ISSN: 0976-3031

Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 8, Issue, 6, pp. 17481-17487, June, 2017

International Journal of Recent Scientific Research

DOI: 10.24327/IJRSR

Research Article

IMPACT OF PROSTHESIS ON ORAL HEALTH RELATED QUALITY OF LIFE AMONG COMPLETE EDENTULOUS GERIATRIC PATIENTS USING GOHAI IN OPD'S OF DENTAL COLLEGES OF PATNA, BIHAR

Prabhjyot Singh, Suma B.S and Sadananda L.D

Department of Public Health Dentistry, BIDSH, Buddha Institute of Dental Sciences Patna

DOI: http://dx.doi.org/10.24327/ijrsr.2017.0806.0363

ARTICLE INFO

Article History:

Received 15th March, 2017
Received in revised form 25th April, 2017
Accepted 23rd May, 2017
Published online 28th June, 2017

Key Words:

GOHAI, Denture wearer, Mean

ABSTRACT

Introduction: Loss of tooth affects the normal functional activities resulting in a range of reactions in edentulous individuals. (GOHAI) groups oral health self-perception in three basic functions: physical, psychosocial and pain/discomfort.

Aim: To assess the Impact of prosthesis on oral health related quality of life among complete edentulous geriatric patients using GOHAI in Opd's of Dental colleges of Patna, Bihar.

Materials and Methods;- It is descriptive, cross-sectional survey. A self administered structured close ended questionnaire has been designed to obtain information about Impact of prosthesis on quality of life among complete edentulous geriatric patients using GOHAI in Opd's of Dental colleges of Patna, Bihar. . The data will be entered into a statistical software program (SPSS 17; SPSS INC, Chicago, USA). 'p' value of <0.05 at 95% confidence interval will be taken as statistically significant..The response format was based on 5-point Likerts scale. Analysis was done using Graph Pad (version 6).'Level of significance ($p<0.05$) at 95% confidence level and ($p<0.01$) at 99% confidence level. Chi-square test was used for analysing the association between parameters.

Results: Out of total 150 participants, majority 70 % of them were males while 30% were females. The mean GOHAI score for females changed from 19.18 ± 4.9 in non denture user to 20.04± 2.82. In case of primary school 19.52 ± 4.97 in case of denture users whereas it turned 21.97±2.73 in case of non denture users with a p value 0.03 significant results. In case of Graduates, middle school certificate, primary school education level the denture users scored low GOHAI as compared to non denture users. These people found no improvement on usage of denture.

Discussion: As per the present study, there was no significant difference between denture users and non denture user scores which showed that the improvement in dental health did not really have any impact on the general health status. Those who showed improvement to some extent were influenced more in psychological aspect, which certainly was improved after the treatment.

Conclusion: This study showed that the GOHAI could be used to evaluate needs for and effect of prosthetic treatment. Clearly states that the oral health status and prosthetic status of elderly subjects across India was very poor with more oral disease and conditions, so immediate preventive measures should be instituted to avoid deterioration of their oral health.

Copyright © Prabhjyot Singh *et al*, 2017, this is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Gerodontology is the delivery of dental care to older adults involving the diagnosis, prevention and treatment of problems associated with normal aging and age related diseases as part of an interdisciplinary team with other health care professional's. World Health Organization (WHO) defines older adults in developed countries as those people aged 65 years or over. In developing countries, like India, the elderly population is considered to be over the age of 60 years.[1]

Health is no longer defined in terms of illness and disease, and clinical indicators have been shown to be limited for determining therapeutic needs. Therefore, oral epidemiology has used measures, which assess the extent to which oral conditions disrupt normal social role functioning and lead to major changes in behaviour, such measures are known as socio-dental indicators or oral health related quality of life measures (OHRQoL.[2]

Loss of tooth affects the normal functional activities resulting in a range of reactions in edentulous individuals. Edentulous

Corresponding author:* **Prabhjyot Singh
Department of Public Health Dentistry, BIDSH, Buddha Institute of Dental Sciences Patna

patients are always conscious about their general appearance. There are a large number of edentulous patients in all communities, and the trend suggests that the number in this group will continue to increase in the future.[3]

