Journal of Contemporary Issues in Business and Government Vol. 26, No. 2, 2020
https://cibg.org.au/

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2020.26.02.034

# Prevalence of hypodontia of permanent teeth in children visiting a university hospital in Chennai- a retrospective study.

GOKUL GUNASEKARAN[1], GEO MANI[2]*, SRI RENGALAKSHMI[3]

[1]Saveetha Dental College And Hospitals, Saveetha Institute Of Medical And Technical Sciences, Saveetha University. Chennai, India
[2]Reader, Department of Pedodontics and Preventive Dentistry, Saveetha Dental College And Hospitals Saveetha Institute Of Medical And Technical Sciences, Saveetha University, Chennai, India
[3]Senior Lecturer, Department of Orthodontics, Saveetha Dental College And Hospitals, Saveetha Institute Of Medical And Technical Sciences, Saveetha University, Chennai, India
*Corresponding Author
Email ID: 151501046.sdc@saveetha.com[1], geomani.sdc@saveetha.com, srirengalakshmi.sdc@saveetha.com

**Abstract:** Hypodontia is one of the most common dental anomalies encountered in the normal dental practices which is a major cause for malocclusion among growing teens and requires replacement in adults. Hypodontia occurs due to congenitally missing teeth and are not found in radiographs. Early diagnosis would help to determine the eruption pattern of the other teeth and help in treatment planning.The aim of this study was to evaluate the prevalence of hypodontia of permanent teeth in the Chennai population. In this retrospective study design, patient case reports were evaluated, of which 6682 patient case sheets which matched the inclusion criteria were selected for evaluation for congenitally missing teeth and the treatment performed for each case with congenitally missing teeth was evaluated. The data was then tabulated and analysed in SPSS software. Descriptive statistics and Chi square tests were performed. The total percentage of study population with congenitally missing teeth was 0.64%. Mandibular incisors were the most common congenitally missing teeth.The prevalence of congenitally missing permanent teeth in the Chennai population was found to be 0.64% .

**Keywords:** Hypodontia; Permanent dentition; Prevalence; Congenital missing teeth, Children innovative technique.

## INTRODUCTION

One among the most common dental anomaly which occurs in humans is hypodontia. Hypodontia is the term used for tooth agenesis which results in anomalies in tooth number in humans. Hypodontia can be either syndromic or non syndromic. Congenitally missing teeth are those teeth that fail to erupt in the oral cavity and remain invisible in a radiograph, which causes hypodontia which may be caused by disturbances during the early stages of tooth development (Hunstadbraten, 1973). Hypodontia, a commonly used term to describe the absence of one to six teeth, is one of the most common dental developmental anomalies in humans while absence of more than six teeth is termed oligodontia (Polder, Van't Hof, F. P. G. M. Van der Linden, *et al.*, 2004). Familial tooth agenesis or hypodontia is transmitted as an autosomal dominant, autosomal recessive, or X-linked genetic condition (Castaldi *et al.*, 1966). According to various reports, the prevalence of hypodontia excluding third molars ranges from 0.15% to 16.2% and based on gender differences, women are more affected than men (Rakhshan, 2013). The etiology of hypodontia is not clear but some probable factors are: Heredity gene mutations of the genes such as PAX9 and MSX1 (Arte *et al.*, 1996; Das *et al.*, 2002) and ectodermal dysplasia, localised inflammation, trauma, radiation, and systemic conditions such as rickets, syphilis, etc. (Werther and Rothenberg, 1939; Brook, 1984; Mostowska, Kobielak and Trzeciak, 2003).

