Denture acceptance among newly rehabilitated elderly population in old age homes in South India

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Abstract

Introduction: Elders in old age homes are mainly those who have been abandoned by their family and have one or more physical or mental disabilities. It is a major challenge for the dental professional to plan oral health strategy for this group of patients. Aim of the Study: Aim of the present study is to observe and determine the acceptance of new dental prosthesis among the elderly residing as inmates of 3 old age homes in Mangalore City. Materials and Methods: This cross-sectional study was conducted using a survey proforma. Information regarding their experience with the new denture, 1-month, 3 months and 6 months after denture insertion was gathered. Statistical analysis of the data was done using the Chi-square test with the P < 0.05 considered significant. Results: One hundred and eighty-three residents out of a total of 400 residents in 3 old age homes were denture wearers. Among them, 101 (55.2%) were females, and 82 (44.8%) were males. Dental prosthesis whether worn regularly, discomfort, retention, cleansing of denture during a period of 1-month, 3 months and 6 months was found to be significant satisfaction with the prosthesis, denture adhesives used, food accumulation during a period of 1-month, 3 months and 6 months was found to be nonsignificant. Conclusion: The emotional makeup of the patient must be taken into consideration during the entire procedure. We must understand that the success of the prosthesis depends mainly on the patient's confidence in the dentist rather than the quality of the prosthesis.

Keywords: Complete denture, denture acceptance, discomfort, old age homes

Introduction

Oral health is of paramount importance for the general health of an individual. Poor oral health and loss of teeth adversely affects the dietary intake and nutritional status and thereby compromises the general health. Tooth loss often substantially reduces the quality of life. The elders in old age homes are mainly those who have been abandoned by their family and have one or more physical or mental disabilities, such subjects experience anxiety, depression and loss of self-esteem. Their diet, nutrition, sleep, psychological status, and social interaction are all affected. It is a major challenge for the dental professional to plan oral health strategy for this group of patients.

The aim of this study was to observe and determine oral complaints of subjects aged 50 years and above, living in old age homes in Mangalore who have been recently rehabilitated with prosthesis and their satisfaction with their complete dentures. Very few studies have been conducted concerning the rehabilitation and frequency of problems in denture wearers, hence an effort was made to collect information to formulate, monitor and evaluate oral health services.

Materials and Methods

This cross-sectional study was conducted to determine the acceptance of new dental prosthesis among the institutionalized elderly residing as inmates of 3 old age homes in Mangalore City, Karnataka State, India. The investigators visited the centers and met the concerned authorities. The aim of the study was explained, confidentiality of the participants was assured. Subjects were informed of the nature of the investigation, and their consent was obtained.

A predesigned and structured proforma was used for data collection. It consists of two parts, the first part recorded data on sociodemographic factors (age, gender and period of stay in the old age home), second part consisted information regarding their experience with the new denture, 1-month, 3 months and 6 months after denture insertion. Subjects were asked for their experience with the new denture. During each visit, the subjects were motivated to wear their denture and were educated about the denture maintenance, cleaning of the oral cavity.
Results

One hundred and eighty-three residents out of a total of 400 residents in 3 old age homes were denture wearers. Among them, 101 (55.2%) were females, and 82 (44.8%) were males. Minimum age was 50, and maximum age was 80, mean age is 62.6 ± 6.88 years.

Examination of the denture bearing area showed (82) 44.8% with inflamed denture bearing and (101) 55.2% with healthy denture bearing.

On examination of the alveolar ridge, 142 (77.5%) had adequate ridge, and 41 (22.5%) had resorbed ridge.

When period of stay of inmates was checked, 23 (12.6%) stayed from 0 to 3 years, 57 (31.1%) stayed from 3 to 6 years, 62 (33.9%) stayed from 6 to 12 years and 41 (22.4%) stayed for more than 12 years.

Distribution of study subject according to their age group and gender is given in Table 1.

Distribution of subjects according to experience with new dentures after 1-month, 3 months and 6 months is given in Table 2.

Dental prosthesis whether regularly worn during a period of 1-month, 3 months and 6 months was found to be significant. Gradual improvement was seen over a period of 6 months.

Satisfaction with the prosthesis during a period of 1-month, 3 months and 6 months was found to be nonsignificant. Satisfaction level was the same in the first 3 months. In the 6th month, there was progress in the satisfaction level.

Denture adhesives used by subjects during a period of 1-month, 3 months and 6 months was found to be nonsignificant. In the 6th month, there was a decline in the use of denture adhesives.

Discomfort during a period of 1-month, 3 months and 6 months was found to be significant. There was a gradual decline seen over a period of 6 months.

Retention during a period of 1-month, 3 months and 6 months was found to be significant. In the 2nd month patients satisfied with retention declined, but in the 6th month there was a good improvement.

