ISSN: 2091-2331 (PRINT) 2091-234X (ONLINE)

Journal of Nobel Medical College

Available Online: www.nepjol.info, www.nobelmedicalcollege.com.np

Volume 6, Number 1, Issue 10, January-June 2017, 77-82

Original Article

Comparison of Oral Health Related Quality of Life (OHRQoL) in Hypodontia Patients and Patients with Acquired Missing Teeth

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Received: 12th May, 2017; Revised after peer-review: 18th June,2017; Accepted: 7th July, 2017

Abstract

Background:

Hypodontia is the developmental absence of one or more teeth from the dentition whereas acquired missing teeth are those lost due to carries, periodontal problem or dental trauma. Patients with congenitally missing teeth suffer aesthetic, functional and psychological morbidity to various degree through childhood, adolescence and adulthood. Greater understanding of the impact of hypodontia on patient's quality of life is very important. Oral health related quality of life (OHRQoL) is considered as an outcome measure to evaluate the consequences of edentulism and the available treatment options.

Material and Methods:

A cross-sectional comparative survey was carried out in the department of Prosthodontics, de'Montmorency College of Dentistry/Punjab Dental Hospital Lahore from 02/03/2010 to 01/09/2010. Total 80 partially dentate patients were studied which included 40 hypodontia patients and 40 patients with acquired missing teeth. All patients were given OHIP-14 questionnaire and responses were recorded on 5-point Likert scale. The mean scores of the two groups were calculated and compared using chi square test.

Results:

The total OHIP scores in hypodontia patients was more compared to that in patients with acquired missing teeth and difference was significant in the patient group with 4-5 missing teeth.

Conclusion:

As the missing teeth number increased, it was found that the OHRQoL in hypodontia patients was more impaired compared to the OHRQoL in patients with acquired missing teeth.

Keywords: *Hypodontia, Oral Health Related Quality of Life (OHRQoL), Oral Health Impact Profile (OHIP).*

Introduction:

The causes of tooth loss can be either acquired or congenital. Hypodontia is the term used to describe the developmental absence of one or more teeth from the dentition, excluding the third molars and constitutes one of the most common anomalies in human [1]. Lack of one or two permanent teeth, with no associated systemic disorders, is the mildest and the

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most common phenotype. Prevalence of hypodontia ranges from 2.6-11.3% [2].

Teeth have an important role in facial appearance, speech and eating ability. Hence, patients with congenitally missing teeth suffer aesthetic, functional and psychological morbidity to various degree[3]. Along with missing teeth, these patients suffer characteristic changes in teeth, alveolar volume deficiencies and skeletal jaw mal-relationships [3]. Hence the functional and psychosocial impact is more profound in these patients [4].

Oral health related quality of life (OHRQoL) has been considered as an outcome measure to assess the consequences of missing teeth and available treatment options [5]. It provides an insight into the potential consequences of edentulism to the daily lives of patients and hence facilitates understanding of its importance in the providing oral health services [5].

Oral Health Impact Profile (OHIP) is one of the most comprehensive instruments used to measure OHRQoL. It comprises of 49 item questionnaires with statements divided into seven conceptually formulated dimensions (functional limitation, physical pain, psychological discomfort, physical, psychological and social disability and handicap) [6-7]. The fourteen-item short form (OHIP-14) was later developed for the setting where full set of 49 questionnaires was inappropriate [8].There is overwhelming evidence showing the negative effect of acquired tooth loss on OHRQoL [9-11]. But the available information on OHRQoL in patients with hypodontia is scarce. Wong et al[5] in a study concluded that severe hypodontia considerably impacts OHRQoL. Hence the aim of the study was to compare the OHRQoL in patients with hypodontia and patients with acquired missing teeth.

Material and Methods:

The study sample was 80 with two groups of 40 each. Hypodontia patients were included in Group A and patients with acquired missing teeth in Group B. These patients were recruited from the outdoor of department of Prosthodontics, Punjab Dental Hospital. Informed consent was taken for each subject and they were asked to fill a questionnaire eliciting information on demographic factors. In addition, a self-administered questionnaire called OHIP-14 (Annexure 1) was used to measure OHRQoL. The questionnaire consisted of 14 questions.