On the basis of the gene involved, inheritance can follow different modes of inheritance. Most genetically transmitted diseases are determined by the status of the two copies of a gene, one derived from the father and one from the mother. Recessive genetic disorders occur when an individual inherits a non-working gene from each parent and if an individual receives one working gene and one non-working gene of the disease, the person will be found to be a carrier for the disease, but usually will not show symptoms. The risk for two X linked recessive or carrier parents to both pass the non-working gene and, therefore, have an affected child is 25% with each pregnancy. The risk to have a child who is a carrier, like the parents, is 1:2 with each pregnancy while the chance for a child to receive working genes from both parents is 1:4. When an individual's identification by other methods such as fingerprints and DNA comparisons are difficult, Congenitally missing tooth/teeth may come as an important dental record for identification may be considered as an alternative source of information which narrows the search field. Understanding the prevalence of a condition in a population helps to formulate appropriate

treatment strategies and also helps the clinicians to nullify the ill effects expected because of the particular condition. Hence this study was conducted to estimate the prevalence of hypodontia in children of Chennai.

Our department is passionate about research we have published numerous high quality articles in this domain over the past years (Abraham *et al.*, 2005; Devaki, Sathivel and BalajiRaghavendran, 2009; Neelakantan *et al.*, 2010, 2015; Arja *et al.*, 2013; Ramshankar *et al.*, 2014; Sumathi *et al.*, 2014; Surapaneni and Jainu, 2014; Surapaneni, Priya and Mallika, 2014; Ramamoorthi, Nivedhitha and Divyanand, 2015; Manivannan *et al.*, 2017; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; J *et al.*, 2018; Ravindiran and Praveenkumar, 2018; Malli Sureshbabu *et al.*, 2019; Mehta *et al.*, 2019; Krishnaswamy *et al.*, 2020; Samuel, Acharya and Rao, 2020; Sathish and Karthick, 2020)
With this inspiration we planned to pursue research to determine the prevalence of congenitally missing permanent teeth in the population of Chennai.

**MATERIALS AND METHODS**
This retrospective study was conducted in the university setting . Data chosen for evaluation were patients who reported to a dental college for pedodontic treatment. The details of the patients were obtained from analysis of case records case sheets from June,2019 to March 2020 from patient case records.The details which are analysed includes case details, radiographs, intraoral and extra oral pictures and treatment records. All the data is maintained in a confidential manner. Ethical approval for the study was obtained from the Institutional Ethical Committee (Ethical approval number : SDC/SIHEC/2020/DIASDATA/0619-0320). After approval, 6682 patient case sheets were shortlisted for evaluation for congenitally missing teeth and the treatment performed for each case with congenitally absent tooth was evaluated. Cross verification was done with the help of photographs and radiographs of the patient available in the image gallery of online case records of the institution . To minimise sampling bias all data were included. Inclusion criteria: The study included all patients who were aged till 18 year,both males and females. Exclusion criteria: Patients with any syndromes and incompletely filled case sheets were excluded from the study. Data which was not required and the missing were excluded. An MS-Excel tabulation was done. The MS- Excel sheet was then imported to SPSS, descriptive statistics and Chi Square tests for associations were done . Results were obtained in the form of graphs and tables.

