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Knowledge of Cleft Lip and Palate among BDS Graduates

Dr. Sharath Kumar Shetty B[1]; Dr. Kavya G A[2]

[1, 2] K.V.G Dental College and Hospital

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Abstract:

- ***Purpose:***
  The purpose of the study was to assess the knowledge of cleft lip and palate among BDS graduates.

- ***Materials and Methods:***
  The participants included 100 BDS graduates. The participants knowledge regarding cleft lip and palate were recorded using a specially designed questionnaire with 18 questions.

- ***Results:***
  The results were interpreted in pie chart, which showed they were aware of CL/P and various procedures involved, prosthesis to be given and timing of different procedures, the multidisciplinary team involved and incidence of cleft lip and palatethe role of each specialty in managing the cleft lip and palate.

- ***Conclusion:***
  The knowledge, awareness on cleft lip and palate management among BDS graduates is necessary for proper timely care, quality service , patient management and efficient treatment.

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I. INTRODUCTION

Children born with oral clefts require treatment from a number of health care providers during the first two decades of their life. Patients with cleft lip and palate confront a plethora of problems ranging from feeding difficulties as infants to frequent ear infections and hearing problems, compromised speech, aberrant dentofacial development, malocclusion and esthetic impairment with its unfavorable effects on the psychosocial adaptation of the individual.[1]

A well-functioning team of experts, provides treatment and support for the patient and parents. Numerous specialities should interact in a timely and sequential manner in the management of these patients.[2]

A basic knowledge of the different timing of development, Knowledge about the various treatment procedures involved and the timing of the procedures among the BDS gaduates is vital for them to refer the patients at the correct stage to the appropriate specialist, who will provide the best of patient care.

II. MATERIALS AND METHODOLOGY

A questionnaire-based study Over a four-month period, 100 BDS graduates were assessed for knowledge, awareness, and attitude on CLEFT LIP AND PALATE.

- *Questonaire*

1. Rule of 10 in cleft lip repair include all of the following except:
a- More than 10 pounds of weight.
b- More than 10 weeks of age.
c- More than 10 gm/dl of Hg.
d- More than 10 thousands of WBC.

2. The palatine processes begin to fuse at
a- Six weeks post fertilization.
b- Eight weeks post fertilization.
c- Ten weeks fertilization.
d- Twelve weeks fertlization.

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3. What is the most common anomaly associated with an isolated cleft palate?
a- 22q deletion
b- Pierre Robin Seque nce (PRS)
c- Van de Woude syndrome
d- Down Syndrome

4. Congenital cleft lip and palate affecting child speech. At which time the Repair of congenital cleft palate is usually improve speech:
a- 6-12 weeks after birth
b- 1-4 years
c- 6-12month
d- 6-12 years

5. Patient with cleft palate have speech disabilities .which of the following soundshave not been affected by palatal clefts are:
a- The vowels (A, I, E, O & U), M and N
b- K & KH letters
c- P & D letters
d- S and SH letters

6. The ideal timing for repair of cleft lip is:
a- 3 weeks.
b- 3 months.
c- 9 months.
d- 12 months

7. The ideal timing for repair of cleft palate is:
a- 3 weeks.
b- 3 months.
c- 1 year.
d- 10 years.

8. Complications that may occur with cleft palate include all of the followings except:
a- Feeding difficulties
b- Speech probems.
c- Frequent ear infection.
d- Speech complications.

9. Which of the following is not a typical part of the multidisciplinary treatment for cleft lip and palate?
a- Orthodontist
b- Prosthodontist
c- Speech therapist
d- Pathologist

10. There are many prosthetic designs for cleft palate patient. The first prosthesis for patient with cleft palate in predental child is:
a- Feeding device
b- Speech Aid
c- Meatus obturator prosthesis
d- Immediate surgical obturator

11. Early repair of the cleft palate is not favorable. which of the followings considered the main reason:
a- Permit the growth of the palate
b- Permit narrowing of the cleft,
c- Permit for development of enough tissues for closure.
d- All of the above

12. Which of the following prosthesis is indicated for patients having incompetent velopharynge
a- Feeding device for infants
b- b-Expansion applians
c- Palatal lift prosthesis
d- None of the above

13. The first disability facing congenital palatal defect babies is:
a- Speech
b- Psychology
c- Nutrition
d- Appearance

14. All of the following are orthodontics problems with cleft lip and palate except
a- Class III tendency
b- Anterior and Posterior cross bite
c- Class II tendecy
d- Spacing and crowding

15. Which maxillary expander is used in transition period for cleft lip and palate
a- Hyrax appliance
b- Quad helix
c- MARPE
d- Jack screw

16. Which ethnic group has highest prevalence of cleft lip and palate?
a- Africans
b- Europeans
c- Australians
d- Native Americans

17. Which prenatal imaging technique is commonly used to diagnose cleft lip and palate?
a- MRI
b- CT scan
c- Ultrasound
d- d-Xray

