



Assessment Of Oral Health Status and Treatment Needs in Geriatric Day Care Centers in New Delhi

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Abstract

Background: Poor oral health plagues the elderly all over the world. Many do not recognize the severity of tooth loss, dental caries, and periodontal disease that affects them and do not seek treatment. The objective is to assess the oral health status and treatment needs amongst elderly population visiting the old age homes in New Delhi. **Material & Methods:** A cross-sectional study was conducted among seven purposively selected geriatric day care centers in New Delhi, and a convenience sample of 518 elderly patients was obtained. The WHO Oral Health Assessment Form 1997 was used to record the clinical findings. Statistical analysis was done using Statistical Package for the Social Sciences (SPSS) software version 28, and descriptive results were obtained. **Results:** 428 males (82.6%) and 90 females (17.3%) were examined. The older adults presented high tooth loss with an average of 7 missing teeth, and consequently a high prosthetic need with poor denture hygiene. Most of the older adults were categorized as having "fair" oral hygiene but almost all respondents presented some degree of periodontal disease. **Conclusion:** The current study highlighted that majority of the patients reported to be satisfied with their oral health status, but most had periodontal problems followed by increased need of prosthesis.

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INTRODUCTION

The rapid spread of modernization, growing urbanization, and crumbling of joint family system have conspired to increase insecurity and loneliness among the geriatric population in the last few decades. Lack of family support, poor financial status, physical and mental disorders, and guilt of being dependent on others are some of the problems nagging the elderly population. [1]

Oral health is an often-overlooked component of overall health. [2] Oral health is the first to go

when elderly become care-dependent, so it usually becomes worse and gets less attention. [3] Daily activities such as food intake, drug intake, getting dressed, bathing, general health care, and physiotherapy get interfered when elderly become care dependent. [4]

Dental and periodontal diseases are also significantly associated with occurrence and disease activity of diabetes, [5] cardiovascular disease, [6] atherosclerosis, [7,8] rheumatoid arthritis, [9] kidney function, [10] pneumonia, [11] multiple sclerosis, and other systemic immune problems. [12] The oral health of older adults can



deteriorate rapidly as a consequence of the frailty accompanying physical and cognitive decline in advanced old age.^[13,14]

MATERIAL AND METHODS

A cross-sectional, descriptive study, in seven geriatric day care centers of New Delhi was conducted to assess the oral health status and treatment needs amongst elderly population.

Study Area and Study Subjects

Inclusion criteria

1. All senior citizens listed in the latest records of the geriatric day care centers at New Delhi.
2. Available during the time of examination at the geriatric day care centers and willing to participate in the study.
3. Age 60 years and above.

Exclusion criteria

1. Not willing to be examined.
2. Homebound members of geriatric day care centers.

Organizing the Survey

Ethical clearance

The ethical clearance to conduct the survey was taken from the Ethical committee of ESIC Dental College and Hospital, New Delhi.

Obtaining approval from the authority/Scheduling

Written permission to conduct the survey was obtained from the concerned heads or the organizing members of the respective centers. The planned schedule of the investigator was

either published in the monthly bulletin or informed via pamphlets, notice or announcement to the members of the respective day care centers in advance.

Examination area

The survey was conducted at the geriatric day care centers by selecting an area providing maximum efficiency and ease in conducting the survey. The subjects were examined under natural light seated in a chair with a high backrest and investigator stood either behind or in front of the chair. The person recording the data was positioned on the left side of the subject close to the examiner, so that the recorder was able to hear the examiner's instructions and codes, and the examiner was able to see the data being entered correctly.

Implementing the Survey

The survey was conducted for 3 months (from 16th June 2022 to 10th September 2022). First, the interview - administered questionnaire was filled which was then followed by the examination with appropriate instruments of approximately 25 subjects in a day.

Instrumentation

The following instruments were used in the survey.

1. 30 Plane mouth mirrors.
2. 30 CPI Probes
3. No.23 explorers - 30 in number
4. Adequate pairs of tweezers
5. Containers (one for used instruments and one for sterilizing instruments) and concentrated sterilizing solution.
6. 2% Glutaraldehyde solution

7. Cloth or paper hand towels
8. Gauze and cotton
9. Disposable gloves and Mask.
10. Data recording proforma.

The instruments were sterilized using 2% glutaraldehyde followed by autoclaving in the Department of Public Health Dentistry, ESIC Dental College and Hospital, New Delhi and after single use they were dipped in disinfectant solution.

Methodology

The survey was carried out using a proforma which consisted of two parts:

Questionnaire

The questionnaire composed of sections, designed to collect general information in the survey which included personal data and the socio-demographic profile consisting of his/her age, gender, diet, occupation, educational level, followed by self-rated oral, general health and dental treatment needs, use, and need of prosthesis, and finally the oral hygiene habits and practices. A variety of question formats were used including some which involved a yes/no response, a forced-choice selection response and Likert scale response.

Clinical examination

The subjects then underwent a clinical examination to assess the oral and dental condition inclusive of extraoral examination, temporomandibular joint assessment, oral mucosal assessment, periodontal condition and loss of attachment, dentition status, prosthetic status following procedures and diagnostic criteria recommended by the WHO Oral Health

Assessment Index Proforma 1997.^[15] The oral hygiene of dentition was assessed by the Simplified Oral Hygiene Index and for denture wearers was by the Denture Hygiene Index.^[16,17]

Assessment of Simplified Oral Hygiene Index (OHI-S)

The Simplified Oral Hygiene Index (OHI-S) introduced in 1964 by John C. Greene and Jack R. Vermillion.^[16] The OHI-S was assessed using two components, the Simplified Debris Index (DI-S) and the Simplified Calculus Index (CI-S). According to the index the surfaces examined were: four posterior and two anterior teeth. Posteriorly, the first molar, but sometimes the second or third molars were examined on each side of the arch. The buccal surfaces of the upper molars and the lingual surfaces of the lower molars were examined. Anteriorly, the labial surfaces of the upper right and the lower left central incisors were scored.

