Effect of all previous dental treatment on the current oral health related quality of life in geriatric patients

Nayar Islam[1*], Nilisha Shukla[2], Amyn Chamadia[3], Sanket Deolkar[4]

[1-4]PG Student, Dept. of Prosthodontics, [1,2]Saraswati Dental College, Lucknow, Uttar Pradesh, [3]Babu Banarasi Das Dental College, Lucknow, Uttar Pradesh, [4]Pacific Dental College, Udaipur, Rajasthan, India

*Corresponding Author: Nayar Islam
Email: dr.ortho.aj@gmail.com

Abstract

Aims and Objectives: The objectives of this research were to determine the influence of all previous dental treatment on the current oral health-related quality of life in geriatric patients and to assess the effect of the regularity of dental care in geriatric patients on oral health-related quality of life.

Materials and Methods: A population-based evaluation was carried out on subjects over the age of 60 who reported to the Department of Prosthodontics for 7 months. Self-perceived oral health was assessed using the Geriatric Oral Health Assessment Index (GOHAI) and the Oral Health Impact Profile (OHIP-14). Descriptive statistics were used to analyze data using SPSS version 21.

Result: The sample included 75 elderly people, 77% of whom were males and 23% women. The Regular Visit Group had 28 subjects, of which 22 (78%) were males and six (21%) were females. There were a total of 47 subjects in the Irregular Patient Group, of which 36 (76%) were males and 11 (22%) were females. In our study both GOHAI and OHIP-14 showed good reliability for measurement of OHRQoL (Oral Health-related Quality of Life). The GOHAI and OHIP-14 Hindi questionnaires were able to identify participants with impaired oral health. This study revealed that the regularity of receiving dental care affected OHRQoL in the geriatric group of the population.

Conclusion: The outcome of this research found out that the OHRQol perceived using both the GOHAI and OHIP-14 was better in patients who received dental care more regularly than those who did not.

Keywords: GOHAI and OHIP, OHRQoL.

Introduction

The age distribution of the population of the world is changing. The proportion of older people will continue to rise worldwide with advances in medicine and prolonged life expectancy. Elderly people are a special category in the population, not only because of the consequences of a particular disease and conditions but also because they often have limited access to medical care, including dental care.

Recent years have seen a shift in dentistry focus from only valuing clinical evaluations to measuring patients' subjective experiences. This shift in approach has led to a significant construction of 'Oral health-related quality of life (OHQoL)'. OHQoL is defined as "the impact of oral disease and disorders on aspects of everyday life that a patient or person values, that are of sufficient magnitude, in terms of frequency, severity or duration to affect their experience and perception of their life overall."[1]

Geriatric Oral Health Assessment Index (GOHAI) was originally developed to evaluate the self-reported oral health status of elderly people.[2] It could be used at the individual level to indicate the need for dental treatment, psychosocial and functional issues affecting the individual.

The Oral Health Impact Profile (OHIP) is developed with a view to providing an integrated measurement of reported oral dysfunction, discomfort and disability.[3] This measure would enhance estimates of the prevalence of oral functional problems among older people, enhance understanding of the psychological impact of oral disease and provide a means for comparing the effectiveness of various dental treatment modalities in older adults.

This study is performed to evaluate the influence of all past dental treatment on the present oral health-related quality of life in geriatric patients and to evaluate the impact of the regularity of receiving dental care on the oral health-related quality of life in geriatric patients.

Materials and Methods

A population-based geriatric evaluation was carried out on subjects over the age of 60. The topics in this study were community-dwelling and independently living people over the age of 60 who reported to the Department of Prosthodontics Crown and Bridge, for a period of 7 months.

Sample size estimation

Sample size estimation was done by using G Power software (version 3.0). The sample size was estimated for independent t-test (comparing the OHRQoL among subjects with regular and irregular dental visits)

A minimum total sample size of 72 was found to be sufficient for an alpha of 0.05, power of 95 %, 0.79 as effect size (assessed from a similar study). The sample size was further rounded off to 75.