18. The average incidence of cleft lip & palate is:
a- 1/7
b- 1/70
c- 1/700
d- 1/7000

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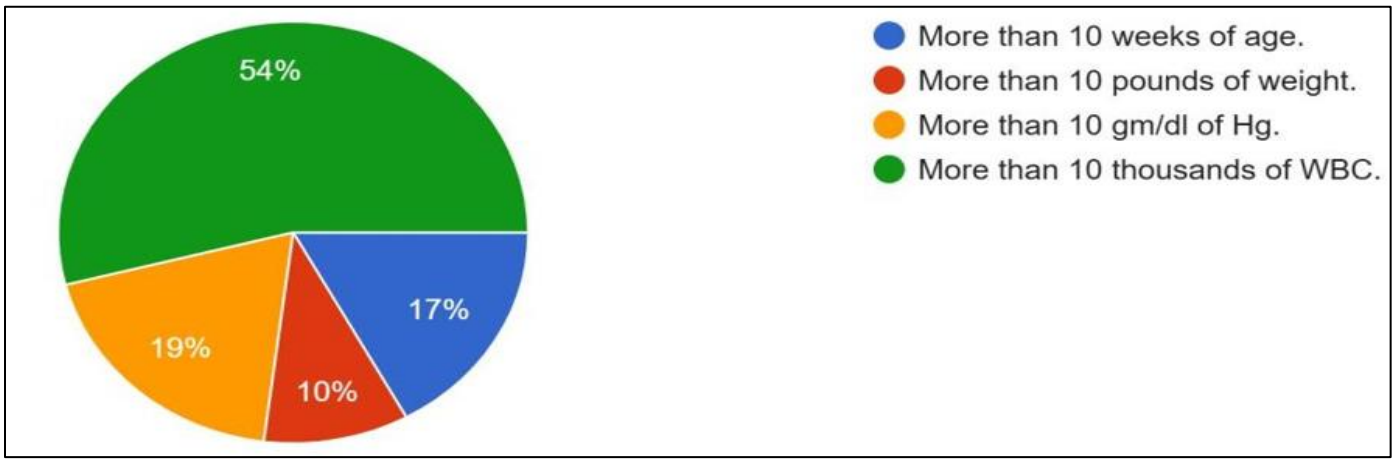
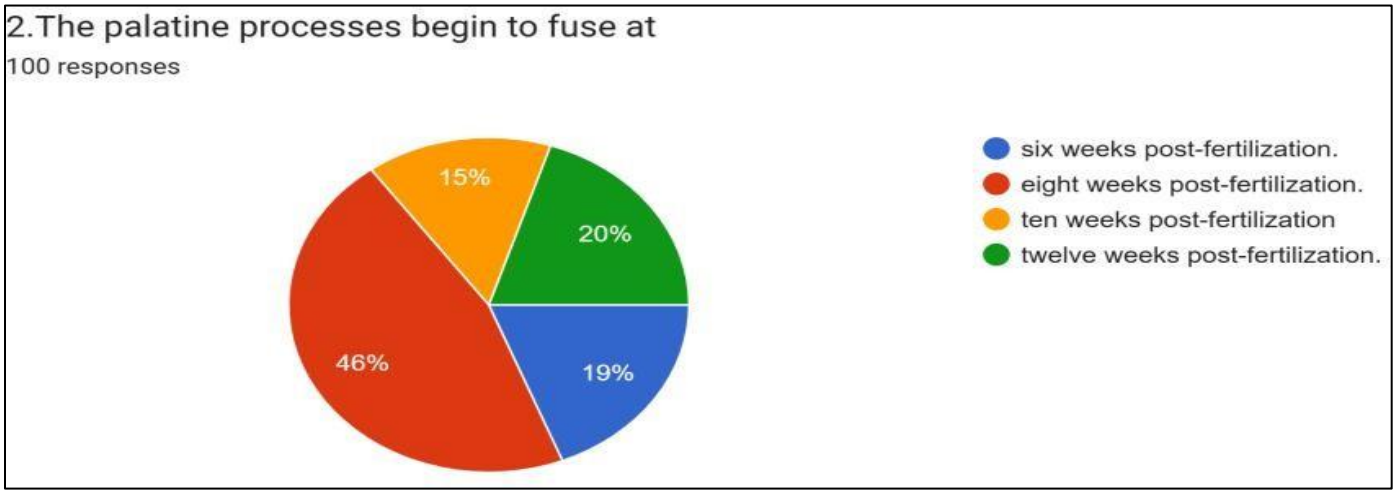
III. RESULTS

A questionnaire consisting of 18 questions was distributed among dental students and knowledge, awareness, and attitude on CL/P management were assessed.

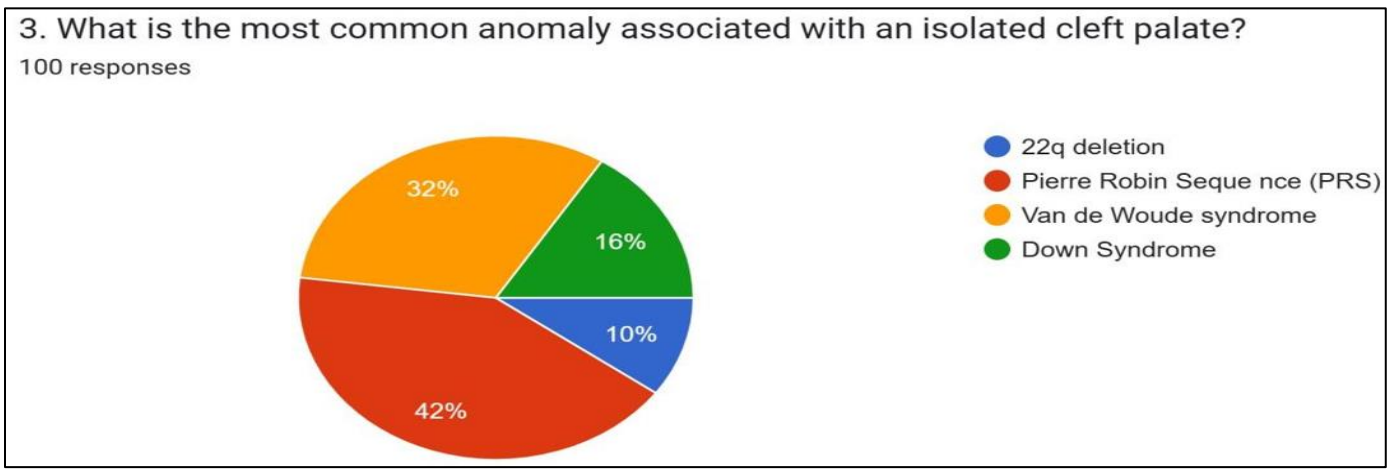
The responses deduced were, a question on rule of 10 in cleft repair, 54% responded that more than 10 thousands of WBC was not included in it,18% said that more than 10gm/dl of Hg was not incuded in rule of 10, 18% claimed that more than 10 weeks of age is not incuded, remaining said that more than 10 pounds of weight was not included in rule of 10.



19% telling that The palatine processes begin to fuse at six weeks post- fertilization, 44% said that it was at eight weeks post-fertilization, 14 % claimed that it was ten weeks post fertilization, and 24% said twelve weeks post-fertilization.



11% said 22q deletion was the common anomaly associated with an isolated cleft palate, 44% claimed it is Pierre Robin Seque nce (PRS), 34% said it was Van de Woude syndrome, 12% said it was Down Syndrome.



