

---

## Association of age and caries experience among adult population - An institutional study

---

VAISHNAVI SIVAKALI SUBRAMANIAN<sup>1</sup>, L. LEELAVATHI<sup>2\*</sup>, ARAVIND KUMAR S<sup>3</sup>

<sup>1</sup>Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai- 77, India

<sup>2</sup>Senior Lecturer, Department of public health dentistry, Saveetha Dental college and Hospitals, Saveetha University, Saveetha Institute of Medical and Technical Sciences, Chennai-77, India

<sup>3</sup>Professor, Department of Orthodontics, Saveetha Dental college and Hospitals, Saveetha Institute of Medical and Technical Sciences, Chennai-77, India

\*Corresponding Author

Email : 151501031.sdc@saveetha.com<sup>1</sup>, leelavathi.sdc@saveetha.com<sup>2</sup>, aravindkumar@saveetha.com<sup>3</sup>

---

**Abstract** : Oral health is closely related with general health and people's quality of life, through affecting their oral functions and social interactions. Dental caries are the major concerns among oral health. The aim of the study is to assess caries experience based on Decayed Missing Filled Teeth Index (DMFT) index among adults patients visiting a private dental college in Chennai. DMFT index was used to evaluate the caries experience. Patient case sheets were reviewed, index scores and age of the patients were collected. 4567 patients were selected for the study and tabulated in excel sheet and statistically analysed using SPSS. Frequency distribution was done using descriptive statistics and Chi-square test was used to analyse the association of caries experience with different age groups. In this study, it was observed that 18-35 year old patients were most prevalent (47.7%) and DMFT scores ranging from 0-7 were maximum with 58.2%. Within the limits of the study, results of the study showed that DMFT score of more than 8 suggesting higher caries experience was prevalent in study participants above 55 years of age. DMFT score of 0-7 was the most prevalent score among 18-35 years and 36-55 years.

**Keywords** : Age; Caries prevalence; DMFT index; Oral hygiene; Oral health.

---

### INTRODUCTION

Oral health is closely related to general health and one's quality of life. Among that caries are the foremost issues for both children and adults. Dental caries is the most typical chronic disease in children: it's 5 times as common as respiratory disorder and 7 times as common as allergic rhinitis. The foremost common explanation for tooth loss among adults is untreated periodontal disease. 53 million individuals live with untreated dental caries in their permanent teeth. One fourth of adults aged sixty five years and higher than have lost all of their teeth because of untreated oral disease. The silent epidemic of oral diseases disproportionately affects underprivileged communities, particularly youngsters, the older, and racial/ethnic minority teams [(cdc) and US Department of Health and Human Services; Centers for Disease Control (CDC), 2005)]. Dental caries damage the tooth structure and so affect the people's quality of health and life. decay etiology has been debatable. It is multifactorial, among that bacterium, time, susceptible tooth surface and fermentable carbohydrates are major four factors affecting teeth. whereas there are different modifying factors that go hand in hand with major factors like age, ethnic cluster, occupation, lifestyle, surroundings and socio-economic status being secondary modifying factors. While primary modifying factors are tooth anatomy, saliva, use of fluoride, biofilm PH, diet specifies and vast system [(Luan et al., 2000; Treasure et al., 2001; Bagramian, Garcia-Godoy and Volpe, 2009; Ritter, Eidson and Donovan, 2014)]. Oral health disparities are exacerbated by the actual fact that a cavity continues to enlarge and become harder to repair the longer it remains untreated [(cdc) and US Department of Health and Human Services; Centers for Disease Control (CDC), 2005)].

Regardless of decrease in incidence in economically developed nations, caries are still prevailing in most developing nations. But studies have additionally shown that there are tooth decay prevalence among adult age groups in each developed and developing nations. [(Petersen, 2003; Peres et al., 2007; Namal et al., 2008; Patro et al., 2008)]. Only 1 in 5 school-aged kids from low-income families receives dental sealants to prevent dental caries. Educational programs accentuate the importance of oral health promotion/disease interference are necessary to boost awareness and discourage the lack of concern relating to oral health. proper oral health is important to a productive and healthy life [(cdc) and US Department of Health and Human Services; Centers for Disease Control (CDC), 2005)].

Many studies up to now engrossed on dental caries experience in children. There are restricted documentation relating to adult tooth decay expertise. Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J et al., 2018; Menon et al., 2018; Prabakar, John and Arumugham, 2018; Rajeshkumar et al., 2018, 2019; Vishnu Prasad et al., 2018; Wahab et al., 2018; Dua et al., 2019; Duraisamy et al., 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and Ezhilarasan, 2019; Malli Sureshbabu et al., 2019; Mehta et al., 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran et al., 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma et al., 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi et al., 2020; Srinivasan Raj Samuel, Acharya and Rao, 2020)

Thus the aim of the study is to assess dental caries experience based on DMFT index among different age groups.

