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A Comparative Analysis of Treatment Seeking Behaviour among People of Urban, Suburban and Rural Population in Chennai.

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ABSTRACT

Aim: To compare among urban, sub-urban and rural populations towards the treatment seeking behaviour among the population by innovative analysis using random sampling technique.

Materials and methods: This explorative and descriptive analysis was used to create an online survey questionnaire to obtain data. The data was collected among rural (21%), urban (48.9%) and sub-urban (30.1%) populations. The total number of samples (N= 405) consists of three groups and samples and were analysed by a random sampling method. The sample size was calculated by maintaining G-power 80%, α=0.05, and a confidence interval of 95%.

Result: The comparative analysis of the urban (48.9%), sub-urban (30.1%) and rural (21%) was compared by treatment seeking for diseases was not found significant. Most people without medical facilities refrained from going to hospital and public health and had the habit of self medication.

Conclusion: At 95% confidence intervals, families who recognized the importance of health-care treatment approached public health centers. The understanding of traits showed statistical differences with innovative analysis in approaching people for health facilities immediately with the innovative analysis.

Keywords: Treatment Seeking Behaviour, Population, Rural, Urban, Sub-urban, Innovative parameter, Community Medicine, Public Health.

1. INTRODUCTION

A survey among the population of urban, suburban and rural areas by random sampling technique. The significance of the work is assessing the awareness of health conditions and by analyzing the data collected from various people and for the implementation of primordial for people towards utilization of medical facilities and retard in self medication for the disease acquired with consultation of hospitals and for the development of medical records (Omotoso 2010).

The research was found relevant to 201 studies in PubMed and 5061 studies in ScienceDirect. Some studies have been done based on this survey which explains why rural areas are

suffering from medical facilities when compared with other communities (Basu et al. 2020). According to the survey, when comparing the urban and suburban communities, the rural community lags far behind in terms of hospital and transportation to medical pharmacies or hospitals, and people are avoiding hospital treatment in favor of self-medication (Omotoso 2010) which could be seen as state or quality of being accessible plays a prominent role in the patronage of facilities, especially, medical services. It is a relative quality accruing to a piece of land by virtue of its relationship to a system of transport. Treatment seeking behaviours are closely linked with the health status of a nation and thus its economic development. However, knowledge of treatment seeking behaviours among subgroups of population is still scanty. (Latunji and Akinyemi 2018).

There are different studies done based on the awareness of the treatment seeking levels, prevalence of social factors, habituals of the people and results. There are no combined investigations related to health status along with body mass index. Our study aimed to estimate the health status and medical factors faced among male and female people in the urban, sub-urban and rural communities based on the regular habits and medical facilities.

2. MATERIALS AND METHODS

This study was carried out in a simulation lab of Saveetha School of Engineering. An online explorative survey was created in which some medical related questions about our own health care are prepared. The responses from the form are collected in areas of the rural, urban and suburban areas of Chennai city. The questionnaire consisted of three parts. The questions covered the following topics: residing areas, hospitalization details, disease caused period of suffering from allergence, hospital facilities, and determining which zones suffered and lacked treatments.The information gathered was only with the end goal of research and henceforth kept private confidentiality. The required sample size was determined and confirmed using clinical.com The sample size was calculated by maintaining G-power 80%, α=0.05, and confidence interval 95% (clinical.com/sample size); (Kashyap et al. 2019). The sample size (N= 405). Where, N = total number of the source population. Hence, the required final sample size was 405. The total number of groups is 3. Group one is rural (N =135), group two is urban (N=135) and group three is sub-urban (N=135).

A well-organized survey was used to collect vital information that was filled in as essential information to address the examination questions and destinations concerning the significance of health issues and diseases acquired by them in the previous time with collection of illness and hospital admittance with and without medical facility. The data survey was collected from different groups based on areas like the rural, urban and suburban chennai zones.

This survey was compared with health seeking behaviour of rural and urban variation in Kazakhstan where the variable of interest is a binary choice variable, as in the case of CON (denoting the decision to consult or not) and HOSP (the event of hospitalisation) estimation is by probit model.