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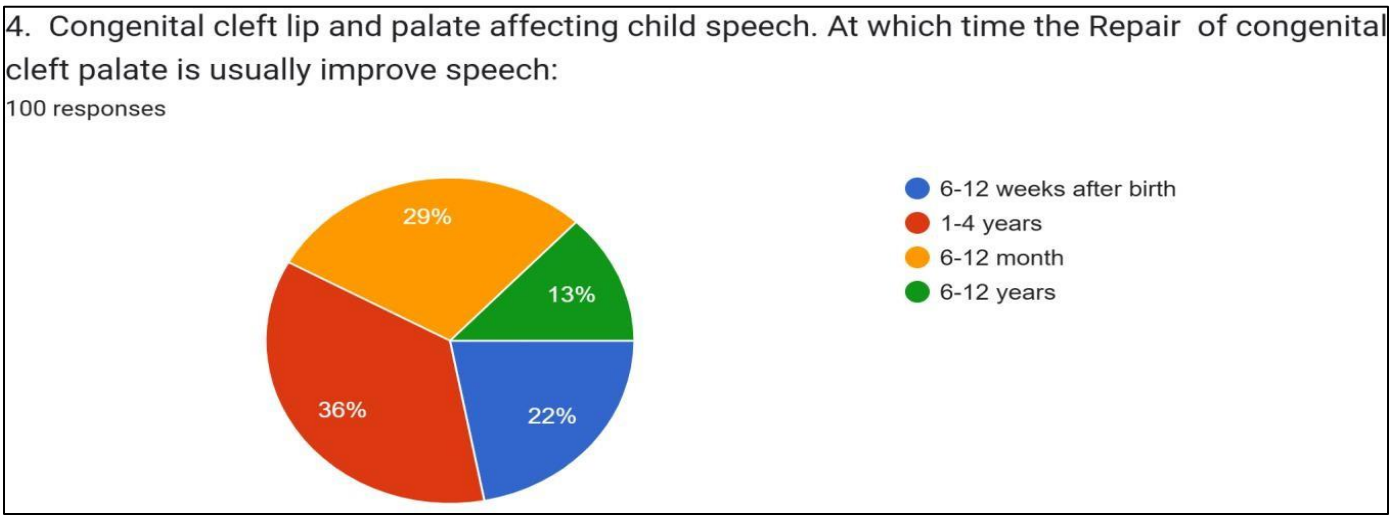
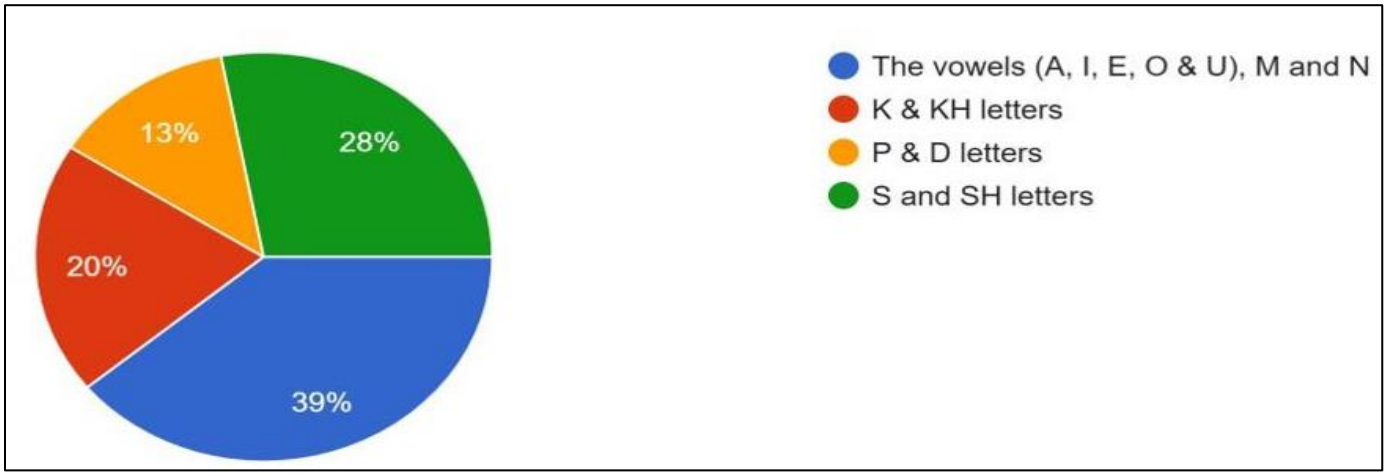
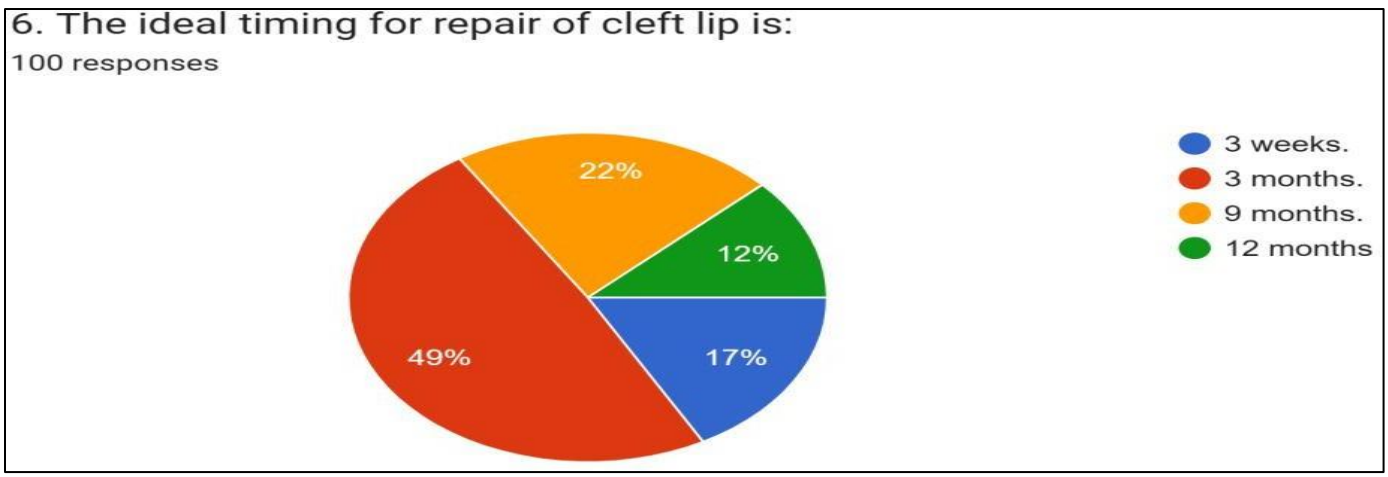
22% responded that Repair of congenital cleft palate at 6-12 weeks after birth would usually improve speech, 35% said 1-4 years was proper time, while 29% claimed 6- 12 months was time to repair cleft palate to improve speech and 14% said it was 6 to 12 years of age.



40% said that The vowels (A, I, E, O & U), M and N sounds were not affected by cleft palate, 19% said K & KH letters were not affected, 13% P & D letters were not affected by cleft palate and 28% claimed that S and SH letters were not affecte in cleft palate.