Tests - Means: Two independent means difference (two groups)

Analysis: A priori: Compute the required sample size

Input:		
Tail(s) =		One
Effect size d =		0.7928167
α err prob =		0.05
Power (1-β err prob) =		0.95
Allocation ratio N2/N1 =		1

Output:

Noncentrality parameter δ =	3.363636
Critical t =	1.666914
Df =	70
Sample size group 1 =	36
Sample size group 2 =	36
Total sample size =	72
Actual power =	0.954102
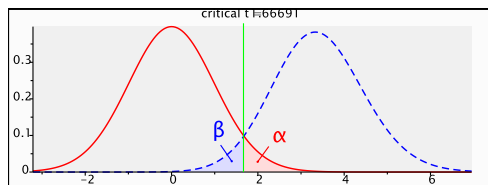
This study included 75 individuals with conventional dentures (maxillary and mandibular). The age of the patient ranged between 60-75 years. To be included in the study, participants should have no medical disease including mental problems and psychological disorders that might affect their ability to understand and/or to score the questionnaires, adults free from any systemic diseases which will affect oral functions, denture wearer and who did not have difficulty in recollecting history.

The institutional review board obtained ethical clearance. The patient's informed consent was obtained to participate in the study.

The GOHAI questionnaire

The GOHAI is used to report oral function problems and psychosocial impacts associated with oral diseases. The GOHAI's 12 items evaluate three dimensions: physical function, pain & discomfort, and psychosocial function.

1. Items 1, 2, 3 and 4 assess the physical function which impacts eating, speaking, and swallowing.
2. Items 6, 7, 9, 10 and 11 assess the psychosocial function that includes oral-dental health concerns, physical appearance dissatisfaction, oral-dental health self-awareness, and social contact difficulties due to dental and oral problems.
3. Items 5, 8 and 12 assess pain and discomfort, including the use of drugs to relieve pain in the oral-dental cavity.

Table 1: GOHAI questionnaire

नाम :   उमर / लिंग   बाह्य रोगी विभाग :

5 -पॉइंट लिकर स्केल

कमी नहीं (स्कोर 0)   शायद ही कमी (स्कोर 1)   कभी कभी (स्कोर 2)

प्राय (स्कोर 3)   अक्सर (स्कोर 4)

क्रं० सं०	गोहाई आईटम	(स्कोर रेंज, 0–4)
1	आपको कितनी बार अपने दांतों की समस्या के कारण खाने की प्रकृति या मात्रा में कमी करनी पड़ी।	
2	आपको कितनी बार कोई सख्त वस्तु जैसे मूंगफली, गाजर, सेब, मूली, या मांस काटने या चबाने में दिक्कत हुई।	
3	कितनी बार आप दांतों या कृत्रिम दांतों के राहत के बिना कठिनाई के निगल पायें।	
4	कितनी बार आप दांतों या कृत्रिम दांतों के कारण वैसे नहीं बोल सके जैसे आप चाहते थे।	
5	आप कितनी बार बिना कोई असुविधा महसूस किए कुछ खा सकें हैं।	
6	आपने कितनी बार अपने दांतों, मसूड़ों और कृत्रिम दांतों की दशा के कारण लोगों से मिलना जुलना कम कर दिया।	
7	आप कितनी बार अपने दांतों, मसूड़ों और कृत्रिम दांतों की बनावट से प्रसन्न या संतुष्ट हुए।	
8	आपने कितनी बार अपने दांतों, मसूड़ों और कृत्रिम दांतों की असुविधा या दर्द को दूर करने के लिये दवा ली।	
9	आपको कितनी बार अपने दांतों मसूड़ों और कृत्रिम दांतों संबंधी समस्याओं को लेकर चिंता या आशंका हुई।	
10	आपको कितनी बार अपने दांतों मसूड़ों या कृत्रिम दांतों की समस्या के कारण चिंतित या सचेत रहना पड़ा।	
11	आपको कितनी बार अपने दांतों मसूड़ों या कृत्रिम दांतों की समस्या के कारण दूसरों के सामने खाने में असहजता महसूस हुई।	
12	क्या आपके दांत गर्म, ठंडे या मीठे के प्रति संवेदनशील है।	