## **MATERIALS AND METHODS**

**Study setting:** This was a retrospective study of 4567 patients from a private dental college and hospitals. A university setup study in which the pros includes flexibility of the study and less time consumption. The cons of the study includes, it is limited to a certain population. Approval was obtained from the institutional ethical committee. The ethical approval number for the present study is SDC/SIHEC/2020/DIASDATA/0619-0320. Two examiners were involved in the study.

**Sampling:** Data was collected from June 2019 to March 2020. Patients records from a Dental University were reviewed. A sample size of 4567 patients were considered for this study. Cross verification of data for error was done by the presence of additional reviewers, and by photographic evaluation. Simple random sampling was done to minimise sampling bias. It was generalised to the South Indian population.

**Data Collection /Tabulation:** DMFT scores of the patients and their age are the parameters taken. Data was collected and entered in excel. Later data was imported to SPSS. Incomplete data was excluded from the study.

**Analysis:** IBM SPSS 2.0 software was used for data analysis. Independent variables include age and dependent variables include DMFT scores. Descriptive and inferential statistics were used. Descriptive statistics include the frequency of distribution of a patient's age. Inferential tests include the Chi-square test. The level of statistical significance was set at p value equals to 0.05.

## **RESULTS:**

This study consisted of a total of 4574 patient records whose DMFT scores were assessed for caries prevalence. On analysing the age groups, 18-35 years old patients were most prevalent with (47.7%), followed by 36-55 years old age group which constitutes 41.8% of the population. And the least prevalent was those patients who were above 56 years (Figure 1). Frequency distribution of DMFT scores among the study population shows DMFT scores ranging from 0-7 were maximum with 58.2% followed by scores ranging 8-14 (35.4%), 15-21 (5.4%) and 22-28 (0.9%) (Figure 2).

Among 18-35 years old groups (2180 patients), 1445(66.4%) patients had 0-7 DMFT scores. 684 (29.7%) patients had 8-14 DMFT scores, 48 (2.2%) patients had 15-21 DMFT scores and only 3 (0.13%) patients had 22-28 DMFT scores. Among 36-55 years old groups (1911 patients), 1029 (53.8%) patients had 0-7 DMFT scores. 737 (38.5%) patients had 8-14 DMFT scores, 124 (6.4%) patients had 15-21 DMFT scores and only 21 (1.09%) patients had 22-28 DMFT scores. Among the age above 56 (476 patients), 187(38.4%) patients had 0-7 DMFT scores. 196 (41.17%) patients had 8-14 DMFT scores, 75 (15.75%) patients had 15-21 DMFT scores and only 18 (3.78%) patients had 22-28 DMFT scores (Figure 3). This is suggestive of increase in caries experience with increase in age. (P value = 0.000)(P Value <0.05 statistically significant) (Figure 3 and Table 1). This is suggestive of increase in caries experience with increase in age.

## **DISCUSSION**

Many studies regarding public health in Saveetha Dental College and hospitals have engrossed youngsters and gender prevalence. Previously our team had conducted various studies related to fluoride levels in water and water quality [(Kumar, Pradeep Kumar and Preethi, 2017; Kumar, Pradeep Kumar and Vijayalakshmi, 2017)] pH level of saliva after carbonated drinks and its effects on teeth [(Pratha, Ashwatha Pratha and Prabakar, 2019)], smoking and rehabilitation and its effects on oral health [(L et al., 2015; Harini and Leelavathi, 2019; Neralla et al., 2019)], variations in different dental dentifrices [(Prabakar et al., 2018b)] [(Mohapatra et al., 2019)], role of phytochemicals and microbes in different oral hygiene [(Khatra et al., 2019; Mebin George Mathew et al., 2020)] , medicolegal cases in dentistry [(Leelavathi, Srudhy and Anitha, 2015)], avulsed teeth [(Leelavathi et al., 2016)], rotary instruments in endodontics [(Patturaja, Leelavathi and Jayalakshmi, 2018)] and also in disaster and its management [(Kannan et al., 2017)].

A previous study in assessing prevalence of dental caries among the outpatients attending dental college, showed female predominance with average DMFT score of 5. The study also analysed oral hygiene practices and dietary

habits [(Rasidi, Mohamad Qulam Zaki Bin and Gheena, 2018)].In compatibility with this study various studies also show mild higher in females than in males [(Medina-Solis et al., 2006; Pontigo-Loyola et al., 2007; García-Cortés et al., 2009)].

Now we have collected data related to caries in adults, and from our study we analysed the age prevalence in adults. Various age groups were selected like 18-35 years, 36-55 and 56 above. Among these 18-35 year old show maximum prevalence in caries experience. Similarly another study also shows high prevalence among same age group (18-34 years) as the present study. They also quoted that this outcome can be as a result of low socioeconomic status, lack of awareness about preventive health measures [(Kamberi et al., 2016)].