Question on ideal time for repair of cleft lip 18% said that 3 weeks is proper time, 51% said 3months, 21% said it was 9 months and 10.3 % said it was 12 months



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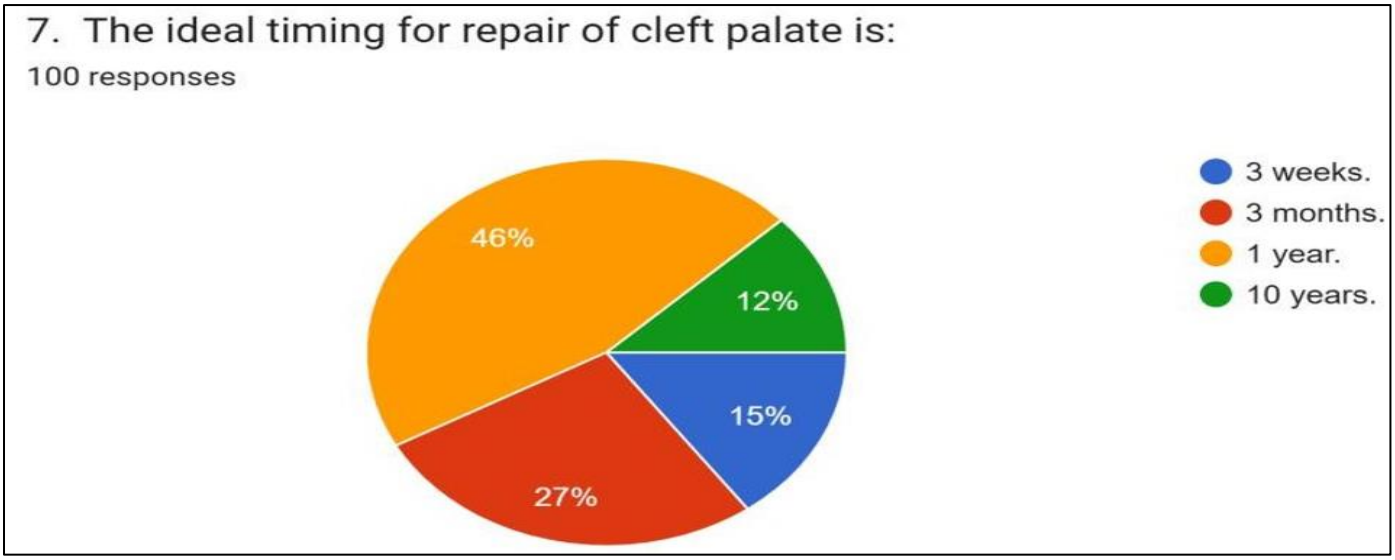
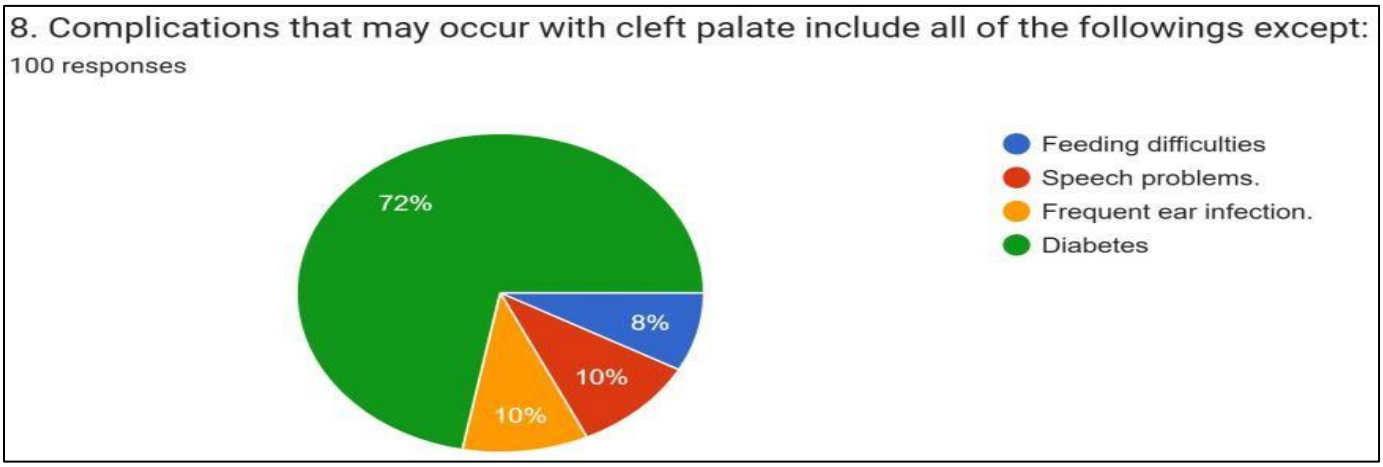
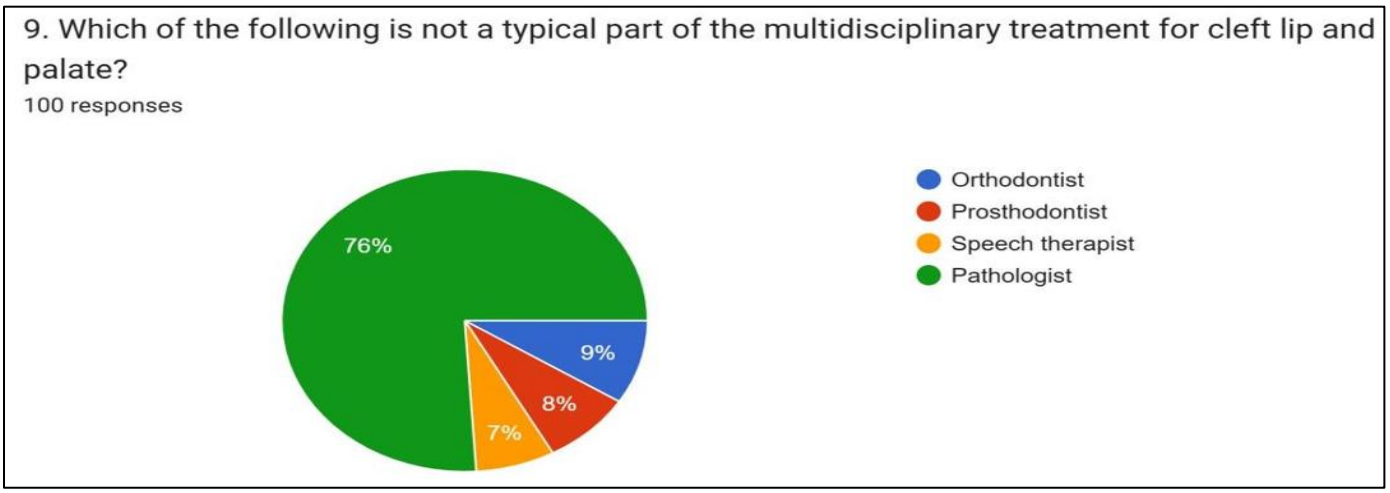
16% said 3 weeks was ideal time for cleft palate, 27% said it was 3 months was ideal time for cleft palate, 46% claimed it was 1 year and 11.5% said it was 10 years.



A question on complications of ceft palate 9% said feeding difficulty was not included in complication,9% said speech problem is not included, 7% said that frequent ear infection and 75% claimed it was diabetes that was not complication of cleft palate.



Team of multididciplinary approach for cleft lip and palate 10% said orthodontist were not included, 8 % said prosthodontist not included, 8% said speech therapist not incuded and 74% said pathologist were not included.



