Original Article

Evaluation of Patient Satisfaction with Existing Complete Dentures for Those Patients Attending College of Dentistry/ University of Sulaimani

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Abstract

Objective: This study was conducted to investigate the impact on Oral Health-Related Quality of Life (OHRQoL) among complete denture wearers and to inspect any impact differences between males and females denture wearers.

Methods: The study sample involved 100 complete denture wearers' (55 males and 45 females) aged between 40-74 years, who attended the Department of Prosthodontics, College of Dentistry, University of Sulaimani. All of the participants Interviewed directly by the researcher to answer the Oral Health Impact Profile questionnaire (OHIP-EDENT-19) to assess the prevalence of impacts using three answering scales:1= never, 2= sometimes, 3=almost always. Socio-demographic information was gathered. Data were submitted to statistical analysis (chi-square test, $P \leq 0.05$).

Results: The majority of participants chose score-2 (sometimes) in answering questions regarding functional limitation, physical pain, physical and psychological disability (58% - 72%). While score-1 (never) was the answer to social disability questions (69%) and score-3 (almost always) was the response of participants to consider wearing a complete denture is a handicap (46%). There were insignificant differences between both sexes in the majority of responses. However, Females were significantly more anxious than males ($P > 0.05$) in answering specific questions regarding self-consciousness, embarrassment, and avoid going out.

Conclusions: Conventional complete dentures bring negative impacts in the OHRQoL of elderly patients, mainly concerning physical pain and functional limitation, followed by handicap, physical disability, psychological discomfort. The least negative impact was on social and psychological disabilities. The most encountered problems by females than males were Psychological discomfort, psychological disability, and social disability.

Keywords: *Complete denture, Oral Health Impact Profile (OHIP), Oral Health-Related Quality of Life (OHRQoL), patient satisfaction.*

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Introduction

Although the prevalence of complete tooth loss has declined over the last decades, edentulism remains a major disease worldwide, especially among older adults[1]. The lack of all teeth contributes to disability, impairment, and handicap[2]. Despite an increase in dental implants' use to treat edentulousness, rehabilitation with conventional complete dentures remains the most accessible treatment option[3], mainly because of economic reasons, aesthetically acceptable, and easy to clean[4,5].

It has been documented that the clinical indicator of oral health status alone for patients receiving prosthetic treatment might not be sufficient. The patients' perceived needs and preferences should be included to provide a more comprehensive and multidimensional assessment of a patient's oral health condition[6,7]. A dentist must estimate this therapy's influence on the patient's general health and life quality, besides just resolving the oral disease. Some studies in edentulous subjects strongly support the concept of patient-based measures to be more reliable than clinical measures to capture the functional and psychological aspects[8,9]. It is preferred mainly because of the tools' simplicity, low cost, and lack of need for special equipment[10].

It was observed that the preferred tool to measure the individual's perception of the social impact of oral health was the Oral Health Impact Profile (OHIP) questionnaire[11,12], which was developed and validated by Slade and Spencer (1994)[13] and has been validated in cross-sectional population studies. The OHIP is valid and reliable in assessing the impact of oral conditions by documenting social impact among individuals and groups, understand oral health behaviors, and evaluate dental treatment. In addition, it provides information for planning for oral health and helps eradicate oral health inconsistencies. OHIP has been assessed for reliability and validity in different cultures and translated into various languages to accommodate social, cultural, and economic variations[13-15]. Originally, it consists of 49 items organized into seven subscales: functional limitation, physical discomfort, psychological discomfort, physical disability, psychological disability, social disability, and handicap.

Some shorter or population-specific versions were further proposed, such as the OHIP-14 and the OHIP-EDENT. The OHIP-14 is a reduced version of the OHIP-49, composed of only 14 questions to accelerate the application and acceptance of the survey. However, due to limitations of the OHIP-14, such as the lack of questions that approached the masticatory function and questions that could measure alterations in the perception of oral health after the rehabilitation with dentures, a specific instrument aimed toward edentulous individuals was developed. Thus, the OHIP-Edent has been designed to assess edentulous individuals, to detect OHRQoL (Oral Health-Related Quality of Life) changes affected by the clinical aspects of edentulousness and associated treatments. It is composed of 19 questions, maintaining the seven original theoretical domains of the OHIP-49. It can measure changes in the OHRQoL of complete denture wearers after inserting new dentures as accurately as OHIP-49[16-19].

