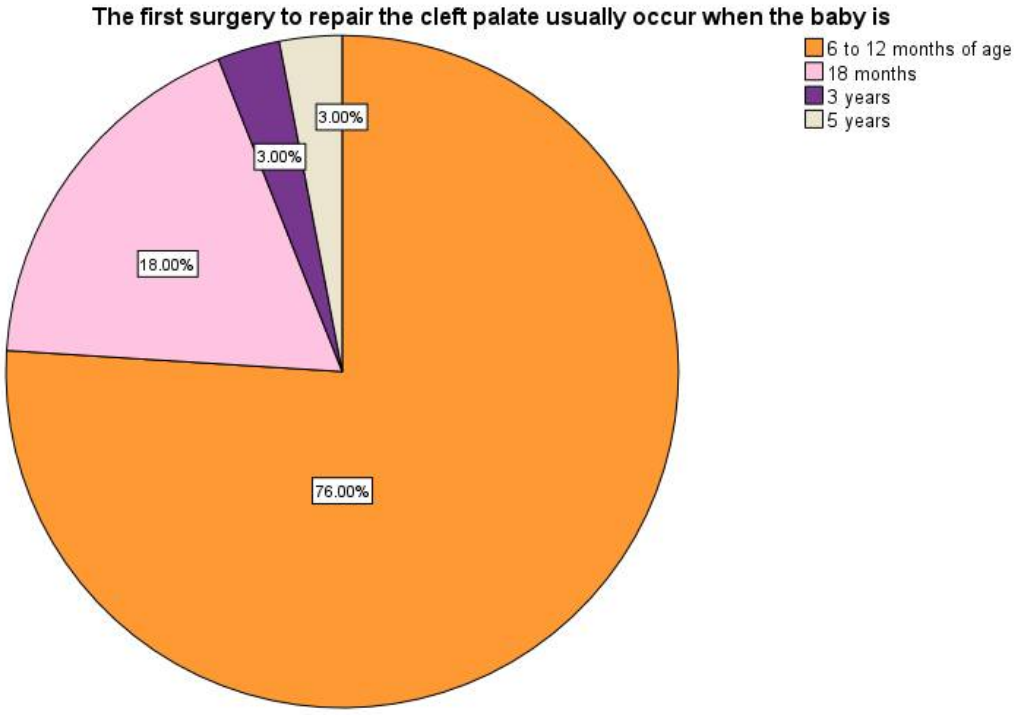

Figure 8: The above pie chart represents the percentage of the study population based on the knowledge about age at which the first surgery to repair the cleft palate is done. 76% responded as 6 to 12 months of age, 18% responded as 18 months, 3% responded as 3 years and 3% responded as 5 years.

