ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR : Dental Publication Service

Available Online at: www.ijdsir.com

Volume – 6, Issue – 2, March - 2023, Page No. : 232 - 240

Assessment of Oral Health Status and Treatment Needs in Elderly Patients Reporting to A Tertiary Dental Care Centre in Trivandrum.

[1]Konikoth Saranya, MDS, Department of Oral Medicine and Radiology, Government Dental College, Trivandrum.

[2]C. Tinky Bose, MPhil Clinical Epidemiology and bio statistics, Department of Oral Medicine and Radiology, Government Dental College, Trivandrum

[3]C.R. Fathima Shirin, BDS, Department of Oral Medicine and Radiology, Government Dental College, Trivandrum.

[4]K.L. Girija, MDS, Department of Oral Medicine and Radiology, Government Dental College, Trivandrum.

[5]Ramachandran Sunu, MDS, Department of Oral Medicine and Radiology, Government Dental College, Trivandrum.

[6]Yogidas Remya, MDS, Department of Oral Medicine and Radiology, Government Dental College, Trivandrum.

Corresponding Author: C.R. Fathima Shirin, BDS, Department of Oral Medicine And Radiology, Government Dental College, Trivandrum.

Citation of this Article: Konikoth Saranya, C. Tinky Bose, C.R. Fathima Shirin, K.L. Girija, Ramachandran Sunu, Yogidas Remya, "Assessment of Oral Health Status and Treatment Needs in Elderly Patients Reporting to A Tertiary Dental Care Centre in Trivandrum", IJDSIR- March - 2023, Volume – 6, Issue - 2, P. No. 232 – 240.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background: People older than 60 years constitute 8.6% of the total Indian population. Compromised oral health may be a risk factor for systemic diseases and vice versa. Only a very few studies have been conducted in India investigating the oral health status of elderly.

Objectives: To assess the dentition status, periodontal status, occlusal support, prevalence of oral mucosal lesions, oral health related quality of life and to evaluate the treatment needs in geriatric patients using DMFT index, Community Periodontal Index, Eichner's index, GOHAI-12 and criteria described in the WHO Oral health assessment form 1997 and 2013.

Methods: This cross sectional study was conducted in 819 elderly individuals(male=393, females=426) from Jan 2017 to June 2018. A structured Proforma was used to record the data. Data entry and analysis was done using SPSS version 20. Descriptive statistics was done for baseline and outcome variables. Association between demographic variables and oral health status was assessed by Chi square test.

Results: DMFT score was 13.90+/-9.78 denoting a high caries experience. 13.2% of patients were edentulous, 67.4% had poor oral hygiene, 44.7% had oral mucosal lesions and 26.1% had Eichner A occlusal support. In

72. 3% GOHAI score(between 41 and 50) indicated fairly good QOL.

Conclusion: The data from this study provide actionable health information to guide public health policy and programs aimed at improving oral health services of the elderly in Kerala.

Keywords: Oral health, elderly, edentulism, Quality of life

Introduction

Population ageing is a global phenomenon. Data on geriatric oral health in India, which is important for planning oral health promotion, prevention and treat ment of oral health problems, is scanty. This study evaluate the periodontal, prosthetic and dentition status; prevalence and distribution of oral mucosal lesion (according to the criteria described in WHO Oral health assessment form 1997 and 2013); Occlusal support using Eichner index (EI); and the Oral Health Related Quality Of Life using the Geriatric Oral Health Assessment Index- 12 (GOHAI-12) of the elderly(60+ years) reporting to a tertiary dental care hospital in south Kerala.

Materials And Methods

The present study was an observational Study (Cross sectional study) carried out in the Out-patient Depart ment of a tertiary dental care hospital in Thiru vanan thapuram. The study period was 15 months from January 2017 to June 2018**.** Patients aged 60 years or above reporting to the OPD of the tertiary dental care were included and those not willing to participate in the study were excluded. Study subjects were recruited con secutively from the study population until the required sample size was achieved.

Ethical clearance for the study was obtained from the Institutional Ethics Committee (IEC No: IEC/ E/ 26/ 2016/ DCT/ dated 06/12/2016).