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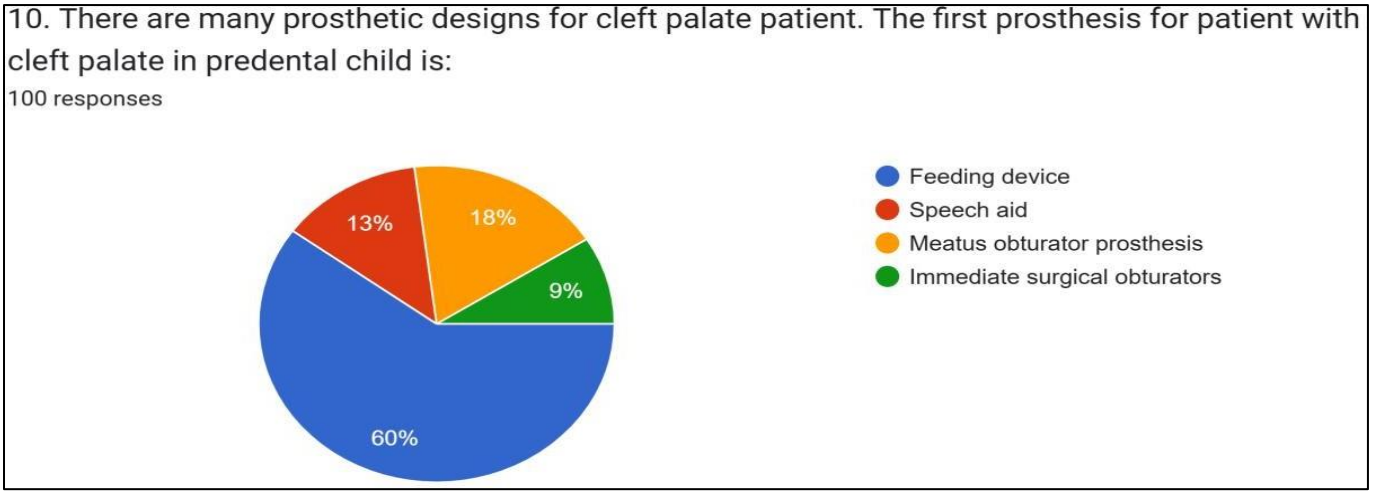
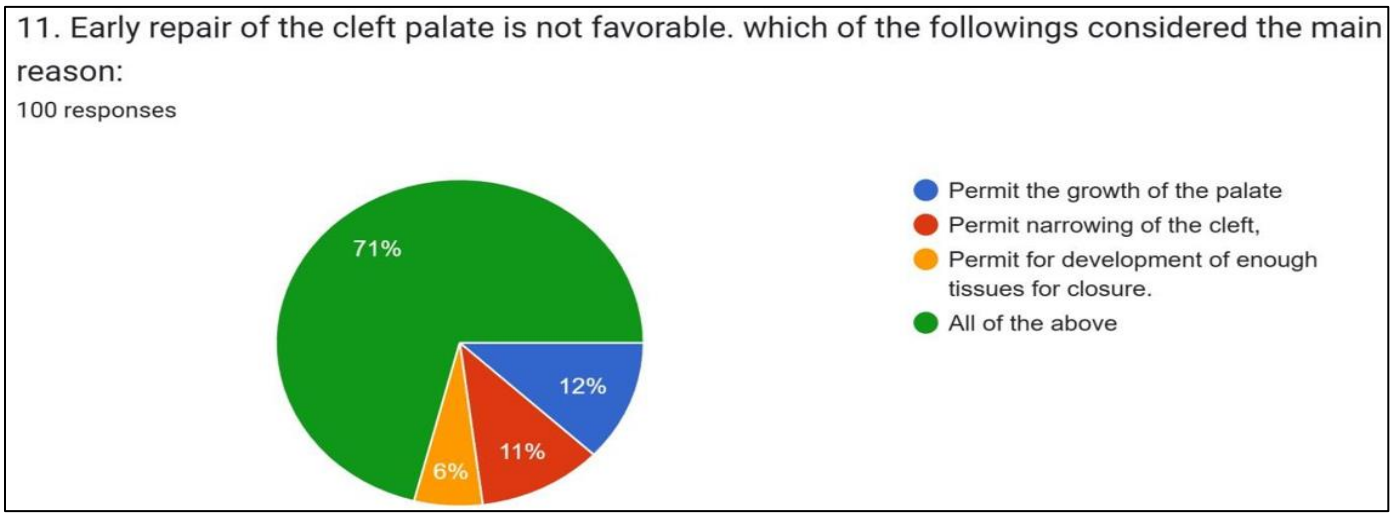
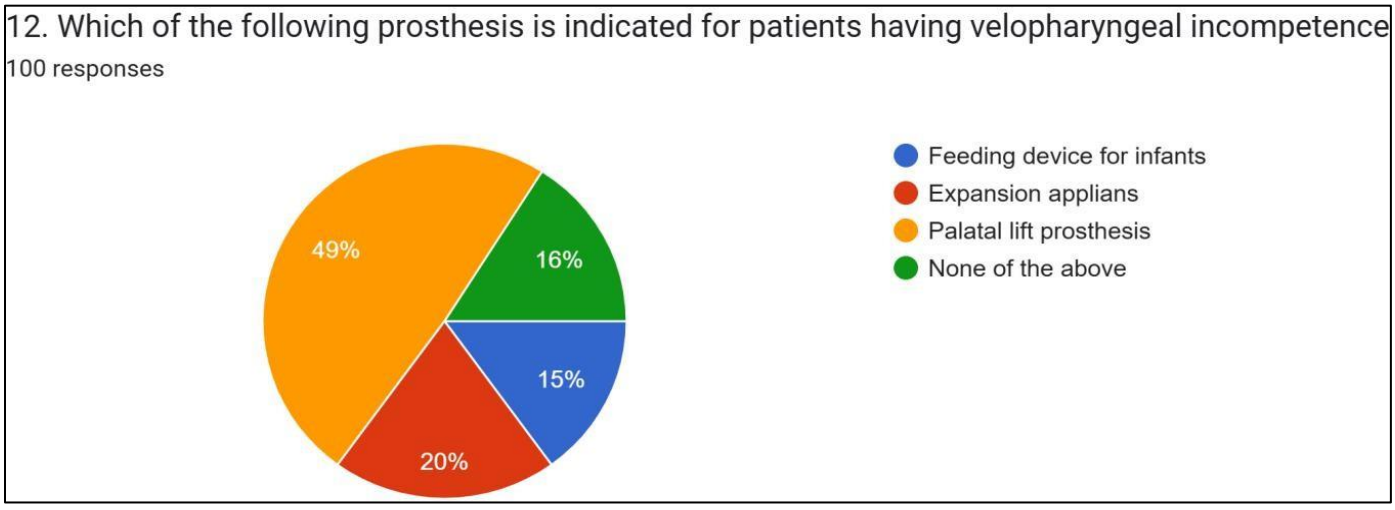
61% said feeding device is the first prosthesis for patient with cleft palate in predental child, 13% said it as speeching aid, 17% claimed it as Meatus obturator prosthesis and 10% said it as Immediate surgical obturators.