Surfaces and Teeth to be examined

Tooth Surface

16 - Upper right first molar - Buccal

11 - Upper right central incisor - Labial

26 - Upper left first molar - Buccal

36 - Lower left first molars - Lingual

31 - Lower left central incisor - Labial

46 - Lower right first molar - Lingual

If a designated tooth was not a fully erupted permanent tooth or had a full crown restoration or had surfaces reduced in height by caries or trauma, a substitution was made as follows:



| | | | |
|---------------|----------|---|-----------------------------|
| For tooth 16: | Tooth 17 | - | Upper right Second molar |
| | Tooth 18 | - | Upper right third molar |
| For tooth 11: | Tooth 21 | - | Upper left Central Incisor |
| For tooth 26: | Tooth 27 | - | Upper left Second molar |
| | Tooth 28 | - | Upper left Third molar |
| For tooth 36: | Tooth 37 | - | Lower left Second molar |
| | Tooth 38 | - | Lower left Third molar |
| For tooth 31: | Tooth 41 | - | Lower right Central Incisor |
| For tooth 46: | Tooth 47 | - | Lower right Second molar |
| | Tooth 48 | - | Lower right Third molar |

Examination Methods and Scoring System:

The following definitions and criteria were used to determine the scores for each of the surfaces examined. [18]

Simplified Debris Index (DI-S):

"Oral Debris" - Oral debris is the loosely attached soft foreign matter on the teeth. It consists of mucin, bacteria, and food, and varies in colour from greyish white to green or orange. The surface area covered by debris was estimated by running the side of a No.23 explorer (SHEPHERD'S HOOK) along the tooth surface being scored. The occlusal or incisal extent of the debris was noted as it got removed.

The following Scoring systems were used.

'0' - No debris or stains present.

'1' - Soft debris covering not more than one third of the tooth surface or the presence of extrinsic stains without debris regardless of surface area covered.

'2' - Soft debris covering more than one third, but not more than two thirds, of the exposed tooth surface.

'3' - Soft debris covering more than two thirds of the exposed tooth surface.

Simplified Calculus Index (CI-S)

"Oral Calculus" - Dental calculus is defined as a hard deposit that forms by mineralization of dental plaque and is usually covered by a layer of unmineralized plaque. Dental calculus can be classified as:

- Supragingival Calculus - denotes deposits, usually white to yellowish-brown in color - coronal to the gingival margin.
- Subgingival Calculus - denotes deposits apical to the gingival margin. These deposits usually are light brown to black in color. A No. 23 explorer was used to estimate surface area covered by Supragingival calculus and to probe for Subgingival calculus.

Scores are assigned according to the following criteria:

'0' - No calculus Present.

'1' - Supragingival calculus covering not more than one third of the exposed tooth surface.

'2' - Supragingival calculus covering more than one third, but not more than two thirds of the exposed tooth surface, or the presence of individual flecks of subgingival calculus around the cervical portion of the tooth or both.

'3' - Supragingival calculus covering more than two-thirds of the exposed tooth surface or a continuous heavy band of subgingival calculus around the cervical portion of the tooth or both.

Calculation of the Index

After recording the scores for debris and calculus, the Index values were calculated. For everyone, the debris scores were totalled and divided by the number of surfaces scored. The

individual scores were averaged to get a score for a group of individuals.

The individual scores were calculated to one decimal place. Group scores were calculated to either one or two decimal places depending on the sample size.

The Simplified Debris Index (DI-S) scores are totalled and divided by the number of the surfaces scored. The same method was used to obtain the Simplified Calculus Index (CI-S). Score of an individual was obtained by totalling the calculus scores and dividing by the number of surfaces scored.

The Simplified Oral Hygiene Index score for the individual was obtained by conjoining the Simplified Debris Index and Calculus Index.

- i.e., $OHI-S = DI-S + CI-S$

The CI-S and DI-S values may range from 0 to 3. The clinical levels for Debris and Calculus that can be associated with group scores are as follows:

- Good - 0.0 to 0.6
- Fair - 0.7 to 1.8
- Poor - 1.9 to 3.0

The Clinical levels of Oral Hygiene that can be associated with group OHI-S Score are as follows.

- Good - 0.0 to 1.2
- Fair - 1.3 to 3.0
- Poor - 3.1 to 6.0

Denture Hygiene Status

Denture hygiene status was assessed according to the Vigild M, [\[17\]](#) criteria:

The palatal surface of the denture was observed for the presence of plaque and debris. The score was given as follows:

Score 0 - No visible plaque and debris

Score 1 - Only moderate accumulation of visible plaque and debris

Score 2 - Abundance of plaque and debris

Treatment

After the collection of data treatment camps were held at each geriatric day care centre to provide the comprehensive treatment for respective conditions. Elderly population requiring emergency treatment or prosthesis was referred to ESIC Dental College and Hospital, New Delhi for which transportation was provided.

Statistical Analysis: The data was analysed using the SPSS package version 28. For each of the parameters in the questionnaire, the percentages, means and standard deviations for each subject for both men and women were calculated. The differences among subjects based on gender using χ^2 analysis for proportions and analysis of variance (ANOVA) for means was analysed. Data was analysed to statistically compare results between oral health status and treatment needs scores and sociodemographic, self-assessed and clinical variables. For nominal and ordinal variables, chi-square test was also used. Pearson's correlation was performed for univariate association between continuous variables and oral health status and treatment needs scores. A significant ANOVA was followed by post hoc comparison using Bonferroni test.



RESULTS

Five hundred and eighteen elderly volunteers participated in the study satisfying the inclusion criteria from seven geriatric day care centers of New Delhi.

Distribution of participants according to Age and Gender: [Table 1, 2]

Out of the total (518) there were only 90 female (17.3%) and the remaining 428 (82.6%) were male. Sixty percent females were less than 70 years of age, whereas there was an equal distribution of 40.9% and 44.4% amongst the male population in the age groups less than 70 years and less than 80 years respectively. As illustrated, by Table 2 mean age for males and females were 71.17 years (SD 7.16) and 65.97 years (SD 6.04) respectively.

Percentage distribution of participants according to Education: [Table 3]

In order to assess the level of education, the results of the participants were categorized under three, i.e., higher school (i.e., graduate and postgraduates), middle school (secondary and high secondary school) and primary school (primary and middle school). Majority, that is more than half (66.8%) of the participant had high school education (49.4% graduation and 17.4% post-graduation) whereas 10.8% had middle school education (secondary 2.5% and higher secondary education 8.3%) and 15.4% had primary school education (primary 7.7% and middle 7.7%). A small proportion of about 6.9% participants had no formal education.

Percentage distribution of participants according to Occupation: [Table 4]

A large proportion of elderly visiting day care centers were government officials (61.6 %) dependent on their pension for their livelihood. Remaining 25.9% had businesses which now were taken care by their children, 10.6% were retired from private jobs and remaining 1.9 % were housewives. The percentage of female in government and private services was recorded as 5.6% and 47.8% respectively whereas 73.4% males were retired government officials and 2.8% retired from private services.