Different instruments have been developed to obtain data about self-perception of the oral condition and the impact on quality of life. One of these instruments is the Geriatric Oral Health Assessment Index (GOHAI), which groups oral health self-perception in three basic functions: physical, psychosocial and pain/discomfort.[4]

The GOHAI demonstrated a high level of internal consistency and reliability as measured by a cronbach' alpha of 0 .79. Measurements in geriatrics serve 5 functions - description, screening, assessment, monitoring and prediction.[5] Among available OHRQOL instruments, the Geriatric Oral Health Assessment Index (GOHAI) and the Oral Health Impact Profile (OHIP-14) have been validated and found to be useful and used among elderly populations. They were initially developed in English speaking countries (USA, Australia) and were translated and validated for use in several countries.[6] The GOHAI measure is 12 item questionnaire originally developed in 1990 in USA for use with elderly population with three months time reference. It was developed to evaluate three dimensions of oral health related quality of life including physical functions like eating, speech, swallowing, psychological functions like worry, concern, about oral health**,** dissatisfaction with appearance, self-consciousness about oral health, avoidance of social contacts because of oral problems; pain or discomfort including the use of medication or discomfort from the mouth. According to Locker *et al*, the GOHAI gives a greater weight to functional limitations or pain and discomfort.[7] In comparison, both the GOHAI &the OHIP-14 consist of a single index that incorporates different dimensions of oral health. Having fewer teeth, wearing a removable denture and perceiving the need for dental treatment were significantly related to a worse (lower) GOHAI score. Respondents who were white, well educated, and with a higher annual household income were most likely to have a high GOHAI score indicating fewer dental problems.[5]

Alongside dysphagia and xerostomia, the number of remaining teeth present in the oral cavity influences the masticatory function. Tooth loss results in a reduced capability to break down food stuff. Thus, edentulous patients (Partial or complete) face largely diminished chewing efficiency and thus modify their diet accordingly. This may result in alteration in the metabolism mechanism and the nutritional value of the individual which may end up in leading to malnutrition and other health related issue.[8]

The objective of this study was to determine if an OHRQOL indicator like the of the GOHAI questionnaire could be used to evaluate the impact of prosthetic treatment. We, thus, decided to evaluate the impact on OHRQL of the placement of new complete dentures in edentulous patients in Patna .Bihar.

Aim

The study was aimed to assess the Impact of prosthesis on oral health related quality of life among complete edentulous geriatric patients using GOHAI in Opd's of Dental colleges of Patna, Bihar.

Objective

1. To assess Oral Health Related Quality Of Life (OHRQOL) using Geriatric Oral Health Assessment Index (GOHAI).
2. To evaluate the impact of prosthesis measured by GOHAI.
3. To plan comprehensive programmes to improve quality of life among geriatric population**.**

MATERIAL AND METHODS

Prior to scheduling the survey, official permission was obtained from, Heads/Concerned authority of the Buddha Institute of dental sciences and hospital. Informed verbal consent was obtained from the participating Patients attending prosthodontics department of Buddha Institute of dental sciences and hospital. The proposed study was reviewed by the Ethical committee of Buddha institute of dental sciences. Patna and clearance was obtained .Prior to scheduled survey of the subjects for recording the Impact of prosthesis on oral health related quality of life among complete edentulous geriatric patients using GOHAI in Opd's of Dental colleges of Patna, Bihar .The Patients were met and explained regarding the research work. Date and time was fixed for the Interview **.**A survey was systematically scheduled to spread over a period of 1 month from 1st week of November to 1st week of December.. According to the detailed weekly schedule well in advance by informing and obtaining consent from the selected Patients, although a detailed schedule plan was prepared meticulously, few adjustments and changes were called for while working it out practically. Duration for data collection from each Patient was 30 minutes. A specially prepared pretested close ended structured questionnaire was prepared in English exclusively designed for recording all the required and relevant general information About Impact of prosthesis on quality of life among complete edentulous geriatric patients using GOHAI in Opd's of Dental colleges of Patna, Bihar. was used for recording the data. A copy of the format is hereby enclosed.