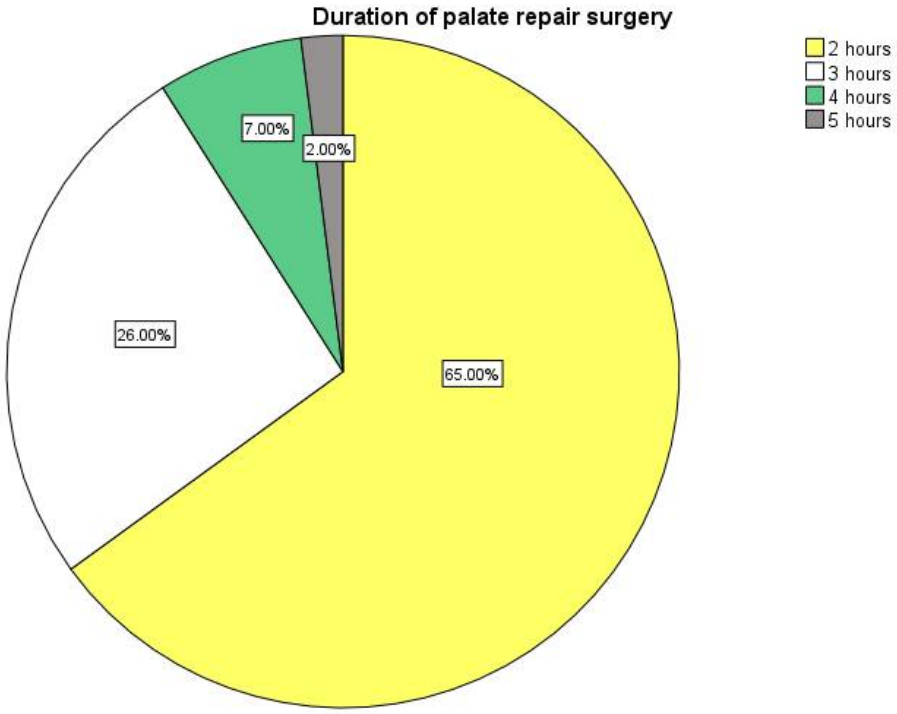

Figure 9: The above pie chart represents the percentage of the study population based on the knowledge about duration of palate repair surgery. 65% responded as 2 hours, 26% responded as 3 hours, 7% responded as 4 hours and 2% responded as 5 hours.

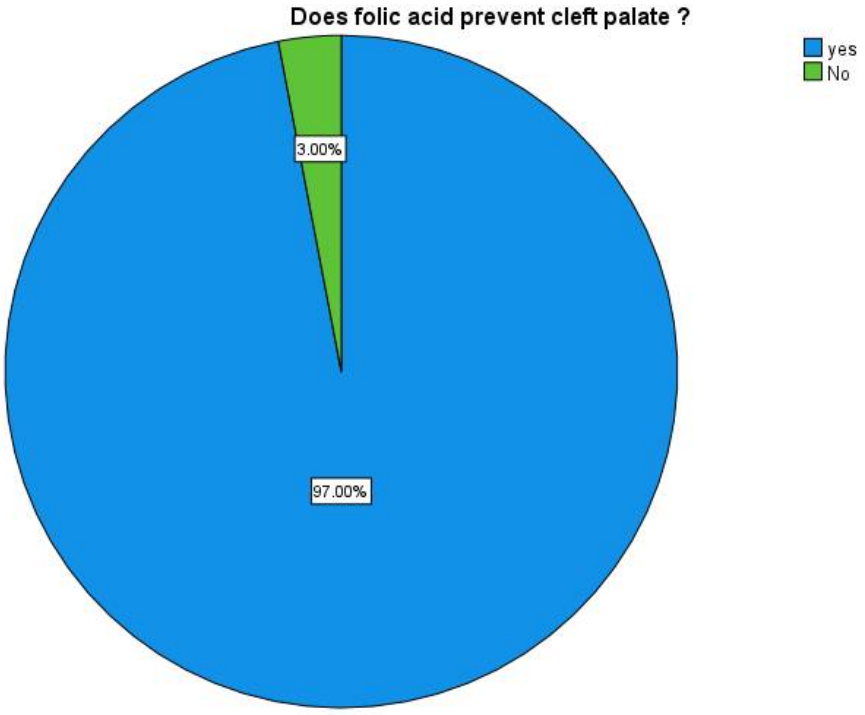

Figure 10: The above pie chart represents the percentage of the study population based on the knowledge about the beneficial effect of folic acid in the prevention of the cleft palate. 97% of the students know that folic acid prevents cleft palate and 3% do not know about the use of folic acid in preventing cleft palate.