The OHIP-14 Questionnaire

The OHIP assesses the social impacts of oral disorders. The questionnaire evaluates dysfunction, discomfort, and disability caused by oral disorders OHIP-14's 14 items cover seven functional limitation dimensions, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and disability.

ITEMS:
1. 1 and 2 assess Functional Limitation.
2. 3 and 4 assess Physical Pain.
3. 5 and 6 assess Psychological Discomfort.
4. 7 and 8 assess Physical Disability.
5. 9 and 10 assess Psychological Disability.
6. 11 and 12 assess Social Disability.
7. 13 and 14 assess Handicap.

Patients are asked if they have Never, Hardly ever, Occasionally, Fairly often, Very often experienced any of those problems in the past three months. Questions were asked sometimes in a positive and sometimes in a negative way, which requires the respondent to consider their answers.

Table 2: OHIP-14 questionnaire

कभी नहीं (स्कोर 0)   शायद ही कभी (स्कोर 1)   कभी कभी (स्कोर 2)

प्राय (स्कोर 3)   अक्सर (स्कोर 4)

क्र० सं०	OHIP-14 प्रश्नावली	(स्कोर रेंज, 0–4)
1.	क्या आपको अपने दाँत, मुहँ, या बत्तिस की समस्याओं की वजह से शब्द उच्चारण में परेशानी होती है।	
2.	क्या आपको अपने दाँत, मुहँ, या बत्तिस की समस्याओं की वजह से लगा कि आपका स्वाद का अहेसास खराब हो गया है।	
3.	क्या अपके मुँह में दंदनाक दँद हुआ है।	
4.	क्या आपको अपने दाँत, मुहँ, या बत्तिस की समस्याओं की वजह से अपने आपको किसी भी खाद्य पदार्थ खाने के लिये असहज पाया है।	
5.	क्या आपको अपने दाँत, मुहँ, या बत्तिस की समस्याओं की वजह से अपने आपको स्वयं के प्रतिसजग पाया है।	
6.	क्या आपको अपने दाँत, मुहँ, या बत्तिस के साथ समस्याओं की वजह से तनाव महसूस किया है।	
7.	क्या आपको अपने दाँत, मुहँ, या बत्तिस के साथ समस्याओं की वजह से आपका आहार असंतोषजनक रहा है।	
8.	क्या आपको अपने दाँत, मुहँ, या बत्तिस के साथ समस्याओं की वजह से भोजन रोकना पड़ा है।	
9.	क्या आपको अपने दाँत, मुहँ, या बत्तिस के साथ समस्याओं की वजह से आराम करने में मुश्किल हुई है।	
10.	क्या आपको अपने दाँत, मुहँ, या बत्तिस के साथ समस्याओं की वजह से एकसा शर्मिंदा हुए है।	
11.	क्या आपको अपने दाँत, मुहँ, या बत्तिस के साथ समस्याओं की वजह से अन्य लोगों के साथ चिड़चिढ़े से हो गये है।	
12.	क्या आपको अपने दाँत, मुहँ, या बत्तिस के साथ समस्याओं की वजह से अपने सामान्य काम करने में कठिनाई हो रही है।	
13.	क्या आपने महसूस किया है कि सामान्य रूप में जीवन अपने दाँत, मुँह या बत्तिसि के साथ समस्याओं की वजह से कम संतोषजनक था।	
14.	क्या आप पूरी तरह से अपने दांत, मुंह श बत्तिसि के साथ समस्याओं की वजह से काम करने में असमर्थ हो गये है।	

The total scores range from 12 to 60 for the ADD-GOHAI and from 14 to 70 for the ADD-OHIP-14 with a higher score indicating better oral health. Simple count scores (SC-GOHAI or SC-OHIP-14) are obtained by counting' sometimes," often' or' always / very often' responses to the number of items. Using this approach, the scores for the SC-GOHAI and the SC-OHIP-14 range from 0 to 12 and 0 to 14 with a higher score indicating poor oral health respectively.