Study Design

The study is a descriptive, cross-sectional survey. Patients aged above 60 years of age attending prosthodontics department of Buddha Institute of dental sciences and hospital.

Study group & Sampling

A study group of 148 Patients above 60 years of age attending prosthodontics department of Buddha Institute of dental sciences and hospital through simple random sampling method.

Inclusion criteria

1. Elderly individuals aged 60 years and above.
2. Participants who are able to respond to the questions are enrolled.
3. Participants who wish to give the consent are included in the study.

Exclusion criteria

1. Medically compromised individuals.

2. Participants who are unable to hear or speak and suffering from depression or other psychiatric problems.
3. Participants who are not willing to give the consent.
4. Participants who are uncooperative.

Study design

A study group of 148 Patients above 60 years of age attending prosthodontics department of Buddha Institute of dental sciences and hospital through simple random sampling method.

Method of collection of data

A self administered structured close ended questionnaire has been designed to obtain information about Impact of prosthesis on quality of life among complete edentulous geriatric patients using GOHAI in Opd's of Dental colleges of Patna, Bihar. All the edentulous patients were pre-informed about the survey. The questionnaire for collecting data with 5 point GOHAI index was used for collecting Data. The questionnaire was peer reviewed, piloted and found comprehensible. It will be undisclosed and confidential with an attached brief introduction explaining purpose of investigation with research workers name as well as specific instruction on how to answer and filled form was collected back by the research worker .The questionnaire was pretested in a group of edentulous patient and validated.

The Questionnaire consisted of two major groups:

1. Socio demographic factors and Regarding complete denture usage,
2. GOHAI index.

The first group of questionnaire consisted of total 15 questions with subheadings and the second group pertaining to GOHAI index. The feasibility and validity was tested by pilot study. The Aims of study were explained and the dentists were met in person by the research worker himself and the questionnaire was given and collected.

Statistical analysis

Data will be analyzed applying various statistical tests to find out the mean and standard deviation. For comparison of proportion chi-square test will be used. ANOVA test will be used to find the association between multiple variables in the study.

The data will be entered into a statistical software program (SPSS 17; SPSS INC, Chicago, USA). 'p' value of <0.05 at 95% confidence interval will be taken as statistically significant. The association between quality of life evaluated through GOHAI and oral health status will be assessed using the Spearman Correlation analysis, Cronbach's alpha will be calculated to assess the degree of internal consistency and homogeneity among the items of GOHAI.