Sample size required for the study was 816.

819 patients were clinically evaluated, with age ranging from 60 to 85 years. The purpose of the study was explained and informed consent for participation (interview and dental examination) was taken in a written format from each respondent. A structured questionnaire was constructed in English and translated into Malayalam and back translated again into English before being administered in the field. The questionnaire consisted of different sections beginning with demo graphic, educational and family details followed by economic status details, personal habits, general health and medical illness, oral health and dental illness, awareness on dental care, and clinical examination. The examination was conducted in bright daylight using mouth mirror, probe and periodontal probe.

Coronal caries (DMFT), periodontal status (CPITN) and prevalence of oral mucosal lesions were assessed based on WHO oral health assessment form for adults 2013 whereas denture status and related treatment needs were assessed based on WHO oral health assessment form for adults 1997[Figure 1]. To arrive at a DMFT score for an individual patient's mouth, three values are determined and added : DMFT = Decayed teeth score + Missing teeth score + Filled teeth score. The clinical diagnosis of oral mucosal conditions was established and classified according to the Epidemiology guide for the diagnosis of oral mucosal diseases (WHO)[1][Figure 1] and the type and distribution were recorded according to the criteria described in the WHO Oral health assessment form 2013.

Occlusal support was assessed by using Eichner index (EI), which is based on presence or absence of occlusal contact in each of the premolar and molar regions, which are called supporting zones. In this:

A1 – Four supporting zone

B1 – Three supporting zone

B2 – Two supporting zone

B3 – One supporting zone

B4 – Anterior tooth contact but no supporting zone

C – No occlusal contact among the few remaining teeth / completely edentulous

The Oral Health Related Quality of Life (OHRQOL) was assessed by the Geriatric Oral Health Assessment Index (GOHAI-12). It consists of a questionnaire with 12 questions. Nine negative questions and three positive questions were asked to discourage respondent acquie scence. There are five response categories for each question and a score has been assigned for each response category (i.e. 0 = never, 1 = seldom, 2 = sometimes, 3 = often, 4 = very often, 5 = always). The scores were reversed for the negative questions and the response codes were summed up to give a 0 – 60 overall score.

The treatment needs were evaluated independently of the patient's request based on his dental and prosthetic status, and according to the stated criteria. Dental treatment needs were assessed from the clinical exam ination, without radio logical testing.

Data entry and analysis was done using SPSS version 20. Continuous variables were expressed in terms of mean and standard deviation (SD) & categorical varia bles were presented in percentages/ proportion. Associ ation between demographic variables with oral health status was assessed by Chi square/ Fisher's exact test. p value less than 0.05 was considered as statistically significant.

Results

819 patients were clinically evaluated, with a mean age of 66 ± 5.3 years ranging between 60 - 85 years and among them, 48% were males and 52% were females [Figure 2]. The most common comorbid condition reported was cardiovascular disorder which accounted for 31% [Figure 2]. Majority of the elderly population had less than primary schooling, which represents 33.3% [Figure 2].

Cigarette smoking was reported among 27.5% of the entire sample. Beedi-smoking and chewing tobacco gave identical figures of 15.8% and 17.3% respectively [Figure 2].

The frequency of visit among elderly population to the dentist was unsatisfactory. 75.9% of the respondents had not visited the dental clinic in the past 12 months and the most common reason for their dental visit was pain on teeth, gum or mouth (66.8%)[Figure 2].

The prevalence of edentulism in the study sample was 13.2%. It was found to be 12% and 13% for men and women respectively and was statistically non-significant (P = 0.38). Among the three different age groups within the sample (60-65 years, 66 – 70 years, and > 70 years), the proportion of completely edentulous patients were 10.5%, 15.4% and 27% respectively showing an increasing trend of edentulism with respect to age [Table 1].

The mean DMFT score of the study population was 13.90 +/- 9.78, which denoted a very high caries experience of the study participants. The mean number of missing and decayed teeth was 10.56+/-10.63, and 2.73 +/-2.90 respectively[Table 1].