Data collection

OHRQoL data were gathered by using the Hindi versions of GOHAI and OHIP-14, which were self-administered followed by a clinical oral examination performed by a single dentist in the outpatient department using sterilized instruments.

The questionnaire also included socio-demographic data such as age, gender. Participants were also asked about the regularity of receiving dental care and then divided into two different groups, patients who received dental care 6 monthly were put in the REGULAR group and the remaining in the IRREGULAR group.

Data analysis

The data collected was entered into the excel sheet using Microsoft Excel Software by the examiner. Then this data was transferred to Statistical Package for Social Sciences

(SPSS) version 21, IBM Inc. for analysis. It was subjected to descriptive statistics for calculation of mean, standard deviation, absolute and relative frequencies. Presentation of data was done using Tables and Graphs. Normality of data related to interval or ratio variables was checked by the Shapiro Wilk test.

As data was found to be normally distributed parametric tests of significance were used. The Independent t-test was used for comparing the mean between two groups. Chi-square test was used for categorical variables. A level of significance was set at 0.05.

Result

1. Seventy-five participants were recruited from the Department of Prosthodontics. All participants answered the self-administered questionnaires and were clinically examined. The majority of participants were men 58 (77%) and women 17 (22%).

2. The Regular Visit Group had a total of 28 subjects, of which 22 (78%) were males and 6 (21%) were females. There were a total of 47 subjects in the Irregular Patient Group, of which 36 (76%) were males and 11 (22%) were females. Therefore, the study sample consisted of a total of 58 males and 17 females. (Table 3)

Table 3: Group wise distribution of the study population according to *gender*

			Gender		Total
			Males	**Females**	
Groups	**Regular**	N	22	6	28
		%	78.6%	21.4%	100.0%
	Irregular	N	36	11	47
		%	76.6%	23.4%	100.0%
Total		N	58	17	75
		%	77.3%	22.7%	100.0%

a. Group of patients on regular visits according to age distribution were-sixteen patients aged between 60 and 65, six were aged between 66 and 70, four were aged between 71 and 75, and two were aged between 76 and 80.

b. In the group of patients visiting irregularly- eight patients were aged 60-65, seventeen were aged 66-70, twenty were aged 71-75 and two were aged 76-80. Therefore there were twenty four subjects in the age group of 60-65, twenty three in the age group of 66-70, twenty four in the age group of 71-75 and four in the age group of 76-80. (Table 4)

Table 4: Group distribution of the study population by age.

			Age				Total
			60-65 years	66-70 years	71-75 years	76-80 years	
Groups	**Regular**	Count	16	6	4	2	28
		% within GROUPS	57.1%	21.4%	14.3%	7.1%	100.0%
	Irregular	Count	8	17	20	2	47
		% within GROUPS	17.0%	36.2%	42.6%	4.3%	100.0%
Total		Count	24	23	24	4	75
		% within GROUPS	32.0%	30.7%	32.0%	5.3%	100.00%
P Value		0.068 NS					

a. The responses to the different questions of the GOHAI regular group and GOHAI irregular group are listed Tables 5 and 6. Within the GOHAI regular group physical function were frequent for item 1(35.7%) reported sometimes. On the other hand, a small number of participants (3.6%) reported always for item 10 nervous or self-conscious because of problems with your teeth, gums, or dentures (Psychosocial impacts).

b. Within the GOHAI irregular group, physical function was frequent for item 1 (48.9%) reported often. On the other hand, a small number of participants 4.3% reported always for item 6 (Psychosocial impacts). Item 12 (teeth or gums sensitive to hot, cold, or sweets) was mentioned by 0.00% of the participants of both GOHAI regular and GOHAI irregular group.