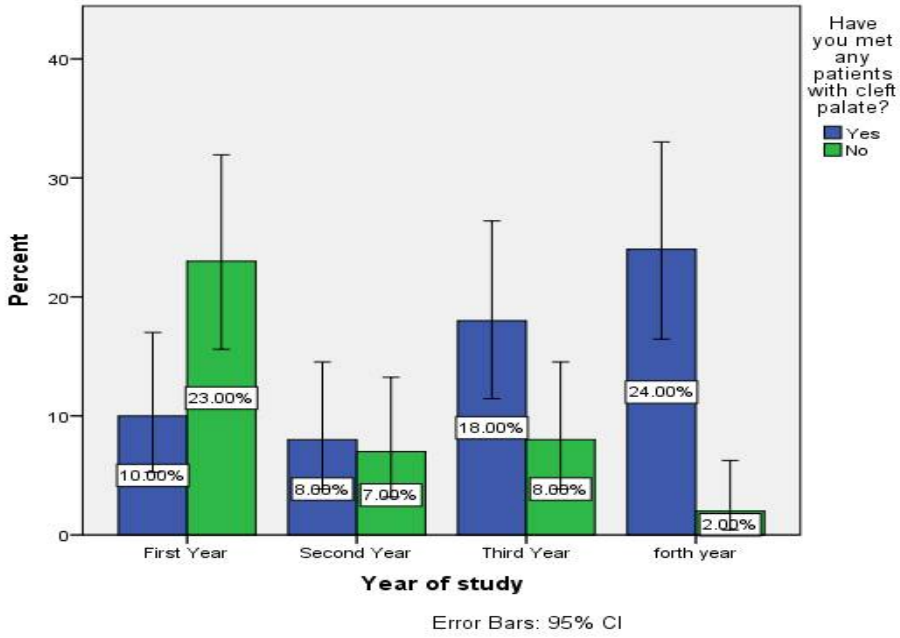

Figure 11: As shown in Figure 11, students' replies to the question "Have you encountered any patients with cleft palate?" are linked to their year of study. Data is plotted along an X-Y axis to show how many people took part in each survey during each year of the study. cleft palate patients have been encountered by 10 percent of first-year students, 8 percent of second-year students, 18 percent of third-year students, and 24 percent of fourth-year students (blue colour). The percentage of students who have never seen a patient with a cleft palate is shown by the color green. It's statistically significant because we used the Pearson Chi-square test (p = 0.010.05).

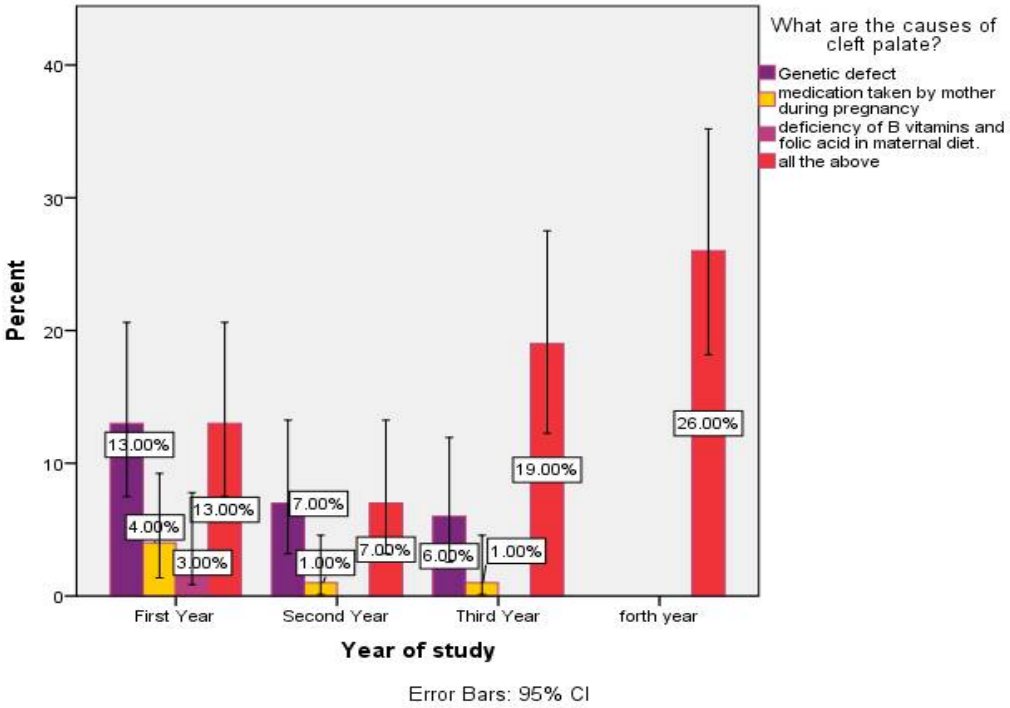

Figure 12: The above bar graph represents association between the students' responses based on the year of study for the question " What are the causes of cleft palate?"?. X axis represents year of study and Y axis represents percentage of responses. 13% (1st year students), 7%(2nd year students) and 6% (3rd year students) responded as genetic defects. 4%(1st year students), 1%(2nd year students) and 1% (3rd year students) responded as medication taken by mother during pregnancy. 3% of 1st year students responded as deficiency of B vitamins and folic acid in maternal diet. 13% (1st year students),

7% (2nd year students), 19% (3rd year students) and 26% (4th year students) responded as all the above. The Pearson Chi- square test was done (p value is 0.01<0.05), hence statistically significant.