There was substantial need of oral prophylaxis (81%) and dental prosthesis (73.4%) among the elderly patients. Extraction was indicated for 62.1%. The need for conservative and endodontic treatments was 57.6% and 34.6% respectively. Surgical intervention (11.8%) was the least common treatment need among the participants[Table 1].

A maximum of 72.8% males and 76.8% females had no prosthesis in maxilla as compared to 71.5% of males and 74.4% of females having no prosthesis in Mandible.

Among 23.2% with prosthesis, 9.1% had complete denture. The differences between males and females with respect to prosthesis status of maxilla was found to be statistically significant (P = 0.019) and that of mandible was found to be statistically non- significant (P = 0.172).

Among the 294 respondents with prosthesis, 153 (18.7%) patients expressed dissatisfaction over their replaced teeth and the most common reason was found to be improper fitting of dentures (50. 3%) followed by fracture (24. 8%). Around 36. 1% males and 30.0% females required no prosthesis for maxilla and 29.3% males and 22.5% females required no prosthesis for mandible. The differences between males and females with respect to prosthesis needs was found to be statistically significant for both maxilla (p<0.01) and mandible (*P* = 0.031).

Of the dentate population(n=711), the majority of the patients(67.4%) presented with calculus followed by shallow pockets(19.0%), and the loss of attachment between 4-5mm had the highest prevalence(41.5%). The differences in periodontal status between gender was statistically significant (p<0.01)[Table 2].

Prevalence oral mucosal lesion in the elderly was 44.7% and 43.5% of the males and 45.8% of females were affected by various mucosal conditions. The most common lesions observed were Candidiasis (9.6%), Denture stomatitis (5%), Smoker's palate (4.9%), Lichen planus (4.8%), Oral cancer (4%), Oral submucous fibrosis (3.6%), Leukoplakia (2.2%) and Frictional keratosis (1.4%). Malignant tumor and leukoplakia were more frequently observed on buccal mucosa and alveolar ridge. Lichen planus was seen most frequently on the buccal mucosa followed by tongue and alveolar ridge [Table 2].

With respect to occlusal support, the largest number of patients was classified as having Eichner A (26.1%). The second highest was Eichner's Index C (25.3%). Eichner's indices B1, B2, B3 & B4 were more prevalent in females. The differences in Eichner's indices between gender was statistically significant (p<0.01)[Table 3].

The mean Additive GOHAI score was 42.9 (± 3.9) with a minimum of 21 and a maximum of 49. 72.3 % of the sample had a GOHAI score between 41 and 50 which indicates they have fairly good QOL. Despite high levels of tooth loss, caries and objective treatment needs, 72.3% of the participants rated their GOHAI score between 41 and 50 while only 27.7% rated between 21 and 40 [Table 3].

Discussion

One of the major morbidity of the elderly is loss of teeth affecting their mastication, dietary intake, nutritional status and quality of life. The study was done in the context of the growing proportion of elderly population in Kerala due to demographic transition and the challenges that it presents in terms of ensuring their health and well-being.

The study population had a mean age of 66 ± 5.3 years, slightly more than half being females (52.0 %), similar to the gender distribution among the elderly in Kerala.[2] Around 70% of the respondents had at least one comorbid condition. Cardiovascular disorders accounted for 31% and was consistent with Government of India statistics.[3]

As per Ministry of statistics and Programme Imple mentation, Government of India, the overall literacy rate among persons aged 60 years & above was 79% in Kerala.[4] However in our study only 3.1% of the study population had never been to school and the literacy rate was double than that reported in the National Oral Health Survey and Fluoride Mapping (15.3%).[5]

A high prevalence of smoking (43.3%) was seen in the present study which was also reported as a common phenomenon among men in rural India[6] and other developing countries.[7]

According to National Oral Health Survey, the prevalence of cigarette smoking and pan chewing was 29. 5 % and 19.1% respectively which is almost similar to our study.