**RESULTS AND DISCUSSION**
The study included a total of 6682 patients (Figure 1) with males (54.82%) and females (45.18%) between the age 6 to 18 years (Figure 2). Age group of 6-12 year was predominant (55.07%) compared to patients 13-18 years (45.93%). The most prevalent missing tooth (Figure 3) was found to be 31 (0.15%) and 41 (0.13%). Of the study population 0.64% (Figure 4) of the population were diagnosed with congenitally missing teeth. Among the group of patients with hypodontia or congenitally missing teeth/tooth (Figure 5) , the percentage of patients with hypodontia (Figure 6) was found to be slightly higher in males (0.34%) when compared to females (0.30%). Chi-square test was done and association was found to be statistically not significant . Pearson's Chi square value: p value: 0.879(>0.05). Hence, it is not statistically significant. a male predilection was seen and single tooth hypodontia (Figure 7) was more prevalent when compared to hypodontia of two or three teeth.On comparison of the each tooth and the most prevalent congenitally missing tooth, (Figure 8) mandibular central incisors (31,41) were found to be the most frequently missing teeth followed by mandibular laterals (32,42).
Hypodontia is one of the most common developmental abnormalities of teeth(Altug-Atac and Erdem, 2007). Environmental and genetic factors contribute to the occurrence of hypodontia.(Nunn *et al.*, 2003). These include infection, trauma, and medicines, as well as genes associated with certain syndromes.(Wu, Wong and Hägg, 2007; De Coster *et al.*, 2009).Considering the high frequency of hypodontia and its serious aesthetical, physiological, functional, and even emotional complications (particularly during the turbulent adolescence years),(Nunn *et al.*, 2003) its early diagnosis seems to be necessary for enabling clinical teams to plan alternative preventive multidisciplinary treatment modalities.(Kokich and Kokich, 2006; Sisman, Uysal and Gelgor, 2007; Chung, Han and Kim, 2008). In this study, the prevalence of congenitally missing teeth was 0.64% which is similar to certain studies such as (BYRD and ED, 1943) who found a prevalence rate of 0.027% . Another author (Mattheeuws, Dermaut and Martens, 2004) also compared other populations within the same region to give a prevalence range of 0.024% to 10.1%. These variations could be ascribed to differences in the racial derivations of the groups examined, sampling methodologies, diagnostic criteria and sample sizes. The reason for this difference could be due to lower sample sizes in other populations, which might affect the overall prevalence.The gender association was not significantly different in the study population with hypodontia, but the number of teeth congenitally missing was slightly higher in males when compared to females. Although in many studies, the average prevalence of hypodontia was concluded to be more in females than males,(Polder, Van't Hof, F. P. Van der Linden, *et al.*, 2004; Fekonja, 2005; Endo *et al.*, 2006; Sisman, Uysal and Gelgor, 2007; Peker, Kaya and Darendeliler-Yaman, 2009; Jawad *et al.*, 2015)).Few authors (Silva Meza, 2003)in Mexico,(Chung, Han and Kim,

2008) in Korea and Behr, *et al*.(Behr *et al.*, 2011) in Germany concluded that hypodontia in females and males are almost equal.

The lower mandibular incisors followed by upper lateral incisors were found to be frequently missing when compared to other teeth which is similar to studies conducted in Asian countries(Endo *et al.*, 2006) and unilateral hypodontia was found to be more frequent when compared to bilateral or more (Polder, Van't Hof, F. P. G. M. Van der Linden, *et al.*, 2004; Lakshmanan *et al.*, 2020) as opposed to a study by (Gurunathan and Lakshmanan, 2019). There is a lack of consistency in the knowledge among general dentists regarding hypodontia and traumatic dental injuries of primary teeth. There is a need to create awareness and education regarding such topics and their treatment options.(Gurunathan and Shanmugaavel, 2016; Ravikumar, Jeevanandan and Subramanian, 2017). The presence of hypodontia will lead to primarily malocclusions among children.This will require orthodontic treatment in order to maintain a proper occlusion and prevent malocclusions in future. Proper and early diagnosis would help to minimise the severity of the malocclusion and help to identify the type of orthodontic treatment to be provided and proper prosthodontic replacement in time. The limitations of the study include a retrospective study design whereby direct examination is not possible and only the data is reilied from past dental records, incomplete records and different ethinic profiles were not maintained .

## CONCLUSION

Within the limitations of the study, it was found that the prevalence of hypodontia in children of chennai was 0.64% with the most common congenitally missing tooth being the lower mandibular central incisors and with a slight gender predilection for males which was not significant .

## ACKNOWLEDGEMENT

The authors acknowledge the Research department and IT department of Saveetha Dental College for constant support and making the case records available for analysis.