Whereas few studies report predominance of caries in the 35-44 year age group. In contrast, present study shows prevalence of about 41.8% which is lower than other reported articles [(Eustaquio, Montiel and Almerich, 2010; Mamai-Homata et al., 2012)]. The present study also presents the age is inversely proportional to caries experience. But few studies conflict this by saying caries prevalence increases with increasing age [(Loh, Chan and Low, 1996)].

These differences from one study to another may be influenced by socioeconomic factors [(Madléna et al., 2008)]. Rural and urban areas may have differences in their caries experience. Lack of awareness among the countryside population can be a reason for such high prevalence. Therefore it is necessary to spread awareness among the rural areas.

Another similar study done in our university involving school children.: A cross-sectional study was done among school going children of Chandigarh in the age group of 3-17 years. Out of the total 4493 sample size, 47.3% of the population showed caries prevalence. By analysing the treatment requirements, 42.6% of the subjects required oral prophylaxis and 45% required restorative procedures [(Prabakar, John and Srisakthi, 2016)].

Various other measures such as Prohibition of sugary snacking in school and daily supervised tooth brushing, with or without oral health education is effective in preventing ECC among preschool children with health neglect in very low-resource settings [(S. R. Samuel, Acharya and Rao, 2020)].

As a preventive measure for dental caries, application of pit and fissure sealant has been a practice in many places. A study was conducted to compare resin tags and viscosity of conventional and hydrophilic pit and fissure sealant. Based on its results, it can be concluded that hydrophilic sealant exhibited lower viscosity and formed a resin tag of sufficient length than that of conventional sealants. Therefore, hydrophilic sealant showed better results as compared to a conventional sealant [(Prabakar et al., 2018a)]. A clinical trial was conducted among 30 schoolchildren aged 12–15 years. Commercially available sealants such as Clinpro™ (conventional sealants) and UltraSeal XT® (hydrophilic sealants). Sealant coverage between the two sealants was compared among the population. Hydrophilic sealant yielded better retention of the sealant compared to the conventional sealant [(Prabakar, John and Arumugham, 2018)]. A study compared the retention rates and development of caries in permanent molars of children sealed with amorphous calcium phosphate-containing (Aegis™) and moisture-tolerant fluoride-releasing (Embrace WetBond™) sealant over a period of 1 year. Aegis™ was superior to Embrace Wetbond™ sealant as Aegis™ exhibited higher retention and lower caries scores [(Khatri et al., 2019)]. Our institution is passionate about high quality evidence based research and has excelled in various fields [(Pc, Marimuthu and Devadoss, 2018; Ramesh et al., 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai et al., 2019; Sridharan et al., 2019; Vijayashree Priyadharsini, 2019; M. G. Mathew et al., 2020)]

## CONCLUSION

Within the limitations of the study, DMFT scores ranging from 0-7 were most prevalent among the study population with 58.2%. DMFT score of more than 8 suggesting higher caries experience was prevalent in study participants above 55 years of age. DMFT score of 0-7 was the most prevalent score among 18-35 years.

## AUTHORS CONTRIBUTIONS

First author (Vaishnavi Sivakali Subramanian) performed the analysis, and interpretation and wrote the manuscript. Second author (Dr L..Leelavathi) contributed to conception, data design, analysis, interpretation and critically revised the manuscript. Third author (Dr.Aravind Kumar S) participated in the study and revised the manuscript. All the three authors have discussed the results and contributed to the final manuscript.

## ACKNOWLEDGEMENT

I would like to acknowledge the Information Technology department of the institution for their support in data collection