Mersel*et al*[8] reported that 20% of the subjects visited a dentist once every year whereas only 3% of the subjects in our study used to visit the dentist regularly. Some elderly people in our study did not give any reasons for not attending a dental clinic. This might be because of ignorance, neglect, the utilisation of traditional and alter native medicine, and their non-belief in orthodox medicine.

The mean DMFT score in the study population was 13.90 +/- 9.78 years which implied a severely affected dentition status(a score greater than 6.1 is indicative of severely affected dentition).[9] Similar scores were also reported by Patro*et al*[10](13.8) and a study from South India(13.5).[11] The mean DMFT was higher for females (F = 14.0 ± 7.09; M = 13.8± 8.06) similar to those repor ted by Lo ECM and Schwartz.[12]

As our study was conducted in a tertiary dental care centre, the entire patients required some sort of dental treatment. According to a study by shah *et al*.[13], the restorations were indicated in 22.2% , endodontic treatment in 4.8% and in majority(40.3%) extraction was indicated. In our study, extraction, conservative and endodontic treatments were indicated for 62.1%, 57.6% and 34.6% respectively.

In our study, 13.2 % subjects were completely edentulous and the proportion of completely edentulous elderly increased with increasing age tuning with the earlier findings in this area.[14,12] The prosthetic status of males were found to be better than females comparable to studies conducted both in India[14,15]and abroad.[16] Majority of them required multi unit prosthesis followed by complete dentures similar to study by Shenoy and Hegde.[15]

Only a small proportion of the dentate in our study had good periodontal health whereas study conducted by Simunkovic SK showed a higher percentage.[17] This may be due to the better dental care provided to the people in their country. About 20.3% of the dentate subjects did not have any loss of periodontal attachment (M=22.3%; F=18.4%). A loss of attachment of 4-5mm was seen in 41.5% subjects followed by 6-8mm (21.7%) agreeing with Baelumet al[18]. Studies by Doifode et al[19] and TS Sekhon et al [20] have reported that periodontal disease was more common in males. In our study, the proportion of calculus and shallow pockets were higher for males whereas bleeding gums and deep pockets were more common in females ($p < 0.01$). Complex perio dontal treatments were required by only a very few subject similar to Bergman et al [21] and Slade et al.[16]

The prevalence of oral mucosal lesions (44.7%) was comparable to Sandeepa et al [22] (42 .2%) and Mathew et al [23] (41. 2%) with a female(45.8%) predominance similar to Mujica et al [24] and Al–Mobeeriek et al.[25] The most common mucosal lesion found was candidiasis (9.6%) whereas Mujica et al [24]

showed denture stomatitis (18%). Most frequent muco sal lesion among males was smoker's palate (4.9%) more than reported by Axell (2.1%)[26] probably because of the chronic and high usage of cigarette and beedi in men. The most common premalignant lesion found was OSMF (3.6%), with a female predilection (F=5.4%; M =2%) contrary to leukoplakia reported by Mujica et al [24] (13%). The prevalence of oral malignancies in our

study (4.0%) was more than that found by Ikeda(0.1%) and Axell(<0.1%).[27,26]

In this study, largest number of patients was classified as Eichner A (26.1%). The proportion of Eichner's indices A and C were higher among males (A- 32.8%; C- 27%) in accordance with study conducted by Nakamura et al.[28]

Oral Health Related Quality of life was measured by GOHAI developed by Atchison and Dolan et al. The mean GOHAI score of this study sample was lower than that of the original study (42.9 vs 52.5), but was almost similar to the study conducted by May et al [29] (48.9) and Sergio et al[30](45.8). Almost all opined that poor oral health had little or no effect on their activities suggesting that they does not regard it as a barrier to social interactions.

Some of the limitations of the study include being conducted in a tertiary dental care setting whereas a community based survey would have had more generali sability. Further there was lack of investigations, which could have shed some light on the etiopathogenesis of various oral lesions. Co-morbidities in this study were self-reported, which could have underestimated the actual prevalence. The gender skew towards female preponderance may also have influenced the gender differences.