**Conflict of interest:** None declared.

## REFERENCES

1. Abraham, S. *et al.* (2005) 'Evaluation of the inhibitory effect of triphala on PMN-type matrix metalloproteinase (MMP-9)', *Journal of periodontology*, 76(4), pp. 497–502.
2. Altug-Atac, A. T. and Erdem, D. (2007) 'Prevalence and distribution of dental anomalies in orthodontic patients', *American journal of orthodontics and dentofacial orthopedics: official publication of the American Association of Orthodontists, its constituent societies, and the American Board of Orthodontics*, 131(4), pp. 510–514.
3. Arja, C. *et al.* (2013) 'Oxidative stress and antioxidant enzyme activity in South Indian male smokers with chronic obstructive pulmonary disease', *Respirology* , 18(7), pp. 1069–1075.
4. Arte, S. *et al.* (1996) 'Gene defect in hypodontia: exclusion of EGF, EGFR, and FGF-3 as candidate genes', *Journal of dental research*, 75(6), pp. 1346–1352.
5. Behr, M. *et al.* (2011) 'Survey of congenitally missing teeth in orthodontic patients in Eastern Bavaria', *European journal of orthodontics*, 33(1), pp. 32–36.
6. Brook, A. H. (1984) 'A unifying aetiological explanation for anomalies of human tooth number and size', *Archives of oral biology*, 29(5), pp. 373–378.
7. BYRD and ED (1943) 'Incidence of supernumerary and congenitally missing teeth', *Journal of dentistry for children*, 10, pp. 84–86.
8. Castaldi, C. R. *et al.* (1966) 'Incidence of congenital anomalies in permanent teeth of a group of Canadian children aged 6-9', *Journal of the Canadian Dental Association*, 32(3), pp. 154–159.
9. Chung, C. J., Han, J.-H. and Kim, K.-H. (2008) 'The pattern and prevalence of hypodontia in Koreans', *Oral diseases*, 14(7), pp. 620–625.
10. Das, P. *et al.* (2002) 'Haploinsufficiency of PAX9 is associated with autosomal dominant hypodontia', *Human genetics*, 110(4), pp. 371–376.
11. De Coster, P. J. *et al.* (2009) 'Dental agenesis: genetic and clinical perspectives', *Journal of oral pathology & medicine: official publication of the International Association of Oral Pathologists and the American Academy of Oral Pathology*, 38(1), pp. 1–17.
12. Devaki, T., Sathivel, A. and BalajiRaghavendran, H. R. (2009) 'Stabilization of mitochondrial and microsomal function by polysaccharide of Ulva lactuca on D-Galactosamine induced hepatitis in rats', *Chemico-biological interactions*, 177(2), pp. 83–88.
13. Endo, T. *et al.* (2006) 'A survey of hypodontia in Japanese orthodontic patients', *American journal of orthodontics and dentofacial orthopedics: official publication of the American Association of Orthodontists, its constituent societies, and the American Board of Orthodontics*, 129(1), pp. 29–35.
14. Ezhilarasan, D. (2018) 'Oxidative stress is bane in chronic liver diseases: Clinical and experimental