The replacement of complete dentures would appear to impact OHRQoL, and factors related to patient denture satisfaction play important roles in its improvement. Many studies found that subjects who required and received new conventional complete dentures that are well designed and constructed showed a significant improvement in OHRQoL within either a short or a long time after the replacement of complete dentures[19-21]. Yet there are a group of patients who remain dissatisfied despite the clinical perfection of their prostheses[22]. Complaints commonly relate to pain, pressure, looseness, poor function, and appearance[23,24]. In addition, the psychological and personality factors have been implicated in the acceptance of complete dentures. Although there are patients that are unhappy with dentures assessed as well constructed, other patients will accept prostheses whose construction falls short of ideal[25,26]. This disability paradox suggests that many individuals with disabilities report that they experience an excellent quality of life when, to most people, they seem to live an undesirable daily existence. Quality of life is dependent upon finding a balance between body, mind, and spirit in the self and on establishing and maintaining a harmonious set of relationships within the person's social context and external environment[27].

Edentulousness and the wearing of conventional complete dentures can affect the quality of life and patient satisfaction[28]. Complete denture wearers perception studies should be addressed and employed to improve their OHRQoL. This study aimed to predict the impact of complete denture rehabilitation on the quality of life of patients from Sulaimani city. Additionally, investigate the differences in the impact on OHRQoL between both genders.

Patients and methods

A total of 100 edentulous participants (55 men and 45 women, aged 40-74 years) participated in this study. All

were required to have a full set of complete heat cure acrylic dentures. These patients attended the Prosthodontic Department/ College of Dentistry/ University of Sulaimani/ Kurdistan region of Iraq to construct new dentures. Verbal consent was obtained from all participants before participation. The study was approved by the Medical Ethics Committee, College of Dentistry, University of Sulaimani.

The demographic information (age, gender, education level, economic status, and the number of previous dentures) was recorded. Participants were encouraged to give their frank opinion about their dentures and assured that the identity would be kept confidential. The patients were physically and mentally able to understand and answered the Oral Health Impact Profile for the Edentulous Patient (OHIP-EDENT) questionnaire. As the majority of the study participants were illiterate, personal interviews were performed by one investigator to register the participants' answers on the questionnaire sheets.

The Oral Health Impact Profile for the Edentulous Patient OHIP-EDENT questionnaire was used to evaluate the complete dentures' satisfaction. It consists of 19 questions divided into functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap. Each question was scored according to the scale of 1= never, 2= sometimes, 3=almost always[29-31].

Statistical analysis

The data for each answer's score of the (OHIP-EDENT-19) questionnaires were presented as numbers and percentages. Data were analyzed with statistical software (PASW Statistics for Windows v18; SPSS Inc). A chi-square test was applied to compare the differences between males' and females' responses. The $P>0.05$ has been accepted as statistically significant.

Results

The samples consisted of 100 edentulous patients in which 55 (55%) were males, and 45 (45%) were females with a mean age of (55.33) years. Patient ages ranged from 40 to 70 years, and most subjects (56%) aged from 51-60 years.

About 60% of participants were illiterate (22 males and 38 females). In this study, men were more educated than females. About 38 men can read, write, and had primary or high school grades, and only 2 with college or institutional degree. Only seven women from 45 were literate without any college degree.

Nearly half of participants (47%) were without work (7 males and 40 females), while only 31 have work (29 males, two females). The minority (22%) were retired (22males, three females).

The majority of participants had more than one set of complete dentures (60%), while only 40% had only one set of complete dentures (Table 1).

From the OHIP scores of all subjects, the results in the functional limitation domain, the majority (72%) answered they sometimes practiced limitation (score-2) indenture function. The functional limitations were mainly in chewing, catching food, and in fitting their dentures. The approximately same percentage (75%) occasionally had some physical pain demonstrated by aching, soreness, and uncomfortable during eating (Table 2)

Similarly, most participants choose score-2 in answering questions regarding psychological discomfort and physical disability, but with a lesser percentage (56-58%). A high percentage (40%) never felt worried or self-conscious from using their complete dentures.

Wearing complete dentures had no adverse effect on the social ability of many participants. Nearly 69% felt socially accepted, and 24% sometimes feel a restriction in their social activity. While the minority (7%) always feel social restriction with wearing the complete denture.