To the best of our knowledge, this study was the first epidemio logic study conducted in Kerala that addresses the wide range of oral health conditions/diseases in Geriatric population. The larger sample size and use of vali dated tools for data collection have provided quality data with high precision, better comparability and increased credibility. The study has opened doors for further research in such needy population. The data from this study provide actionable health information to guide public health policy and programs aimed at improving oral health services of the elderly in Kerala.

Conclusion

Since oral health is an integral part of general health, it is important to identify the unmet dental needs among older adults and to promote community strategies to address these needs. Over the next 25 years, the proportion of adults aged 65 and older is estimated to increase three fold, and with that remarkable change will come the complexities of managing this population. Prevention and control of oral health problems of elderly necessitates a multifaceted approach incorporating active collaboration of health, social welfare, rural/urban development and legal sectors. In the long term, any attempt focusing on public health interventions should start from children of young age, continue through all stages of their life cycle to reduce oral morbidity, improve dentition status and to reduce edentulousness among the elderly.

References

1. Kramer IR, Pindborg JJ, Bezroukov V, Infirri JS. Guide to epidemiology and diagnosis of oral mucosal diseases and conditions. World Health Organization. Community Dent Oral Epidemiol. 1980 Feb;8(1):1–26.

2. Kerala Population Census data 2011. Kerala Population Sex Ratio in Kerala Literacy rate data [Inter net]. [cited 2018 Nov 14]. Available from: https:// www. census2011.co.in/census/state/kerala.html

3. National Statistical Commission | Ministry of Statistics and Program Implementation | Government Of India.

4. CSO. Elderly in India- Profile and Programmes 2016 [Internet]. Central Statistics Office,Ministry of statistics and Programme Implementation,Government of India. 2016. p. 1–95. Available from: http:// mospi. nic.in/ sites/ default/ files/ publication _ reports/ Elderly

in India_2016.pdf

5. National oral health survey & fluoride map ping dental council of india new delhi. 2002. 2002.

6. International Institute of Population Sciences (IIPS) and ORC Macro. National Family Health Survey, 1998–99. Mumbai: IIPS; 2001. [Internet]. [cited 2018 Nov 23]. Available from: http:// microdata. World bank. org/ index. php/ catalog/1405

7. Miilunpalo S, Vuori I, Oja P, Pasanen M, Urponen H. Self-rated health status as a health measure: the predictive value of self-reported health status on the use of physician services and on mortality in the working-age population. J Clin Epidemiol. 1997 May;50(5):517–28.

8. Mersel A. Oral health status and dental needs in a geriatric institutio nalized population in Paris. Gero dontology. 1989;8(2):47–51.

9. World Health Organization. (1997). Oral health surveys : basic methods, 4th ed. Geneva : World Health Organi zation.

10. Kumar Binod Patro,Kumar Ravi B,Gowswami Anil PVM. Prevalence of dental caries among adults and elderly in an urban resettlement colony of New Delhi.

11. Thomas S, Raja R V, Kutty R, Strayer MS. Pattern of caries experience among an elderly population in south India. Int Dent J. 1994 Dec;44(6):617–22.

12. Corbet EF, Lo ECM. Tooth spaces in and prosthetic treatment received by the middle-aged and the elderly in Hong Kong. Community Dent Oral Epidemiol. 1994 Oct; 22 (5):386–91.

13. Shah N, Sundaram KR. Impact of socio-demo graphic variables, oral hygiene practices, oral habits and diet on dental caries experience of Indian elderly: a community - based study. Gero dontology. 2004; 21 (1): 43–50.

14. Shah N, Parkash H, Sunderam KR. Edentulousness, denture wear and denture needs of Indian elderly - A community-based study. J Oral Rehabil. 2004; 31 (5): 467–76.

15. Shenoy RP, Hegde V. Dental Prosthetic Status and Prosthetic Need of the Institutionalized Elderly Living in Geriatric Homes in Mangalore: A Pilot Study. ISRN Dent. 2011;2011(December):1–3.

16. Slade GD, Spencer AJ. Oral health status and treatment needs of non-institutionalized persons aged 60 + in Adelaide, South Australia. 1974;373–80.

