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Barriers to Oral Health Care Utilisation among General Population in Chennai - A Cross Sectional Study

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ABSTRACT

Background Oral health is an important key for overall health and well being. There are a lot of barriers that obstruct the utilisation of oral health care services. This leads to various oral diseases which are a major public health problem.

Aim The aim of the present study was to assess the various barriers to oral health care utilisation.

Materials and method A cross sectional survey based study was conducted among the general population in Chennai. The required data was collected using a validated and a pretested questionnaire. A total of 150 responses were collected from the study population. The data was analysed using SPSS software, version 23. Chi square test was performed to obtain the significance between two variables.

Result The barriers to oral health care utilisation were assessed. Most of the respondents (58.7%) consulted a dentist only when they were no longer able to bear the pain, while 32% of the population never had a dental visit. Based on the findings of the study, not feeling dental health is important was statistically significant among all the socioeconomic groups.

Conclusion The major barrier to oral health care utilisation was high cost. There is a need to create awareness on oral health and hygiene through outreach programmes and mass education.

Keywords: Barriers, Dental Care,Novel Method, Oral health, Utilisation

INTRODUCTION

Oral health is a major key for the overall health and improvement of the quality of life (1). Factors determining Oral health are food habits, Oral hygienic practices and the frequency and pattern of dental visits. Orodental diseases are a major public health problem arising in India (2). The proper use of dental health care service is of great importance among the factors that cause oral problems. Untreated oral diseases have harmful effects on systemic health. Despite this, lack utilisation of dental services is more predominant (2). The most common barriers include unavailability of dental services, fear of dental procedures, cost of service, travel, lack of time, negligence to oral health.

The Federation Dentaire Internationale (FDI) classified the barriers to oral health care utilisation as the individuals (Self), the dentist and the community (3). Previous studies show that people with dental insurances are able to overcome a major barrier of high treatment charges (4). It is mostly the psychosocial determinants like the patient's attitude and feelings that modifies their oral health behaviour. Therefore, these psychosocial factors could be referred to as double edged knives (4).

Inequalities in socioeconomic status is a major barrier to utilise dental services in most of the countries (3). Decreasing the inequalities in the utilisation of health care services is an important goal of health systems. Creating complete equality in utilising these services is impossible, hence, policy makers can create and implement new ideas that can cause a change to reduce the inequalities(5). A better understanding about these barriers and timely oral intervention is important. This is done better

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by various outreach programmes (6). Increased consumption of sugar and other habits such as tobacco chewing or use of a nut increases the chance of oral problems which in turn increases the need for dental care services. So, the need to decrease the barriers also increases. Our team has extensive knowledge and research experience that has translate into high quality publications(7–15),(16),(17),(18,19),(20),(21),(22–26)

Hence, the aim of the study was to assess the barriers to oral health care utilisation among the general population in Chennai that helps to explore the various unmet dental treatment needs.

MATERIALS AND METHODS

A cross-sectional study was conducted among the general population of the age group 18 to 55 in Chennai.A structured self administered questionnaire was employed as the instrument for data collection (Table 1). The questionnaire had two parts. Part one sought information about the demographic variables like the participant's age, gender, education, income and occupation. Socioeconomic status was calculated using the scores given by Kuppuswamy scale (27). The second part of the questionnaire consisted of twelve close-ended questions with either four or two options for each question seeking the information about dental visit behaviour of the respondents and the barriers to oral health care utilisation. In the current study, barriers like no dental clinic nearby, lack of time, fear of dental procedures and expensive nature of dental service were listed. A total of 150 responses were collected by randomly distributing the hard copy of the questionnaire among the general population.

STATISTICAL ANALYSIS

The data was entered in Microsoft Excel and analysed using SPSS software (version 23.0). Descriptive statistics was done. Chi square test was used to assess the association between the population belonging to different socioeconomic groups with respect to the barriers to oral health care utilisation. For significance level, a p value of ≤ 0.05 was considered statistically significant.