RESULTS

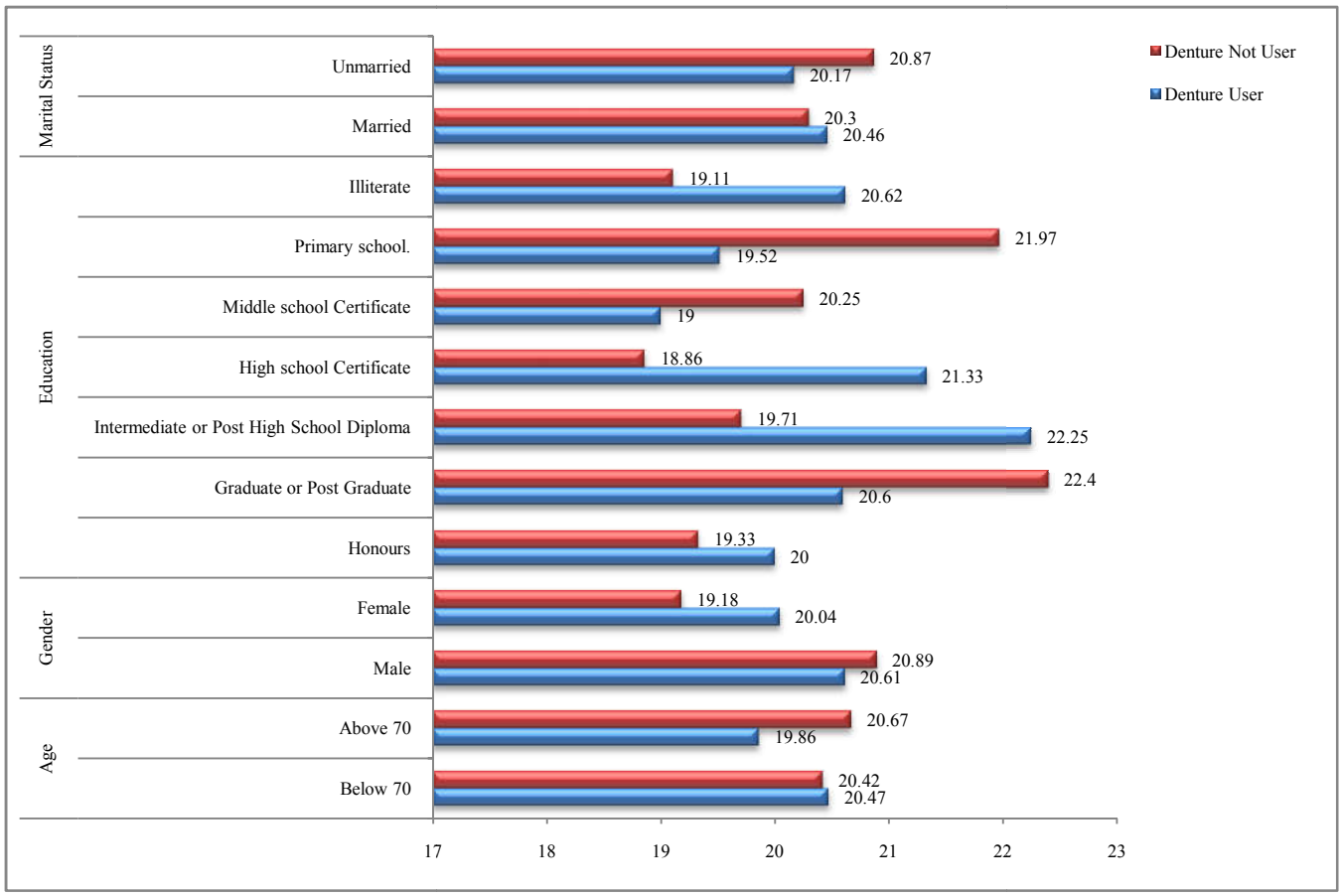
A comparative analysis was carried out among the demographic variables which were more significant in terms of age, gender, educational and marital status as long as the dental health was concerned. Subject characteristics are shown in [Table/Fig-1].

The age of the participants ranged from 60-82 years with the mean age 64.8. Out of total 150 participants, majority 70 % of them were males while 30% were females. The mean GOHAI score for females changed from 19.18 ± 4.9 in non denture user to 20.04± 2.82 in case of denture users and p value was 0.8533 which showed non significant results, while in males there are no changes among denture users and non users. At the same time, the subjects below 70 years ,a very marginal increases in mean GOHAI score among denture user 20.47 ± 2.91 and p value 0.776 had non significant results compared to non denture users i.e. 20.42 ± 3.69 and p value was 0.414 showed non significant results. The single and widows/ widowers were found to be having GOHAI scores as 20.17 ± 2.75 in case of denture users and which showed no improvement in quality of life on using dentures which turned to 20.87 ± 3.4 where the quality of life has improved on using denture. in case of non denture user with a p value of 0.646, on the contrary, married participants scored denture user as 20.46 ± 4.18 and non denture user as 20.3 ± 3.74.The GOHAI scores were noted to be higher in the intermediate 22.25 ± 0.95 in case of denture users whereas it turned to19.71±1.98 in case of non denture user with a p value 0.064 non significant results. In case of high school 21.33 ± 2.69 in case of denture users whereas it turned 18.86±2.93 in case of non denture users with a p value 0.094 non significant results.