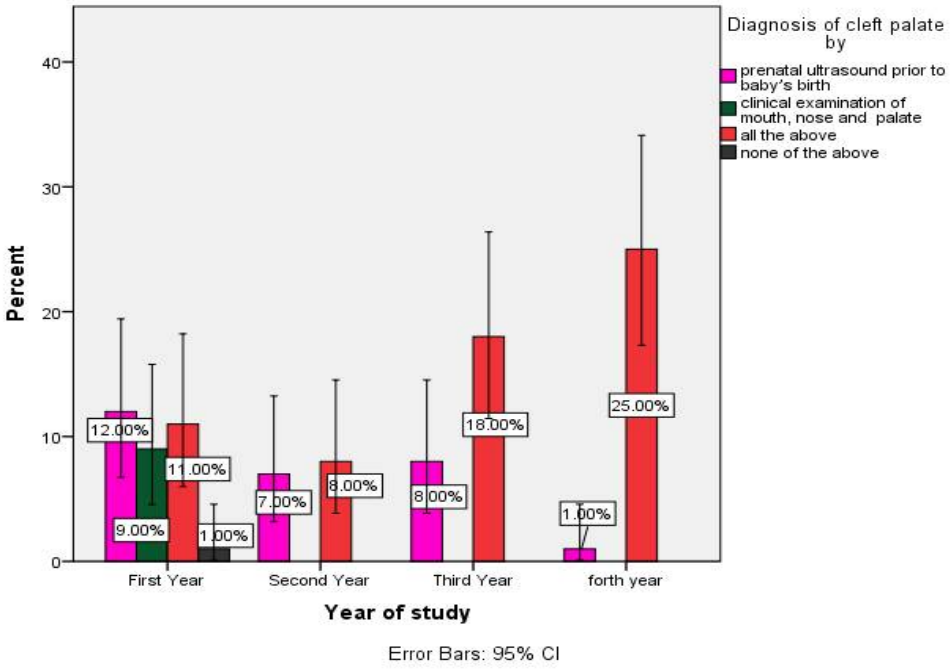

Figure 13: The bar graph above shows the correlation between students' answers to the question "How is cleft palate diagnosis done?" dependent on the year of study. Data is plotted along an X-Y axis to show how many people took part in each survey during each year of the study. First-year students accounted for 12 percent; sophomores accounted for 7 percent; juniors accounted for 8 percent; senior citizens accounted for 1 percent. Clinical examination of the mouth, nose, and palate was selected by 9% of first-year students. All of the above was the response of 11 percent of first-year students, 8 percent of second-year students, 18 percent of third-year students, and 26 percent of fourth-year students. Only 1% of first-year students selected "none of the above" as their answer. It's statistically significant because we used the Pearson Chi-square test (p = 0.010.05).

DISCUSSION

When a child is born with a cleft palate, it is a birth defect affecting the child's craniofacial structure. It is a congenital defect that can be inherited or acquired. Mothers who smoke, drink alcohol, or have a shortage in vitamin B and folic acid in their diets can all have an impact on the health of their children. According to Vieira et al, the development of orofacial clefts is influenced by both hereditary and environmental variables. Near relatives of children with cleft palates are estimated to have a higher probability of developing the condition [7]. Researchers in both studies believe that cleft palate is a hereditary and environmental disease. This evidence strengthens the consensus.