RESULTS

The results were analysed and it was found that the majority of the study population 60.7% were male and the rest 39.3% were female. Similarly the majority of the population 35.3% belonged to the age group of 26-35 years (Figure 1). It was determined that 48.1% of the respondents belonged to the upper lower socioeconomic status according to the kuppuswamy socioeconomic scale. It was also found that 32% of the respondents never had a dental visit (Figure 2). 46% of the study population preferred to " treat" oral problems and a majority of 54% preferred to "prevent" oral problems. A statistically significant association was observed between socioeconomic status and the barrier that people feel dental health is not important (chi square - p=0.05) (Figure 3)(Table 2).

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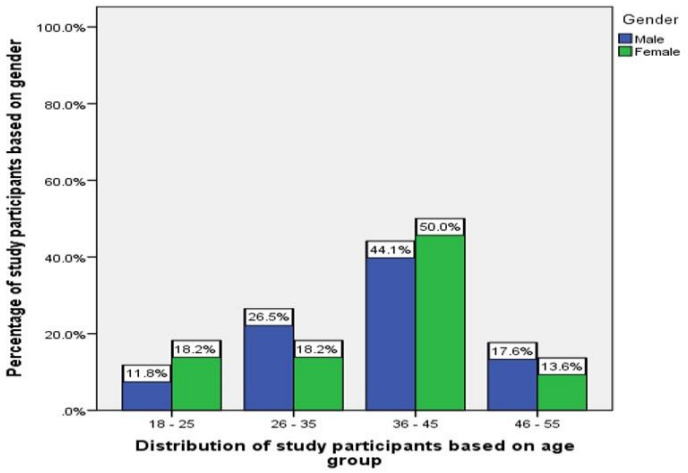

Figure 1: Bar graph depicts the distribution of study population based on their age groups and gender. X axis represents the distribution of the study population based on age group and y axis represents the percentage of study participants based on gender. Blue colour denotes male and green colour denotes female. Majority of the participants among the male population (44.1%) and female population (50%) belonged to the age group 36-45 years.

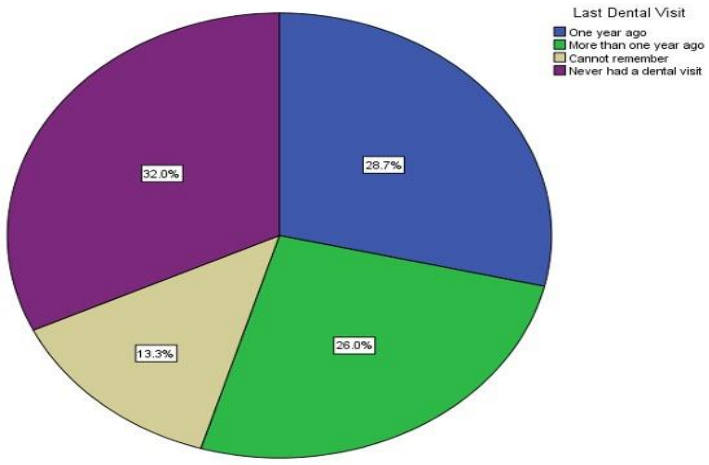

Figure 2: Pie chart depicts the distribution of the study population based on their recent dental visit. Blue colour denotes 'one year ago' , green colour denotes 'more than one year ago', light brown colour denotes ' cannot remember' and violet colour denotes ' never had a dental visit'. Majority of the population (32%) had never visited a dentist , whereas 28.7% of the population had been to a dentist a year back.