Table 1 Comparison of User and Non User of denture

Patient Characteristic	Denture User		Denture Not User		Mann Whitney test	
	Mean	SD	Mean	SD	p- Value	Difference
Age						
Below 70	20.47	2.91	20.42	3.69	0.776	Not significant
Above 70	19.86	9.12	20.67	3.5	0.4148	Not significant
Gender						
Male	20.61	4.46	20.89	3.03	0.8914	Not significant
Female	20.04	2.82	19.18	4.9	0.8533	Not significant
Education						
Honours	20	1.83	19.33	4.04	0.5926	Not Significant
Graduate or Post Graduate	20.6	4.5	22.4	1.67	0.3947	Not significant
Intermediate or Post High School Diploma	22.25	0.95	19.71	1.98	0.0648	Not significant
High school Certificate	21.33	2.69	18.86	2.93	0.0943	Not significant
Middle school Certificate	19	3.67	20.25	2.76	0.4315	Not significant
Primary school.	19.52	4.97	21.97	2.73	0.03	Significant
Illiterate	20.62	3.17	19.11	5.47	0.4281	Not significant
Marital Status						
Married	20.46	4.18	20.3	3.74	0.6967	Not significant
Unmarried	20.17	2.75	20.87	3.4	0.6462	Not significant

P < 0.05 Significant



In case of illiterate 20.62 ± 3.17 in case of denture users whereas it turned 19.11±5.47 in case of non denture users with a p value 0.428 non significant results whereas in case of graduates 20.6 ± 4.5 in case of denture users and 22.4±1.67 in case of non denture users with a p value 0.394 non significant results. In case of middle school 19 ± 3.67 in case of denture users whereas it turned 20.25±2.76 in case of non denture users with a p value 0.431 non significant results. In case of primary school 19.52 ± 4.97 in case of denture users whereas it turned 21.97±2.73 in case of non denture users with a p value 0.03 significant results. In case of Graduates, middle school certificate, primary school education level the denture users scored low GOHAI as compared to non denture users. These people found no improvement on usage of denture.

Responses to GOHAI Questionnaire

GOHAI scores were calculated by using an additive method, where the addition of GOHAI items was done (response set was always=5, often=4, sometimes=3, seldom=2, never=1) by combining them (a=always + often, b=seldom + sometimes, c=never).

GOHAI items and frequency distribution are shown in Graph 1. As per the results of the denture users, items 4 which comes under functional limitations which describe the problems to speak clearly, scored highest. i.e.75% and the respondents stated that they seldom or sometimes had this problem.

When the GOHAI 1st questionnaire was asked that whether there is trouble biting food or chewing then 11.3% of non denture wearers told often or always have problem in biting or chewing food as compared to only 8.6% of denture wearers which showed that on usage of denture their problems has been reduced.

When the participants were asked that do they limit the kinds of food(2nd item) 26.6%of non denture wearers told often or always limit the kinds of food as compared to only 20.6% of denture wearers which showed that on usage of denture there is no need do not limit the kinds of food Participants while giving answers to (3rd item) that is was there any problems to swallow comfortably maximum 24%of non denture wearers told often or always limit the kinds of food as compared to only 18% of denture wearers which showed that on usage of denture there is no problems to swallow comfortably.

In case of answering to (4th item) that was there any problems to speak clearly maximum non denture users 18% told often or always whereas only 10% of denture wearers showed that on usage of denture they are able to speak clearly.

Respondents when asked (5th item) that was there any discomfort eating any kind of food maximum non denture wearers 38% told seldom or sometimes whereas only 28.6% denture wearers showed that on usage of denture there is no discomfort eating any kind of food.

While answering to (6th item) that do they limit contact with people 31.3% of non denture wearer told often or always whereas, 23.3% of denture wearers showed that on usage of denture there is less chances of having limit to contact with people.

Table 2 Comparision of life user and non user of denture patients reporting impact on quality of life