14% said feeding device for infants is the prosthesis indicated for patients having velopharyngeal incompetence, 19% said Expansion applians is indicated, 54% claimed palatal lift prosthesis is indicated and 15% said none of the given opton is correct.



22% said that speech is the first disability faced by congenital palatal defect babies, said psychology is first disability, 55% said nutrition and 21% said appearance.



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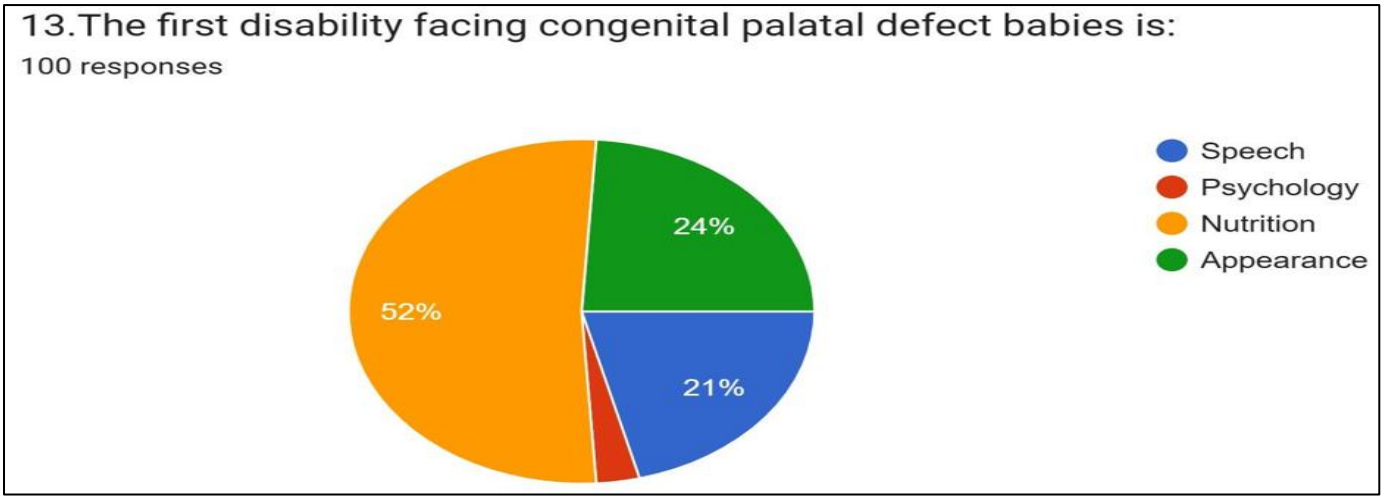
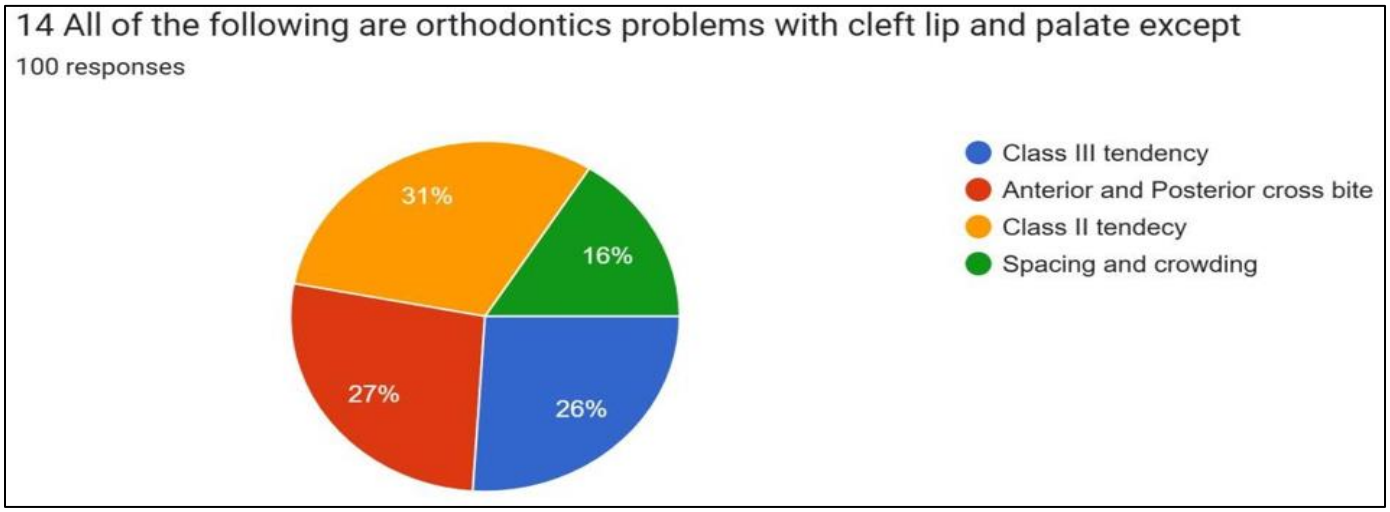
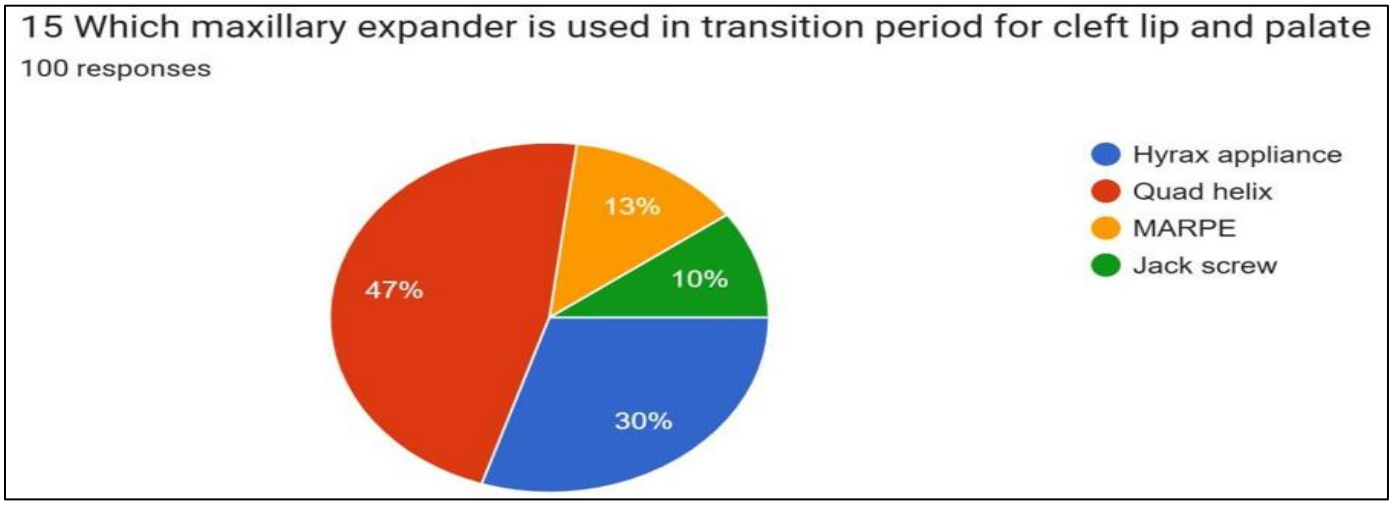
21% of people said speech is the first disability faced in congenital palate babies, 3% said it as psychology, 52% said it is nutriton, 24% said it is appearance.