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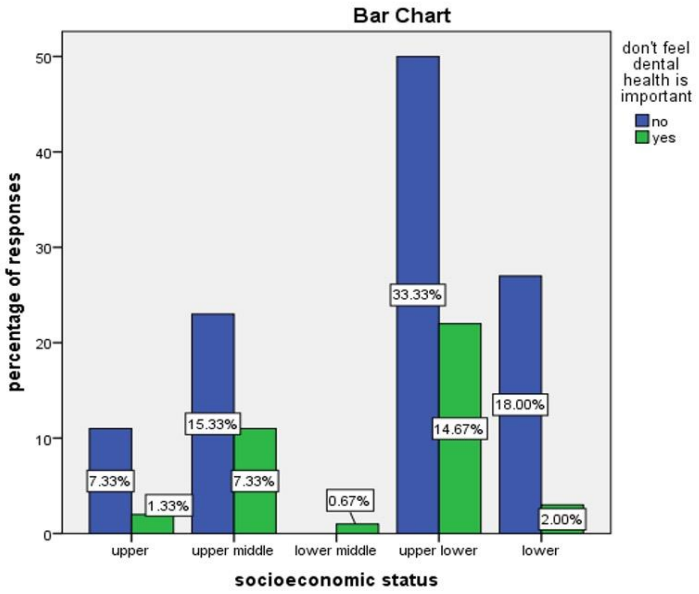

Figure 3: Bar chart represents the association between socioeconomic status and the percentage of responses given by the study population for the barrier " Don't feel dental health is important" to visit the dentist. The X axis represents socioeconomic status and the Y axis represents the percentage of responses. Blue colour denotes no and green colour denotes yes. Majority of the population belonging to the upper lower group of socioeconomic status (33.33%) responded "no". This difference was statistically significant (Chi square test, p value = 0.05 - significant)

Table 2: **Association between socioeconomic status and reasons for unavailing dental care**

Variables	**Upper n(%)**	**Upper middle n (%)**	**Lower middle n(%)**	**Upper lower n(%)**	**Lower n(%)**	**Chi square test p value**
Fear of dentist Yes	6(4)	11(7.3)	0	33(22)	13(8.66)	0.632
No	7(4.6)	23(15.3)	1(0.6)	39(26)	17(11.33)	
No dental facility nearby Yes	2(1.3)	3(2)	1(0.6)	20(13.33)	6(4)	0.062
No	11(7.3)	31(20.66)	0	52(34.6)	24(16)	
High cost of service						
Yes	4(2.6)	18(12)	1(0.6)	42(28)	18(12)	0.332
No	9(6)	16(10.6)	0	30(20)	12(8)	
Lack of time Yes	4(2.6)	10(6.6)	0	31(20.6)	11(7.3)	0.599
No	9(6)	24(16)	1(0.6)	41(27.3)	19(12.66)	
Don't feel dental health is important						
Yes	2(1.3)	11(7.3)	1(0.6)	22(14.6)	3(2)	0.05
No	11(7.3)	23(15.3)	0	50(33.33)	27(18)	

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Fear of transmission of infection in a dental clinic						
Yes	3(2)	10(6.6)	0	23(15.3)	8(5.33)	0.910
No	10(6.6)	24(16)	1(0.6)	49(32.6)	22(14.6)	
Need an accompany during dental visit						
Yes	7(4.6)	18(12)	0	33(22)	17(11.33)	0.694
No	6(4)	16(10.6)	1(0.6)	39(26)	13(8.66)	

Table 2 represents the distribution of study participants regarding their barriers to unavailing dental care services. Chi square test was used; p value ≤ 0.05 is considered statistically significant. The results showed that the perception that dental health is not important is statistically significant among all the socioeconomic groups.

DISCUSSION

Oral health is associated with general health and there are numerous factors that influence this. The major concern in this study was to investigate the barriers to seek oral care services. From the results of the present study we find that the high cost of dental service is a major barrier as a majority of 55.3% of the population responded to it. Similar reports were obtained from the research of (2) and low income groups of all ages experience the least access to oral health care services (28). Previous reports it is also evident that individuals who reported cost as a barrier had poor oral health (29). This proves that the high cost of dental care was a discouraging factor as reported by (30).