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STATISTICAL ANALYSIS

The factual devices applied are Percentage investigation; weighted normal mean Chi Square analysis by using SPSS were utilized to break down the information and data. The factual perspectives shift from consistently to once in a while and their adapting system is likewise fundamentally varying from every one. The variables were compared with the blood sugar level and the source available for people to reach hospitals.Therefore, the Pearson value of the Chi square test and the significance value as the P-value

3. RESULTS

Table 1 represents the demographic characteristics in tabular format showing the total population of the people from which the real data has been collected for the survey consisting of the living area zones mentioned as urban, sub-urban and rural areas of Chennai. It also includes the frequency and percentage of males and females. Table 2 depicts the respondents' traits characteristics, displaying the variables of common behavioral factors of people living in the mentioned community zones, stating whether the people have any type of blood pressure, habitual use of tobacco and alcohol, and physical stage while working out, indicating whether their body is in a stable or unstable condition.

Figure. 1Bar Graphrepresents the statistics of Male population and Female population of the urban communities, sub-urban communities and rural communities which are collected from the survey for the treatment seeking purpose. Fig. 2Bar Graph representationshows the variables of common behavioural factors like blood pressure, habits of alcohol, practice of tobacco and other skin allergic diseases of people living the mentioned community zones.

Table 3 represents an important health disorder comparison in rural, urban and suburban areas. The following tabular column represents the major health disorders like diabetes and any skin allergic diseases which are compared with the mentioned community zones. Table 4 represents the total medical facilities available in rural, urban and suburban areas, also showing the variables of overall medical facilities available for people living in the mentioned community zones and concluding that which kind of area is lagging more for the medical facilities.

Table 5 shows the Chi square tests are performed with the numerical values which are converted from alphabetical responses from the survey with significant values.Fig. 3. represents the important health disorders for the people who suffer from diabetes and compared with non-diabetes,people who underwent any medical assisted treatment in the rural, urban and suburban communities. Fig. 4represents the medical facilities in the urban, suburban and rural communities and seeing which community is suffering more for the medical treatment and the facilities to reach medical pharmacies or hospitals.

4. DISCUSSION

A qualitative survey was performed to analyse awareness of people seeking medical help for diseases. The urban population (48.9%) was found to have high awareness and people were approaching the medical facility while sub-urban (30.1%) and rural (21%) from the Chennai region, were found to have a high negligence of treatment seeking behaviour for most disorders.The rural people practiced self-medication and had a hesitant attitude toward seeking treatment at medical facilities.Comparative analysis based upon evaluation results among the factors obtained where the urban population (48.9%) had utilized the medical facility. The sub-urban (30.1%) population had a mixed response to utilization of the hospital facility while the rural (21%) population approached the hospital facility if there was an emergency.

From the research study (Latunji and Akinyemi 2018), civil servants were found to have a high level of appropriate health-seeking behaviour. To increase health-seeking behaviour, lower cadre employees and those with lower levels of education must be targeted during policy formulation. Furthermore, in order to increase health-seeking behaviour, health insurance schemes should be expanded to cover a larger portion of the population, which is similar to my survey analysis. There are no opposing articles found related to this work (Omotoso 2010).The research was found relevant to 201 studies in PubMed and 5061 studies in ScienceDirect. Some studies have been done based on this survey which explains why rural areas are suffering from medical facilities when compared with other communities (Basu et al. 2020). According to the survey, when comparing the urban and suburban communities, the rural community lags far behind in terms of hospital and transportation to medical pharmacies or hospitals, and people are avoiding hospital treatment in favor of self-medication (Omotoso 2010) which could be seen as state or quality of being accessible plays a prominent role in the patronage of facilities, especially, medical services.

The population in rural and suburban areas were not considering hospital treatment as primary treatment. People prefered un-conventional treatment instead of using public health facilities. This survey will be useful to maintain the database management for preparation of medical records for epidemiology and also help in preparation of government health policy towards affording the most needful things to people lagging from health issues in the particular determined zone.