Approximately half of the participants (49%) never experienced any psychological disability (upset or embarrassed) using their dentures. The other half had the opposite feeling (42% sometimes and 9% almost always).

The handicap was the most prevalent complaint among participants. A high percentage of the participants fell handicap because of missing all their teeth and wearing a complete denture. 76% thought that life is unsatisfying, and they were unable to enjoy with others (30% answered sometimes, and 46% answered almost always). Only 24% had no such emotions (Table 2).

Table 3 compare the OHIP responses between males and females. There were no significant differences between both genders in the majority of responses. However, a disassociation between complete denture satisfaction and gender was observed in psychological discomfort, psychological and social disability ($P>0.05$). Females wearing their complete dentures fell discomfort

For females, the highest number answered score-2 (sometimes) in functional limitation (food catching and denture not fit) (75.5%), physical pain (painful etching and uncomfortable denture) (72%), feel worried (71.2%) felt, and never restricted them from going out or affect their social behavior (75.5%) (Table 3).

A low number of male participants [between 2 (3.6%) and 5 (9.1%)] mainly answered score-3 (almost always) for the rest of the domain questions. Females mainly answered sore-1 (Never), which was in the physical pain domain (Table 4). Generally, the mean domains' reactions for each gender were identical to that of the whole sample responses (Table 4).

Discussion

In this study, an evaluation of the current situation of the patient's complete denture experience was investigated to detect the impact of oral health on the quality of life of patients with the total prosthesis. The satisfaction was determined using the OHIP-EDENT questionnaire in older adults, which has been validated in the literature [13-15]; this study started directly to use the instruments before going to its validation, mainly because the majority of the participants were illiterate, they will not be able to read and understand the questions and perform a self- assessment. Moreover, the study evaluated the existent complete denture experience, not comparing before and after treatment or patients with or without denture practice. It still an English language questionnaire and the researcher explains the questions by participants' mother language (Kurdish).

The self-reported measures may be more meaningful than clinical measures and have been the major deciding factors of satisfaction concerning this context[32].

Among participants' complaints, physical pain peaked at the highest level (90%) among other domains, including aching, soreness, and uncomfortable to eat. This finding is in agreement with a study done by Adam in 2006[32].

Table 1: Frequency distribution of demographic data.

Demography		Total sample	Male	Female
		100%	55 (%)	45 (%)
Age	(40-50) years	38	19 (34.5)	19 (42.3)
	(51-60) years	56	32 (58.2)	24 (53.3)
	(61-70) years	6	4 (7.3)	2 (4.4)
Education status	Illiterate	60	22 (40)	38 (84.4)
	Read and write (primary or high school grades)	38	31 (56.4)	7 (15.5)
	College/ institutional degree	2	2 (3.6)	0 (0)
Economic level	Retired	22	19 (34.5)	3 (6.6)
	Employed or have work	31	29 (52.7)	2 (4.6)
	Do not have work	47	7 (12.8)	40 (88.8)
Set of the previous denture	One set	40	23 (41.8)	17 (37.7)
	More than one set	60	32 (58.2)	28 (62.3)

Table 2: Percentage of participants responses to Oral Health Impact Profile for Edentulous Individuals (OHIP-EDENT) questionnaires.

			Total Sample			Mean domains		
	Domains	Questions	Never	Sometimes	Almost always	Never	Sometimes	Almost always
			Score-1	Score-2	Score-3	Score-1	Score-2	Score-3
1	Functional limitation	Difficulty chewing	12%	71%	17%	13%	72%	15%
2		Food catching	20%	74%	6%			
3		Dentures not fitting	7%	70%	23%			
4	Physical pain	Painful aching	10%	79%	11%	10%	75%	15%
5		Uncomfortable to eat	7%	73%	20%			
6		Sore spots	12%	74%	14%			
7		Uncomfortable dentures	9%	75%	16%			
8	Psychological discomfort	Worried	26%	70%	4%	40%	56%	4%
9		Self-conscious	53%	42%	5%			
10	Physical disability	Avoid eating	26%	45%	29%	25%	58%	17%
11		Unable to eat	18%	69%	13%			
12		Interrupts meals	31%	59%	10%			
13	Psychological disability	Upset	34%	57%	9%	49%	42%	9%
14		Has been embarrassed	63%	28%	9%			
15	Social disability	Avoided going out	85%	13%	2%	69%	24%	7%
16		Less tolerant of others	68%	24%	8%			
17		Irritable with others	55%	33%	12%			
18	Handicap	unable to enjoy company	47%	41%	12%	24%	30%	46%
19		life unsatisfying	1%	19%	80%			

Table 3: Comparison of Oral Health Impact Profile for Edentulous Individuals (OHIP-EDENT) domains between males and females.