## CONFLICT OF INTEREST

Nil

## REFERENCES

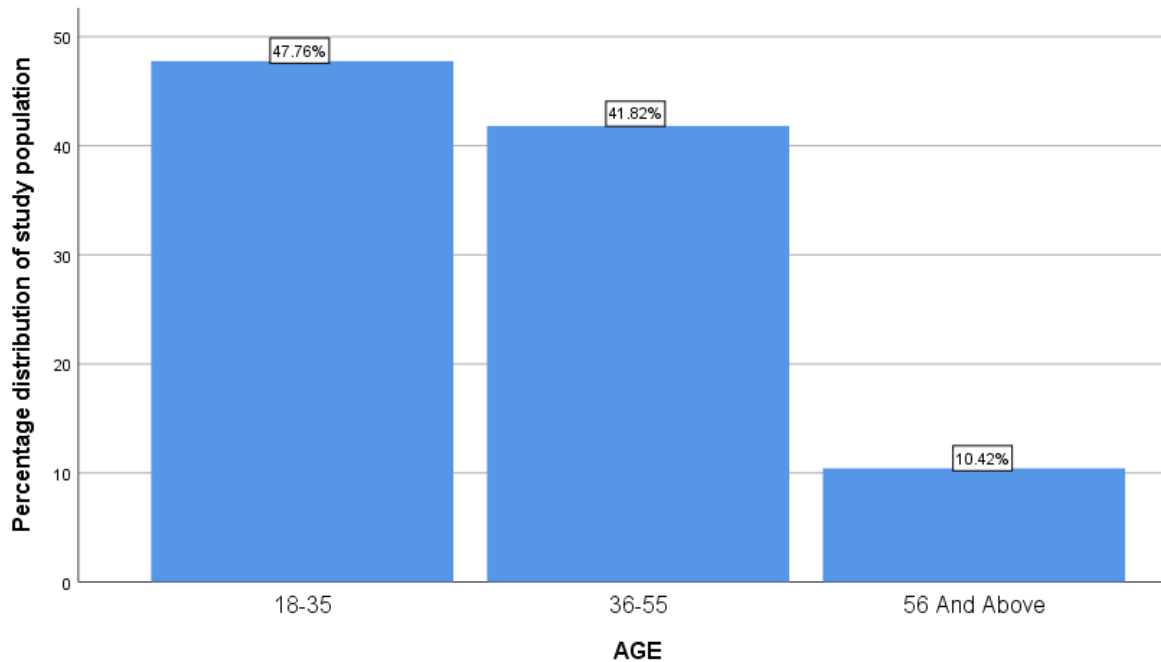
1. Bagramian, R. A., Garcia-Godoy, F. and Volpe, A. R. (2009) 'The global increase in dental caries. A pending public health crisis', *American journal of dentistry*, 22(1), pp. 3–8.
2. (cdc), U. S. D. of H. A. H. S. C. F. D. C. and US Department of Health and Human Services; Centers for Disease Control (CDC) (2005) 'Oral Health: Preventing cavities, gum disease, and tooth loss 2005', *PsycEXTRA Dataset*. doi: 10.1037/e421422005-001.
3. Deogade, S., Gupta, P. and Ariga, P. (2018) 'Effect of monopoly-coating agent on the surface roughness of a tissue conditioner subjected to cleansing and disinfection: A Contact Profilometric In vitro study', *Contemporary Clinical Dentistry*, p. 122. doi: 10.4103/ccd.ccd\_112\_18.
4. Dua, K. et al. (2019) 'The potential of siRNA based drug delivery in respiratory disorders: Recent advances and progress', *Drug development research*, 80(6), pp. 714–730.
5. Duraisamy, R. et al. (2019) 'Compatibility of Nonoriginal Abutments With Implants: Evaluation of Microgap at the Implant-Abutment Interface, With Original and Nonoriginal Abutments', *Implant dentistry*, 28(3), pp. 289–295.
6. Eustaquio, M.-V., Montiel, J.-M. and Almerich, J.-M. (2010) 'Oral health survey of the adult population of the Valencia region (Spain)', *Medicina oral, patologia oral y cirugia bucal*, 15(3), pp. e538–44.
7. 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.
8. Ezhilarasan, D., Apoorva, V. S. and Ashok Vardhan, N. (2019) 'Syzygium cumini extract induced reactive oxygen species-mediated apoptosis in human oral squamous carcinoma cells', *Journal of oral pathology & medicine: official publication of the International Association of Oral Pathologists and the American Academy of Oral Pathology*, 48(2), pp. 115–121.
9. 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.
10. García-Cortés, J. O. et al. (2009) 'Dental caries' experience, prevalence and severity in Mexican adolescents and young adults', *Revista de Salud Pública*, pp. 82–91. doi: 10.1590/s0124-00642009000100009.
11. Gheena, S. and Ezhilarasan, D. (2019) 'Syringic acid triggers reactive oxygen species-mediated cytotoxicity in HepG2 cells', *Human & experimental toxicology*, 38(6), pp. 694–702.