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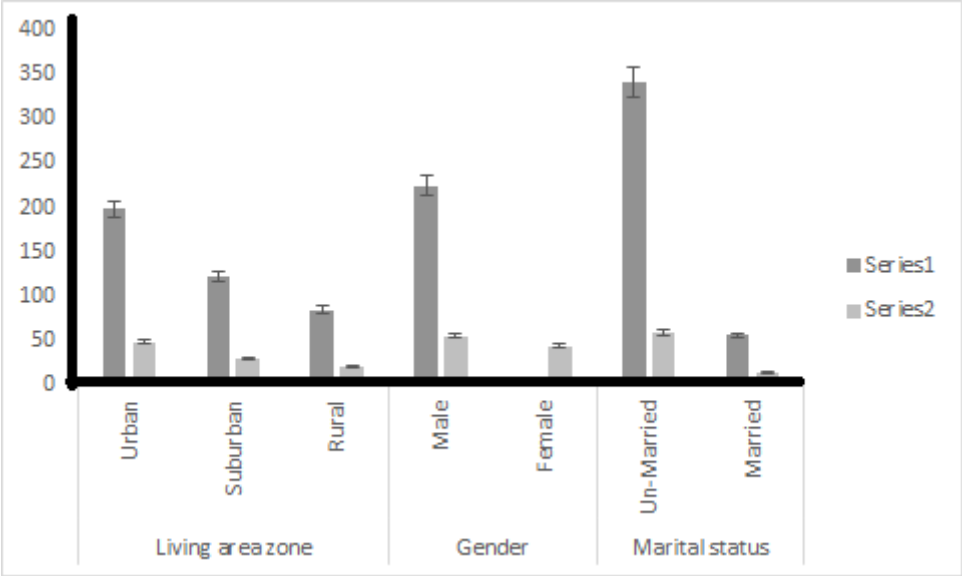

Fig. 1. Bar Graphrepresenting the statistics of Male population and Female population of the urban communities, sub-urban communities and rural communities which are collected from the survey for the treatment seeking purpose. X axis Variable count and the Y axis based on demography, gender and marital status ±1SD

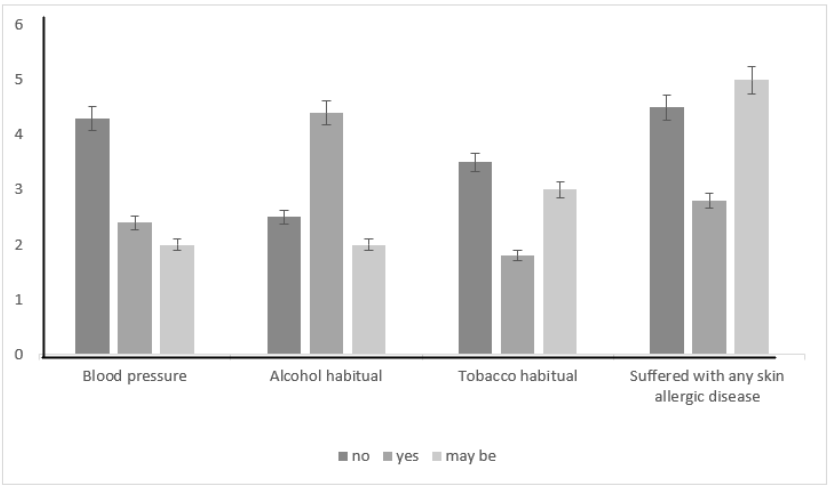

Fig. 2. Bar Graph representationShowing the variables of common behavioural factors like blood pressure, habits of alcohol, practice of tobacco and other skin allergic diseases of people living the mentioned community zones.X axis represents the variable count and the Y axis represents the Traits ±1SD