Questions	Denture User			Denture Not User				Chi Square test	
	a	b	c	a	b	c		Chi Square, df	P value
Q1	13 (8.6%)	43 (28.66%)	7 (4.6%)	17 (11.3%)	58 (38.6%)	10 (6.6%)	58%	0.02065, 2	0.9897
Q2	31 (20.6%)	32 (21.33%)	0 (0%)	40 (26.6%)	45 (30%)	0 (0%)		0.06686, 1	0.796
Q3	27 (18%)	36 (24%)	0 (0%)	36 (24%)	49 (32.6%)	0 (0%)		0.003762, 1	0.9511
Q4	16 (10.6%)	47 (31.3%)	0 (0%)	27 (18%)	58 (38.6%)	0 (0%)		0.7118, 1	0.3988
Q5	0 (0%)	43 (28.6%)	20 (13.3%)	0 (0%)	57 (38%)	28 (18.6%)		0.02358, 1	0.8779
Q6	35 (23.3%)	25 (16.6%)	3 (2%)	47 (31.3%)	34 (22.6%)	4 (2.6%)		0.001601, 2	0.9992
Q7	10 (6.6%)	40 (26.6%)	13 (8.6%)	13 (8.6%)	56 (37.3%)	16 (10.6%)		0.1003, 2	0.9511
Q8	14 (9.3%)	35 (23.3%)	14 (9.3%)	19 (12.6%)	47 (31.3%)	19 (12.6%)		0.001001, 2	0.9995
Q9	27 (18%)	36 (24%)	0 (0%)	39 (26%)	46 (30.6%)	0 (0%)		0.1340, 1	0.7143
Q10	23 (15.3%)	38 (25.3%)	2 (1.3%)	29 (19.3%)	53 (35.3%)	3 (2%)		0.09670, 2	0.9528
Q11	11 (7.3%)	33 (22%)	19 (12.6%)	17 (11.3%)	42 (28%)	26 (17.3%)		0.1885, 2	0.9101

a. Impact reported 'often' or 'always'(4+5); b. Impact reported 'seldom' or 'sometimes'(2+3); c impact reported 'never' (1).

According to (7^{th} item) is concerned that are they pleased with look of teeth maximum non denture users 8.6% told often or always whereas only 6.6% of denture wearers showed that on usage of denture they are pleased with look of teeth.

In (8^{th} item) when questionnaire was asked that do participants take medicines to relieve pain maximum non denture users 12.6% told often or always whereas only 9.3% of denture wearers showed that on non usage of denture they take medicines to relieve pain.

Next (9^{th} item) asked about that were the participants worried about their teeth, gums or denture gave maximum 26% of non denture wearers told often or always have problem in biting or chewing food as compared to only 18% of denture wearers which showed that on usage of denture their worry about their teeth, gums or denture has limited.

When the participants were asked (10^{th} item) that participants were self-conscious of teeth, gums or maximum 19.33% of non denture wearers told often or always have problem in biting or chewing food as compared to only 15.3% of denture wearers which showed that on usage of denture their self-conscious of teeth, gums has improved.

According to (11^{th} item) is concerned that there is uncomfortable eating in front of others maximum 11.33% of non denture wearers told often or always have problem in biting or chewing food as compared to only 7.3% of denture wearers which showed that on usage of denture they are less uncomfortable eating in front of others.

DISCUSSION

As per the present study, there was no significant difference between denture users and non denture user scores which showed that the improvement in dental health did not really have any impact on the general health status. Those who showed improvement to some extent were influenced more in psychological aspect, which certainly was improved after the treatment.

It was hypothesized that the younger subjects would have better GOHAI scores than the older subjects. Respondents with intermediate education had higher GOHAI which clearly indicates a relatively better socio–economic status and awareness. There was significant difference between males and females with better GOHAI scores in males, which points out that males had higher acceptance of prescribed treatment.

Marital status showed high impact on the QOL of elderly, as it was seen that the married subjects showed higher GOHAI scores than the single and widow/widowers. This was hypothesized again as the psychological well-being and companion support in life as a 'feel good' factor.

Majority of people above 60 years are lonely or dependant. As per the government data, about 65% of the aged had to depend on others for their day-to-day maintenance. Less than 20% of elderly women but majority of elderly men were economically independent. Among economically dependent elderly men 6-7% was financially supported by their spouses, almost 85% by their own children, 2% by grand children and 6% by others. Out of elderly women, less than 20% depended on their spouses, more than 70% on their children, 3% on grand children and 6% or more on others including the non-relations according to study done by Govt of India, June 2011.[9]