Having a cleft palate can cause a wide range of health issues, including ear infections and breathing difficulties. Study participants in their fourth and third years were informed about the difficulties associated with a cleft palate to a 25 percent and 20 percent respective extent. The results of earlier studies [8] support the findings of the current investigation regarding the problems and defects related with cleft palate. In a study by Mir M et al, they discovered that Palatoplasty can be used to repair any form of cleft palate [9]. The Palatoplasty procedure for cleft palate correction is known by 26% of the current study group (4th year dental students). Both prior research and the current investigation support this conclusion. This evidence contributes to the general agreement.

Lip prints and bite marks are difficult to see in people with cleft palates and cleft lips. According to previous research, the same holds true [10].

Tooth decay is one of the complications associated with cleft palate. The previous study conducted also proves that children with cleft palate have high incidence of caries which mostly occur in the deciduous central incisor and first molar [11, 12].

The study population was selected from a single college, which does not represent the entire population. So the results cannot be generalized, and can be considered as the limitations for this study. In the future this study can help to increase awareness about cleft palate.

CONCLUSION

According to the findings of the study, third and fourth year dental students have greater knowledge and awareness concerning cleft palates as compared to first and second year students in the sample. In order to provide good treatment and timely care to patients, it is vital to take the appropriate steps to expand their knowledge and experience.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES

1. Alsawalha, M. *et al.* (2019) 'Novel mathematical modelling of Saudi Arabian natural diatomite clay', *Materials Research Express*, 6(10), p. 105531.
2. Antony, J.V.M. *et al.* (2021) 'Particle size penetration rate and effects of smoke and smokeless tobacco products - An invitro analysis', *Heliyon*, 7(3), p. e06455.
3. CDC (2021) *Facts about Cleft Lip and Cleft Palate*. Available at: https://www.cdc.gov/ NCBDDD/birth defects/ cleftlip.html (Accessed: 11 March 2021).
4. Chandrasekar, R. *et al.* (2020) 'Development and validation of a formula for objective assessment of cervical vertebral bone age', *Progress in orthodontics*, 21(1), p. 38.
5. Doggalli, N. *et al.* (2019) 'Bite mark: Is it still valid??', *International Journal of Forensic Odontology*, p. 14. doi:10.4103/ijfo.ijfo_4_19.
6. Smallridge, J. *et al.* (2017) 'Centre-level variation in dental treatment and oral health and individual- and area-level predictors of oral health in 5-year-old children with non-syndromic unilateral cleft lip and palate: the Cleft Care UK study. Part 3', *Orthodontics & craniofacial research*, 20 Suppl 2, pp. 19–26.
7. Sridharan, G. *et al.* (2019) 'Evaluation of salivary metabolomics in oral leukoplakia and oral squamous cell carcinoma', Journal of oral pathology& medicine: official publication of the International Association of Oral Pathologists and the American Academy of Oral Pathology, 48(4), pp. 299–306.
8. Subramanyam, D. *et al.* (2018). Comparative evaluation of salivary malondialdehyde levels as a marker of lipid peroxidation in early childhood caries', *European journal of dentistry*, 12(1), pp. 67–70.
9. Sundaram, R., Nandhakumar, E. and Haseena Banu, H. (2019). Hesperidin, a citrus flavonoid ameliorates hyperglycemia by regulating key enzymes of carbohydrate metabolism in streptozotocin-induced diabetic rats', *Toxicology mechanisms and methods*, 29(9), pp. 644–653.
10. Vieira, A.R. (2012). Genetic and Environmental Factors in Human Cleft Lip and Palate', *Frontiers of Oral Biology*, pp. 19–31. doi:10.1159/000337521.
11. Yu, J. *et al.* (2020). Inhibitory effects of triterpenoid betulin on inflammatory mediators inducible nitric oxide synthase, cyclooxygenase-2, tumor necrosis factor-alpha, interleukin-6, and proliferating cell nuclear antigen in 1, 2-dimethylhydrazine-induced rat colon carcinogenesis', *Pharmacognosy magazine*, 16(72), p. 836.
12. Zafar, A. *et al.* (2020). Diagnostic utility of touch imprint cytology for intraoperative assessment of surgical margins and sentinel lymph nodes in oral squamous cell carcinoma patients using four different cytological stains', *Diagnostic cytopathology*, 48(2), pp. 101–110.