Table 5: Item wise GOHAI response in Regular patient group

GOHAI		Never	Seldom	Sometimes	Often	Always
Q1	N	4	5	10	7	2
	%	14.3%	17.9%	35.7%	25.0%	7.1%
Q2	N	5	4	9	6	4
	%	17.9%	14.3%	32.1%	21.4%	14.3%
Q3	N	7	11	6	2	2
	%	25.0%	39.3%	21.4%	7.1%	7.1%
Q4	N	14	4	7	2	1
	%	50.0%	14.3%	25.0%	7.1%	3.6%
Q5	N	2	10	7	5	4
	%	7.1%	35.7%	25.0%	17.9%	14.3%
Q6	N	7	12	5	2	2
	%	25.0%	42.9%	17.9%	7.1%	7.1%
Q7	N	9	5	11	2	1
	%	32.1%	17.9%	39.3%	7.1%	3.6%
Q8	N	11	9	4	3	1
	%	39.3%	32.1%	14.3%	10.7%	3.6%
Q9	N	12	8	5	2	1
	%	42.9%	28.6%	17.9%	7.1%	3.6%
Q10	N	14	4	7	2	1
	%	50.0%	14.3%	25.0%	7.1%	3.6%
Q11	N	9	4	8	5	2
	%	32.1%	14.3%	28.6%	17.9%	7.1%
Q12	N	28	0.00	0.00	0.00	0.00
	%	100 %	0.00%	0.00%	0.00%	0.00%

Q1. Limit the kinds of food -Maximum subjects (35.7%) reported sometimes.
Q2. Trouble biting or chewing -Maximum subjects (32.1%) reported sometimes.
Q3. Able to swallow comfortably -Maximum subjects (39.3%) reported seldom.
Q4. Problems to speak clearly -Maximum subjects (50%) reported never.
Q5. Discomfort when eating any kind of food -Maximum subjects (35.7%) reported seldom.
Q6. Limit contact with people -Maximum subjects (42.9%) reported seldom.
Q7. Pleased with look of teeth -Maximum subjects (32.1%) reported never.
Q8. Used medication to relieve pain -Maximum subjects (39.3%) reported never.
Q9. Worried about teeth, gums or dentures -Maximum subjects (42.9%) reported never.
Q10. Self-conscious of teeth, gums or dentures -Maximum subjects (50 %) reported never.
Q11.Uncomfortable eating in front of others -Maximum subjects (28.6%) reported sometimes
Q 12. Sensitive to hot, cold or sweet foods -Maximum subjects (100%) reported never.

Table 6: Item wise GOHAI response in the IRREGULAR patient group

GOHAI		Never	Seldom	Sometimes	Often	Always
Q1	N	4	3	11	23	6
	%	8.5%	6.4%	23.4%	48.9%	12.8%
Q2	N	3	5	14	21	4
	%	6.4%	10.6%	29.8%	44.7%	8.5%
Q3	N	22	4	11	8	2
	%	46.8%	8.5%	23.4%	17.0%	4.3%
Q4	N	20	10	12	2	3