12. Gomathi, A. C. et al. (2020) 'Anticancer activity of silver nanoparticles synthesized using aqueous fruit shell extract of Tamarindus indica on MCF-7 human breast cancer cell line', *Journal of Drug Delivery Science and Technology*, p. 101376. doi: 10.1016/j.jddst.2019.101376.
13. Harini, G. and Leelavathi, L. (2019) 'Nicotine Replacement Therapy for Smoking Cessation-An Overview', *Indian Journal of Public Health Research & Development*, p. 3588. doi: 10.5958/0976-5506.2019.04144.5.
14. Jeevanandan, G. and Govindaraju, L. (2018) 'Clinical comparison of Kedo-S paediatric rotary files vs manual instrumentation for root canal preparation in primary molars: a double blinded randomised clinical trial', *European Archives of Paediatric Dentistry*, pp. 273–278. doi: 10.1007/s40368-018-0356-6.
15. 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.
16. Kamberi, B. et al. (2016) 'Prevalence of Dental Caries in Kosovar Adult Population', *International journal of dentistry*, 2016, p. 4290291.
17. Kannan, S. S. D. et al. (2017) 'AWARENESS AND ATTITUDE TOWARDS MASS DISASTER AND ITS MANAGEMENT AMONG HOUSE SURGEONS IN A DENTAL COLLEGE AND HOSPITAL IN CHENNAI, INDIA', *Disaster Management and Human Health Risk V*. doi: 10.2495/dman170121.
18. Khatri, S. G. et al. (2019) 'Retention of moisture-tolerant fluoride-releasing sealant and amorphous calcium phosphate-containing sealant in 6-9-year-old children: A randomized controlled trial', *Journal of the Indian Society of Pedodontics and Preventive Dentistry*, 37(1), pp. 92–98.
19. Kumar, R. P., Pradeep Kumar, R. and Preethi, R. (2017) 'Assessment of Water Quality and Pollution of Porur, Chembambakkam and Puzhal Lake', *Research Journal of Pharmacy and Technology*, p. 2157. doi: 10.5958/0974-360x.2017.00380.8.
20. Kumar, R. P., Pradeep Kumar, R. and Vijayalakshmi, B. (2017) 'Assessment of Fluoride Concentration in Ground Water in Madurai District, Tamil Nadu, India', *Research Journal of Pharmacy and Technology*, p. 309. doi: 10.5958/0974-360x.2017.00063.4.
21. Leelavathi, L. et al. (2016) 'Avulsed Tooth – A Review', *Biomedical and Pharmacology Journal*, pp. 847–850. doi: 10.13005/bpj/1015.
22. Leelavathi, L., Srudhy, R. and Anitha, M. (2015) 'Medicolegal Case Scenerios in Dental Practice-A Review of Literature', *Biomedical & Pharmacology Journal*, 8(SpecialOct), p. 537.
23. L, L. et al. (2015) 'Nutrition and Oral Health - (Review)', *Biomedical and Pharmacology Journal*, pp. 545–