perspective', *Arab journal of gastroenterology: the official publication of the Pan-Arab Association of Gastroenterology*, 19(2), pp. 56–64.
15. Ezhilarasan, D., Sokal, E. and Najimi, M. (2018) 'Hepatic fibrosis: It is time to go with hepatic stellate cell-specific therapeutic targets', *Hepatobiliary & pancreatic diseases international: HBPD INT*, 17(3), pp. 192–197.
16. Fekonja, A. (2005) 'Hypodontia in orthodontically treated children', *European journal of orthodontics*, 27(5), pp. 457–460.
17. Gurunathan, D. and Lakshmanan, L. (2019) 'Prevalence of congenitally missing second premolar teeth in the Dravidian population', *Journal of Forensic Dental Sciences*, p. 103. doi: 10.4103/jfo.jfds_32_19.
18. Gurunathan, D. and Shanmugaavel, A. K. (2016) 'Dental neglect among children in Chennai', *Journal of the Indian Society of Pedodontics and Preventive Dentistry*, 34(4), pp. 364–369.
19. Hunstadbraten, K. (1973) 'Hypodontia in the permanent dentition', *ASDC journal of dentistry for children*, 40(2), pp. 115–117.
20. Jawad, F. H. A. A. *et al.* (2015) 'Hypodontia prevalence and distribution pattern in a group of Qatari orthodontic and pediatric patients: A retrospective study', *European Journal of Dentistry*, pp. 267–271. doi: 10.4103/1305-7456.156850.
21. J, P. C. *et al.* (2018) 'Prevalence and measurement of anterior loop of the mandibular canal using CBCT: A cross sectional study', *Clinical implant dentistry and related research*, 20(4), pp. 531–534.
22. Kokich, V. G. and Kokich, V. O. (2006) 'Congenitally missing mandibular second premolars: clinical options', *American journal of orthodontics and dentofacial orthopedics: official publication of the American Association of Orthodontists, its constituent societies, and the American Board of Orthodontics*, 130(4), pp. 437–444.
23. Krishnaswamy, H. *et al.* (2020) 'Investigation of air conditioning temperature variation by modifying the structure of passenger car using computational fluid dynamics', *Thermal Science*, 24(1 Part B), pp. 495–498.
24. Lakshmanan, L. *et al.* (2020) 'Assessing the quality of obturation and instrumentation time using Kedo-S files, Reciprocating files and Hand K-files', *Brazilian Dental Science*. doi: 10.14295/bds.2020.v23i1.1822.
25. Malli Sureshbabu, N. *et al.* (2019) 'Concentrated Growth Factors as an Ingenious Biomaterial in Regeneration of Bony Defects after Periapical Surgery: A Report of Two Cases', *Case reports in dentistry*, 2019, p. 7046203.
26. Manivannan, I. *et al.* (2017) 'Tribological and surface behavior of silicon carbide reinforced aluminum matrix nanocomposite', *Surfaces and Interfaces*, 8, pp. 127–136.
27. Mattheeuws, N., Dermaut, L. and Martens, G. (2004) 'Has hypodontia increased in Caucasians during the 20th century? A meta-analysis', *European journal of orthodontics*, 26(1), pp. 99–103.
28. Mehta, M. *et al.* (2019) 'Oligonucleotide therapy: An emerging focus area for drug delivery in chronic inflammatory respiratory diseases', *Chemico-biological interactions*, 308, pp. 206–215.
29. Mostowska, A., Kobielak, A. and Trzeciak, W. H. (2003) 'Molecular basis of non-syndromic tooth agenesis: mutations of MSX1 and PAX9 reflect their role in patterning human dentition', *European Journal of Oral Sciences*, pp. 365–370. doi: 10.1034/j.1600-0722.2003.00069.x.
30. Neelakantan, P. *et al.* (2010) 'Root and Canal Morphology of Mandibular Second Molars in an Indian Population', *Journal of endodontics*, 36(8), pp. 1319–1322.
31. Neelakantan, P. *et al.* (2015) 'Photoactivation of curcumin and sodium hypochlorite to enhance antibiofilm efficacy in root canal dentin', *Photodiagnosis and photodynamic therapy*, 12(1), pp. 108–114.
32. Nunn, J. H. *et al.* (2003) 'The interdisciplinary management of hypodontia: background and role of paediatric dentistry', *British dental journal*, 194(5), pp. 245–251.
33. Peker, I., Kaya, E. and Darendeliler-Yaman, S. (2009) 'Clinic and radiographical evaluation of non-syndromic hypodontia and hyperdontia in permanent dentition', *Medicina oral, patologia oral y cirugia bucal*, 14(8), pp. e393–7.
34. Polder, B. J., Van't Hof, M. A., Van der Linden, F. P. G. M., *et al.* (2004) 'A meta-analysis of the prevalence of dental agenesis of permanent teeth', *Community Dentistry and Oral Epidemiology*, pp. 217–226. doi: 10.1111/j.1600-0528.2004.00158.x.
35. Polder, B. J., Van't Hof, M. A., Van der Linden, F. P., *et al.* (2004) 'A meta-analysis of the prevalence of dental agenesis of permanent teeth', *Community dentistry and oral epidemiology*, 32(3), pp. 217–226.
36. Rakhshan, V. (2013) 'Meta-analysis and systematic review of factors biasing the observed prevalence of congenitally missing teeth in permanent dentition excluding third molars', *Progress in orthodontics*, 14, p. 33.
37. Ramamoorthi, S., Nivedhitha, M. S. and Divyanand, M. J. (2015) 'Comparative evaluation of postoperative pain after using endodontic needle and EndoActivator during root canal irrigation: A randomised controlled trial', *Australian endodontic journal: the journal of the Australian Society of Endodontology Inc*, 41(2), pp. 78–87.
38. Ramshankar, V. *et al.* (2014) 'Risk stratification of early stage oral tongue cancers based on HPV status and