17. Simunković SK, Boras VV, Pandurić J, Zilić IA. Oral health among institutionalised elderly in Zagreb, Croatia. Gerodontology. 2005 Dec;22(4):238–41.

18. BAELUM V, WEN-MIN L, FEJERSKOV O, XIA C. Tooth mortality and periodontal conditions in 60?80-year-old Chinese. Eur J Oral Sci. 1988 Apr 1;96(2):99–107.

19. Doifode V V, Ambadekar NN, Lanewar AG. Assessment of oral health status and its association with some epidemio logical factors in population of Nagpur, India. Indian J Med Sci. 2000 Jul;54(7):261–9.

20. Periodontal health status and treatment needs of the rural population of India: A cross-sectional study.

21. Saub R, Evans RW. Dental needs of elderly hostel residents in inner Melbourne. Aust Dent J. 2001; 46 (3): 198–202.

22. Sandeepa NC, Jaishankar HP, Sharath CB, Abhinetra MS, Darshan DD, Deepika N. Prevalence of oral mucosal lesions among Pre-University students of Kodava population in Coorg District. J Int oral Heal JIOH. 2013 Jun;5(3):35–41.

23. Mathew AL, Pai KM, Sholapurkar AA, Vengal M. The prevalence of oral mucosal lesions in patients visiting a dental school in Southern India. Vol. 19, Indian J Dent Res. 2008.

24. Mujica V, Rivera H, Carrero M. Prevalence of oral

soft tissue lesions in an elderly venezuelan population. Med Oral Patol Oral Cir Bucal. 2008 May 1;13(5):E270-4.

25. Al-Mobeeriek A, AlDosari AM. Prevalence of oral lesions among Saudi dental patients. Ann Saudi Med. 2009;29(5):365–8.

26. Axéll T. A prevalence study of oral mucosal lesions in an adult Swedish population. Odontol Revy Suppl. 1976;36:1–103.

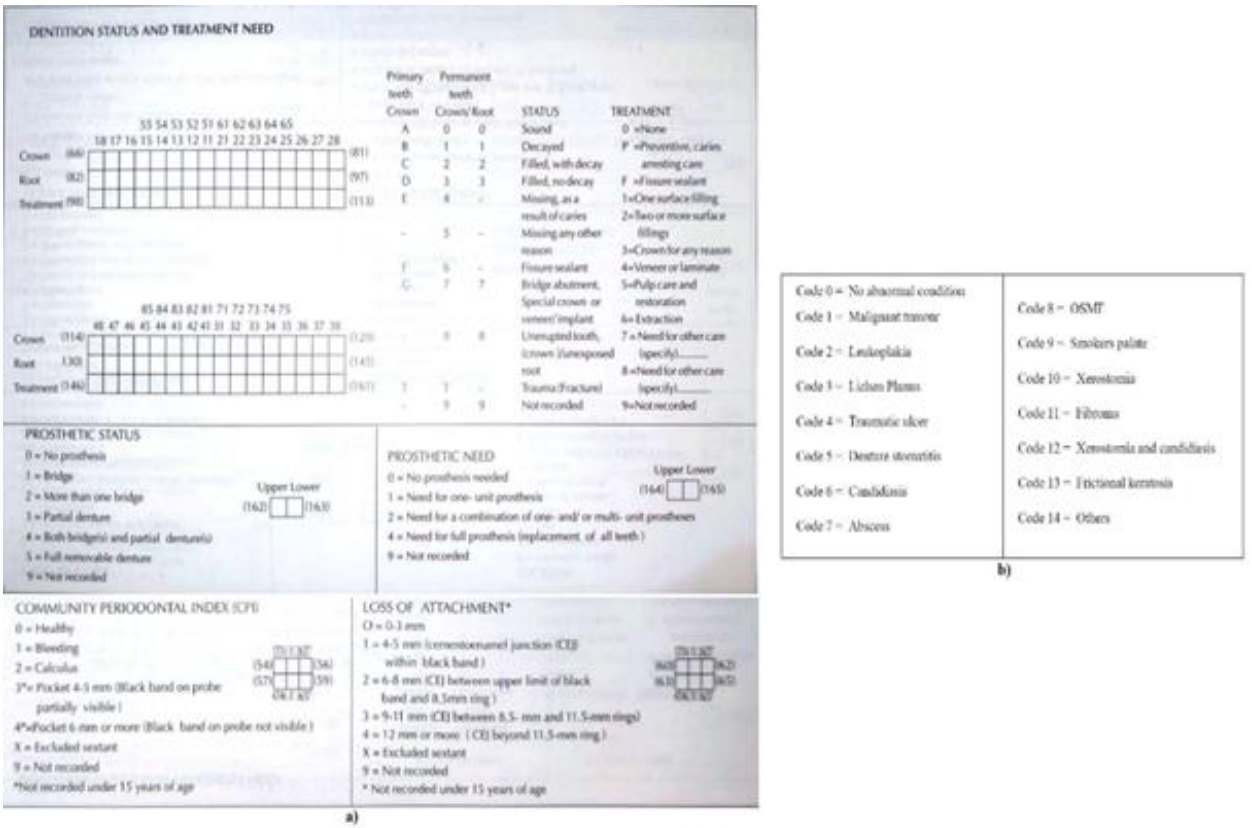
27. Zain RB, Ikeda N, Razak IA, Axell T, Majid ZA, Gupta PC, et al. A national epidemiological survey of oral mucosal lesions in Malaysia. Community Dent Oral Epidemiol. 1997 Oct;25(5):377–83.

