ORIGINAL RESEARCH ARTICLE

An Evaluation of Prosthetic Status and Prosthetic Need amongst people living in and around Panvel, Navi-Mumbai-A Survey
Jyoti Nadgere, Anita Gala-Doshi, Sumana Kishore

Abstract
To promote oral health, we need to know their prosthetic status and prosthetic need. Hence, a survey of prosthetic status and need of people living in and around panvel was done. A cross-sectional study was undertaken and 678 subjects aged 13 years and above was examined (58.4% males and 41.6% females). 44.5% were partially edentulous and 26.1% were completely edentulous and remaining were dentulous. Still eighty five percent of the subjects were without any prosthesis. Prosthetic status and prosthetic need are not significantly associated with gender whereas it is significantly associated with socio economic status. A high unmet need for prosthetic care existed among the people living in and around Panvel, Navi-Mumbai surveyed.

Keywords: Edentulism; Prosthetic need

Introduction
Oral health is always an inseparable part of general health and awareness plays a vital role in determining the oral health of individual. Tooth loss especially, complete loss or edentulism, is equivalent to the dental death. Tooth loss often substantially reduces the quality of life. The loss of teeth is an end product of oral disease and reflects the attitudes of the patients, the dentists in a society, the availability and accessibility of dental care as well as the prevailing philosophies of care.

In order to promote the oral health, we need to know their prosthetic status and prosthetic need. Hence, an effort was made to collect baseline information to formulate policy, to plan, to monitor and evaluate oral health services.

Materials and Methods
The study was cross sectional and ethical clearance was obtained from the M.G.M. Dental College ethical committee. The study was conducted to determine the prosthetic status and prosthetic need among the people living in and around Panvel, Navi-Mumbai, India. The inclusion criteria were being 13 years or more in age and only the permanent dentition was considered. Subjects had been informed of the nature of the investigation and had been included in the study after their consent was obtained.

The study involved completion of a pre-designed and structured questionnaire containing 24 close ended questions. The questionnaire was framed to collect information regarding the demographic profile, educational status, income, occupation etc. The questionnaire also included multiple option questions to collect information regarding their dental visits, the reasons for not visiting a dentist on a routine basis, awareness towards the oral diseases. The data regarding their oral health status was obtained through direct oral examination of the study subjects using WHO oral health assessment form (Basic Oral Health Survey, 1997). The prosthetic status and prosthetic needs was assessed using the following criteria.

Prosthetic status
0 – No prosthesis
1 – Bridge
2 – More than one bridge
3 – Partial denture
4 – Both bridge(s) and partial denture(s)
5 – Full removable denture
9 – Not recorded

Prosthetic need
0 – No prosthesis needed
1 – Need for one unit prosthesis
2 - Need for multi unit prosthesis
3 - Need for combination of one-and/or multi unit prosthesis
4 - Need for full prosthesis (replacement of all teeth)
9 – Not recorded

The examination was conducted by a single examiner. The examination was conducted at the department of Prosthodontics M.G.M. Dental College and Hospital and its peripheral centers on a dental chair with the help of autoclaved diagnostic instruments.

Results
Data obtained were subjected to the Statistical Package for the Social Sciences (SPSS) Version 17.0. Quantitative data was summarized using mean and standard deviation. Qualitative data was summarized using frequencies, percentages, and ranges. The cross-tabs and contingency co-efficient was used to compare the prosthetic status and prosthetic needs in relation to gender, education, economic factors, etc, the statistical significance was fixed at 0.05.

After compiling and analyzing the data from questionnaire form, the following observations were made.

Age and Sex: The study population comprised 58.4% of males and 41.6% of females. The age ranged between 13 years to 84 years. The mean age was 35.5 years. Table 1 shows distribution of subjects according to different age groups.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-23</td>
<td>100</td>
</tr>
<tr>
<td>23-33</td>
<td>136</td>
</tr>
<tr>
<td>33-43</td>
<td>117</td>
</tr>
<tr>
<td>43-53</td>
<td>137</td>
</tr>
<tr>
<td>53-65</td>
<td>135</td>
</tr>
<tr>
<td>&gt;65</td>
<td>53</td>
</tr>
</tbody>
</table>

Table 1 : Distribution of subjects according to different age groups

Location and Literacy level: 33.5 % were from urban, 40.9 % were from periurban, 25.7 % were from rural. 86.7 % were literate of whom 38.1% had school education, 38.6% were from college, 10% had higher education, and 13.3% were illiterate.

Physical and mental condition: Of the 678 persons, 77.5%were in good physical condition, 17.5% were in fair physical condition and 5% were in poor physical condition. Mental health could not be assessed because the medical record of each subject was not available. On interrogation 5% of these were depressed. On an average majority of them were in good physical and mental conditioned had accepted the reality of life and were keeping a positive attitude towards life.

Medical health: 45% were having systemic illness and were on regular medical treatment, 8% had some past major illness, and 20% showed frequency of minor illness, remaining had no medical problems. These people were aware of ill effects of their systemic disease.