p16 immunoexpression', *Asian Pacific journal of cancer prevention: APJCP*, 15(19), pp. 8351–8359.
39. Ravikumar, D., Jeevanandan, G. and Subramanian, E. M. G. (2017) 'Evaluation of knowledge among general dentists in treatment of traumatic injuries in primary teeth: A cross-sectional questionnaire study', *European journal of dentistry*, 11(2), pp. 232–237.
40. Ravindiran, M. and Praveenkumar, C. (2018) 'Status review and the future prospects of CZTS based solar cell – A novel approach on the device structure and material modeling for CZTS based photovoltaic device', *Renewable and Sustainable Energy Reviews*, 94, pp. 317–329.
41. Samuel, S. R., Acharya, S. and Rao, J. C. (2020) 'School Interventions-based Prevention of Early-Childhood Caries among 3-5-year-old children from very low socioeconomic status: Two-year randomized trial', *Journal of public health dentistry*, 80(1), pp. 51–60.
42. Sathish, T. and Karthick, S. (2020) 'Wear behaviour analysis on aluminium alloy 7050 with reinforced SiC through taguchi approach', *Journal of Materials Research and Technology*, 9(3), pp. 3481–3487.
43. Silva Meza, R. (2003) 'Radiographic assessment of congenitally missing teeth in orthodontic patients', *International journal of paediatric dentistry / the British Paedodontic Society [and] the International Association of Dentistry for Children*, 13(2), pp. 112–116.
44. Sisman, Y., Uysal, T. and Gelgor, I. E. (2007) 'Hypodontia. Does the prevalence and distribution pattern differ in orthodontic patients?', *European journal of dentistry*, 1(3), pp. 167–173.
45. Sumathi, C. *et al.* (2014) 'Production of prodigiosin using tannery fleshing and evaluating its pharmacological effects', *TheScientificWorldJournal*, 2014, p. 290327.
46. Surapaneni, K. M. and Jainu, M. (2014) 'Comparative effect of pioglitazone, quercetin and hydroxy citric acid on the status of lipid peroxidation and antioxidants in experimental non-alcoholic steatohepatitis', *Journal of physiology and pharmacology: an official journal of the Polish Physiological Society*, 65(1), pp. 67–74.
47. Surapaneni, K. M., Priya, V. V. and Mallika, J. (2014) 'Pioglitazone, quercetin and hydroxy citric acid effect on cytochrome P450 2E1 (CYP2E1) enzyme levels in experimentally induced non alcoholic steatohepatitis (NASH)', *European review for medical and pharmacological sciences*, 18(18), pp. 2736–2741.
48. Werther, R. and Rothenberg, F. (1939) 'Anodontia: A review of its etiology with presentation of a case', *American journal of orthodontics and oral surgery*, 25(1), pp. 61–81.
49. Wu, C. C. L., Wong, R. W. K. and Hägg, U. (2007) 'A review of hypodontia: the possible etiologies and orthodontic, surgical and restorative treatment optionsconventional and futuristic', *Hong Kong Dent J*. Available at: https://pdfs.semanticscholar.org/10f1/bfd843e0d6a1df711d38d1d718f54b26e417.pdf.