548. doi: 10.13005/bpj/744.
24. Loh, T., Chan, J. and Low, C. N. (1996) 'Oral health of Singapore adults', Singapore dental journal. Available at: <https://europepmc.org/abstract/med/10597175>.
  25. Luan, W.-M. et al. (2000) 'Ten-Year Incidence of Dental Caries in Adult and Elderly Chinese', Caries research, 34(3), pp. 205–213.
  26. Madléná, M. et al. (2008) 'Caries prevalence and tooth loss in Hungarian adult population: results of a national survey', BMC public health, 8, p. 364.
  27. 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.
  28. Mamai-Homata, E. et al. (2012) 'Risk indicators of coronal and root caries in Greek middle aged adults and senior citizens', BMC public health, 12, p. 484.
  29. Mathew, M. G. et al. (2020) 'Evaluation of adhesion of Streptococcus mutans, plaque accumulation on zirconia and stainless steel crowns, and surrounding gingival inflammation in primary ...', Clinical oral investigations. Available at: <https://link.springer.com/article/10.1007/s00784-020-03204-9>.
  30. Mathew, M. G. et al. (2020) 'Evaluation of adhesion of Streptococcus mutans, plaque accumulation on zirconia and stainless steel crowns, and surrounding gingival inflammation in primary molars: randomized controlled trial', Clinical oral investigations. doi: 10.1007/s00784-020-03204-9.
  31. Medina-Solis, C. E. et al. (2006) 'Socioeconomic inequalities in oral health: dental caries in 6 to 12 year-old children', Revista de investigacion clinica; organo del Hospital de Enfermedades de la Nutricion, 58(4), pp. 296–304.
  32. 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.
  33. Menon, S. et al. (2018) 'Selenium nanoparticles: A potent chemotherapeutic agent and an elucidation of its mechanism', Colloids and Surfaces B: Biointerfaces, pp. 280–292. doi: 10.1016/j.colsurfb.2018.06.006.
  34. Mohapatra, S. et al. (2019) 'Assessment of Microhardness of Enamel Carious Like Lesions After Treatment with Nova Min, Bio Min and Remin Pro Containing Toothpastes: An in Vitro Study', Indian Journal of Public Health Research & Development, p. 375. doi: 10.5958/0976-5506.2019.02832.8.
  35. Namal, N. et al. (2008) 'Dental health status and risk factors for dental caries in adults in Istanbul, Turkey', Eastern Mediterranean health journal = La revue de sante de la Mediterranee orientale = al-Majallah al-sihhiyah li-sharq al-mutawassit, 14(1), pp. 110–118.
  36. Neralla, M. et al. (2019) 'Role of nutrition in rehabilitation of patients following surgery for oral squamous cell carcinoma', International Journal of Research in Pharmaceutical Sciences, pp. 3197–3203. doi: 10.26452/ijrps.v10i4.1622.
  37. Panchal, V., Jeevanandan, G. and Subramanian, E. M. G. (2019) 'Comparison of post-operative pain after root canal instrumentation with hand K-files, H-files and rotary Kedo-S files in primary teeth: a randomised clinical trial', European archives of paediatric dentistry: official journal of the European Academy of Paediatric Dentistry, 20(5), pp. 467–472.
  38. Patro, B. K. et al. (2008) 'Prevalence of dental caries among adults and elderly in an urban resettlement colony of New Delhi', Indian journal of dental research: official publication of Indian Society for Dental Research, 19(2), pp. 95–98.
  39. Patturaja, K., Leelavathi, L. and Jayalakshmi, S. (2018) 'Choice of Rotary Instrument Usage among Endodontists – A Questionnaire Study', Biomedical and Pharmacology Journal, pp. 851–856. doi: 10.13005/bpj/1441.
  40. Pc, J., Marimuthu, T. and Devadoss, P. (2018) 'Prevalence and measurement of anterior loop of the mandibular canal using CBCT: A cross sectional study', Clinical implant dentistry and related research. Available at: <https://europepmc.org/article/med/29624863>.
  41. Peres, M. A. et al. (2007) 'The relation between family socioeconomic trajectories from childhood to adolescence and dental caries and associated oral behaviours', Journal of epidemiology and community health, 61(2), pp. 141–145.
  42. Petersen, P. E. (2003) 'The World Oral Health Report 2003: continuous improvement of oral health in the 21st century--the approach of the WHO Global Oral Health Programme', Community dentistry and oral epidemiology, 31, pp. 3–24.
  43. Pontigo-Loyola, A. P. et al. (2007) 'Prevalence and severity of dental caries in adolescents aged 12 and 15 living in communities with various fluoride concentrations', Journal of public health dentistry, 67(1), pp. 8–13.
  44. Prabakar, J. et al. (2018a) 'Comparative Evaluation of the Viscosity and Length of Resin Tags of Conventional and Hydrophilic Pit and Fissure Sealants on Permanent Molars: An In vitro Study', Contemporary clinical dentistry, 9(3), pp. 388–394.
  45. Prabakar, J. et al. (2018b) 'Comparing the Effectiveness of Probiotic, Green Tea, and Chlorhexidine- and