		Males			**Females**			
Domains	**Questions**	**Never**	**Sometimes**	**Almost always**	**Never**	**Sometimes**	**Almost always**	***p*-value**
		Score-1	**Score-2**	**Score-3**	**Score-1**	**Score-2**	**Score-3**	
Functional limitation	Difficulty chewing	5 (9.1)	41 (74.5)	9 (16.3)	7 (15.5)	30 (66.6)	8 (17.7)	0.574
	Food catching	12 (21.8)	40 (72.2)	3 (5.4)	8 (17.7)	34 (75.5)	3 (6.6)	0.865
	Dentures not fitting	4 (7.27)	36(65.4)	15 (27.2)	3 (6.6)	34 (75.5)	8 (17.7)	0.51
Pysical pain	Painful aching	6 (10.9)	45 (81.8)	4 (7.27)	4 (8.8)	34 (75.5)	7 (15.5)	0.257
	Uncomfortable to eat	4 (7.27)	41 (74.5)	10 (18.1)	3 (6.7)	32 (71.2)	10 (22.3)	0.880
	Sore spots	5 (9.1)	45 (81.8)	5 (9.1)	7 (15.5)	29 (64.4)	9 (20)	0.137
	Uncomfortable dentures	5 (9.1)	41 (74.5)	9 (16.3)	4 (8.8)	34 (75.5)	7 (15.5)	0.992
Psychological discomfort	Worried	14 (25.4)	38 (69.1)	3 (5.4)	12 (26.6)	32 (71.2)	1 (2.2)	0.713
	Self- conscious	35 (63.6)	20 (36.3)	0 (0)	18 (40)	22 (48.8)	5 (11.2)	**0.008***
Physical disability	Avoid eating	15 (27.2)	29 (52.7)	11 (20)	11 (24.4)	16 (35.6)	18 (40)	0.077
	Unable to eat	8 (14.5)	41 (74.5)	6 (10.9)	10 (22.3)	28 (62.2)	7 (15.5)	0.413
	Interrupts meals	20 (36.3)	32 (58.1)	3 (5.4)	11 (24.4)	27 (60)	7 (15.5)	0.159
Psychological disability	Upset	21 (38.1)	32 (58.1)	2 (3.6)	13 (28.8)	25 (55.5)	7 (15.5)	0.102
	Has been embarrassed	40 (72.7)	13 (23.6)	2 (3.6)	23 (51.1)	15 (33.3)	7 (15.5)	**0.037***
Social disability	Avoided going out	51 (92.7)	4 (7.2)	0 (0)	34 (75.5)	9 (20)	2 (4.4)	**0.041***
	Less tolerant of others	39 (70.9)	14 (25.4)	2 (3.6)	29 (64.4)	10 (22.3)	6 (13.3)	0.205
	Irritable with others	32 (58.1)	20 (36.3)	3 (5.4)	23 (51.1)	13 (28.8)	9 (20)	0.485
Handicap	unable to enjoy company	28 (50.9)	23 (41.8)	4 (7.27)	19 (42.2)	18 (40)	8 (17.7)	0.26
	life unsatisfying	1 (1.8)	5 (9.1)	49 (89.1)	0 (0)	14 (31.1)	31 (68.8)	0.015

The next top criticism was functional difficulties (87%), including mastication and catching food capacity. The patient felt unable to function. This finding agrees with other studies[2,10,33,34], which correlate the functional limitation to the discomfort experienced by edentulous patients, feeling of an unfitted denture, and food accumulation under dentures. The masticatory force of completely edentulous patients is 20%–40% of that of healthy dentate persons. Therefore, complete denture wearers need up to seven times more chewing strokes to reduce food particles than do dentulous subjects[35].