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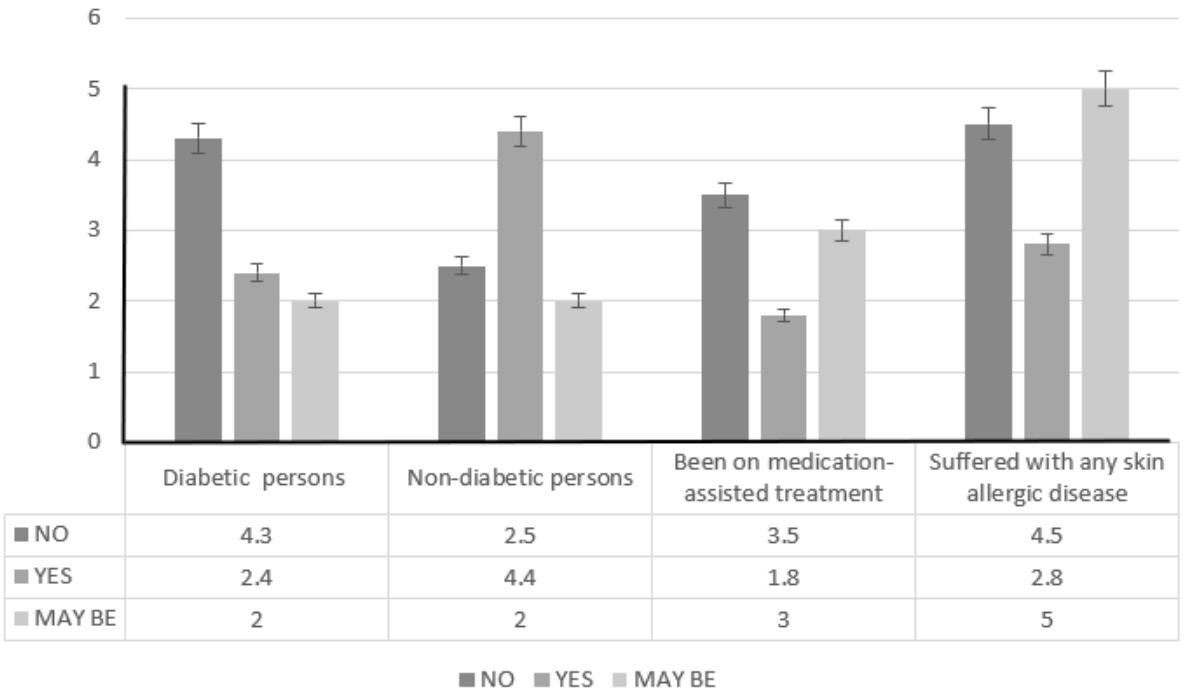

Fig. 3. Represents the important health disorders for the people who suffer from the diabetes and comparing with non-diabetes, people who underwent any medical assisted treatment in the rural, urban and suburban communities X axis shows the variable count and Y axis shows the health disorders ±1SD

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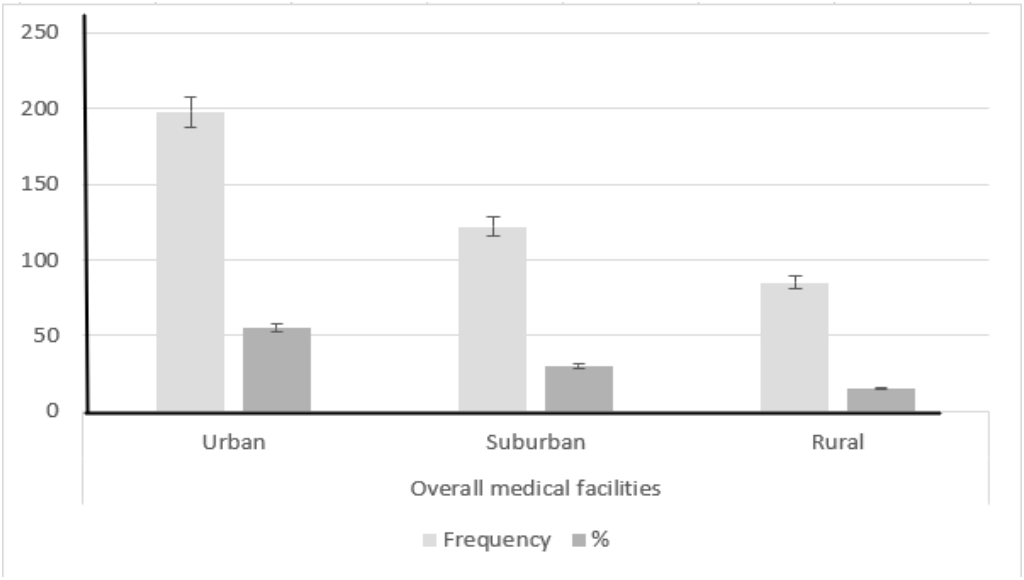

Fig. 4. Represents the medical facilities in the urban, suburban and rural communities, Community suffering more for the medical treatment and the facilities to reach medical pharmacies or hospitals. X axis shows the variable count and Y axis suggests the overall medical facility used ±1SD.