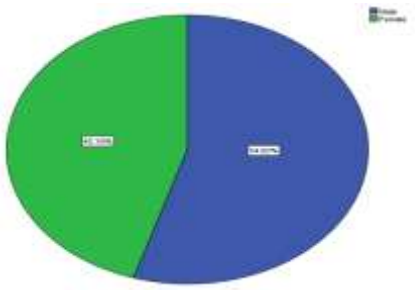

**Fig.1:The pie chart represents the frequency distribution of the study subjects based on gender. Blue colour represents male patients and green colour represents female patients. It was noticed that male patients (blue) were predominant (54.82%) when to compared to female patients (green) (45.18%).**

**Fig.2: The pie chart represents the frequency distribution of study subjects based on age group. Yellow colour represents the age group 6-12 years and pink colour represents the age group 13-**

**18 years. It was noticed that patients of 6-12 years (pink) were predominant (55.07%) compared to patients 13-18 years (yellow) (45.93%).**

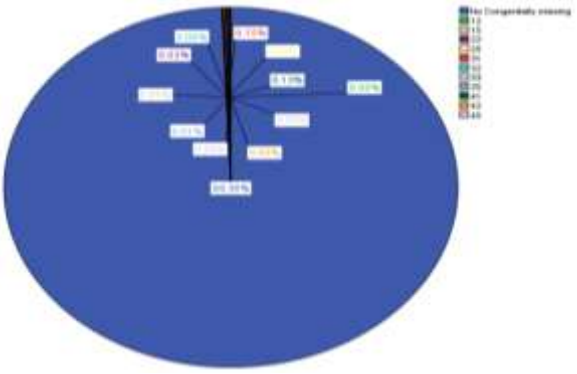

**Fig.3: The pie chart represents prevalence of individual's congenitally missing teeth (in FDI notation) in the study population. It was noticed that the children with no congenitally missing tooth (blue) were predominant (99.36%), followed by the child with missing 31 (red) (0.15%) , child with missing 41(dark green) (0.13%), child with missing 12(green), child with missing 32(cyan),child with missing 42(orange),child with missing 45(pink), child with missing 22(violet), child with missing 33(grey),child with missing 25(yellow) (0.03%) and child with missing 15(gold), child with missing 35(light blue)(0.01%).**

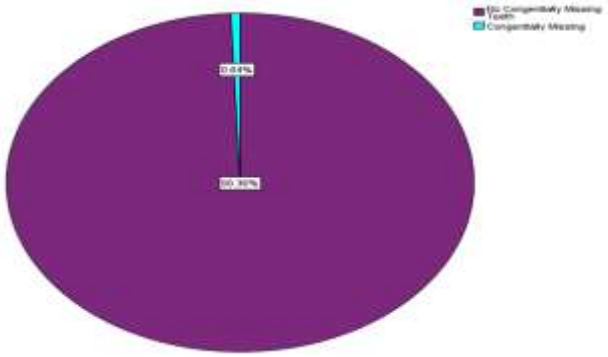

**Fig.4: The pie chart represents prevalence of hypodontia in the study population.Violet colour represents the population without any congenitally missing teeth and blue colour represents the population with congenitally missing teeth. Majority of the patients in the Study population did not have any congenitally missing teeth (violet) 99.36% and the study population with hypodontia (blue) was (0.64%). The prevalence of hypodontia in the children visiting the university dental hospital was 0.64%.**

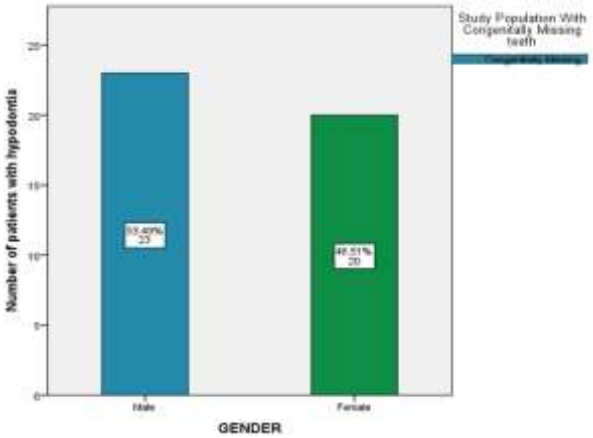


**Fig.5: This bar graph represents frequency of the gender distribution of the study population with congenitally missing teeth. X-axis represents the gender and Y-axis represents the number of patients with congenitally missing. A male predilection is observed for congenitally missing teeth.**