Responses were made on 5-point Likert scale and coded as (0 = never: 1 = hardly ever: 2 = occasionally: 3 = fairly often: 4 = very often). The scores on Likert scale is inversely proportional to the improvement in OHRQoL.

The criteria for inclusion in the study were patients between 15 and 30 years of age and with less than 6 missing teeth (hypodontia and acquired missing teeth patients assessed clinically, radiographically and by history). Exclusion criteria were patients who were edentulous in one arch and partially dentate in opposing arch and those who were unable to understand the questionnaire.

Statistical analysis:

SPSS software version 11 was used to analyze the data. Age and OHRQoL was presented using mean and standard deviation and gender by frequency and percentage. The results were presented in tabular form and the two groups compared for OHRQoL scores by using chi square test. P-values ≤ 0.05 was considered to be significant. Total OHIP score was stratified for number of missing teeth (≤ 3, > 3) to address effect modifier.

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Results:

The mean age of hypodontia patients was 22.2 ± 4.66 years and that of acquired missing teeth patient was 25.2±4.08. In the hypodontia group, there were 13 males and 37 females whereas in the acquired missing teeth group, there were 18 males and 22 females.

In patients with 1-3 missing teeth, total OHIP score in hypodontia group was 13.59±7.10 and that in patients with acquired missing teeth was 11.10±5.11 with no significant difference between the two groups.

In patients with 4-6 missing teeth, total OHIP scores in hypodontia patients was 22.74±7.62 and that in patients with acquired missing teeth was 12.20±5.06 with a significant difference found between the two groups (Table 1).

In the analysis of the questions, it was found that there was no significant difference between the hypodontia patients and acquired missing teeth patients in the domain of functional limitation, physical pain, physical disability, social disability and handicap (Table 2,3,5,7,8,9) . However significant difference was found in the domain of psychological discomfort and psychological disability between the two groups, the impact being more in the hypodontia patients (Table 4, 6).

Table 1: Comparison of ohrqol in hypodontia patients and patients with acquired missing teeth

Number of missing teeth	Missing teeth	Total patients	Total score	Level of significance
1-3 teeth missing	Hypodontia	17	13.59± 7.107	0.225 (not significant)
	Acquired missing teeth	20	11.10± 5.119	
4, 5 teeth missing	Hypodontia	23	22.74± 7.623	0.000 (significant)
	Acquired missing teeth	20	12.20± 5.064	

Table 2. Functional limitation

Responses	Question 1		Question 2	
	Trouble pronouncing words		Taste worse	
	Hypodontia patients	Acquired missing teeth patients	Hypodontia patients	Acquired missing teeth patients
Never	12	20	34	38
Hardly ever	5	8	4	2
Occasionally	16	9	1	0
Fairly often	5	2	1	0
Very often	2	1	0	0
P value	0.180		0.409	

Table 3. Physical pain

Responses	Question 3		Question 4	
	Painful aching		Uncomfortable to eat food	
	Hypodontia patients	Acquired missing teeth patients	Hypodontia patients	Acquired missing teeth patients
Never	17	21	8	12
Hardly ever	13	10	16	5
Occasionally	9	9	9	15
Fairly often	1	0	5	7
Very often	0	0	2	1
P value	0.612		0.068	

Table 4. Psychological discomfort

Responses	Question 5		Question 6	
	Felt conscious		Felt tense	
	Hypodontia patients	Acquired missing teeth patients	Hypodontia patients	Acquired missing teeth patients
Never	2	4	3	7
Hardly ever	3	5	5	5
Occasionally	9	19	6	12
Fairly often	12	12	7	10
Very often	14	0	19	3
P value	0.001 (significant)		0.002 (significant)	

Table 5. Physical disability

Responses	Question 7		Question 8	
	Unsatisfactory diet		Interrupted meals	
	Hypodontia patients	Acquired	Hypodontia patients	Acquired

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		missing teeth patients		missing teeth patients
Never	5	7	17	19
Hardly ever	8	13	15	11
Occasionally	12	13	6	9
Fairly often	11	7	1	1
Very often	4	0	1	0
P value	0.168		0.676	

