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## Oral Hygiene Practices Among Cricketers in Chennai

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MONESH BABU J D<sup>1</sup>, DHANRAJ GANAPATHY<sup>2\*</sup>, KEERTHI SASANKA<sup>3</sup>

<sup>1</sup>Saveetha dental college and hospitals, Saveetha institute of medical and technical science, Saveetha university, 162, Poonamalle high road, Velapanchavadi, Chennai- 600077, Tamil Nadu , India

<sup>2</sup>Professor and Head, Department of Prosthodontics, Saveetha dental College, Saveetha Institute of medical and technological science, Saveetha University, 162, Poonamallee High Road, Velapanchavadi, Chennai- 600077, Tamil Nadu , India

<sup>3</sup>Senior Lecturer, Department of Prosthodontics, Saveetha dental college and hospitals, Saveetha institute of medical and technical science, Saveetha university,162, Poonamalle high road, Velapanchavadi, Chennai-600077, Tamil Nadu , India

\*Corresponding Author

Email: 151901038.sdc@saveetha.com<sup>1</sup>, dhanarajmganapathy@yahoo.co.in<sup>2</sup>, keerthis.sdc@saveetha.com<sup>3</sup>

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**Abstract:** Oral hygiene refers to the practice of keeping the mouth, teeth and gums clean and healthy to prevent oral disease. Oral hygiene is often taken for granted but it is essential part of our daily life. Oral hygiene is the practice of maintaining a clean oral cavity to prevent dental diseases such as dental cavities, gingivitis, periodontitis and bad breath. A total of 150 cricketers were involved in the study . Self administered questionnaire related to the oral hygiene practices along with sociodemographic details was prepared and it was distributed through an online survey link. Based on hypotonic and isotonic content of the sports drink , the majority of the participants(58.7%) prefer isotonic sports drinks and the remaining participants( 41.3%) prefer Hypotonic .About 58% of participants eat chocolate regularly. 54.6% of participants agreed that dental erosion affects oral health . 56% of participants think oral health has an impact on sports performance. In the present study, the knowledge,attitude and practice of oral hygiene is moderate.For further improvement, awareness about maintaining good oral health should be created among the public. Erosion can be prevented by educating the subjects about the risks associated with carbonated drinks which is more common among sportsmen and young adults.

**Keywords:** Oral hygiene, erosion, chocolate, sports performance.

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### INTRODUCTION

Oral hygiene refers to the practice of keeping the mouth, teeth and gums clean and healthy to prevent oral disease. Oral hygiene is often taken for granted but it is an essential part of our daily life. Oral hygiene is the practice of maintaining a clean oral cavity to prevent dental diseases such as dental cavities,gingivitis,periodontitis and bad breath. Plaque and calculus are the main causes of gum disease and tooth decay .Oral health is an essential component of general health (Hosing *et al.*, 2016). Good oral hygiene is the foundation for a healthy mouth and prevents 80% of all dental problems (Pereira and Others, 2017). Majority of the Indians are unaware of the fact that good oral health not only ensures freedom from pain and suffering associated with oral health problems, but it is also essential for the overall health improvement and elevation of self esteem ,quality of life , performance at work (Nagarajappa *et al.*, 2015). Dental diseases such as dental caries, periodontal diseases and oral cancer have increased in prevalence globally by an average of 45.6% since 1990, in parallel with major non communicable disease(25%). Poor oral health impacts substantially on daily activities due to the associated pain and suffering, and in the long term is a substantial health and financial burden (Batra, Gupta and Erbas, 2019). Bacterial plaque is the cause of most of the oral diseases such as dental caries ,gingivitis and periodontitis (Devishree and Saveetha Dental College and Hospital, 2016). Oral hygiene practices such brushing teeth regularly,using fluoride toothpaste,using aids such as floss to clean interdental spaces,changing toothbrush at regular intervals of time, visiting dentists regularly will assist in maintaining proper oral health (Bandyopadhyay *et al.*, 2017). Sports drinks may contribute to risks of dental erosion, dental caries, and periodontitis in athletes especially when he or she exhibits poor oral hygiene habits (Broad and Rye, 2015). Sports drinks contain relatively high amounts of carbohydrates (sugars), salt, and citric acid. High intake of sports drinks during exercise, coupled with xerostomia from dehydration, may lead to the possibility of erosive damage to teeth (Mathew, Casamassimo and Hayes, 2000). These drinks have negative effects on teeth and can eventually lead to dental erosion [9]. A person engaged in strenuous sports may be at risk for dental erosion due to the frequent ingestion of acidic sports drinks (Roy, 2008). Sports drinks were made for three main reasons: to prevent dehydration during sport or exercise; to supply enough carbohydrates to increase