		42.6%	21.3%	25.5%	4.3%	6.4%
	%	42.6%	21.3%	25.5%	4.3%	6.4%
Q5	N	4	5	9	20	9
	%	8.5%	10.6%	19.1%	42.6%	19.1%
Q6	N	25	6	10	4	2
	%	53.2%	12.8%	21.3%	8.5%	4.3%
Q7	N	21	6	4	10	6
	%	44.7%	12.8%	8.5%	21.3%	12.8%
Q8	N	15	11	9	10	2
	%	31.9%	23.4%	19.1%	21.3%	4.3%
Q9	N	22	7	12	4	2
	%	46.8%	14.9%	25.5%	8.5%	4.3%
Q10	N	19	5	14	6	3
	%	40.4%	10.6%	29.8%	12.8%	6.4%
Q11	N	18	11	5	9	4
	%	38.3%	23.4%	10.6%	19.1%	8.5%
Q12	N	47	0.00	0.00	0.00	0.00
	%	100%	0.00%	0.00%	0.00%	0.00%

a. The responses to the different questions of the OHIP-14 regular group and OHIP-14 irregular group are listed Tables 7 and 8. Within the OHIP-14 regular group, physical disability was frequent for item 7 (42.9%) reported **sometimes**. On the other hand, a small number of participants (3.6%) reported always for item 10 (embarrassed because of problems with your teeth, mouth or dentures).

b. Physical disability was frequently reported for item 7 (42.6 percent) within the irregular OHIP-14 group. On the other hand, a small number of participants (2.1%) reported always for item 10 (embarrassed because of problems with your teeth, mouth or dentures).

Table 7: Item wise OHIP response in Regular patient group.

OHIP		Never	Seldom	Sometimes	Often	Always
Q1	N	14	7	4	2	1
	%	50.0%	25.0%	14.3%	7.1%	3.6%
Q2	N	6	7	9	4	2
	%	21.4%	25.0%	32.1%	14.3%	7.1%
Q3	N	12	8	4	3	1
	%	42.9%	28.6%	14.3%	10.7%	3.6%
Q4	N	7	5	11	3	2
	%	25.0%	17.9%	39.3%	10.7%	7.1%
Q5	N	12	5	7	2	2
	%	42.9%	17.9%	25.0%	7.1%	7.1%
Q6	N	13	8	4	2	1
	%	46.4%	28.6%	14.3%	7.1%	3.6%
Q7	N	5	6	12	3	2
	%	17.9%	21.4%	42.9%	10.7%	7.1%
Q8	N	5	8	11	3	1
	%	17.9%	28.6%	39.3%	10.7%	3.6%
Q9	N	12	7	4	2	3
	%	42.9%	25.0%	14.3%	7.1%	10.7%
Q10	N	14	4	6	3	1
	%	50.0%	14.3%	21.4%	10.7%	3.6%
Q11	N	15	7	5	1	0
	%	53.6%	25.0%	17.9%	3.6%	0.00%
Q12	N	16	6	4	2	0
	%	57.1%	21.4%	14.3%	7.1%	0.00%
Q13	N	12	3	9	3	1
	%	42.9%	10.7%	32.1%	10.7%	3.6%
Q14	N	21	5	1	1	0
	%	75.0%	17.9%	3.6%	3.6%	0.00%

Q1.Have you had trouble pronouncing any words because of problems with your teeth or mouth? – Maximum subjects (50 %) reported never.

Q2. Have you felt that your sense of taste has worsened because of problems with your teeth or mouth? - Maximum subjects (31.2 %) reported sometimes.

Q3. Have you had painful aching in your mouth? Maximum subjects (42.9 %) reported never.

Q4. Have you found it uncomfortable to eat any food because of problems with your teeth or mouth? Maximum subjects (39.3 %) reported sometimes.

Q5. Have you been self-conscious because of your teeth or mouth? - Maximum subjects (42.5 %) reported never.

Q6. Have felt tense because of the problem with your teeth or mouth? Maximum subjects (46.4 %) reported never.

Q7. Has your diet been unsatisfactory because of problems with your teeth or mouth? Maximum subjects (42.9 %) reported sometimes

Q8. Have you had to interrupt meals because of problems with your teeth or mouth? Maximum subjects (39.3%) reported sometimes.

Q9. Have you found it difficult to relax because of problems with your teeth or mouth? Maximum subjects (42.9 %) reported never.