From the present study, it is found that fear of dentists and dental procedures was a major barrier. Similar findings were reported by (4), in which 23.7% of the people reported fear as the key factor affecting oral health care services. In the present study 28.7% of the respondents had a dental visit in the past one year, whereas, only 36% of the population had dental visits in the last 1 year (31). The present study also reported that 37.3% of the respondents had a lack of time to visit a dentist and it is in accordance with the previous study by (32). The findings of (33) also reported lack of time as a major barrier among people in availing dental services. The present study had a lesser percentage (21.3%) of respondents reporting no dental clinic near their location, which is similar to a study done by (6). Previous reports also found that the oral health services for old aged people was inadequate which could have a serious impact on their overall health (34).

In the present study 58.7 % of the respondents reported that they go to a dentist only when they can no longer bear the pain. This is similar to the findings of (35) where 57% of the patients seek treatment only when there are symptoms and pain. The major limitation of the present study was the cross-sectional nature and the refusal of the study population to respond to the questionnaire. In future, the study can be conducted with other perceived barriers to bring to light the various barriers of oral healthcare utilisation.

CONCLUSION

From the present study, It was observed that high cost of dental service is a major barrier to utilisation of oral healthcare services as a majority of responses were received. There appears to be a lack of knowledge about the importance of oral health among the study population. Hence, there is a

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need to create awareness through mass education and preventive programs. It is also necessary to introduce new measures to overcome these barriers.

AUTHOR CONTRIBUTION

Ms.Revathy.E: Literature search, survey, data collection, analysis, manuscript writing Dr. Pradeep Kumar. R :Study design, data verification, manuscript drafting

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CONFLICTS OF INTEREST

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

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REFERENCES

[1] Z Y, Yaghoubi Z. Introducing a Valid Questionnaire for Assessment of Perceived Oral Health Care Needs, Barriers to Accessing Oral Health Care Services and Its Utility [Internet]. Vol. 3, International Journal of Dentistry and Oral Health. 2017. Available from: http://dx.doi.org/10.16966/2378-7090.239

[2] Kadaluru UG, Kempraj VM, Muddaiah P. Utilization of oral health care services among adults attending community outreach programs. Indian J Dent Res. 2012 Nov;23(6):841–2.

[3] Krishnan L, Aarthy CS, Kumar PDM. Barriers to access dental care services among adult population: A systematic review [Internet]. Vol. 3, Journal of Global Oral Health. 2020. p. 54–62. Available from: http://dx.doi.org/10.25259/jgoh_1_2020

[4] Malhi R, Basavaraj P, Singla A, Jankiram C, Pandita V, Vashishtha V. Perceived barriers in accessing dental care among patients attending dental institute using decision-making trial and evaluation laboratory method [Internet]. Vol. 13, Journal of Indian Association of Public Health Dentistry. 2015. p. 152. Available from: http://dx.doi.org/10.4103/2319-5932.159052

[5] Nouraei Motlagh S, Ghasempour S, Bajoulvand R, Hasanvand S, Abbasi-Shakaram S, Imani-Nasab MH. Factors affecting demand and utilization of dental services: Evidence from a developing country. Shiraz E Med J [Internet]. 2019 Nov 13;20(12). Available from: https://sites.kowsarpub.com/semj/articles/89076.html

[6] Ajayi DM, Arigbede AO. Barriers to oral health care utilization in Ibadan, South West Nigeria. Afr Health Sci. 2012 Dec;12(4):507–13.

[7] Mathew MG, Samuel SR, Soni AJ, Roopa KB. Evaluation of adhesion of Streptococcus mutans, plaque accumulation on zirconia and stainless steel crowns, and surrounding gingival inflammation in primary molars: randomized controlled trial. Clin Oral Investig. 2020 Sep;24(9):3275–80.

[8] Samuel SR. Can 5-year-olds sensibly self-report the impact of developmental enamel defects on their quality of life? Int J Paediatr Dent. 2021 Mar;31(2):285–6.

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[9] Samuel SR, Kuduruthullah S, Khair AMB, Al Shayeb M, Elkaseh A, Varma SR, et al. Impact of pain, psychological-distress, SARS-CoV2 fear on adults' OHRQOL during COVID-19 pandemic. Saudi J Biol Sci. 2021 Jan;28(1):492–4.