energy; and to provide electrolytes to replenish those lost during perspiration, with the view that these would be full of flavour. These can then be split into two main types of solution: hypotonic and isotonic (Hinds, 2019). By maintaining a proper oral health and practicing good oral hygiene habits can prevent many of the dental disease. Previously our department has published extensive research on various aspects of prosthetic dentistry ('Evaluation of Corrosive Behavior of Four Nickel–chromium Alloys in Artificial Saliva by Cyclic Polarization Test: An in vitro Study', 2017; Ganapathy, Kannan and Venugopalan, 2017; Jain, 2017a, 2017b; Ranganathan, Ganapathy and Jain, 2017; Ariga *et al.*, 2018; Gupta, Ariga and Deogade, 2018; Anbu *et al.*, 2019; Ashok and Ganapathy, 2019; Duraisamy *et al.*, 2019; Varghese, Ramesh and Veeraiyan, 2019), this vast research experience has inspired us to research about the oral hygiene practices among cricketers in Chennai. Therefore the aim of the study is to assess the oral hygiene practices among cricketers in Chennai. Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Gupta, Ariga and Deogade, 2018; Jeevanandan and Govindaraju, 2018; J *et al.*, 2018; Menon *et al.*, 2018; Prabakar *et al.*, 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; Samuel, Acharya and Rao, 2020)

## MATERIALS AND METHODS

A descriptive cross sectional study was conducted among cricketers aged 18-25 years to assess their impact of social media. Approval was obtained from the institutional review board. Simple convenient random sampling was done. A total of 150 participants were involved in the study. Self administered questionnaire of close ended questions was prepared related to oral hygiene practices along with sociodemographic details and distributed among cricketers through an online survey link. The responses were collected back and finally, the result was presented by using pie charts.

## RESULTS AND DISCUSSION

The present study was conducted to know the knowledge, attitude and practice of oral hygiene among cricketers in Chennai. Regarding the knowledge of oral hygiene, 49.3% of participants brush to brighten their teeth. Surprisingly, 30.6% of participants brush their teeth to prevent bleeding and the rest of the participants (20.1%) brush to prevent the bad breath. Majority of the participants 48% approach the dentist only when they suffer from pain and 28% of participants approach dentist for specific treatment such as RCT, restoration and 24% of participants have never gone to dentist. Regarding the attitude, about 45.3% of participants think oral health is as important as general health and 38% of participants think oral health is not as important as general health. Only 32% of participants visit a dentist every 6-12 months and 68% of participants visit occasionally. Regarding the practice, the majority of the participants 94.6% brush their teeth regularly. Only 13.3% of participants brush twice a day and 86.6% of participants brush only once in a day. About 40% of participants use dental floss and the remaining 60% don't use dental floss [Figure 1]. About 29.4% of participants clean their tongue regularly and 70.6% of participants don't clean their tongue regularly [Figure 2]. Majority of the participants prefer red bull (53.3%) and Gatorade (34.6%) as their sports drinks and 6.6% of participants prefer one8 and 5.3% prefer sting as their sports drinks and regarding the frequency of consumption of these drinks, 42% of participants drink once in a day, 39.3% of participants drink twice in a day and 18.7% of participants intake more than twice a day. Based on hypotonic and isotonic content of the sports drink, majority of the participants (58.7%) prefer isotonic sports drinks and the remaining participants (41.3%) prefer Hypotonic [Figure 3]. About 58% of participants eat chocolate regularly [Figure 4]. 54.6% of participants agreed that dental erosion affects oral health. 56% of participants think oral health has an impact on sports performance and 44% of participants think that oral health doesn't have any impact on sports performance [Figure 5]. 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; Vijayashree Priyadharsini, Smiline Girija and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai *et al.*, 2019; Sridharan *et al.*, 2019; Vijayashree Priyadharsini, 2019; Chandrasekar *et al.*, 2020; Mathew *et al.*, 2020; R *et al.*, 2020; Samuel, 2021)