<table>
<thead>
<tr>
<th>Prosthesis status</th>
<th>Maxillary Arch</th>
<th>Mandibular Arch</th>
</tr>
</thead>
<tbody>
<tr>
<td>No prosthesis</td>
<td>581</td>
<td>581</td>
</tr>
<tr>
<td>Bridge/ Crown</td>
<td>23</td>
<td>30</td>
</tr>
<tr>
<td>&gt;one Bridge</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Partial Denture</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>Both Bridges &amp; Partial Denture</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Full mouth Removable denture</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>678</td>
<td>678</td>
</tr>
</tbody>
</table>

Table 2 Maxillary and Mandibular prosthetic status

Dental status: 29.4% were dentulous, 44.5% were partially edentulous and 26.1% were edentulous.

Oral hygiene status : 36 % used finger and powder/paste, 43 % used brush and powder/paste, 12% used mishri and 9% used other aids like datun, salt etc. Majority of them had frequency of cleaning the teeth only once a day.

Prosthetic status: Table 2 shows the distribution of prosthetic status of their maxillary and mandibular arches. 85% of the subjects had no prosthesis in their maxillary and mandibular arches (Table2).

Prosthetic need: Table 3 shows the distribution of prosthetic need of their maxillary and mandibular arches. Need for
multi unit prosthesis was more in both maxillary and mandibular arches.

<table>
<thead>
<tr>
<th>Prosthetic Need</th>
<th>Maxillary Arch</th>
<th>Mandibular Arch</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Need</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>One Unit Prosthesis</td>
<td>109</td>
<td>16.1</td>
</tr>
<tr>
<td>Multi-unit Prosthesis</td>
<td>164</td>
<td>24.2</td>
</tr>
<tr>
<td>Need For a Combination of One / Multi unit Prosthesis</td>
<td>5</td>
<td>0.7</td>
</tr>
<tr>
<td>Full Prosthesis</td>
<td>127</td>
<td>18.7</td>
</tr>
<tr>
<td>Total</td>
<td>678</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 3 Shows the distribution of prosthetic need

Discussion

It is evident from the data collected that majority of dentulous subjects i.e. within the age group of less than 23 years. Partial edentulousness was seen in all age groups, being maximum among those aged 34-43 years. Thereafter, the percentage of partially edentulous individuals decreased as the age increased. This can be explained by the fact that the condition of partial edentulousness was replaced by complete edentulousness from the age group of 33-43 years onwards, the latter increasing steadily till the age of >65 years. Similar trends have been reported in studies conducted by Angellillo et al, Crabb, Hobdell et al, Liss et al and Varelzides et al, Prateek et al.

There were fewer patients in above sixty five years age groups because geriatric patients give a lower priority to dental health. Older people make extensive use of medical facilities, but they seem to underuse dental facilities.

The study revealed that 88% of the total population surveyed did not have any prosthesis. The low proportion of those who had prosthesis may be due to the fact that people underuse dental facilities due to lack of awareness, financial constraints.

It was observed that there was minimal variation between the sexes regarding the status for maxillary and mandibular arches. This is in accordance with the findings of Mersel et al and Shroff. Although greater proportion of males had “Need for full prosthesis” with respect to females. “Need for multi-unit prosthesis” was more in females compared to males. However the difference in prosthetic needs between the sexes was not statistically significant which is in accordance with the observations of Mulay and Master.

A significantly higher percentage of subjects in the upper socio economic categories had prosthesis of some kind, compared to those in the lower socio economic categories. The social pressure of maintaining the esthetics and function may be the driving force that influences the subjects in the upper classes to get their missing teeth replaced. In addition to this, the attitude and awareness towards dental care, the cost of dental treatment might also be the significant factors that determine the prosthetic status in a person. Certainly, the attitude and awareness towards dental care was better among the subjects in the upper socio economic categories and this was evident when the utilization of dental services was assessed, which was also significantly better among the subjects in the upper classes compared to those in lower classes. The studies by Hanson B, Eklund SA et al, and Gilbert GA et al also found the prosthetic status to be better among the subjects in the upper classes as was found in our study.

Good facilities are provided by M.G.M. Dental College and Hospital, such as camps to the nearby villages, free transportation, free complete denture and removable partial denture services. In spite of this, awareness among the patient for dental treatment seemed to be significantly low. This indicates patient education and counseling is the need of the hour to increase awareness of dental treatment.

Conclusion

The findings of this study clearly demonstrate a high unmet need for prosthetic care among the population surveyed.

To improve the oral health status, it is necessary to provide oral health education & importance of prosthetic treatment. Centers for free dental treatment should be set up for those who need prosthetic treatment but cannot afford the treatment.

Although extended results have been achieved, yet the small sample size
hinders the generalization of the results to the general population. Hence, further studies are needed at a large scale to collect the baseline oral health data & to plan prosthetic services for people.

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Acknowledgement: To all Staff members of Department of Prosthodontics, M.G.M. Dental College And Hospital, Kamothe, Navi Mumbai, India.

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Source of Support: Nil, Conflict of interest: None Declared