Percentage distribution of participants according to Frequency of Brushing: [Table 5]

Majority (79.5%) of the population brushes once a day whereas 18.5% subjects brushed twice, and 1.9% subjects never brushed their teeth. The frequency of brushing teeth once was reported to be higher amongst female (82.2% vs. 79.0%) whereas twice brushing of teeth was reported higher amongst males (18.7% vs. 17.8%). The overall percentage distribution of subject brushing once was reported to be four times that of brushing twice.

Percentage distribution of participants according to Oral Hygiene Practices: [Table 6]

More than three fourth (75.5%) subjects reported to use brush and paste to clean their teeth whereas the remaining 14.9% subjects used Neem/ Datun (5.4%), powder and finger (9.5%), only water (6.8%), water and soap (1.7) (for denture users) and 1.2% reported to use nothing. Approximately three fourth of the participants both males (76.4%) and females (71.1%) reported use of brush and paste.

Percentage distribution of Oral Habits of Study Participants: Graph 7



More than three fourth (77.4%) of the participants reported to have no oral habit whereas remaining participants reported habits in the ascending order as alcohol (1.2%), betel nut chewing (2.3%), bidi/cigarettes (4.6%), and tobacco chewing (14.5%) respectively.

Self-Perceived Needs of Participants

Percentage distribution of participants according to Self-Assessed Oral Health Status: [Table 8]

The participants self-assessed their oral health as being very satisfied, satisfied or not satisfied with the present condition of oral cavity, of which 42.3% reported to be satisfied, 33% reported to be very satisfied and remaining 24.7% were not satisfied. Forty-five-point six percent males were satisfied with their oral health as compared to 26.7% females. The results indicated that males were approximately twice more satisfied as compared to females with their oral health.

Percentage distribution of participants according to Self-Assessed General Health Status: [Table 9]

Approximately 30.3% of participants were very satisfied with their general health remaining 45% were satisfied and 24.7% were not satisfied. Forty-eight-point six percent males were satisfied with their general health as compared to 27.8% females. The results indicated that males were approximately twice more satisfied as compared to females with their general health.

Percentage distribution of participants according to Last Visit to Dentist: [Table 10]

Of the total less than half (48.1%) of the participants visited a dentist a year ago, 32.8% visited a month ago. A small proportion of participants (19.1%) never visited a dentist of which 12.2% percent were females and 20.6% were males.

Percentage distribution of participants according to Need to Visit Dentist: [Table 11]

More than half of the participants (65.8%) reported need to see a dentist. Both male (66.1%) and female (64.4%) considered a need to visit a dentist. Only 34.2% (35.6% females and 33.9% males) participants did not report the need to visit a dentist.

Percentage distribution of participants according to Simplified Oral Hygiene Index (OHI-S) [Table 12]

Out of the total 518, 440 subjects were included, whereas the remaining were excluded because they were edentulous. Majority i.e., more than three fourth (66.3%) were recorded to have fair oral hygiene whereas 16.5% had good and 17.0% had poor oral hygiene. The distribution of good, fair, or poor oral hygiene status amongst males and females were almost equal.

Subjective Assessment of Simplified Oral Hygiene Index (OHI-S) and Selective Variables: [Table 13]

The score of simplified oral hygiene index was compared with certain selected independent variables in which significant p value was observed with the number of times the subjects brushed their teeth (p=0.0001).

The table illustrates that as the age increased the oral hygiene scores also increased. Thirty



percent of elderly had poor oral hygiene at the age of 75-84 years whereas only 17% reported to have poor oral hygiene at the age of 65-74 years. More than three fourths of both males and females reported to have fair score of oral hygiene index.

Percentage distribution of participants according to Denture Wearers: [Table 14 and 14a]

Out of the total 518, 98 wore dentures. Out of the total denture wearers 79.8% wore complete denture whereas 20.2% wore removable partial denture.

Percentage distribution of participants according to Denture Hygiene: [Table 15]

Of these 98 subjects who wore dentures, no visible plaque and debris was observed on 34 (6.6%), moderate amount of plaque and debris on 27 (5.2%) and abundant plaque and debris was seen on 37 (7.1%) subjects.

Percentage distribution of participants according to Denture Problems: [Table 16]

Out of the total denture wearers more than half reported to have problems in retention (51%), 57.1% with aesthetics and about 62.2% reported for to have problems with chewing and speaking.

Percentage distribution of participants according to Decayed, Missing and Filled Teeth: [Table 17]

Out of the total subjects examined for dentition status, majority i.e., 64.05% reported to have missing teeth, 8.2% had decayed teeth, 7.3% root decay, 5.7% filled due to caries and other reasons and 13.5% had healthy teeth.

Mean Distribution of Decayed, Missing, Filled Teeth: [Table 18]

The mean DMFT score of all the elderly population was 9.87 (SD-8.32) and the major component was of missing teeth about 64.05% with a mean of 7.04 (SD-7.85). The percentage of decayed teeth was recorded to be as 8.2% with a mean of 1.9 (SD-3.34) and filled percentage was recorded as 5.7% with a mean of 0.94 (SD-2.90).

Percentage distribution of participants according to Community Periodontal Index (CPI): [Table 19]

The CPI Index showed that out of the total teeth examined 11.2% had healthy teeth, 15.1% gingival bleeding, 34.6% calculus, 12.4% had pocket of 4-5mm and 8.7% had pocket of 6mm or more. About 34.6% subjects examined for periodontal diseases showed the presence of calculus.

Community Periodontal Index (CPI) and Selective Variables: [Table 20]

When score of Community Periodontal Index were compared to elderly subjects in two age ranges i.e., 60-74 and 74-84 years approximately 50% subjects reported to have calculus. [Table 23] shows a significant p value with occupational status and need to visit a dentist with the community periodontal index scores. Females reported higher CPI score for bleeding gums (26.2%) and deep pockets (17.9%) whereas in comparison males reported higher scores for calculus (43.2%) and shallow pockets (17.4%).

[Table 22] shows a significant p value with occupational status and need to visit a dentist

with the community periodontal index scores. Majority of subject who retired from government services reported to have calculus whereas subjects in private services or business reported maximum bleeding or shallow pockets. Irrespective of occupation maximum prevalence of calculus was reported amongst all subjects.