## CONCLUSION

Within the limitations of this study following conclusion can be drawn, Oral hygiene is important for overall health. For maintaining a good health, we should maintain a good oral health because many of the systemic diseases are associated with oral diseases. In the present study, the knowledge, attitude and practice of oral hygiene is moderate. For further improvement, awareness about maintaining good oral health should be created among the public. Erosion can be prevented by educating the subjects about the risks associated with carbonated

drinks which is more common among sportsmen and young adults. Preventive programs and dietary counselling for young adults should be conducted to control and reduce the use of acidic beverages.

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#### CONFLICTS OF INTEREST

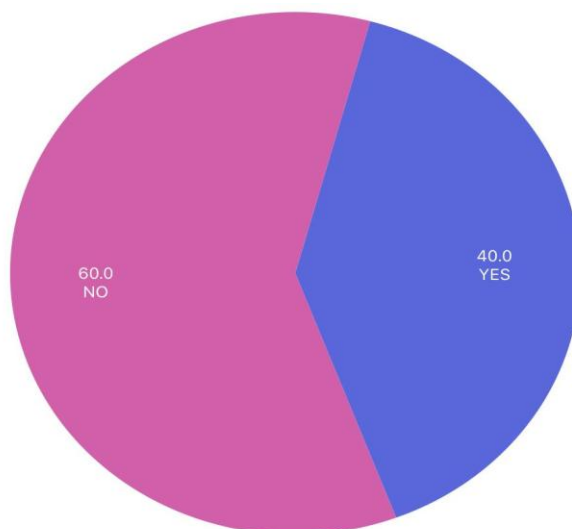
The authors declare that there were no conflicts of interest in the present study.

#### REFERENCES

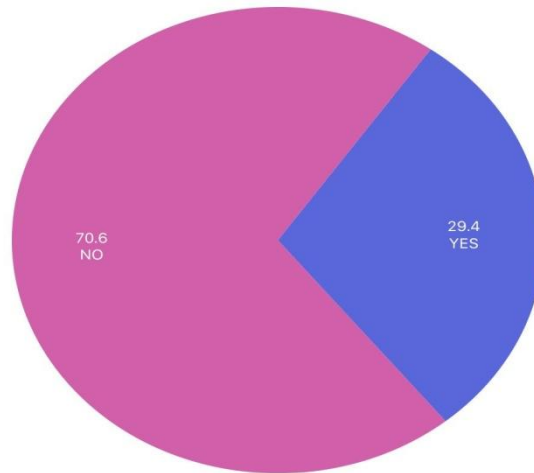
1. Anbu, R. T. et al. (2019) 'Comparison of the Efficacy of Three Different Bone Regeneration Materials: An Animal Study', *European journal of dentistry*, 13(1), pp. 22–28.
2. Ariga, P. et al. (2018) 'Determination of Correlation of Width of Maxillary Anterior Teeth using Extraoral and Intraoral Factors in Indian Population: A Systematic Review', *World Journal of Dentistry*, 9(1), pp. 68–75.
3. Ashok, V. and Ganapathy, D. (2019) 'A geometrical method to classify face forms', *Journal of oral biology and craniofacial research*, 9(3), pp. 232–235.
4. Bandyopadhyay, A. et al. (2017) 'Assessment of Oral Hygiene Knowledge, Practices, and Concepts of Tobacco Usage among Engineering Students in Bhubaneswar, Odisha, India', *The journal of contemporary dental practice*, 18(6), pp. 423–428.
5. Batra, M., Gupta, S. and Erbas, B. (2019) 'Oral Health Beliefs, Attitudes, and Practices of South Asian Migrants: A Systematic Review', *International journal of environmental research and public health*, 16(11). doi: 10.3390/ijerph16111952.
6. Broad, E. M. and Rye, L. A. (2015) 'Do current sports nutrition guidelines conflict with good oral health?', *General dentistry*, 63(6), pp. 18–23.
7. 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.
8. Devishree, R. A. and Saveetha Dental College and Hospital (2016) 'Assessment of Oral Hygiene Knowledge, Attitude and Practice among 13-17 Years Old Children', *Journal of Medical Science And clinical Research*. doi: 10.18535/jmscr/v4i8.33.
9. 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.
10. 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.
11. 'Evaluation of Corrosive Behavior of Four Nickel–chromium Alloys in Artificial Saliva by Cyclic Polarization Test: An in vitro Study' (2017) *World Journal of Dentistry*, 8(6), pp. 477–482.
12. 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.
13. 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.
14. 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.
15. Ganapathy, D. M., Kannan, A. and Venugopalan, S. (2017) 'Effect of Coated Surfaces influencing Screw Loosening in Implants: A Systematic Review and Meta-analysis', *World Journal of Dentistry*, 8(6), pp. 496–502.
16. 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.
17. 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.
18. Gupta, P., Ariga, P. and Deogade, S. C. (2018) 'Effect of Monopoly-coating Agent on the Surface Roughness of a Tissue Conditioner Subjected to Cleansing and Disinfection: A Contact Profilometric Study', *Contemporary clinical dentistry*, 9(Suppl 1), pp. S122–S126.
19. Hinds, L. (2019) 'Sports drinks and their impact on dental health', *BDJ Team*, 6(7), pp. 11–17.