Food accumulation during a period of 1-month, 3 months and 6 months was found to be nonsignificant. There was a gradual decline seen over a period of 6 months.

Cleansing of denture during a period of 1-month, 3 months and 6 months was found to be significant. There was a gradual increase seen over a period of 6 months.

Discussion

There are several factors beyond the dentist’s control that affect a patient’s ability to achieve a successful denture outcome. Numerous factors associated with aging, that is, xerostomia, tissue fragility, muscle weakness, osteoporosis, arthritis, and depression have been reported as possible causes for denture failure. Experience with a denture usage is another determinant of patients’ acceptance of their new dentures.\(^\text{[2,3]}\)

It has been suggested the patient’s personality and his or her relationship with the dentist play a substantial role in overall success, and psychological attributes are as important for success as a patient’s anatomical features as well as the dentist’s skill in providing complete denture therapy.\(^\text{[4]}\)

In this study, majority of the subjects had adequate alveolar ridge and as time progressed the subjects gave better rating to the retention and comfort of wearing the denture, which was in accordance with the study by Magnusson\(^\text{[5]}\) who found significant correlations between denture satisfaction and qualities of the residual alveolar ridge in a 5 years follow-up study.

But the study by Asja et al.\(^\text{[6]}\) showed that subjects with a better quality mandibular denture bearing area gave lower rating to the retention and comfort of wearing the denture.

By the 6th month, 8.7% of subjects were dissatisfied with the prosthesis and they were those who stayed for more than 12 years in the old age home and were mentally disturbed and dissatisfied in life and according to Bolender et al.\(^\text{[7]}\) patients with a high probability of emotional problems were not as satisfied with their dentures as those patients with less probability of problems.

About 8.7% of subjects who were dissatisfied with the prosthesis were all in the age range of 76–80 years. According

| Age group | Gender (%) | Total (%) |
|-----------|------------|-----------|
| 50-55     | 7 (23.5%)  | 13 (76.4%)| 20 (100.0) |
| 56-60     | 24 (46.1%) | 27 (53.9%)| 51 (100.0) |
| 61-65     | 21 (32.1%) | 36 (67.9%)| 57 (100.0) |
| 66-70     | 11 (46.6%) | 12 (53.4%)| 23 (100.0) |
| 71-75     | 14 (55.5%) | 9 (44.5%) | 23 (100.0) |
| 76-80     | 5 (42.8%)  | 4 (57.2%) | 9 (100.0)  |
| Total     | 82 (39.3%) | 102 (60.7%)| 184 (100)  |
Shetty, et al.: Denture acceptance among rehabilitated elderly

71% of the elderly aged 65 years and over had some adaptation problems after 1-year wearing of new complete dentures. A patient’s general adaptive capacity tends to deteriorate with increasing age. Based on this hypothesis, authors Bergman and Carlsson have reported that older patients require more adjustment visits and also exhibit a poorer denture acceptance than younger patients. Kotkin et al. also found that an increase in the patient’s age decreased the ability to accommodate dentures. It was found that patients who had worn dentures previously were able to stabilize their denture better than the patients who had no previous experience, which is in agreement with the study by Narain et al. wherein the patients with previous denture experience were slightly more satisfied than new denture wearers. As suggested by Narain et al., the neuromuscular control of those who acquire additional sets of dentures becomes more highly developed. Their ability to stabilize new dentures in the mouth may be relearned more quickly than who undergo this process for the first time.

In the 1st-month, 31.7% of the subjects complained of discomfort with the prosthesis and Heydecke et al. found that 1-month after treatment almost half of the patients reported pain.

As time progressed, it was found that the subjects were accustomed to the denture and similar result was found by Rise and Heloe who suggested that the longer dentures are worn, the better they are tolerated, despite a poor fit.

**Conclusion**

The emotional makeup of the patient must be taken into consideration during the entire procedure. We must understand that the success of the prosthesis depends

| Wear | 1-month | 3 months | 6 months | Total (%) | Significance |
|------|---------|----------|----------|-----------|-------------|
| Yes  | 145 (79.2) | 158 (86.3) | 171 (93.4) | 474 (86.3) | 0.001 |
| No   | 38 (20.8) | 25 (13.7) | 12 (6.6) | 75 (13.7) | |
| Total | 183 (100) | 183 (100) | 183 (100) | 549 (100) | |

| Satisfaction | 1-month | 3 months | 6 months | Total (%) | Significance |
|--------------|---------|----------|----------|-----------|-------------|
| Yes | 159 (86.9) | 159 (86.9) | 167 (91.3) | 485 (88.3) | 0.322 |
| No  | 24 (13.1) | 24 (13.1) | 16 (8.7) | 64 (11.7) | |
| Total | 183 (100) | 183 (100) | 183 (100) | 549 (100) | |