28. Nakamura T, Baba K, Minami I, Okano N, Ohyama T. Electromyographic evaluation of masticatory function in denture wearers in related to existing occlusal support. J Med Dent Sci. 2004 Sep;51(3):173–7.

29. Wong MCM, Liu JKS, Lo ECM. Translation and validation of the Chinese version of GOHAI. J Public Health Dent. 2002;62(2):78–83.

30. Sánchez-García S, Heredia-Ponce E, Juárez-Cedillo T, Gallegos-Carrillo K, Espinel-Bermúdez C, De La Fuente-Hernández J, et al. Psychometric properties of the General Oral Health Assessment Index (GOHAI) and dental status of an elderly Mexican population. J Public Health Dent. 2010 Sep;70(4):300–7.

Figure 1: a)An excerpt from WHO oral health assessment form 1997 and b)Epidemiology guide for the diagnosis of oral mucosal diseases(WHO).[1]



a) b)

FIGURE 1

Figure 2: Distribution of a) Age, b) Gender, c) Systemic diseases, d)Level of education, e) Deleterious habits, f) Time since last dental visit and g)The reason for last visit among the study participants.

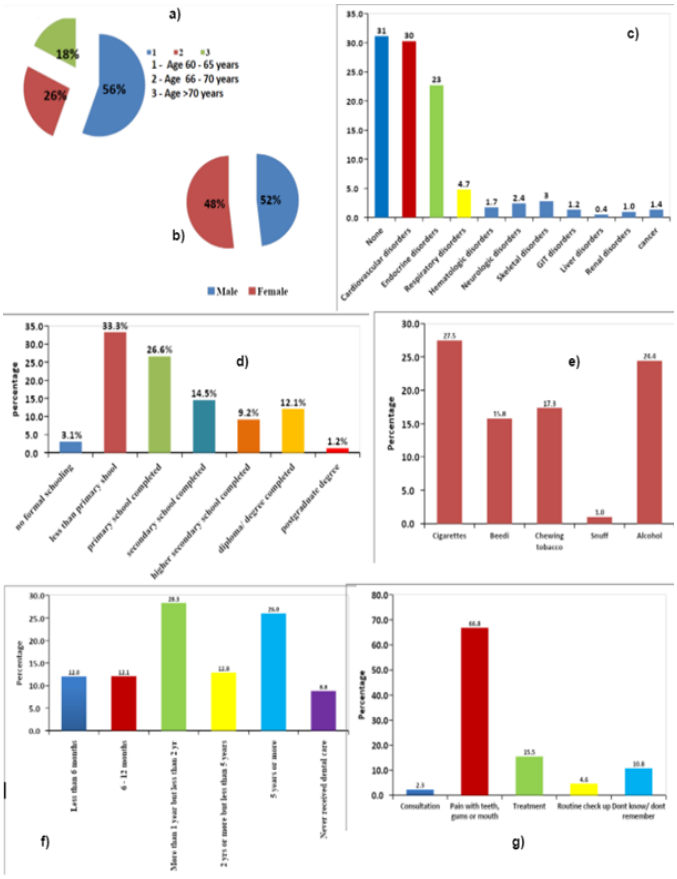


FIGURE 2

Table 1: Distribution of a) Number of natural teeth based on age and b) Mean DMFT score based on gender among study participants and c) Distribution of sample according to treatment needs.

No of natural teeth	60 – 65		66 – 70		>70		χ^2	P
	Count	Percent	Count	Percent	Count	Percent		
Edentulous	48	**10.5**	33	**15.4**	27	**18.3**	*9.03*	0.172
1-9	29	6.3	9	4.2	13	8.9		
10 -19	54	11.8	31	14.5	14	9.5		
20 teeth or more	327	71.4	141	65.9	93	63.3		

a)

Gender	Mean DMFT score	SD	N	T	p
Male	13.8	9.7	393	*0.23*	*0.815*
Female	14.0	9.9	426		

b)

Treatment Needs	Count	Percent