Q10. Have you been embarrassed because of problems with your teeth or mouth? Maximum subjects (50 %) reported never.

Q11. Have you been a bit irritable with other people because of problems with your teeth or mouth? Maximum subjects (53.6 %) reported never.

Q12. Have you had difficulty doing your usual job because of problems with your teeth or mouth? Maximum subjects (57.1 %) reported never.

Q13. Have you felt that life, in general, was less satisfying because of problems with your teeth or mouth? Maximum subjects (32.1 %) reported sometimes.

Q14. Have you been totally unable to function because of problems with your teeth or mouth Maximum subjects (75 %) reported never?

Table 8: Item wise OHIP response in Irregular patient group

OHIP		Never	Seldom	Sometimes	Often	Always
Q1	N	18	13	8	6	2
	%	38.3%	27.7%	17.0%	12.8%	4.3%
Q2	N	10	4	18	10	5
	%	21.3%	8.5%	38.3%	21.3%	10.6%
Q3	N	12	6	16	9	4
	%	25.5%	12.8%	34.0%	19.1%	8.5%
Q4	N	6	5	11	18	7
	%	12.8%	10.6%	23.4%	38.3%	14.9%
Q5	N	19	5	14	7	2
	%	40.4%	10.6%	29.8%	14.9%	4.3%
Q6	N	20	11	11	5	0
	%	42.6%	23.4%	23.4%	10.6%	0.00%
Q7	N	4	6	9	20	8
	%	8.5%	12.8%	19.1%	42.6%	17.0%
Q8	N	2	6	15	19	5
	%	4.3%	12.8%	31.9%	40.4%	10.6%
Q9	N	19	12	10	4	2
	%	40.4%	25.5%	21.3%	8.5%	4.3%
Q10	N	17	13	10	6	1
	%	36.2%	27.7%	21.3%	12.8%	2.1%
Q11	N	8	32	6	1	0.00
	%	17.0%	68.1%	12.8%	2.1%	0.00%
Q12	N	28	6	11	1	1
	%	59.6%	12.8%	23.4%	2.1%	2.1%
Q 13	N	15	10	11	5	6
	%	31.9%	21.3%	23.4%	10.6%	12.8%
Q14	N	32	10	4	1	0.00
	%	68.1%	21.3%	8.5%	2.1%	0.00%

Groupwise distribution of MEAN OHIP AND GOHAI scores. When mean OHIP scores were compared using independent t-test among regular and irregular visit group, QoL was found to be better among subjects with a regular dental visit (p<0.05). When QoL was compared using GOHAI scores, it failed to reach the level of statistical significance (p>0.05) (Table 9).

Table 9: Groupwise distribution of MEAN OHIP AND GOHAI scores

Group Statistics						
	Groups	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**	**P-value**
OHIP	Regular	28	15.6429	4.63652	.87622	<0.0001 S
	Irregular	47	20.3191	4.56407	.66574	
GOHAI	Regular	28	15.4286	4.88708	.92357	< 0.103 NS
	Irregular	47	17.4043	5.08476	.74169	

Discussion

The purpose of this study was to examine the effect of all previous dental treatments on the current oral health-related quality of life (OHRQoL) and the effect of the regularity of receiving dental care on the OHRQoL in geriatric patients using the GOHAI Hindi version[4] and OHIP-14 Hindi version.[5] The GOHAI and OHIP-14 questionnaires were selected for this study as they are short allowing higher response rates.[6]

Hindi is a standardized register of the Indian subcontinent and is the official language of the Republic of India[7]. In our study, seventy-five Hindi speaking individuals above the age of sixty years with conventional dentures (maxillary and mandibular) were asked to fill the GOHAI Hindi AND OHIP-14 Hindi. They were also asked about the regularity of them receiving dental care.