Subject considering need to visit a dentist reported higher CPI with 47.1% showing presence of calculus and 20.8% reporting to have shallow or deep pockets as compared to those not finding a need to visit a dentist ($P=0.000$). Forty-three of the subjects were satisfied with their oral health but approximately 43% recorded the presence of calculus.

Percentage distribution of participants according to Loss of attachment: [Table 21]

The number of subjects with loss of attachment in the range of 0-0.3 mm were recorded as 5% while sextants with a loss of attachment in the range 4-5mm were 22.2%, 6-8 mm were 31.3%, 9-12 mm were 17.6% and 12 mm or more 18.9%.

Loss of attachment and Selective Variables: [Table 22]

Only 19.2% of elderly population in the age range of 60-74 years and 75-84 years reported no loss of attachment. Majority of subjects reported loss of attachment in the range of 6-8 mm. A significant p value of 0.000 was observed when age ranges were compared to loss of attachment scores.

Out of the total only 11.9% females and 4.8% males reported no loss of attachment ($p=0.001$). Thirty nine percent males and 36.9% females

reported a loss of attachment in the range of 6-8 mm followed by 4-5 mm.

Elderly population not satisfied with their oral cavity showed a uniform increase in loss of attachment score with maximum subjects (37.5%) reporting to have attachment loss of in the range 6-8 mm.

On comparing the visit to the dentist with loss of attachment, 47.4% subjects who did not visit dentists recorded 6-8 mm of loss of attachment, followed by 27.8% subjects reported loss of attachment in the range of 4-5 mm, 12% recorded 8-12 mm and 6% recorded more than 12 mm.

Percentage distribution of participants according to Prosthetic Status: [Table 23]

About eighty percent elderly population visiting day care centers wore no prosthesis in both upper and lower arches, whereas the remaining 8.3% wore complete dentures, 5.6% wore bridges, 4.2% removable partial dentures, and 2.1% wore bridge and removable dentures in the upper arch. In the lower arch 7.9% percent subjects wore RPD, 5.8% wore complete dentures, 5.3% bridges (either one unit or multi-unit) and 2.1 % bridge and removable dentures.

Percentage distribution of participants according to Prosthetic Need: [Table 24]

Approximately 30 % elderly population visiting day care centers needed no prosthesis in both upper and lower arches, whereas the remaining 13.7% needed one unit prosthesis, 8.9% combination of one or more prosthesis, 44.6% needed complete dentures. In the lower arch 13.1% needed one unit prosthesis, 6.6%



combination of one or more prosthesis, 50.2% needed complete dentures.

Percentage distribution of Prosthetic Needs and Selective Variables: [Table 25]

Fifty percent of the elderly population in the age group of 75-84 years reported need of upper full prosthesis, whereas only 7.1% needed one unit prosthesis and 7.5% needed one or multiunit prosthesis. The need for prosthesis in the lower arch was reported as 47.6%, 42.4% and 40.7% in the age range of 85-95 years, 60-75 years and 75-84 years respectively.

Need for full prosthesis was higher amongst males as compared to female in upper arch

whereas the needs for prosthesis in lower arch were almost same. One third of elderly females (37.8%) reported need for one unit prosthesis in the lower arch whereas 22.2% females reported need for one unit prosthesis in the upper arch and 6.5% reported need for upper multiunit prosthesis.

More than fifty percent of elderly population needing full prosthesis reported to be satisfied with their oral health. A significant p ($p < 0.001$) value was found when lower prosthetic needs were compared to self-perceived oral health status.

Table 1: Percentage distribution of participants according to Age and Gender.

| Age (Years) | Female | | Male | | Total | |
|-------------|---------------------|-----|---------------------|------|---------------------|------|
| | No. of participants | % | No. of participants | % | No. of participants | % |
| 60-69 | 58 | 60 | 175 | 40.9 | 229 | 44.3 |
| 70-79 | 36 | 40% | 190 | 44.4 | 226 | 44.6 |
| 80-91 | 0 | 0 | 63 | 14.7 | 63 | 12.1 |
| Total | 90 | 100 | 428 | 100 | 518 | 100 |

Table 2: Percentage distribution of Mean age (in yrs.) and gender

| | Female | Male |
|----------|--------|-------|
| Mean age | 65.97 | 71.17 |
| S.D. | 6.04 | 7.16 |
| Min | 60 | 60 |
| Max | 76 | 91 |

Table 3: Percentage distribution of participants according to Education

| Education | | Female | | Male | | Total | | Total |
|----------------|------------|---------------------|------|---------------------|-----|---------------------|-----|-------|
| | | No. of participants | % | No. of participants | % | No. of participants | % | |
| Illiterate | Illiterate | 19 | 21.1 | 17 | 4.0 | 36 | 6.9 | 6.9% |
| Primary School | Primary | 6 | 6.7 | 34 | 7.9 | 40 | 7.7 | 15.4% |
| | Middle | 5 | 5.6 | 35 | 8.2 | 40 | 7.7 | |
| | Secondary | 6 | 6.7 | 7 | 1.6 | 13 | 2.5 | 10.8% |



| | | | | | | | | |
|---------------|------------------|----|------|-----|------|-----|------|-------|
| Middle school | Higher Secondary | 11 | 12.2 | 32 | 7.5 | 43 | 8.3 | |
| Higher school | Graduation | 37 | 41.1 | 219 | 51.2 | 256 | 49.4 | 66.8% |
| | Post-Graduation | 6 | 6.7 | 84 | 19.6 | 90 | 17.4 | |
| | Total | 90 | 100 | 428 | 100 | 518 | 100 | |

Table 4: Percentage distribution of participants according to Occupation

| Occupation | Female | | Male | | Total | |
|---------------------------|---------------------|------|---------------------|------|---------------------|------|
| | No. of participants | % | No. of participants | % | No. of participants | % |
| Private Service | 43 | 47.8 | 12 | 2.8 | 55 | 10.6 |
| Private Business | 37 | 41.1 | 97 | 22.7 | 134 | 25.9 |
| Government | 5 | 5.6 | 314 | 73.4 | 319 | 61.6 |
| No occupation / housewife | 5 | 5.6 | 5 | 1.2 | 10 | 1.9 |
| Total | 90 | 100 | 428 | 100 | 518 | 100 |

Table 5: Percentage distribution of participants according to Frequency of Brushing

| Brush in a day | Female | | Male | | Total | |
|----------------|---------------------|------|---------------------|------|---------------------|------|
| | No. of participants | % | No. of participants | % | No. of participants | % |
| Once | 74 | 82.2 | 338 | 79.0 | 412 | 79.5 |
| Twice | 16 | 17.8 | 80 | 18.7 | 96 | 18.5 |
| Never | 0 | 0.00 | 10 | 2.3 | 10 | 1.9 |
| Total | 90 | 100 | 428 | 100 | 518 | 100 |