[10] Samuel SR, Kuduruthullah S, Khair AMB, Shayeb MA, Elkaseh A, Varma SR. Dental pain, parental SARS-CoV-2 fear and distress on quality of life of 2 to 6 year-old children during COVID-19. Int J Paediatr Dent. 2021 May;31(3):436–41.

[11] Samuel SR, Acharya S, Rao JC. School Interventions-based Prevention of Early-Childhood Caries among 3-5-year-old children from very low socioeconomic status: Two-year randomized trial. J Public Health Dent. 2020 Jan;80(1):51–60.

[12] Vikneshan M, Saravanakumar R, Mangaiyarkarasi R, Rajeshkumar S, Samuel SR, Suganya M, et al. Algal biomass as a source for novel oral nano-antimicrobial agent. Saudi J Biol Sci. 2020 Dec;27(12):3753–8.

[13] Chellapa LR, Rajeshkumar S, Arumugham MI, Samuel SR. Biogenic Nanoselenium Synthesis and Evaluation of its antimicrobial, Antioxidant Activity and Toxicity. Bioinspired Biomim Nanobiomaterials. 2020 Jul 23;1–6.

[14] Samuel SR, Mathew MG, Suresh SG, Varma SR, Elsubeihi ES, Arshad F, et al. Pediatric dental emergency management and parental treatment preferences during COVID-19 pandemic as compared to 2019. Saudi J Biol Sci. 2021 Apr;28(4):2591–7.

[15] Barma MD, Muthupandiyan I, Samuel SR, Amaechi BT. Inhibition of Streptococcus mutans, antioxidant property and cytotoxicity of novel nano-zinc oxide varnish. Arch Oral Biol. 2021 Jun;126:105132.

[16] Muthukrishnan L. Nanotechnology for cleaner leather production: a review. Environ Chem Lett. 2021 Jun 1;19(3):2527–49.

[17] Muthukrishnan L. Multidrug resistant tuberculosis - Diagnostic challenges and its conquering by nanotechnology approach - An overview. Chem Biol Interact. 2021 Mar 1;337:109397.

[18] Sekar D, Auxzilia PK. Letter to the Editor: H19 Promotes HCC Bone Metastasis by Reducing Osteoprotegerin Expression in a PPP1CA/p38MAPK-Dependent Manner and Sponging miR-200b-3p [Internet]. Hepatology. 2021. Available from: http://dx.doi.org/10.1002/hep.31719

[19] Gowhari Shabgah A, Amir A, Gardanova ZR, Olegovna Zekiy A, Thangavelu L, Ebrahimi Nik M, et al. Interleukin-25: New perspective and state-of-the-art in cancer prognosis and treatment approaches. Cancer Med. 2021 Aug;10(15):5191–202.

[20] Kamala K, Sivaperumal P, Paray BA, Al-Sadoon MK. Author response for "Identification of haloarchaea during fermentation of Sardinella longiceps for being the starter culture to accelerate fish sauce production" [Internet]. Wiley; 2021. Available from: https://publons.com/publon/47375106

[21] Ezhilarasan D, Lakshmi T, Subha M, Deepak Nallasamy V, Raghunandhakumar S. The ambiguous role of sirtuins in head and neck squamous cell carcinoma. Oral Dis [Internet]. 2021 Feb 11; Available from: http://dx.doi.org/10.1111/odi.13798

[22] Sridharan G, Ramani P, Patankar S, Vijayaraghavan R. Evaluation of salivary metabolomics in oral leukoplakia and oral squamous cell carcinoma. J Oral Pathol Med. 2019 Apr;48(4):299–306.