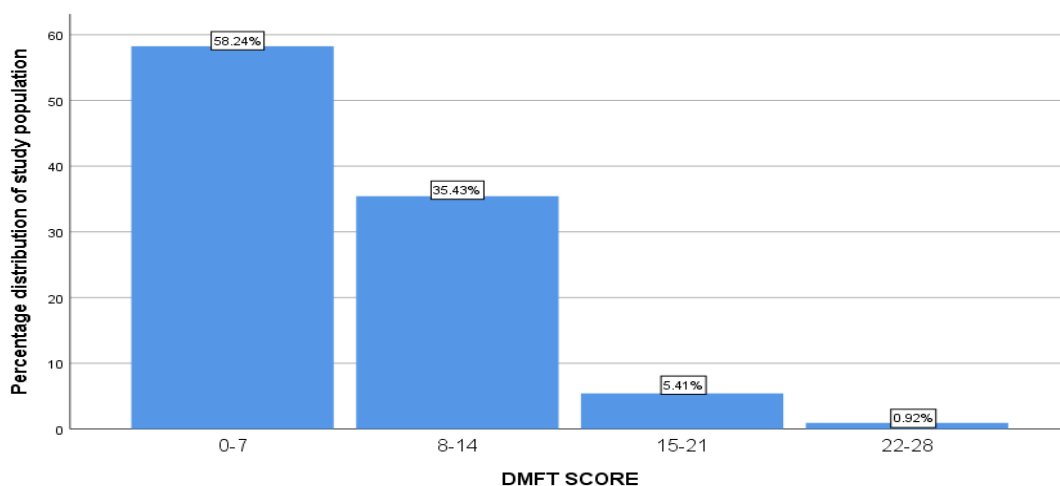
- Fluoride-containing Dentifrices on Oral Microbial Flora: A Double-blind, Randomized Clinical Trial', *Contemporary clinical dentistry*, 9(4), pp. 560–569.
46. Prabakar, J., John, J. and Arumugham, I. M. (2018) 'Comparative evaluation of retention, cariostatic effect and discoloration of conventional and hydrophilic sealants-A single blinded randomized split mouth ...', *Contemporary clinical*. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6169278/>.
  47. Prabakar, J., John, J. and Srisakthi, D. (2016) 'Prevalence of dental caries and treatment needs among school going children of Chandigarh', *Indian journal of dental research: official publication of Indian Society for Dental Research*, 27(5), pp. 547–552.
  48. Pratha, A. A., Ashwatha Pratha, A. and Prabakar, J. (2019) 'Comparing the effect of Carbonated and energy drinks on salivary pH- In Vivo Randomized Controlled Trial', *Research Journal of Pharmacy and Technology*, p. 4699. doi: 10.5958/0974-360x.2019.00809.6.
  49. Rajendran, R. et al. (2019) 'Comparative Evaluation of Remineralizing Potential of a Paste Containing Bioactive Glass and a Topical Cream Containing Casein Phosphopeptide-Amorphous Calcium Phosphate: An in Vitro Study', *Pesquisa Brasileira em Odontopediatria e Clínica Integrada*, pp. 1–10. doi: 10.4034/pboci.2019.191.61.
  50. Rajeshkumar, S. et al. (2018) 'Biosynthesis of zinc oxide nanoparticles using *Mangifera indica* leaves and evaluation of their antioxidant and cytotoxic properties in lung cancer (A549) cells', *Enzyme and microbial technology*, 117, pp. 91–95.
  51. Rajeshkumar, S. et al. (2019) 'Antibacterial and antioxidant potential of biosynthesized copper nanoparticles mediated through *Cissus arnotiana* plant extract', *Journal of photochemistry and photobiology. B, Biology*, 197, p. 111531.
  52. Ramadurai, N. et al. (2019) 'Effectiveness of 2% Articaine as an anesthetic agent in children: randomized controlled trial', *Clinical oral investigations*, 23(9), pp. 3543–3550.
  53. Ramakrishnan, M., Dhanalakshmi, R. and Subramanian, E. M. G. (2019) 'Survival rate of different fixed posterior space maintainers used in Paediatric Dentistry - A systematic review', *The Saudi dental journal*, 31(2), pp. 165–172.
  54. Ramesh, A. et al. (2018) 'Comparative estimation of sulfiredoxin levels between chronic periodontitis and healthy patients - A case-control study', *Journal of periodontology*, 89(10), pp. 1241–1248.
  55. Rasidi, M. Q. Z. B. M., Mohamad Qulam Zaki Bin and Gheena, S. (2018) 'The Prevalence of Dental Caries in 18 to 30 years Individual Associated with Socio-economic status in an Outpatient Population Visiting a Hospital in Chennai', *Biomedical and Pharmacology Journal*, pp. 1295–1300. doi: 10.13005/bpj/1491.
  56. Ritter, A. V., Eidson, R. S. and Donovan, T. E. (2014) 'Dental caries: etiology, clinical characteristics, risk assessment, and management', *Sturdevant's Art & Science of Operative Dentistry-E-Book*, 41. Available at: [https://books.google.com/books?hl=en&lr=&id=IMbsAwAAQBAJ&oi=fnd&pg=PA41&dq=Donovan+Etiology+clinical+characteristics+risk+assessment+and+management+Andre+V&ots=m0fC6o90gn&sig=8Bxe16SCjn5H\\_hEBiOCJG4BfgN0](https://books.google.com/books?hl=en&lr=&id=IMbsAwAAQBAJ&oi=fnd&pg=PA41&dq=Donovan+Etiology+clinical+characteristics+risk+assessment+and+management+Andre+V&ots=m0fC6o90gn&sig=8Bxe16SCjn5H_hEBiOCJG4BfgN0).
  57. 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.
  58. 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*. Available at: <https://onlinelibrary.wiley.com/doi/abs/10.1111/jphd.12348>.
  59. Sharma, P. et al. (2019) 'Emerging trends in the novel drug delivery approaches for the treatment of lung cancer', *Chemico-biological interactions*, 309, p. 108720.
  60. 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.
  61. Treasure, E. et al. (2001) 'Factors associated with oral health: a multivariate analysis of results from the 1998 Adult Dental Health survey', *British dental journal*, 190(2), pp. 60–68.
  62. Varghese, S. S., Ramesh, A. and Veeraiyan, D. N. (2019) 'Blended Module-Based Teaching in Biostatistics and Research Methodology: A Retrospective Study with Postgraduate Dental Students', *Journal of dental education*, 83(4), pp. 445–450.
  63. Vijayashree Priyadharsini, J. (2019) 'In silico validation of the non-antibiotic drugs acetaminophen and ibuprofen as antibacterial agents against red complex pathogens', *Journal of periodontology*, 90(12), pp. 1441–1448.
  64. Vishnu Prasad, S. et al. (2018) 'Report on oral health status and treatment needs of 5-15 years old children with sensory deficits in Chennai, India', *Special care in dentistry: official publication of the American Association of Hospital Dentists, the Academy of Dentistry for the Handicapped, and the American Society*