Table 6: Percentage distribution of participants according to Oral Hygiene Practices

| Oral Practices | Female | | Male | | Total | |
|--------------------------------------|---------------------|------|---------------------|------|---------------------|------|
| | No. of participants | % | No. of participants | % | No. of participants | % |
| Brush and Paste | 64 | 71.1 | 327 | 76.4 | 391 | 75.5 |
| Neem/Datun | 0 | 0.00 | 28 | 6.5 | 28 | 5.4 |
| Powder and Finger | 12 | 13.3 | 37 | 8.6 | 49 | 9.5 |
| Only water | 10 | 11.1 | 25 | 5.8 | 35 | 6.8 |
| Water and Soap (Edentulous patients) | 1 | 1.1 | 8 | 1.9 | 9 | 1.7 |
| Nothing | 3 | 3.3 | 3 | 0.7 | 6 | 1.2 |
| Total | 90 | 100 | 428 | 100 | 518 | 100 |



Table 7: Percentage distribution of participants according to Oral Habits

| Oral Habit | No. of Individuals | % |
|-------------------|--------------------|------|
| No Oral habit | 401 | 77.4 |
| Alcohol | 6 | 1.2 |
| Betel Nut chewing | 12 | 2.3 |
| Bidi/Cigarettes | 24 | 4.6 |
| Tobacco chewing | 75 | 14.5 |

Table 8: Percentage distribution of participants according to Self-Assessed Oral Health Status

| Perceived Oral Health | Female | | Male | | Total | |
|-----------------------|---------------------|------|---------------------|------|---------------------|------|
| | No. of participants | % | No. of participants | % | No. of participants | % |
| Very satisfied | 17 | 18.9 | 111 | 25.9 | 128 | 24.7 |
| Satisfied | 24 | 26.7 | 195 | 45.6 | 219 | 42.3 |
| Not satisfied | 49 | 54.4 | 122 | 28.5 | 171 | 33.0 |
| Total | 90 | 100 | 428 | 100 | 518 | 100 |

Table 9: Percentage distribution of participants according to Self-Assessed General Health Status

| Perceived General Health | Female | | Male | | Total | |
|--------------------------|---------------------|------|---------------------|------|---------------------|------|
| | No. of participants | % | No. of participants | % | No. of participants | % |
| Very satisfied | 24 | 26.7 | 133 | 31.1 | 157 | 30.3 |
| Satisfied | 25 | 27.8 | 208 | 48.6 | 233 | 45.0 |
| Not satisfied | 0 | 0.00 | 87 | 20.3 | 128 | 24.7 |
| Total | 90 | 100 | 428 | 100 | 518 | 100 |

Table 10: Percentage distribution of participants according to Last Visit to Dentist

| Last Visit to Dentist | Female | | Male | | Total | |
|-----------------------|---------------------|------|---------------------|------|---------------------|------|
| | No. of participants | % | No. of participants | % | No. of participants | % |
| Month back | 29 | 32.2 | 141 | 32.9 | 170 | 32.8 |
| Year back | 50 | 55.6 | 199 | 46.5 | 249 | 48.1 |
| Never | 11 | 12.2 | 88 | 20.6 | 99 | 19.1 |
| Total | 90 | 100 | 428 | 100 | 518 | 100 |

Table 11: Percentage distribution of participants according to Need to Visit Dentist

| Visit Dentist | Female | | Male | | Total | |
|---------------|---------------------|------|---------------------|------|---------------------|------|
| | No. of participants | % | No. of participants | % | No. of participants | % |
| Yes | 58 | 64.4 | 283 | 66.1 | 341 | 65.8 |
| No | 32 | 35.6 | 145 | 33.9 | 177 | 34.2 |
| Total | 90 | 100 | 428 | 100 | 518 | 100 |



Table 12: Percentage distribution of participants according to Simplified Oral Hygiene Index (OHI-S)

| Scores | Female | | Male | | Total | |
|----------------|---------------------|------|---------------------|------|---------------------|------|
| | No. of participants | % | No. of participants | % | No. of participants | % |
| Good (0-1.2) | 12 | 13.3 | 61 | 14.5 | 73 | 16.5 |
| Fair (1.3-3.0) | 62 | 68.9 | 230 | 71.4 | 292 | 66.3 |
| Poor (3.1-6.0) | 16 | 17.7 | 59 | 16.8 | 75 | 17.0 |
| Total | 90 | 100 | 350 | 100 | 440 | 100 |

Table 13: Subjective Assessment of Simplified Oral Hygiene Index (OHI-S) and Selective Variables

| | Good | Fair | Poor | P-value |
|---------------------------------------|-------------|-------------|------------|---------|
| Age (in yrs..) | | | | |
| 60-74 | 108 (65.3%) | 236 (29.9%) | 17 (0.48%) | 0.415 |
| 75-84 | 19 (13.01%) | 97 (66.4%) | 30 (20.5%) | |
| 85-95 | 0 (0%) | 3 (27.3%) | 8 (72.7%) | |
| Gender | | | | |
| Female | 12 (13.3%) | 62 (68.9%) | 16 (17.8%) | 0.006 |
| Male | 61 (14.5%) | 308 (71.5%) | 59 (14.0%) | |
| Frequency of Brushing in a day | | | | |
| Once | 63 (15.6%) | 291 (72.0%) | 50 (12.4%) | 0.000* |
| Twice | 5 (5.2%) | 71 (74.0%) | 20 (28.8%) | |
| Never | 5 (50%) | 0 (0%) | 5 (50%) | |
| Oral Hygiene Practices | | | | |
| Brush and paste | 9.4% | 76% | 14.6% | 0.001* |
| Neem/Datun | 0% | 100% | 0% | |
| Powder and Finger | 32.7% | 28.6% | 38.8% | |
| Only water | 45.7% | 54.3% | 0% | |
| Water and Soap (For edentulous) | 55.6% | 44.4% | 0% | |
| Nothing | 0% | 100% | 0% | |

*Significant - 0.001

Table 14: Percentage distribution of participants according to Denture Wearers

| Denture Wearing | Participants | |
|-----------------|--------------|------|
| | No. | % |
| Yes | 98 | 18.9 |
| No | 420 | 81.1 |
| Total | 518 | 100 |