Many studies have documented that the overall health of the elderly was related to their oral health and vice versa. It is rightly said that, access to appropriate oral health care is likely to improve overall quality of life. According to study done by Locker D *et al* (1997) it has been observed by various researchers that oral health plays an important role in maintaining the general health not fully but to a certain extent.[10] A study by Jenson (2008) states that, oral health related quality of life is associated with some (perceived need for dental treatment, poor self-rated health, worse mental health, fewer teeth, and relatively poor cognitive status) but not all (e.g., ADL (activities of daily living) and instrumental ADL dependence) measures of oral health, health, and disability status and not with life satisfaction, living alone, or low income.[11] On the contrary, as per Mack *et al*., prosthetic status has significant effect on the physical index of general health related quality of life. The reduced dentition without replacement of missing teeth by removable or fixed prosthodontics reduces the physical index of quality of life to the same extent as cancer or renal diseases study done.[12] One more study revealed that the general health–related quality of life was improved in the elderly patients who were treated by giving the implant supported mandibular overdentures according to study done by Heydecke G *et al* (2003).[13]

A similar study by Shigli K *et al* (2010), analysed 27 patients from the age group 60 – 84 where the GOHAI score was seen to be increased from 27.48 to 30.19 (p=0.002) which was highly significant; whereas the present study examined 150 patients from the age group 60-82, where the GOHAI score

was seen to be increased from 20.47 ± 2.91 to 20.67 ± 3.5 which was non significant.[14]

Though there are differing results on relationship between OHRQoL and general health, there are definite results for compromised dental conditions and OHRQoL. A study investigated the masticatory performance with oral health-related quality of life in independently living elderly Japanese subjects. It suggests that the masticatory performance has a direct influence on the quality of life according to study done by Ikebe K *et al* (2007).[15]

Patient satisfaction is always related to their level of acceptance of the dental treatment which directly depends on their emotional and mental status. Sometimes the elderly require time to accept things which are new to them. Due to some reason, the elderly sometimes face depression which can negatively affect their physical functioning and well-being, which in turn affects their oral functioning. Individuals with more depressive symptoms reported worse oral quality of life, controlling for sociodemographic factors and self-reported oral health according to study done by Kressin NR *et al*(2002).[16] Though the quality of life for the elderly is assessed by many, there are very few studies conducted to assess the quality of life in completely edentulous population in India. GOHAI is translated in various languages; it was translated in Hindi by Deshmukh and Radke (2012) to assess its validity and reliability for use among people in India and was proved to be a valuable instrument for measuring oral health-related quality of life.[17] Oral health-related quality of life and nutritional status of institutionalized elderly population was studied in Mysore City, India, by using GOHAI data and their association with the Mini Nutritional Assessment (MNA) results to assess the relationship between oral health and malnutrition according to study done by Kshetrimayun N *etal*(2013).[18]

The present study evaluated the need of investigation before and after the prosthodontic care which can provide the exact picture of whether the elderly have been provided a better quality of life. It was noticed that the patients expected more attention and psychological support by the clinicians in the institutions. There is a need to understand the responsibility of the entire dental fraternity to acknowledge the problems of elderly and treat them so that it adds to their QOL.

SUMMARY AND CONCLUSION

The present review clearly states that the oral health status and prosthetic status of elderly subjects across India was very poor with more oral disease and conditions, so immediate preventive measures should be instituted to avoid deterioration of their oral health.This study showed that the GOHAI could be used to evaluate needs for and effect of prosthetic treatment provided by students. The validity of the French version of the GOHAI was confirmed but there remains a need to evaluate and understand how OHRQOL indicators like the GOHAI vary with time. It has also been demonstrated that a slight improvement in oral health quality of life requires at least 12 weeks after placement of new complete dentures to be measurable. Limitations of the study are due to the small number of participants and the shortness of the period of observation. It would therefore be interesting to prolong this study to allow for changes in the GOHAI over time and its ability to detect variations in the oral health state to be charted using a larger number of participants and a longer period of observation.