for Geriatric Dentistry, 38(1), pp. 58–59.

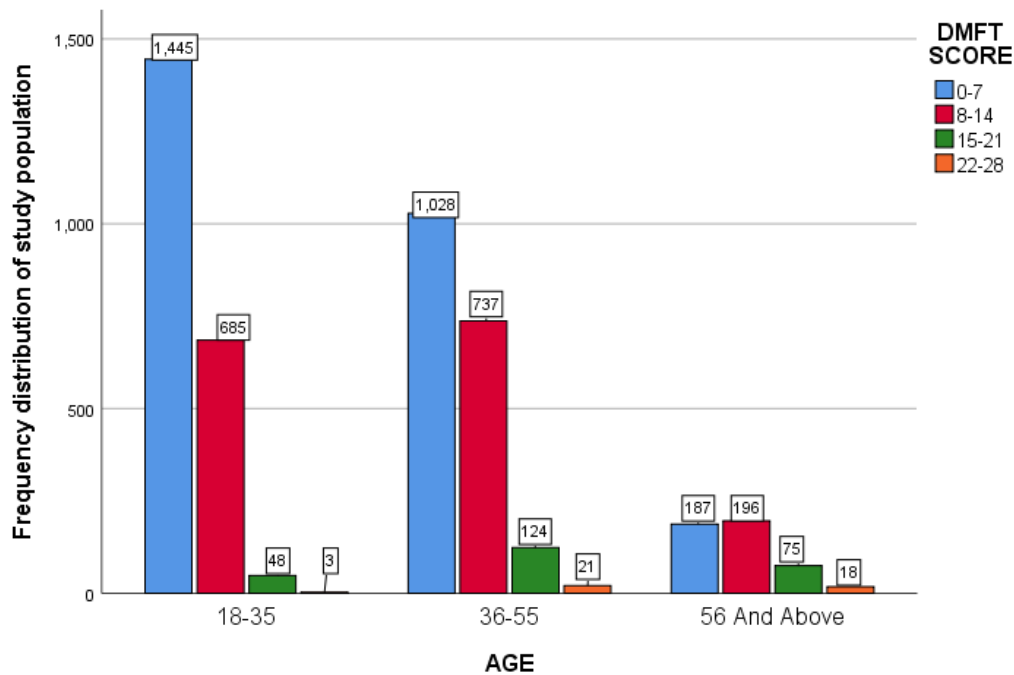
65. Wahab, P. U. A. et al. (2018) ‘Scalpel Versus Diathermy in Wound Healing After Mucosal Incisions: A Split-Mouth Study’, *Journal of oral and maxillofacial surgery: official journal of the American Association of Oral and Maxillofacial Surgeons*, 76(6), pp. 1160–1164.



**Fig.1:shows age wise distribution of study population. X axis denotes age group of the study population and Y axis denotes percentage distribution of caries experience. About 47.78% were in the age group of 18-35yrs, 41.82% were in 36-55 yrs and 10.42% of the study participants were above 56 yrs. It is inferred that majority of the study population were among the 18-35 years age group.**



**Fig.2 shows distribution of DMFT scores among the study population. X axis denotes DMFT scores and Y axis denotes the percentage of study population. DMFT score of 0-7 was prevalent among 58.24% of the study participants, DMFT score of 8-14 was prevalent among 36.43% of the study population, score of 15-21 and 22-28 were prevalent among 5.41% and 0.92% respectively, suggesting that DMFT score of 0-7 was the most prevalent DMFT score in the study population**



**Fig.3:shows association of DMFT scores and age of the study participants. X axis denotes age group of study participants and Y axis represents number of study participants. Highest DMFT scores (Orange colour) was more prevalent among study participants above 56 years of age when compared with other age groups and this was statistically significant suggesting that, as with the increase in age, there was an increase in caries experience based on DMFT index (Chi-square value - 292.54, p value -0.000, P value < 0.05, statistically significant).**

**Table 1**

DMFT SCORES	AGE (in years)				Chi Square Value	p value
	18-35	36-55	ABOVE 56	TOTAL		
0-7	1445 (66.2%)	1029 (53.8%)	187 (38.4%)	2661 (58.26%)	292.542	.000*
8-14	684 (29.7%)	737 (38.5%)	196 (41.17%)	1617 (35.4%)		
15-21	48 (2.2%)	124 (6.4%)	75 (15.75%)	247 (5.40%)		
22-28	3 (0.13%)	21 (1.09%)	18 (3.78%)	42 (0.9%)		
Total	2180 100%	1911 100%	476 100%	4567 100%		

\*p value <0.05- Statistically significant

Table 1 shows association of DMFT scores and age of the study participants. There was an increase in caries



experience as the age increases. ( P value = 0.000\*. P value< 0.05).

Figure 1 shows age wise distribution of study population. X axis denotes age group of the study population and Y axis denotes percentage distribution of caries experience. About 47.78% were in the age group of 18-35yrs, 41.82% were in 36-55 yrs and 10.42% of the study participants were above 56 yrs. It is inferred that the majority of the study population were among the 18-35 years age group.

Figure 2 shows distribution of DMFT scores among the study population. X axis denotes DMFT scores and Y axis denotes the percentage of study population. DMFT score of 0-7 was prevalent among 58.24% of the study participants, DMFT score of 8-14 was prevalent among 36.43% of the study population, score of 15-21 and 22-28 were prevalent among 5.41% and 0.92% respectively, suggesting that DMFT score of 0-7 was the most prevalent DMFT score in the study population

Figure 3 shows association of DMFT scores and age of the study participants. X axis denotes age group of study participants and Y axis represents number of study participants. Highest DMFT scores (Orange colour) was more prevalent among study participants above 56 years of age when compared with other age groups and this was statistically significant suggesting that, as with the increase in age, there was an increase in caries experience based on DMFT index (Chi-square value - 292.54, p value -0.000, P value < 0.05, statistically significant).

Table 1 shows association of DMFT scores and age of the study participants. There was an increase in caries experience as the age increases. ( P value = 0.000\*. P value< 0.05).