Table 14a: Percentage distribution of Denture Wearers

| | No. | % |
|-----------------------------------|-----|------|
| Total Denture Wearers | 98 | 100 |
| Complete Denture wearers | 78 | 79.8 |
| Removable Partial Denture Wearers | 20 | 20.2 |

Table 15: Percentage distribution of participants according to Denture Hygiene

| Denture Hygiene | Participants | |
|-------------------------------------|--------------|---------|
| | No. | % |
| No visible plaque or debris | 34 | 34.69% |
| Moderate amount of plaque or debris | 27 | 27.55% |
| Abundant plaque or debris | 37 | 37.75% |
| Total | 98 | 100.00% |

Table 16: Percentage distribution of participants according to Denture Problems

| Denture Problems | Retention % | Chewing% | Speaking% | Aesthetics% |
|------------------|-------------|----------|-----------|-------------|
| Yes | 51 | 62.2 | 62.2 | 57.1 |
| No | 49 | 37.8 | 37.8 | 42.9 |
| Total | 100 | 100 | 100 | 100 |

Table 17: Distribution of participants according to Decayed, Missing and Filled Teeth

| | No. of teeth | Percentage |
|---------------|--------------|------------|
| Healthy teeth | 1598 | 13.58 |
| Decayed teeth | 968 | 8.20 |
| Filled teeth | 679 | 5.70 |
| Missing teeth | 7650 | 64.05 |
| Root decay | 865 | 7.30 |
| Total | 11760 | 100% |

Table 18: Mean distribution of Decayed, Missing and Filled Teeth

| | Decayed | Missing | Filled | DMFT | Root decay |
|------|---------|---------|--------|------|------------|
| Mean | 1.9 | 7.04 | 0.94 | 9.87 | 1.42 |
| S.D. | 3.34 | 7.85 | 2.90 | 8.32 | 2.41 |
| Min | 0 | 0 | 0 | 0 | 0 |
| Max | 25 | 32 | 22 | 32 | 11 |

Table 19: Distribution of participants according to Community Periodontal Index (CPI)

| CPI | No. of participants | Percentage (%) |
|----------|---------------------|----------------|
| Healthy | 58 | 11.2 |
| Bleeding | 78 | 15.1 |
| Calculus | 179 | 34.6 |



| | | |
|------------------------------|-----|------|
| Shallow Pockets (4-5mm) | 64 | 12.4 |
| Deep pockets (6 and more mm) | 45 | 8.7 |
| Total | 424 | 100% |

Table 20: Community Periodontal Index (CPI) and Selected Variables

| | Healthy | Bleeding | Calculus | Shallow Pockets | Deep pockets | P-value |
|-----------------------------------|------------|------------|-------------|-----------------|--------------|---------|
| Age (in yrs..) | | | | | | |
| 60-74 | 48 (14.9%) | 65 (20.1%) | 132 (40.9%) | 44 (13.6%) | 34 (10.5%) | 0.033 |
| 75-84 | 10 (10.4%) | 8 (8.3%) | 47 (49.0%) | 20 (20.8%) | 11 (11.5%) | |
| 85-95 | 0 (0%) | 5 (100%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Gender | | | | | | |
| Females | 10 (11.9%) | 22 (26.2%) | 32 (38.1%) | 5 (6.0%) | 15 (17.9%) | 0.004 |
| Males | 48 (14.1%) | 56 (16.5%) | 147 (43.2%) | 59 (17.4%) | 30 (8.8%) | |
| Occupation | | | | | | |
| Private Service | 6 (10.9%) | 19 (34.5%) | 3 (5.5%) | 17 (30.9%) | 40 (18.2%) | 0.000* |
| Private Business | 8 (7.6%) | 8 (7.6%) | 63 (60.0%) | 13 (12.4%) | 13 (12.4%) | |
| Government | 44 (17.3%) | 46 (18.1%) | 108 (42.5%) | 34 (13.4%) | 22 (8.7%) | |
| No occupation / housewife | 0 (0%) | 5 (50%) | 5 (50%) | 0 (0%) | 0 (0%) | |
| Self-Perceived Oral Health | | | | | | |
| Satisfied | 41 (14.3%) | 51 (17.8%) | 124 (43.4%) | 44 (15.4%) | 26 (9.1%) | 0.165 |
| Not satisfied | 17 (12.3%) | 27 (19.6%) | 55 (39.9%) | 20 (14.5%) | 19 (13.8%) | |
| Visit Dentist | | | | | | |
| Yes | 40 (13.8%) | 53 (18.3%) | 136 (47.1%) | 26 (9.0%) | 34 (11.8%) | 0.000* |
| No | 18 (13.3%) | 25 (18.5%) | 43 (31.9%) | 38 (28.1%) | 11 (8.1%) | |

* Significant - 0.001

Table 21: Distribution of participants according to Loss of Attachment

| LOA | No. of participants | Percentage |
|---------------|---------------------|------------|
| 0-3mm | 26 | 5.0 |
| 4-5 mm | 115 | 22.2 |
| 6-8 mm | 162 | 31.3 |
| 9-12 mm | 91 | 17.6 |
| 12mm and more | 26 | 5.0 |
| Total | 420 | 81.1% |



Table 22: Loss of Attachment and Selected Variables

| | 0-3mm | 4-5mm | 6-8mm | 8-12 mm | More than 12mm | P-value |
|-----------------------------------|--------------|--------------|--------------|----------------|-----------------------|----------------|
| Age (in yrs.) | | | | | | |
| 60-74 | 11 (3.4%) | 107 (33.4%) | 122 (38.1%) | 62 (19.4%) | 18 (5.6%) | 0.000* |
| 75-84 | 15 (15.8%) | 8 (8.4%) | 35 (36.8%) | 29 (30.5%) | 8 (8.4%) | |
| 85-95 | 0 (0%) | 0 (0%) | 5 (100%) | 0 (0%) | 0 (0%) | |
| Gender | | | | | | |
| Females | 10 (11.9%) | 21 (25.0%) | 31 (36.9%) | 17 (20.2%) | 5 (6.0%) | 0.001* |
| Males | 16 (4.8%) | 94 (28.0%) | 131 (39.0%) | 74 (22.0%) | 21 (6.3%) | |
| Occupation | | | | | | |
| Private Service | 10 (18.2%) | 21 (38.2%) | 12 (21.8%) | 7 (12.7%) | 5 (9.1%) | 0.000* |
| Private Business | 5 (4.8%) | 14 (13.3%) | 34 (32.4%) | 52 (49.5%) | 0 (0%) | |
| Government | 11 (4.4%) | 80 (32.0%) | 106 (42.4%) | 32 (12.8%) | 21 (8.4%) | |
| No occupation / housewife | 0 (0%) | 0 (0%) | 10 (100%) | 0 (0%) | 0 (0%) | |
| Self-Perceived Oral Health | | | | | | |
| Satisfied | 9 (3.2%) | 91 (32.0%) | 111 (39.1%) | 60 (21.1%) | 13 (4.6%) | 0.000* |
| Not satisfied | 17 (12.5%) | 24 (17.6%) | 51 (37.5%) | 31 (22.8%) | 13 (9.6%) | |
| Visit Dentist | | | | | | |
| Yes | 17 (5.9%) | 78 (27.2%) | 99 (34.5%) | 75 (26.1%) | 18 (6.3%) | 0.015 |
| No | 9 (6.8%) | 37 (27.8%) | 63 (47.4%) | 16 (12.0%) | 8 (6.0%) | |