For females, the highest number answered score-2 (sometimes) in functional limitation (food catching and denture not fit) (75.5%), physical pain (painful etching and uncomfortable denture) (72%), feel worried (71.2%) felt, and never restricted them from going out or affect their social behavior (75.5%) (Table 3).

A low number of male participants [between 2 (3.6%) and 5 (9.1%)] mainly answered score-3 (almost always) for the rest of the domain questions. Females mainly answered sore-1 (Never), which was in the physical pain domain (Table 4). Generally, the mean domains' reactions for each gender were identical to that of the whole sample responses (Table 4).

Table 4: Comparison of mean domains of Oral Health Impact Profile for Edentulous Individuals (OHIP-EDENT) between males and females.

Domains	Mean domains / Males			Mean domains / Females		
	Never score-1	Sometimes Score-2	Almost always Score-3	Never score-1	Sometimes Score-2	Almost always Score-3
Functional limitation	14%	70%	16%	14%	72%	14%
Physical pain	9%	78%	13%	10%	72%	18%
Psychological discomfort	45%	52%	3%	34%	60%	6%
Physical disability	26%	62%	12%	24%	53%	23%
Psychological disability	55%	41%	4%	40%	44%	16%
Social disability	74%	23%	3%	64%	24%	12%
Handicap	26%	26%	48%	21%	36%	43%

Removable denture wearing can be regarded as a handicap by most participants, 76% (30% sometimes, and 46% almost feel like a handicap). They are less satisfying and less enjoyable than when they were dentate. This can be related to poor quality of life and maybe a marker for other medical comorbidities[6]. No participants from both groups in this study felt that life was satisfying with their rehabilitation. Satisfaction, perhaps related more to the extent of their acceptance of denture limitations than it is to the technical correctness of their dentures. What one patient accepts as a normal level of discomfort or handicap may to intolerable to another[21].

The majority of participants answered with scores 2 and 3 for physical disability and psychological discomfort (75%, 60% according). However, the interpretation of complete denture patients regarding the physical disability and psychological discomfort is intrinsically individual and extremely subjective. Complete denture wearers feel uncomfortable eating some kinds of hard food, mainly because of the absence of chewing efficiency, leading the patient to prefer softer foods. The psychological discomfort or disability is mainly related to the oral health and retention and stability of the complete denture, leading to embarrassment, stress, and self-consciousness. In addition, the patient did not feel comfortable to talk, laugh, or chew[36].

Regarding the social disability and psychological disability, the current findings are in accordance with several published studies[32,33,37] that recording them to be the least prevalent impairment among the other domains (31%, 51% in accordance). So, the study participants were active socially and didn’t feel upset, embarrassed, or being irritable with others when they wore their prostheses.

According to this study, a significant relationship was observed between gender and psychological discomfort. This is supported by other studies that concluded that females are often less satisfied with dentures in terms of comfort and being observed by other peoples[32,38].

Additionally, a significant relation was seen between gender and psychological disability; females felt more disturbing and embarrassed about their dentures' problems [39]. Likewise, in this study, females seem to be more sensitive than males, and they preferred staying home and avoiding going out to public places in case of arising any denture problems. This can be explained by either physical or psychological differences between sexes or physiological factors and hormonal changes that have been suggested to play important roles[39].

The educational level could play an important role in patient satisfaction. The higher the levels of patients' education, the lower the neuroticism scores. This is possible because highly educated patients lead less stressful lives than less educated ones; because most of our sample were illiterate and economically inactive, a negative impact of the OHRQoL relationship was detected among them[40].

A detailed and clear explanation by the dentist about denture limitations for each patient seems to be key, as it may help patients understand the limitations of their dentures, revise their expectations, and be more willing to accept their new dentures[5].

It is suggested that more clinical trials should be conducted to find the difference in satisfaction between old and new dentures. Effect of other criteria on satisfaction: age, education and socioeconomic status, and oral condition status.

Conclusions

With the limitation of this study, the following conclusion can be obtained:

1- Conventional complete dentures bring negative impacts in the OHRQoL of elderly patients, mainly concerning physical pain and functional limitation followed by handicap, physical disability, psychological discomfort.

2- No social restrictions are experienced from wearing complete dentures in both genders. The social disability was the least negative impact, followed by psychological disabilities.

3- Females had a significantly higher impact and affected more regarding social and Psychological aspects.

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