Past studies have reported on specific types of dental treatment in comparing OHRQoL after treatment with conventional dentures and implants.[8] However, there is sparse literature on the impact of past dental treatment (complete denture) and routine dental care on the geriatric population. Locker[7] did report deterioration and improvement in the oral status and observed improvement in pain and chewing oral health indexes. Fisher et al only reported the recovery from an oral disadvantage but did not measure the impact (improvement or deterioration) in OHRQoL.

In our study both GOHAI AND OHIP-14 showed good reliability for measurement of OHRQoL. The GOHAI and OHIP-14 Hindi questionnaires were able to identify participants with impaired oral health.The GOHAI and OHIP-14 are similar measures but there are many differences in their item content that can affect their ability to detect the health-related quality of life outcomes. The present results are per previous studies which showed that GOHAI is more successful than OHIP-14 at detecting the oral function problems.[6]

In this study, more number of individuals in the irregular group reported the problem in eating (Physical Function) 48.9% reported often which was more than the individuals in regular group 35.7% reported sometimes. Physical function was most often affected domain of the GOHAI and Physical disability of the OHIP-14 was most affected, reflecting the functional needs of these geriatric patients. "Limit the type of food" and "trouble biting/chewing" were the most frequently reported problems. These findings were similar to the study done by Sarah M. Osman et al.[7]

Psychosocial impacts such as "limit contact with other", "worried", "nervous" and "medication for pain" were the least reported oral problems. Our result provides additional support to Locker's theoretical model of oral health, which indicates that social disability and handicap are least frequent. OHRQoL was found to be better among subjects with a regular dental visit in our study than the irregular group.

This study revealed that the regularity of receiving dental care affected OHRQoL in the geriatric group of population. To best of our knowledge, there is no such study done which shows the effect of the past dental treatments (denture wearer) and impact of regularity on the OHRQoL in Geriatric patients. Therefore, comparisons with the results of the other studies will be limited.

The study has some limitations especially the small sample size and the population was limited to a particular area. The result cannot be applied to elderly living in other parts of the country. Also, Evaluation of the dentures was not done, factors such as retention, stability and aesthetic may have influenced the individual's responses to both questionnaires.

Conclusion

The results of this study concluded that the perceived OHRQoL for both GOHAI and OHIP-14 was better in patients who received dental care more regularly than those who did not. GOHAI and OHIP-14 had a strong correlation. According to the measures obtained in both the questionnaire, the relationship between variables such as regularity of dental care and OHRQoL can be similarly assessed.

The most frequently affected physical function and physical disability and the least reported oral problems were psychosocial impacts and psychological disability. They showed a statistically significant difference (p<0.05).

This result can serve the geriatric population if policies that support their well-being and social contributions are put in place.

References

1. D Locker, Allen F. What do measures of 'oral health-related quality of life' measure? *Community Dent Oral Epidemiol.* 2007;35(6):401-11.
2. Kathyrn AA, Teressa AD. Development of geriatric oral health assessment index. *J Dent Educ.* 1990;54(11):680-7.
3. Miyazaki H. Oral health conditions and denture treatment needs in institutionalized elderly people in Japan. *Community Dent Oral Fpidemiol.* 1992;20(5):297-301.
4. Tubert-Jeannin S, Riordan PJ, Morel-Papernot A, Porcheray S, Saby-Collet S. Validation of oral health quality of life index (GOHAI) in France. *Community Dent Oral Epidemiol.* 2003;31(4)275:84.

5. Reissmann DR, Dent M. Alignment of oral health-related with health-related quality of life assessment. *J Prosthodont Res.* 2016;60(2):69-71.
6. Chaudhary A, Ingle N, Kaur N, Dhankar K. Geriatric Dentistry: A Review. J Oral Health Community Dent. 2013;7(3):170-3.
7. Locker D. Does dental care improve the oral health of older adults? *Community Dent Health.* 2001:18(1):7-15.
8. 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. *Gerodontol.* 2010;27(3)167-73.