References

1. B. Kumara Raja,G. Radha,R. Rekha, S.K Pallavi. Geriatic oral health .A literature review. Int J Dent Health Sci 2015; 2(2):385-395
2. Momen A. Atieh. Arabic version of the geriatric oral health assessment Index. doi:10.1111/j.1741-2358.2007.00195.x
3. S.tubert jeananin S, Riordan PJ. Validation of oral health quality of life GOHAI in france. Community Dent Oral epidemiology:2003:31,275-84
4. Maria Madalena Canuto Lemos, Luciane Zanin, Maria Letícia Ramos Jorge, Flávia Martão Flório. Oral health conditions and self-perception among edentulous individuals with different prosthetic status. Braz J Oral Sci. January | March 2013 - Volume 12, Number.
5. Rajani A. Dable1, Girish S. Nazirkar2, Shailendra B. Singh3, PRADNYAB. WASNIK4 Assessment of Oral Health Related Quality of Life Among Completely Edentulous Patients in Western India by Using GOHAI. DOI: 10.7860/JCDR/2013/6377.3406
6. Alice Murariu, Carmen Hanganu, Livia Bobu. Evaluation of the Reliability of the Geriatric Oral Health Assessment Index (GOHAI) in Institutionalised Elderly in Romania: A Pilot Study. OHDMBSC - Vol. IX - No. 1 - March, 2010
7. Ewa Rodakowska1*, Karolina Mierzyńska2, Joanna Bagińska3 and Jacek Jamiołkowski4, McDonnell DD, Kazinets G, Seo HG, Moskowitz JM. Effects of Web- and computer-based smoking cessation programs: meta-analysis of randomized controlled trials. Arch Intern Med. 2009 May 25;169(10):929-37.
8. Joannis Katsoulis1, Martin Schimmel2, Marianna Avrampou1, Andreas E. Stuck3 and Regina Mericske-Stern. Oral and general health status in patients treated in a dental consultation clinic of a geriatric ward in Bern, Switzerland. doi: 10.1111/j.1741-2358.2011.00529.x
9. Situation analysis of the elderly in India's central statistics office ministry of statistics and programme implementation Government of India; June 2011.
10. Locker D, Matear D, Stephens M. Oral health-related quality of life of a population of medically compromised elderly people. *J Public Health Dent.* 1997; 57: 224- 32.
11. Jensen PM, Saunders RL, Thierer T. Factors associated with oral health-related quality of life in community-dwelling elderly persons with disabilities. *J Am Geriatr Soc.* 2008; 56: 711-17.
12. Mack F, Schwahn C, Feine JS.The impact of tooth loss on general health related to quality of life among elderly Pomeranians: results from the study of health in Pomerania (SHIP-O). *Int J Prosthodont.* 2005; 18: 414-19.
13. Heydecke G, Locker D, Awad MA. Oral and general health-related quality of life with conventional and implant dentures. *Community Dent Oral Epidemiol.* 2003; 31: 161-68.

14. Shigli K, Hebbal M. Assessment of changes in oral health-related quality of life among patients with complete denture before and 1 month post-insertion using Geriatric Oral Health Assessment Index. *Gerodontology*. 2010; 27: 167-73.
15. Ikebe K, Hazeyama T, Morii K. Impact of masticatory performance on oral health-related quality of life for elderly Japanese. *Int J Prosthodont.* 2007; 20: 478-85.
16. Kressin NR, Spiro A 3rd, Atchison KA. Is depressive symptomatology associated with worse oral functioning and well-being among older adults?. *J Public Health Dent.* 2002; 62: 5-12.
17. Deshmukh SP, Radke UM. Translation and validation of the Hindi version of the Geriatric Oral Health Assessment Index. *Gerodontology.* 2012; 29:1052-8.
18. Kshetrimayum N, Reddy CV, Siddhana S, Manjunath M, Rudraswamy S, *et al*. Oral health-related quality of life and nutritional status of institutionalized elderly population aged 60 years and above in Mysore City, India. *Gerodontology.* 2013; 30:119-25.

How to cite this article:

Prabhjyot Singh *et al*.2017, Impact of Prosthesis on Oral Health Related Quality of Life Among Complete Edentulous Geriatric Patients Using Gohai In Opd's of Dental Colleges of Patna, Bihar. *Int J Recent Sci Res.* 8(6), pp. 17481-17487.
DOI: http://dx.doi.org/10.24327/ijrsr.2017.0806.0363

****