Table 6. Psychological disability

Responses	Question 9		Question 10	
	Difficult to relax		Felt embarassed	
	Hypodontia patients	Acquired missing teeth patients	Hypodontia patients	Acquired missing teeth patients
Never	6	23	6	15
Hardly ever	12	10	2	8
Occasionally	12	5	9	8
Fairly often	9	2	16	7
Very often	1	0	7	2
P value	0.001 (significant)		0.008 (significant)	

Table 7. Social disability

Responses	Question 11		Question 12	
	Irritable with others		Difficulty doing job	
	Hypodontia patients	Acquired missing teeth patients	Hypodontia patients	Acquired missing teeth patients
Never	35	39	33	39
Hardly ever	2	1	6	1
Occasionally	2	0	0	0
Fairly often	1	0	1	0
Very often	0	0	0	0
P value	0.149		0.135	

Table 8. Handicap

Responses	Question 13		Question 14	
	Less satisfying life		Unable to function	
	Hypodontia patients	Acquired missing teeth patients	Hypodontia patients	Acquired missing teeth patients
Never	25	30	35	38
Hardly ever	11	8	4	2
Occasionally	2	2	1	0
Fairly often	2	0	0	0
Very often	0	0	0	0
P value	0.201		0.409	

Discussion:

The study compared OHRQoL of hypodontia patients with acquired missing teeth patients as both groups represent partially dentate subjects with similar treatment needs. The prevalence of severe hypodontia is very less. Fowler et al [12] in a study found the prevalence of severe hypodontia to be less than 1%. Hence patients with mild to moderate hypodontia (<6 missing teeth) has been included in this study.

Among the various oral health status measures available for measuring OHRQoL, OHIP is one of the most widely used questionnaire. Studies by Maria et al [13], Mike et al [14] and Ozahayt et al [15]have used OHIP to assess OHRQoL in patients with missing teeth. In this study also, OHIP has been used to assess the QOL between hypodontia and acquired missing teeth patients. Patients aged 15-30 was included in the study as these age group patients would have better understanding of the questionnaire.

In patients with 4-5 missing teeth, significant difference was found in the total OHIP scores between hypodontia and acquired missing teeth patients with the OHRQoL being more impaired in the hypodontia group. As the severity of hypodontia increases, the functional and psychosocial problems which these patients face also increases, hence the impact on QOL also increases. Studies by Wong et al [5] and Ide et al [9] support this finding in which they found a strong correlation between number of missing teeth and higher OHIP scores.

In the analysis of the questionnaire, significant difference was found between the two groups in the domain of psychological discomfort and psychological disability with the scores being more for hypodontia patients. The reason could be that hypodontia patients suffer the impact of missing teeth through their early

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childhood which might affect their self-esteem, self-confidence and their psychosocial wellbeing. The range of problems that these patients face is greater as the remaining teeth present maybe malformed, malaligned and the condition maybe associated with a syndrome. Study by Wong et al [5] supports this finding in which he assessed the OHRQoL impact among children with severe hypodontia using CPQ and he found that majority of them (88 %) reported OHRQoL impact in the psychological domain.

No significant difference was found in the domain of functional limitation, physical pain, physical disability, social disability and handicap between the two groups. The reason could be that both groups represent partially dentate subjects with less than 6 missing teeth, hence the degree of problem encountered by these patients with regards to speech, taste alteration, painful aching of jaws, difficulty in eating, unsatisfactory diet, dissatisfaction with life and inability to function could have been similar.

Conclusion:

The study found an impaired OHRQoL in hypodontia patients compared to acquired missing teeth patients as the number of missing teeth increased. The domain of psychological discomfort and psychological disability was more affected in the hypodontia group, thus suggesting that the psychosocial impact is more in this group. There is a wealth of research into the prevalence and probable etiology of hypodontia but there has been little understanding of how hypodontia affects the person functionally, socially and emotionally. Vast number of studies have been done on OHRQoL in patients with acquired missing teeth but there are hardly any studies done on OHRQoL in hypodontia patients. Hence, this study thus highlights the importance of understanding the impact of hypodontia on quality of life.

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