[23] R H, Hannah R, Ramani P, Ramanathan A, Jancy MR, Gheena S, et al. CYP2 C9 polymorphism among patients with oral squamous cell carcinoma and its role in altering the metabolism of benzo[a]pyrene [Internet]. Vol. 130, Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology. 2020. p. 306–12. Available from: http://dx.doi.org/10.1016/j.oooo.2020.06.021

[24] J PC, Pradeep CJ, Marimuthu T, Krithika C, Devadoss P, Kumar SM. Prevalence and measurement of

ISSN: 2309-5288(Print)/2309-6152(Online)
Volume 10 No.1 (2022), Page No. 587 – 594
Article History: Received: 02 January 2022, Revised: 10 February 2022, Accepted: 21 February 2022, Publication: 31 March 2022
anterior loop of the mandibular canal using CBCT: A cross sectional study [Internet]. Vol. 20, Clinical Implant Dentistry and Related Research. 2018. p. 531–4. Available from: http://dx.doi.org/10.1111/cid.12609

[25] Wahab PUA, Abdul Wahab PU, Madhulaxmi M, Senthilnathan P, Muthusekhar MR, Vohra Y, et al. Scalpel Versus Diathermy in Wound Healing After Mucosal Incisions: A Split-Mouth Study [Internet]. Vol. 76, Journal of Oral and Maxillofacial Surgery. 2018. p. 1160–4. Available from: http://dx.doi.org/10.1016/j.joms.2017.12.020

[26] Mudigonda SK, Murugan S, Velavan K, Thulasiraman S, Krishna Kumar Raja VB. Non-suturing microvascular anastomosis in maxillofacial reconstruction- a comparative study. Journal of Cranio-Maxillofacial Surgery. 2020 Jun 1;48(6):599–606.

[27] Saleem SM. Modified Kuppuswamy socioeconomic scale updated for the year 2020 [Internet]. Vol. 7, Indian Journal of Forensic and Community Medicine. 2020. p. 1–3. Available from: http://dx.doi.org/10.18231/j.ijfcm.2020.001

[28] Bersell CH. Access to Oral Health Care: A National Crisis and Call for Reform. J Dent Hyg. 2017 Feb;91(1):6–14.

[29] Thompson B, Cooney P, Lawrence H, Ravaghi V, Quiñonez C. The potential oral health impact of cost barriers to dental care: findings from a Canadian population-based study [Internet]. Vol. 14, BMC Oral Health. 2014. Available from: http://dx.doi.org/10.1186/1472-6831-14-78

[30] Al-Hussyeen AJA. Factors affecting utilization of dental health services and satisfaction among adolescent females in Riyadh City [Internet]. Vol. 22, The Saudi Dental Journal. 2010. p. 19–25. Available from: http://dx.doi.org/10.1016/j.sdentj.2009.12.004

[31] Nagarjuna P, Reddy VS, Sudhir KM, Krishna RV, Gomasani S. Utilization of dental health-care services and its barriers among the patients visiting community health centers in Nellore District, Andhra Pradesh: A cross-sectional, questionnaire study [Internet]. Vol. 14, Journal of Indian Association of Public Health Dentistry. 2016. p. 451. Available from: http://dx.doi.org/10.4103/2319-5932.195844

[32] Byrappagari D, Jung Y, Chen K. Oral health care for patients with developmental disabilities: A survey of Michigan general dentists [Internet]. Vol. 38, Special Care in Dentistry. 2018. p. 281–90. Available from: http://dx.doi.org/10.1111/scd.12303

[33] Dubey DG, Lecturer S, Dept. of Pedodontics and Preventive Dentistry, Sri Aurobindo College of Dentistry. Barriers in Achieving Oral Health Care among Children with Low Socioeconomic Status: A Cross-sectional Study [Internet]. Vol. 6, Journal of Medical Science And clinical Research. 2018. Available from: http://dx.doi.org/10.18535/jmscr/v6i9.61

[34] Hearn L, Slack-Smith L. Oral health care in residential aged care services: barriers to engaging health-care providers [Internet]. Vol. 21, Australian Journal of Primary Health. 2015. p. 148. Available from: http://dx.doi.org/10.1071/py14029

[35] Garcha V, Shetiya SH, Kakodkar P. Barriers to oral health care amongst different social classes in India. Community Dent Health. 2010 Sep;27(3):158–62.