* Significant - 0.001

Table 23: Percentage distribution of participants according to Prosthetic Status

| | No prosthesis | Bridge | >1 bridge | RPD | Bridge+ RPD | Complete denture |
|-------------------------|----------------------|---------------|---------------------|------------|--------------------|-------------------------|
| Prosthetic status upper | 413 (79.7%) | 29(5.6%) | 0 (0%) | 22(4.2%) | 11 (2.1%) | 43 (8.3%) |
| Prosthetic status lower | 409 (79.0%) | 21 4.1%) | 6 1.2%) | 41(7.9%) | 11 (2.1%) | 30 (5.7%) |

Table 24: Percentage distribution of participants according to Prosthetic Needs

| | No prosthesis | Need one unit prosthesis | One and multi-unit prosthesis | Full prosthesis | Not recorded |
|-----------------------|----------------------|---------------------------------|--------------------------------------|------------------------|---------------------|
| Prosthetic need upper | 158 (30.5%) | 71 (13.7%) | 46 (8.9%) | 231 (44.6%) | 12 (2.3%) |
| Prosthetic need lower | 142 (27.4%) | 68 (13.1%) | 34 (6.6%) | 260 (50.2%) | 12 (2.3%) |



Table 25: Percentage distribution of Prosthetic Needs and Selected Variables

| | No prosthesis | Need one unit prosthesis | One and multi-unit prosthesis | Full prosthesis | Not recorded | P value |
|-----------------------------------|---------------|--------------------------|-------------------------------|-----------------|--------------|---------|
| PROSTHETIC NEED UPPER ARCH | | | | | | |
| Age (in yrs.) | | | | | | |
| 60-74 | 76 (33.2%) | 51 (22.3%) | 11 (4.8%) | 91 (39.7%) | 0 (0%) | 0.698 |
| 75-84 | 73 (32.3%) | 16 (7.1%) | 17 (7.5%) | 120 (50%) | 0 (0%) | |
| 85-95 | 9 (14.3%) | 4 (6.3%) | 18 (28.6%) | 20 (31.7%) | 12 (19.0%) | |
| Gender | | | | | | |
| Female | 29 (32.2%) | 20 (22.2%) | 6 (6.7%) | 35 (38.9%) | 0 (0%) | 0.11 |
| Male | 129 (30.1%) | 51 (11.9%) | 40 (9.3%) | 196 (45.8%) | 12 (2.8%) | |
| Self-perceived oral health | | | | | | |
| Satisfied | 140 (88.6%) | 46 (64.8%) | 23 (50%) | 126 (58%) | 0 (0%) | 0.259 |
| Not satisfied | 18 (11.4%) | 25 (35.2%) | 23 (50%) | 105 (46%) | 0 (0%) | |
| PROSTHETIC NEED LOWER ARCH | | | | | | |
| Age (in yrs.) | | | | | | |
| 60-74 | 84 (36.7%) | 24 (10.5%) | 5 (2.2%) | 97 (42.4%) | 0 (0%) | 0.682 |
| 75-84 | 50 (22.1%) | 45 (19.9%) | 17 (7.5%) | 92 (40.7%) | 0 (0%) | |
| 85-95 | 9 (14.3%) | 0 (0%) | 0 (0%) | 30 (47.6%) | 12 (19.0%) | |
| Sex | | | | | | |
| Female | 5 (5.6%) | 34 (37.8%) | 6 (6.5%) | 45 (50%) | 0 (0%) | 0.233 |
| Male | 138 (32.2%) | 35 (8.2%) | 28 (6.5%) | 215 (50%) | 12 (2.8%) | |
| Self-perceived oral health | | | | | | |
| Satisfied | 125 (87.4%) | 56 (81.2%) | 17 (50%) | 138 (53.5%) | 12 (100%) | 0.001* |
| Not satisfied | 18 (12.6%) | 13 (18.8%) | 17 (50%) | 99 (46.5%) | 0 (0%) | |

* Significant - 0.001

DISCUSSION

The present cross-sectional study was carried out to assess the oral health status and treatment needs of persons above the age of 60 years residing in old age homes in New Delhi. The data used were collected through interviews and a full- mouth oral examination.

Demographic Characteristics

Distribution of elderly according to Age and Gender:

The present study disclosed that amongst the members of geriatric day care centers more than three fourth of members were males, with an age range of 60-91 years. This is similar to reports by Sha et al. and Gautam et al. who also reported to have a higher percentage of male respondents.^[1,19] This is in contrast to the prevailing literature on this subject which



reports more female patients in old age homes.^[20,21,22,23] The low prevalence of female member in the present study might be due to rigid custom and beliefs in Indian society were female generally stay indoors and only interact with family member and children.