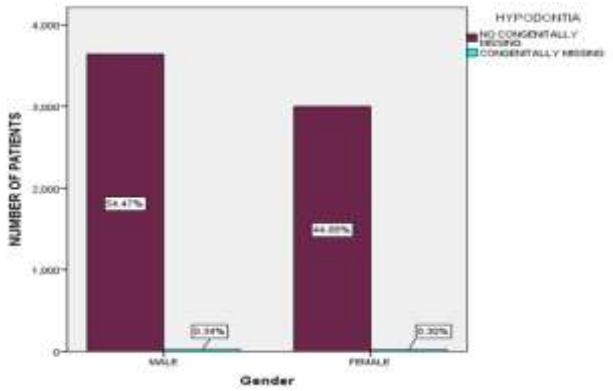


**Fig.6: This bar graph represents the association between gender and hypodontia. X-axis represents the gender distribution and Y-axis represents the number of patients. A male predilection is observed for congenitally missing teeth. Chi-square test was done and association was found to be statistically not significant ( p value: 0.879(>0.05), not statistically significant).**

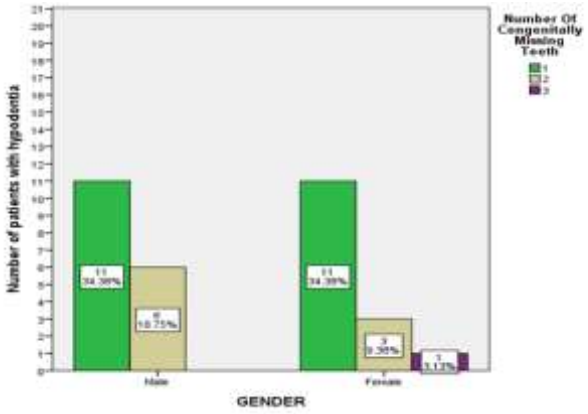


**Fig.7:This bar graph represents the association between the gender with the number of congenitally missing teeth .X-axis represents the gender distribution of the study population with the number of congenitally missing teeth and Y-axis represents the number of patients with hypodontia.Green colour represents single tooth hypodontia, beige colour colour represents two teeth hypodontia and purple colour represents three teeth hypodontia. Single tooth hypodontia was found to be the most prevalent type of hypodontia. Chi-square test was done and association was found to be statistically not significant ( p value: 0.879(>0.05), not statistically significant).**

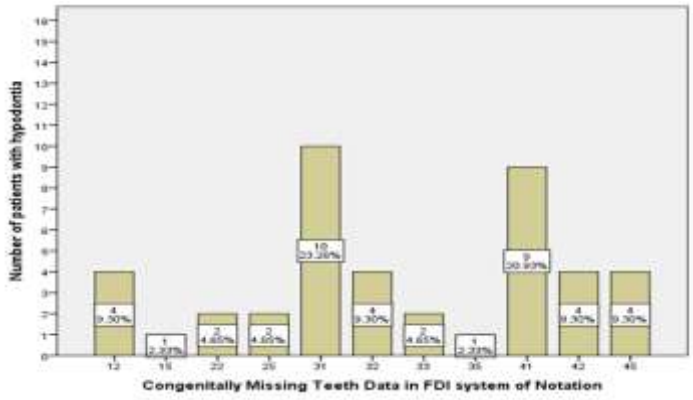


**Fig.8:This bar graph represents the distribution of individual's congenitally missing teeth in patients with hypodontia. X-axis represents the congenitally missing teeth in the FDI system of notation and Y-axis represents the number of patients with hypodontia. It was noticed that mandibular central incisors were the most frequently missing teeth followed by mandibular laterals.**