20. Hosing, A. et al. (2016) 'Oral Hygiene Practices in Dental Students', *Journal of Oral Health and Community Dentistry*, pp. 30–34. doi: 10.5005/johcd-10-1-30.
21. Jain, A. R. (2017a) 'Clinical and Functional Outcomes of Implant Prostheses in Fibula Free Flaps', *World Journal of Dentistry*, 8(3), pp. 171–176.
22. Jain, A. R. (2017b) 'Prevalence of Partial Edentulousness and Treatment needs in Rural Population of South India', *World Journal of Dentistry*, 8(3), pp. 213–217.
23. 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.
24. 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.
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. Mathew, M. G. et al. (2020) 'Evaluation of adhesion of Streptococcus mutans, plaque accumulation on zircons and stainless steel crowns, and surrounding gingival inflammation in primary molars: Randomized controlled trial', *Clinical oral investigations*, pp. 1–6.
27. Mathew, T., Casamassimo, P. S. and Hayes, J. R. (2000) 'Relationship between sports drink and dental erosion in university athletes', in *Journal of Dental Research*. AMER ASSOC DENTAL RESEARCH 1619 DUKE ST, ALEXANDRIA, VA 22314 USA, pp. 158–158.
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. 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.
30. Nagarajappa, R. et al. (2015) 'Knowledge, attitude and practices regarding oral health among out patients at Rama dental college, Kanpur', *Rama Univ J Dent Sci*, 2(1), pp. 8–14.
31. 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.
32. 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>.
33. Pereira, W. D. and Others (2017) 'Knowledge, attitude and practice on oral hygiene measures among students in rural areas: Kanchipuram', *The Pharma Innovation*, 6(9, Part F), p. 382.
34. Prabakar, J. et al. (2018) 'Comparative Evaluation of Retention, Cariostatic Effect and Discoloration of Conventional and Hydrophilic Sealants - A Single Blinded Randomized Split Mouth Clinical Trial', *Contemporary clinical dentistry*, 9(Suppl 2), pp. S233–S239.
35. 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.
36. 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.
37. 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.
38. 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.
39. 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.
40. 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.
41. Ranganathan, H., Ganapathy, D. M. and Jain, A. R. (2017) 'Cervical and Incisal Marginal Discrepancy in Ceramic Laminate Veneering Materials: A SEM Analysis', *Contemporary clinical dentistry*, 8(2), pp. 272–278.
42. R, H. et al. (2020) 'CYP2 C9 polymorphism among patients with oral squamous cell carcinoma and its role in altering the metabolism of benzo[a]pyrene', *Oral Surgery, Oral Medicine, Oral Pathology and Oral*