Table 1: Demographic Characteristics representation in tabular form, Showing the total population of the people based upon the demography of the region of survey details collected

Variable		**Frequency**	**%**
Living area zone	**Urban**	198	48.9
	Suburban	122	30.1
	Rural	85	21
Gender	**Male**	224	55.4
	Female	180	44.6
Marital status	**Un-Married**	341	58.9
	Married	56	14.1

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Table 2: Characteristics from the respondents showing the variables of common traits of people living the mentioned community zones.

Variable	Percentage of population not accepting the traits	Percentage of population accepting the traits)	Percentage of population could accept the traits
Abnormal Blood Pressure	78.4	5.6	7.9
Alcoholism	75.6	17.3	7.2
Tobacco Abuse	77.8	15.8	6.4
Allergic conditions	45.8	45.8	8.4
Metabolic diseases	57	28.9	14.1

Table 3: The following tabular column representsimportant health disorder comparison in rural, urban and suburban in which the major health disorders which are compared with the mentioned community zones

Variable	No (%)	Yes(%)	May be(%)
Diabetic persons	-	15.1	-
Non-diabetic persons	84.9	-	-

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Been on medication-assisted treatment	85.6	14.4	6.4
Suffered with any skin allergic disease	45.8	45.8	8.4

Table 4: The following tabular column represents total medical facilities available in rural, urban and suburban, Showing the variables of overall medical facilities available for people living the mentioned community zones.

Variable		**Frequency**	**%**
Overall medical facilities	Urban	198	48.9
	Suburban	122	30.1
	Rural	85	21

Table 5: Represent the statistical analysis byChi square and The comparative analysis was not found to be statistically significant

Variable	**Statistical Analysis**	**Value**	**df**
Traits of people on rural, urban and suburban	Pearson Chi-Square	42.633[c]	12
	Likelihood Ratio	26.634	12
	N of Valid Cases	185	
health disorder comparison in rural, urban and suburban	Pearson Chi-Square	43.771[d]	9
	Likelihood Ratio	39.498	9

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	N of Valid Cases	178	
Total medical facilities in rural, urban and suburban	Pearson Chi-Square	13.373[e]	9
	Likelihood Ratio	15.064	9
	N of Valid Cases	31	
Total	Pearson Chi-Square	83.327[a]	12
	Likelihood Ratio	68.826	12
	`N of Valid Cases	406	

5. CONCLUSION

The influencing factors show that families who recognize the importance of treatment in hospitals for their health as critical and seek the assistance of a public health facility in urban communities. while families from sub-urban (30.1%) and rural areas (21%) showed a huge statistical difference in approaching the public health facility immediately based upon the innovative analysis.

DECLARATIONS

Conflict of interests

No conflict of interest in this manuscript

Authors Contributions

The LK was involved in data collection, data analysis, and manuscript writing. The MAAA was involved in conceptualization, data validation, NR was involved in critical review of the manuscript**.**

Conflict of interest

No conflict of interest in this manuscript.