Distribution of elderly according to Education:

The present study reports that more than three fourths of subjects of the day care centers had high school education. Majority were government officials before retirement and dependent on their monthly pension for their living, which is similar to Rekhi et al. and Rodakowska et al. which reported that majority of patients had at least a formal education.^[24,25]

Distribution of elderly according to Occupation:

Most were employed individuals with the majority being government officials before retirement and dependent on their monthly pension for their living in this study, only about 2% were unemployed, which is in contrast to a study by Bianco et al. which reported unemployment rates of 26%.^[26]

Distribution of Elderly According to Frequency of Brushing

Around 80% of participants reported to brushing only once a day and only 18.5% of respondents brushed the recommended twice a day. This is similar to Escobar et al. which reported almost 52% of respondents brushing at least once a day.^[21] But this is in contrast to Singh et al. which reported that almost 43% of patients did not brush daily even once and only 16% of people brushed once a day.^[2]

Distribution of Elderly According to Oral Hygiene

The predominant oral hygiene aid reported was toothbrush (75.5%) although a number of subjects (15.5%) also reported using Neem/Datun, which is a scientifically accepted indigenous oral hygiene aid, used widely in many rural parts of India. Prevalent literature suggests that majority of patients used to toothbrush and toothpaste to maintain oral hygiene, while toothbrush and tooth powder was the second most common aid.^[1,26]

Distribution of Elderly According to Oral Habits

77.4% of elderly subjects reported no oral habit of any sort, similarly, the majority of studies reported patients having no oral habit of any sort but 14.5% of participants in this study reported using chewing tobacco which is in contrast to other studies that reported approx. 2% of patients using chewing tobacco.^[19,26,27]

Self-Assessed Needs of Participants

Distribution of elderly according to perceived oral, general health and utilization of services

Around 68% of patients reported to be satisfied with their oral health, while 75% of them were satisfied with their general health. This is in contrast to Maille et al. which reported that only 31% of patients were satisfied with their oral health, while this study was in agreement with Singh et al. in reporting that the majority of respondents were happy with their oral health status.^[2,28] When asked regarding their last visit to a dentist, 48% of patients had not visited a dentist in about a year and 66% of patients felt the need to visit a dentist. This is in contrast to



Maille et al. which reported that only 18% patients had visited a dentist during the past year.^[28]

Distribution of elderly according to Simplified Oral Hygiene Index

Majority of patients (66%) had fair oral hygiene status in this study which is in contrast to Escobar et al. which reported that 59.88% had poor oral hygiene status.^[21] Also, a significant p value (0.000) was obtained when the scores of oral hygiene index was compared to the number of times the subjects brushed their teeth. Seventy four percent of subjects brushing twice a day reported to have a fair score of oral hygiene index whereas 50% of subjects who never brushed had poor oral hygiene index.

Percentage distribution of participants according to Denture Wearers

In this study, only 19% of patients required a prosthesis, and of those patients the majority of them were complete denture wearers that is almost 80% of the respondents. This is similar to other studies where no prosthesis need was observed for a large majority of patients.^[19,26,28] But some studies also reported that prosthesis need was great enough for at least 60% of patients with the majority of patients using removable partial dentures.^[1,27,29]

Percentage distribution of participants according to Denture Hygiene and Denture Problems

This study reported that almost 37.75% of denture wearers had abundant plaque or debris on their dentures and did not maintain adequate hygiene for their prosthesis. Carter et al. reported that about 27% of denture users had

denture biofilm.^[20] Also chewing and speaking constituted the biggest issue with their prosthesis, with about 60% of patients suffering from this problem. Maille et al. also reported that around 30% of denture wearers had a chewing problem.^[28]

Distribution of elderly according to Decayed, Missing and Filled Teeth

The mean DMFT in the present study was 9.87 ± 8.32 , the M component contributed the major portion (64.05%) of the DMFT. This is in contrast to studies by Singh et al. and Gautam et al. which reported that the majority of participants presented with a greater D component than any other component.^[2,19] The filled tooth was found the minimum (5.7%) amongst the subjects. This agrees with Singh et al., Gautam et al., and Bhadauria et al. which reported that the F component comprised only approx. 7%. of the patients.^[2,19,30]

This study reports an average Decayed score of 1.9 ± 3.34 , average Missing score of 7.04 ± 7.85 , and an average Filled score of 0.94 ± 2.90 . Majority of studies reported a higher average Missing score than other components, with an average score ranging from 5.00 to 24.90.^[22,29]

Distribution of Elderly According to Periodontal Status

Distribution of elderly according to Community Periodontal Index

Periodontal examination revealed that few dentate subjects (11.9%) had healthy periodontium, with fewer females as compared to males. Most subjects had calculus deposits sextants and bleeding from gums. Shallow pockets of 4-5mm depth were reported by 12.4%

whereas 8.7% subjects had deep pockets of > 6mm. A clinically significant correlation was seen between occupation and presence of deep periodontal pockets, with increasing pocket correlated with those in private service. This is in contrast to studies such as Escobar et al., Khanal et al. and Bhadauria et al., which reported that females presented with healthier periodontium.^[21,27,30] Also, other studies reported similar results of greater presence of shallow pocket depths of 4-5mm depth than presence of deeper pocket depths.^[27,29]

Distribution of elderly according to Loss of Attachment

In the present study only 5% of the dentate subjects did not have any loss of periodontal attachment. Most subjects had 6-8 mm loss of attachment followed by 4-5 mm loss of attachment. A clinically significant correlation was seen between increasing age and decreasing number of individuals with 4-5mm loss of attachment as well as worsen loss of attachment levels in males. This is contrast to Singh et al., Shaheen et al., Khanal et al. and Mary et al. which reported the just the opposite of our study.^[2,26,27,29]

Distribution of Elderly According to Prosthetic Status and Needs

Distribution of elderly according to Prosthetic Status

We found a lesser prevalence of prosthesis usage as compared to Carter et al. who studied an aged population in New Zealand where 67.61% were edentulous, while Janssens in Belgium reported edentulousness in 33.8% of their study population.^[20,22]

Similar to the present study is Khanal et al. amongst urban group of community- dwelling, very old people living in Kathmandu found that only 5% were completely edentulous, while Wyatt in Canada reported 24% edentulousness in their study population.^[27,31]

Distribution of elderly according to Prosthetic Need

Given the age of the population included in the study, it was interesting to note that over two-thirds of the sample needed prosthesis with only very small sample having retained 20 or more teeth. This is similar to Bhadauria et al. which reported that around 80% of patients had the presence of a prosthesis need.^[30] A clinically significant correlation was seen between need for prosthesis and the self-perceived satisfaction with oral health in this study. Twenty or more teeth, if appropriately distributed, are generally considered to be adequate for oral functioning.

CONCLUSIONS

This study assessed oral health status and treatment needs in elderly population visiting the geriatric day care centres in New Delhi. It concluded that amongst the elderly population, majority were satisfied with their oral health status, but most had periodontal problems followed by increased need of prosthesis. Due to the increased prevalence of education and independence majority felt the need to improve their oral health status. Aging does reduce the functional capacity of an individual but a slight effort from us can improve the oral health quality of life.



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