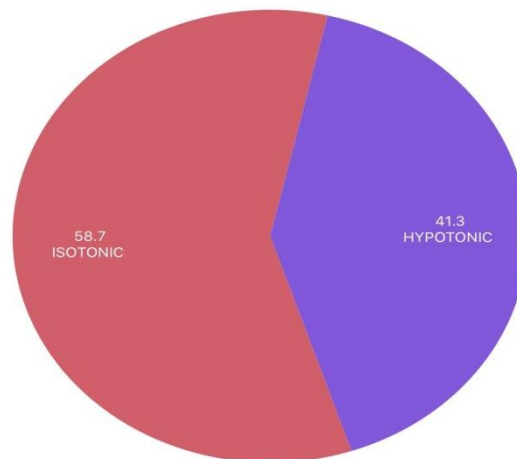
- Radiology, pp. 306–312. doi: 10.1016/j.o000.2020.06.021.
43. Roy, B. D. (2008) 'Milk: the new sports drink? A Review', *Journal of the International Society of Sports Nutrition*, 5, p. 15.
  44. Samuel, S. R. (2021) 'Can 5-year-olds sensibly self-report the impact of developmental enamel defects on their quality of life?', *International journal of paediatric dentistry / the British Paedodontic Society [and] the International Association of Dentistry for Children*, 31(2), pp. 285–286.
  45. 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.
  46. 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.
  47. 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.
  48. 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.
  49. 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.
  50. Vijayashree Priyadharsini, J., Smiline Girija, A. S. and Paramasivam, A. (2018) 'In silico analysis of virulence genes in an emerging dental pathogen *A. baumannii* and related species', *Archives of oral biology*, 94, pp. 93–98.
  51. 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.
  52. 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.



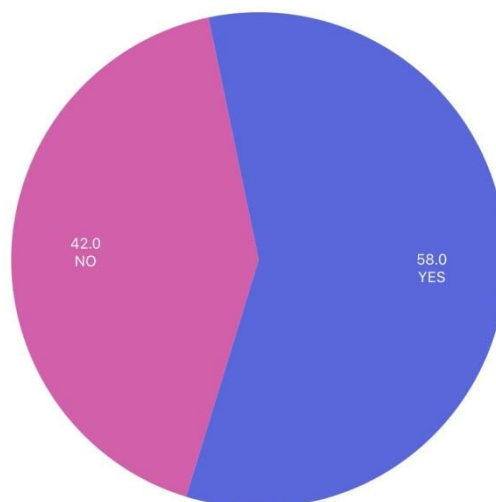
**Fig.1: Pie chart representing percentage distribution of participants who use dental floss where blue colour denotes yes and pink colour denotes pink. About 40 %(blue) of the participants use dental floss .**



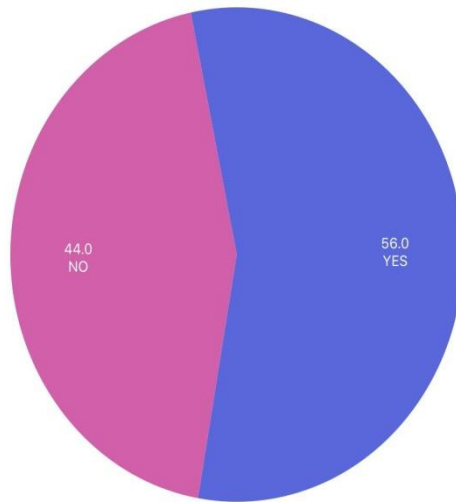
**Fig.2: Pie chart representing percentage distribution of participants who clean their tongue regularly where blue colour denotes yes and pink colour denotes pink. 29.4% of the participants clean their tongue regularly.**



**Fig.3: Pie chart representing percentage distribution of type of sports drinks preferred by the participants where red colour denotes isotonic and violet colour denotes hypotonic . 58.7% of the participants prefer isotonic sports drinks.**



**Fig.4: Pie chart representing percentage distribution of participants who eat chocolate regularly where blue colour denotes yes and pink colour denotes pink. 58% of the participants eat chocolate regularly.**



**Fig.5: Pie chart representing percentage distribution of knowledge on oral health has an impact on sports performance where blue colour denotes yes and pink colour denotes no. About 56% of the participants agreed oral health has an impact on sports performance.**