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References

1. Anbu, R. Tamil, V. Suresh, RevathyGounder, and AbinayaKannan. 2019. "Comparison of the Efficacy of Three Different Bone Regeneration Materials: An Animal Study." *European Journal of Dentistry* 13 (1): 22–28.
2. Ashok, V., and DhanrajGanapathy. 2019. "A Geometrical Method to Classify Face Forms." *Journal of Oral Biology and Craniofacial Research* 9 (3): 232–35.
3. Avinash, Kavarthapu, SankariMalaippan, and JayakumarNadathurDooraiswamy. 2017. "Methods of Isolation and Characterization of Stem Cells from Different Regions of Oral Cavity Using Markers: A Systematic Review." *International Journal of Stem Cells* 10 (1): 12–20.
4. Basu, Saurav, Suneela Garg, S. Anuradha, and Navya Gangadharan. 2020. "Oral Self-Care Practices and Treatment Seeking Behavior in Patients with Diabetes at a Tertiary Care Government Hospital in Delhi, India." *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*. https://doi.org/10.1016/j.dsx.2020.09.007.
5. Chandrasekar, Raghavan, Shyamala Chandrasekhar, K. K. ShanthaSundari, and Poornima Ravi. 2020. "Development and Validation of a Formula for Objective Assessment of Cervical Vertebral Bone Age." *Progress in Orthodontics* 21 (1): 38.
6. Ezhilarasan, Devaraj, Velluru S. Apoorva, and Nandhigam Ashok Vardhan. 2019. "SyzygiumCumini 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): 115–21.
7. Felicita, A. Sumathi. 2017. "Quantification of Intrusive/retraction Force and Moment Generated during En-Masse Retraction of Maxillary Anterior Teeth Using Mini-Implants: A Conceptual Approach." *Dental Press Journal of Orthodontics* 22 (5): 47–55.
8. ———. 2018. "Orthodontic Extrusion of Ellis Class VIII Fracture of Maxillary Lateral Incisor - The Sling Shot Method." *The Saudi Dental Journal* 30 (3): 265–69.
9. Jain, Ashish R. 2017a. "Clinical and Functional Outcomes of Implant Prostheses in Fibula Free Flaps." *World Journal of Dentistry* 8 (3): 171–76.
10. ———. 2017b. "Prevalence of Partial Edentulousness and Treatment Needs in Rural Population of South India." *World Journal of Dentistry* 8 (3): 213–17.
11. Kashyap, Nainakshi, Nadiya Krishnan, Sukhpal Kaur, and SandhyaGhai. 2019. "Risk Factors of Cervical Cancer: A Case-Control Study." *Asia-Pacific Journal of Oncology Nursing* 6 (3): 308–14.
12. Latunji, O. O., and O. O. Akinyemi. 2018. "FACTORS INFLUENCING HEALTH-SEEKING BEHAVIOUR AMONG CIVIL SERVANTS IN IBADAN, NIGERIA." *Annals of Ibadan Postgraduate Medicine* 16 (1). https://pubmed.ncbi.nlm.nih.gov/30254559/.
13. Mathew, Mebin George, S. R. Samuel, AshuJagdishSoni, and KorishettarBasavarajRoopa. 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*, 1–6.

14. Mehta, Meenu, Deeksha, DeveshTewari, Gaurav Gupta, RajendraAwasthi, Harjeet Singh, Parijat Pandey, et al. 2019. "Oligonucleotide Therapy: An Emerging Focus Area for Drug Delivery in Chronic Inflammatory Respiratory Diseases." *Chemico-Biological Interactions* 308 (August): 206–15.
15. Omotoso, O. 2010. "Accessibility to Medical Facilities in the Rural Areas of Ekiti State, Nigeria." *African Research Review*. https://doi.org/10.4314/afrrev.v3i5.51139.
16. Padavala, Sisira, and GheenaSukumaran. 2018. "Molar Incisor Hypomineralization and Its Prevalence." *Contemporary Clinical Dentistry* 9 (Suppl 2): S246–50.
17. Pc, J., T. Marimuthu, and P. Devadoss. 2018. "Prevalence and Measurement of Anterior Loop of the Mandibular Canal Using CBCT: A Cross Sectional Study." *Clinical Implant Dentistry and Related Research*. https://europepmc.org/article/med/29624863.
18. Ponnulakshmi, R., B. Shyamaladevi, P. Vijayalakshmi, and J. Selvaraj. 2019. "In Silico and in Vivo Analysis to Identify the Antidiabetic Activity of Beta Sitosterol in Adipose Tissue of High Fat Diet and Sucrose Induced Type-2 Diabetic Experimental Rats." *Toxicology Mechanisms and Methods* 29 (4): 276–90.
19. Ramadurai, Neeraja, DeepaGurunathan, A. Victor Samuel, Emg Subramanian, and Steven J. L. Rodrigues. 2019. "Effectiveness of 2% Articaine as an Anesthetic Agent in Children: Randomized Controlled Trial." *Clinical Oral Investigations* 23 (9): 3543–50.
20. Ramesh, Asha, Sheeja Varghese, Nadathur D. Jayakumar, and SankariMalaiappan. 2018. "Comparative Estimation of Sulfiredoxin Levels between Chronic Periodontitis and Healthy Patients - A Case-Control Study." *Journal of Periodontology* 89 (10): 1241–48.
21. R, Hannah, R. Hannah, Pratibha Ramani, Arvind Ramanathan, Jancy Merlin R, S. Gheena, Abilasha Ramasubramanian, and K. Monika. 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*. https://doi.org/10.1016/j.oooo.2020.06.021.
22. Samuel, Melvin S., Jayanta Bhattacharya, Sankalp Raj, NeedhidasanSanthanam, Hemant Singh, and N. D. Pradeep Singh. 2019. "Efficient Removal of Chromium(VI) from Aqueous Solution Using Chitosan Grafted Graphene Oxide (CS-GO) Nanocomposite." *International Journal of Biological Macromolecules* 121 (January): 285–92.
23. Samuel, Srinivasan Raj. 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): 285–86.