Conservative	472	57.6
Endodontic	283	34.6
Prosthodontics	**601**	**73.4**
Periodontics	**663**	**81.0**
Extraction	509	62.1
Surgical	97	11.8

c)

Table 2: Distribution of a)Sample according to Community Periodontal Index (CPI) and Gender; b)Oral mucosal lesions based on gender

CPI	Male		Female		Total (%)	χ^2	p
	Count	%	Count	%			
Healthy (Code 0)	7	2.0	4	1.1	11 (1.5)	*26.4*	*p<0.01*
Bleeding (Code 1)	15	4.3	35	9.6	50 (7.0)		
Calculus (Code 2)	**247**	**71.4**	**232**	**63.6**	**479 (67.4)**		
Pocket 4-5mm (Code 3)	70	20.2	65	17.8	135 (19.0)		
Pocket 6mm or more (Code 4)	7	2.0	29	7.9	36 (5.1)		

a)

Oral mucosal lesions	Male		Female		Total count (%)
	Count	Percent	Count	Percent	
No abnormal condition	222	56.5	231	54.2	453(55..3)
Oral cancer	23	5.9	9	2.2	32(4.0)
Leukoplakia	16	4.1	2	0.4	18(2.2)
Lichen planus	6	1.5	33	7.7	39(4.8)
Traumatic ulceration	8	2.0	13	3.0	21(2.6)
Denture stomatitis	22	5.6	19	4.6	41(5.0)
Candidiasis	21	5.3	58	13.6	79(9.6)
Abscess	11	2.8	16	3.8	27(3.3)
OSMF	8	2.0	23	5.4	31(3.6)
Smokers palate	40	10.2	0	0.0	40(4.9)
Xerostomia	4	1.0	5	1.2	9(1.1)
Fibroma	3	0.8	7	1.6	10(1.2)
Frictional keratosis	5	1.3	7	1.6	12(1.4)
Others	4	1.0	3	0.7	7(1.0)

b)

Table 3: Distribution of sample according to a) Eichner's index and gender; b)Total GOHAI score

Eichner's Index	Male		Female		Total (%)	χ^2	p
	Count	Percent	Count	Percent			
A	129	32.8	85	20.0	214 ((26.1)	*26.4*	*p<0.01*
B1	56	14.2	78	18.3	134 (16.4)		
B2	43	10.9	57	13.4	100 (12.2)		
B3	40	10.2	73	17.1	113 (12.2)		
B4	19	4.8	32	7.5	51 (6.2)		
C	106	27.0	101	23.7	207 (25.3)		

a)

Total GOHAI score	Count	Percent
21 – 40	227	27.7
41 – 50	592	72.3

b)