| Denture adhesion | 1-month | 3 months | 6 months | Total (%) | Significance |
|------------------|---------|----------|----------|-----------|-------------|
| Yes | 132 (72.1) | 132 (72.1) | 117 (63.9) | 381 (69.4) | 0.145 |
| No  | 51 (27.9) | 51 (27.9) | 66 (36.1) | 168 (30.6) | |
| Total | 183 (100) | 183 (100) | 183 (100) | 549 (100) | |

| Discomfort | 1-month | 3 months | 6 months | Total (%) | Significance |
|------------|---------|----------|----------|-----------|-------------|
| Yes | 58 (31.7) | 31 (16.9) | 15 (8.2) | 104 (18.9) | 0.001 |
| No  | 125 (68.3) | 152 (83.1) | 168 (91.8) | 445 (81.1) | |
| Total | 183 (100) | 183 (100) | 183 (100) | 549 (100) | |

| Retention | 1-month | 3 months | 6 months | Total (%) | Significance |
|-----------|---------|----------|----------|-----------|-------------|
| Yes | 42 (23.0) | 26 (14.2) | 85 (46.4) | 153 (27.9) | 0.001 |
| No  | 141 (77.0) | 157 (85.8) | 98 (53.6) | 396 (72.1) | |
| Total | 183 (100) | 183 (100) | 183 (100) | 549 (100) | |

| Food accumulate | 1-month | 3 months | 6 months | Total (%) | Significance |
|----------------|---------|----------|----------|-----------|-------------|
| Yes | 95 (52.2) | 86 (47.0) | 84 (45.9) | 265 (48.4) | 0.438 |
| No  | 87 (47.8) | 97 (53.0) | 99 (54.9) | 283 (51.6) | |
| Total | 183 (100) | 183 (100) | 183 (100) | 549 (100) | |

| Cleansing denture | 1-month | 3 months | 6 months | Total (%) | Significance |
|-------------------|---------|----------|----------|-----------|-------------|
| Yes | 86 (47.0) | 171 (93.4) | 174 (95.1) | 474 (86.3) | 0.001 |
| No  | 97 (53.0) | 12 (6.6) | 9 (4.9) | 118 (21.5) | |
| Total | 183 (100) | 183 (100) | 183 (100) | 549 (100) | |
mainly on the patient’s confidence in the dentist rather than the quality of the prosthesis. Therefore, we must educate the patient and make him understand that the efficiency of the prosthesis is depended on the condition of his or her alveolar ridge and his attitude to adapt to the prosthesis. Constant assurance needs to be given to the subjects in old age homes as they are mentally disturbed and need emotional support.

References

1. Slade GD, Spencer AJ. Social impact of oral conditions among older adults. Aust Dent J 1994;39:358-64.
2. Frank RP, Milgrom P, Leroux BG, Hawkins NR. Treatment outcomes with mandibular removable partial dentures: A population-based study of patient satisfaction. J Prosthet Dent 1998;80:36-45.
3. Weinstein M, Schuchman J, Lieberman J, Rosen P. Age and denture experience as determinants in patient denture satisfaction. J Prosthet Dent 1988;59:327-9.
4. Carlsson GE. Clinical morbidity and sequelae of treatment with complete dentures. J Prosthet Dent 1998;79:17-23.
5. Magnusson T. Clinical judgement and patients’ evaluation of complete dentures five years after treatment. A follow-up study. Swed Dent J 1986;10:29-35.
6. Celebić A, Knezović-Zlatarić D, Papić M, Carek V, Baucić I, Stipetić J. Factors related to patient satisfaction with complete denture therapy. J Gerontol A Biol Sci Med Sci 2003;58:M948-53.
7. Bolender CL, Swoope CC, Smith DE. The Cornell Medical Index as a prognostic aid for complete denture patients. J Prosthet Dent 1969;22:20-9.
8. Mäkilä E. Primary oral status and adaptation to complete dentures. A clinical follow-up study in groups over and under 65 years. Ann Acad Sci Fenn A 1974;164:1-29.
9. Bergman B, Carlsson GE. Review of 54 complete denture wearers. Patients’ opinions 1 year after treatment. Acta Odontol Scand 1972;30:399-414.
10. Kotkin H, Slabbert JC, Becker PJ. The prognostic value of denture complaints. Int J Prosthodont 1993;6:341-5.
11. Narain U, Garg R, Sameer, Narain P. A prospective study of the quality of removable prostheses and patients’ satisfaction in post-prosthetic phase. Internet J Dent Sci 2009;9: ISSN:1937-8238.
12. Heydecke G, Tedesco LA, Kowalski C, Inglehart MR. Complete dentures and oral health-related quality of life – Do coping styles matter? Community Dent Oral Epidemiol 2004;32:297-306.
13. Rise J, Heløe LA. Oral conditions and need for dental treatment in an elderly population in northern Norway. Community Dent Oral Epidemiol 1978;6:811.

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