26% said class III tendency is not problems associated withcleft lip and palate, 27% said it is anterior and posterior cross bite, 31% said it is class II tendency and 16% said spacing and crowding.



Question on maxillary expander in transition period for cleft lipand palate 30% said hyrax is used, 47% said quad helixis used, 13% said MARPE is used, 10% jack screw is used.



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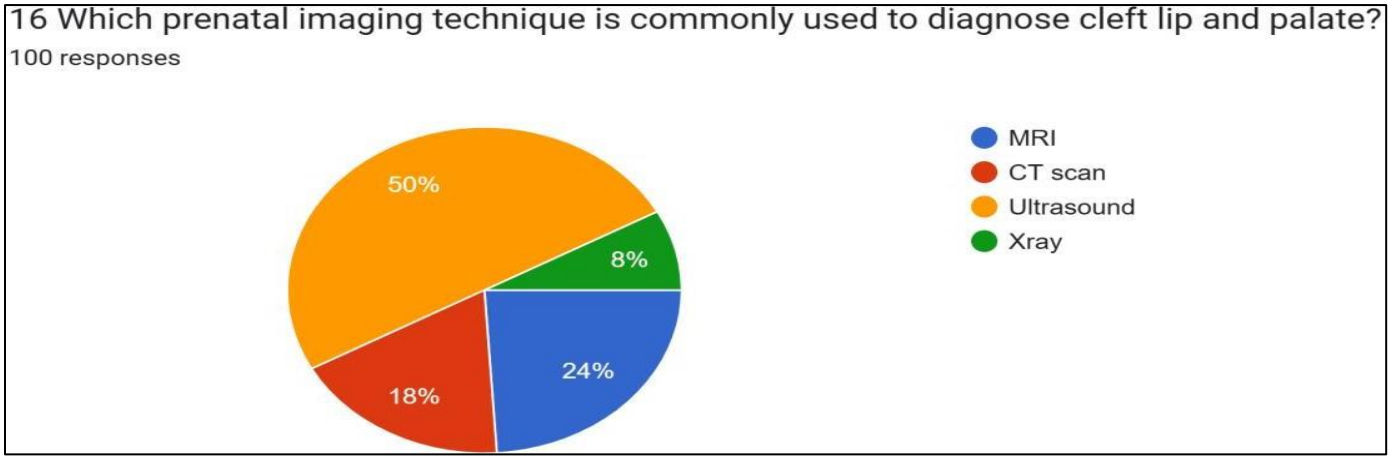
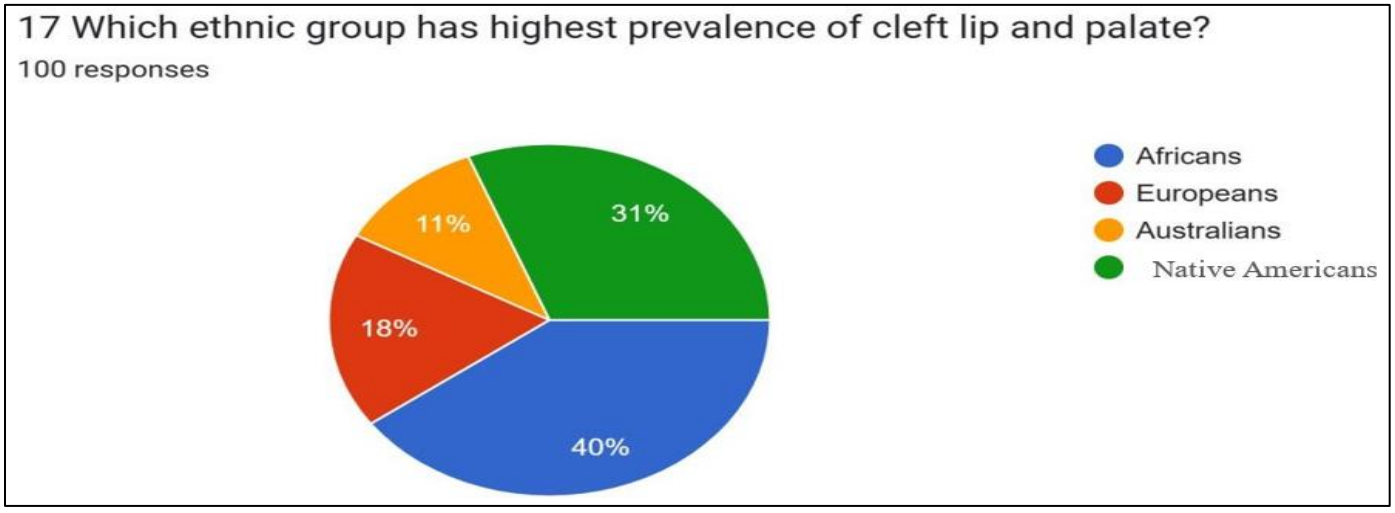
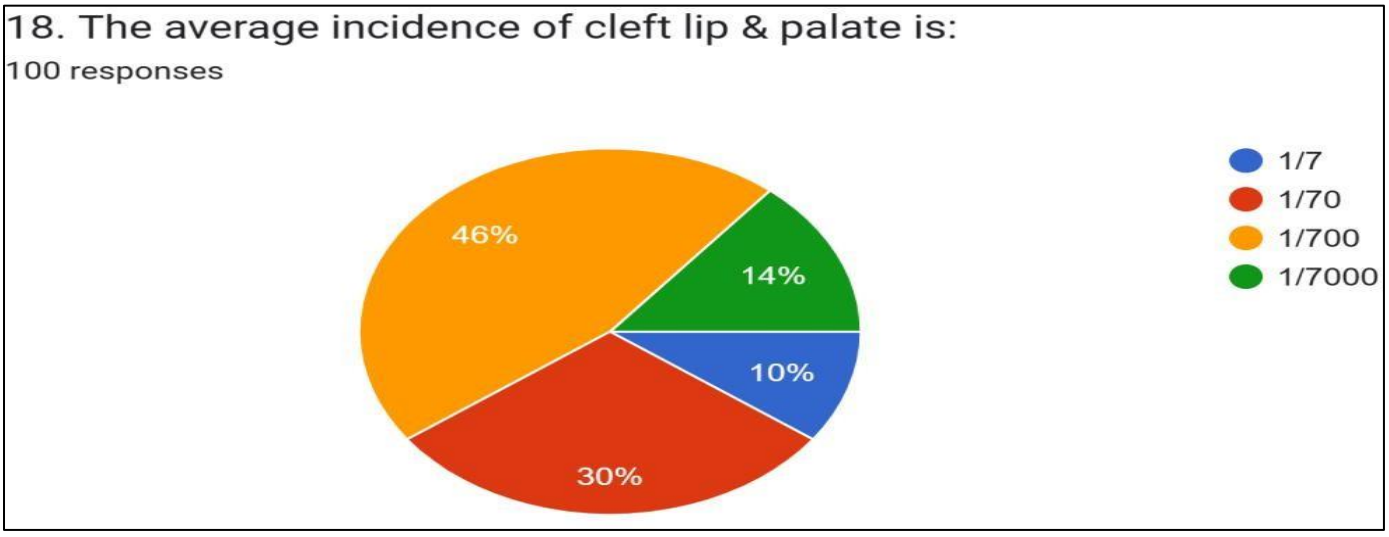
24% said MRI is used as prenatal imaging technique to diagnose cleft lip and palate, 18% said CT scan is used, 50% said ultrasound is used, 8% said x rays are used