24. Sridharan, Gokul, PratibhaRamani, and SangeetaPatankar. 2017. "Serum Metabolomics in Oral Leukoplakia and Oral Squamous Cell Carcinoma." *Journal of Cancer Research and Therapeutics* 13 (3): 556–61.
25. Sridharan, Gokul, PratibhaRamani, SangeetaPatankar, and RajagopalanVijayaraghavan. 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): 299–306.
26. Varghese, SheejaSaji, Asha Ramesh, and Deepak NallaswamyVeeraiyan. 2019. "Blended Module-Based Teaching in Biostatistics and Research Methodology: A Retrospective Study with Postgraduate Dental Students." *Journal of Dental Education* 83 (4): 445–50.
27. Venu, Harish, LingesanSubramani, and V. DhanaRaju. 2019. "Emission Reduction in a DI Diesel Engine Using Exhaust Gas Recirculation (EGR) of Palm Biodiesel Blended with TiO2 Nano Additives." *Renewable Energy* 140 (September): 245–63.
28. VijayashreePriyadharsini, Jayaseelan. 2019. "In Silico Validation of the Non-Antibiotic Drugs Acetaminophen and Ibuprofen as Antibacterial Agents against Red Complex Pathogens." *Journal of Periodontology* 90 (12): 1441–48.
29. VijayashreePriyadharsini, J., A. S. SmilineGirija, and A. Paramasivam. 2018. "In Silico Analysis of Virulence Genes in an Emerging Dental Pathogen A. Baumannii and Related Species." *Archives of Oral Biology* 94 (October): 93–98.
30. Differential expression of Helios, Neuropilin-1 and FoxP3 in head and neck squamous cell carcinoma (HNSCC) patients A.A.Mohamed Adil, Anil Kumar Bommanabonia, AnandrajVaithy, Sateesh Kumar 3biotech 9 (178)
31. Protagonist of Immuno-Profiling, Immuno-Scoring, and Immunotherapy Towards Colitis-Associated Cancer: Systematic Review, Mohamed Adil a.a, AK Pandurangan, M Waseem, N Ahmed Diagnostic and Treatment Methods for Ulcerative Colitis and Colitis 2020
32. Emerging Role of Mitophagy in Inflammatory Diseases: Cellular and Molecular Episodes, Mohamed Adil AA, S Ameenudeen, A Kumar, S Hemalatha, N Ahmed, N Ali 2020 Curr Pharm Des. 2020;26(4):485-491. doi: 10.2174/1381612826666200107144810
33. Increased Expression of TGF-β and IFN-γ in Peripheral Blood Mononuclear Cells (PBMCs) Cultured in Conditioned Medium (CM) of K562 Cell Culture AAM Adil, L Vallinayagam, K Chitra, S Jamal, AK Pandurangan, N Ahmed Journal of Environmental Pathology, Toxicology and Oncology 38 (2)
34. Cancer immunotherapy: Targeting immunosuppressive tumor microenvironment NA A.A Mohamed Adil Oncobiology and Targets 2014

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Received 18April2020; accepted 23June2020