Question on prevelence of cleft lip and palate 40% said Africans have high prevelence,18% answered Europeans, 11% said it is australians, said it is 31% Native Americans



Question on incidence of cleft lip and palate 10% answered it is 1/7, 30% answered it is 1/70, 46% answere it is 1/700 and 14% aswered it is 1/7000



IV. DISCUSSSION

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The cleft and craniofacial team involves nurses, general dentists, orthodontists, oral surgeons, otolaryngologists, geneticists,prosthodontists, speech therapists, radiologists, psychologists, feeding specialists, and plastic surgeons, the cleft children needs are multifactorial.[3]

Team working is essential to produce successful patient outcomes. Cleft teams and their constituent clinicians are at the fore front of patient outcome assessment and any aspiring cleft team member must understand how the continuous evaluation of outcome and burden of care will further refine clinical protocols for future patients.The craniofacial team is composed of nursing and physician specialists with specific interest and special training in the care of children with cleft and craniofaciail deformities. Feeding specialist are the first consultation managing the special feeding needs of cleft newborns preventing nutrtion deficiency in them.

In 2002, a comprehensive overview of orofacial cleft (OFC) epidemiology up to the end of the 20th century which included a systematic literature search and a review of the major international registries including EUROCAT, ICBDMS and NBDP was published [1].

The available data indicates that the overall figure for OFC prevalence is approximately 1 in 700 live births with considerable ethnic and geographical variation.[4]

Maternal smoking has been linked to an increased risk of cleft lip and palate (CLP), though the association is relatively modest, with multiple studies consistently reporting a relative risk ranging from 1.3 to 1.5. However, when smoking during pregnancy is combined with a genetic predisposition, the risk becomes more pronounced. Notably, research by Beaty et al. (2002) found that the combination of maternal smoking and specific MSX1 gene variants in infants could raise the likelihood of developing CLP by over sevenfold. [5]

Friede and Johanson reported facial growth in 13 Swedish children with bilateral clefts of the lip and palate (BCLP), five at age 7, and eight at age 10 years. The patients, who had had lip adhesion and vomer flap (without premaxillary setback) and velar closure with push back, exhibited facial convexity similar to the Oslo sample.[6]

In the study active presurgical orthopaedics appliances improved the nasal deformity and overlapped alveolus morphology in infants with complete unilateral cleft lip and T-shaped alveolus.[7]

AlignerNAM showed high accuracy in reducing cleft size and aligning alveolar segments in UCLP patients, achieving accuracy rates above 90% in both linear and angular dimensions. AlignerNAM appliance is a suitable alternative to conventional presurgical infant orthopeadic techniques.[8]

Secondary alveolar bone grafting is an integral part of the cleft lip and palate surgical treatment series; this study identified several outcome predictors for both graft failure and adverse events, the most significant of which was age at operation. Although the mixed dentition phase often extends to 12 years of age, it is recommended that bone grafting be performed before 9 years of age to optimize outcomes.[9]

Cleft anomalies occur in different degrees of severity and configuration with greater incidence of conductive hearing defects of 97%. Positive correlation was noted in cleft palate cases with significant improvement after palatoplasty at an earlier age.[10]

In clinical practice, the timing of cleft lip repair has historically been guided by the "rule of 10s," recommending surgery when the infant is at least 10 weeks of age, weighs a minimum of 10 pounds (approximately 4.5 kilograms), and has a haemoglobin level of 10 g/dL. This guideline was originally introduced by Wilhelmsen and Musgrave in the 1960s to minimize surgical and anaesthetic risks in young infants (Wilhelmsen & Musgrave, 1969). Despite advances in paediatric anaesthesia and perioperative care, these criteria remain a practical benchmark for assessing surgical readiness and ensuring patient safety (Singh et al., 2015; Losee & Kirschner, 2008)[11-12]

The most frequently used surgical cleft repair techniques are the Furlow palatoplasty and the Bardach style with intravelar veloplasty.[13]

Cleft lip and palate (CLP) are common congenital conditions that require a multidisciplinary approach for optimal management. General dentists play a critical role in the care of individuals with CLP, and their understanding of these conditions is vital for ensuring proper treatment throughout the patient’s life. As many patients with CLP first seek dental care, general dentists are often the initial professionals to detect and address oral health concerns related to the condition.

Knowledge of CLP enables general dentists to identify dental anomalies, such as misalignment, missing teeth, or issues with tooth development, that are common in these patients. They are also equipped to provide preventive care, helping to reduce the risk of tooth decay and periodontal issues that CLP patients may face due to their altered oral anatomy. Furthermore, general dentists play an essential role in educating patients and their families about oral hygiene practices, as well as providing guidance on feeding and speech development in the early stages.

Additionally, general dentists are crucial in monitoring the eruption of teeth, ensuring that dental growth is progressing as expected, and identifying issues that may require further intervention. By understanding the surgical, orthodontic, and psychosocial aspects of CLP, general dentists can coordinate care effectively with other specialists, ensuring a holistic and patient-centred approach. Ultimately, a strong foundation of knowledge helps general dentists contribute to improved long-term outcomes for individuals

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with cleft lip and palate (Losee & Kirschner, 2008; Singh et al., 2015)[14-15]

V. CONCLUSION

In conclusion, while cleft lip and palate are challenging conditions, the outcomes for individuals born with these conditions have improved significantly due to advances in surgical treatment, speech therapy, dental care, and psychological support.

In this study, we have assessed the knowledge, attitude, and awareness of CL/P management among BDS graduates, in which they were aware of CL/P and various procedures involved, prosthesis to be given and timing of different procedures, the multidisciplinary team involved and incidence of cleft lip and palate.

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