ORIGINAL RESEARCH

Journal of Dentomaxillofacial Science (*J Dentomaxillofac Sci*) August 2017, Volume 2, Number 2: 100-104
P-ISSN.2503-0817, E-ISSN.2503-0825

The correlation between denture usage satisfactions on quality life of the elderly

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Abstract

Objective: To analyze correlation between the denture use satisfactions and quality life of elderly and the relationship between gender and denture use satisfaction

Material and Methods: This study is an observational analytical study. The sample of study is elderly population aged ≥50 years who live in Luwu Timur, South Sulawesi, the sample was to fill the questioner form based on OHIP-EDENT from WHO. The Chi-square test was used to analyze the relationship between gender and denture use satisfactions.

Results: Spearman's correlation test results for each domain OHIP-EDENT and OHIP-EDENT total showed a significant correlation of ($p < 0.05$) between denture use satisfaction and functional limitations, physical pain, psychological discomfort and physical disability domain showed significant. Meanwhile, chi-squared test for denture use satisfactions to gender does not have a significant relationship.

Conclusion: The denture use satisfactions has no correlation to quality of life of older adults. The gender dose not influence the satisfactions in denture use.

Keywords: Patient satisfaction, Quality of life, OHIP

Cite this Article: Akbar FH, Anwar AI. 2017. The correlation between denture usage satisfactions on quality life of the elderly. *Journal of Dentomaxillofacial Science* 2(2): 100-104. DOI: 10.15562/jdmfs.v2i2.528

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Introduction

Indonesia has been experiencing changes in the age structure of the population for several decade. Aging becomes one of the absolute process that occurs in human life. The proportion of young people 0–14 years has declined, while there is an increase in the proportion of elderly (above 60 years). In 2014 for example, Indonesian Population census results showed 8.03% of the population was aged >60 years.[1,2]

Malili district is one of the districts in Luwu Timur, South Sulawesi. This district has an area of 921 201 km^2 with a population according to 2008 data was as many as 31.323 people. Number of elderly people was aged 50–75 years and over in this district, according to 2008 data, was 3,951 people with a total of men 1,949 and 2,002 women in Badan Pusat Statistik Sulawesi Selatan, 2014.

Oral health status plays an important role in the quality of life of patients, it affects the condition of mental, physical, weight, symptoms of temporary illness, personal perceptions about health, psychological and social development as a whole through its influence on the spelling of words, social life and food digestive functions.[3,4]

Elderly patients have physical limitations, chronic disease, and almost all of them require medications that increase the risk of oral diseases, and also systemic diseases. Elderly dental care is sometimes limited to emergency care and is not intended to retain teeth through restorative treatment and daily care oral health.[5]

The oral health care of the elderly is mostly rehabilitative care that is due to loss of teeth. The rehabilitative care, for example, is in the form of the use of denture (partial or full) removable or fixed dentures. Rehabilitation of the oral cavity can have a positive impact on the physical, social and patient psychology.[6,7]

The patients' perception of their oral health is a very important factor, particularly the elderly who often have high level of expectations of the level for the care obtained from clinical practitioners. Oral health-related quality of life (OHRQoL - oral health-related quality of life) gives the characteristics of the individual's perception of the buccal health, and can be used as an indicator of profit for prosthetic rehabilitation strategies. A 14 oral health impact profile (OHIP) questionnaire is one of the technically advanced instruments for measuring OHRQoL.[8] This study aims to relate the denture use satisfactions to the quality of life of the elderly, and to determine the relationship between gender and the denture use satisfactions in District Malili, Luwu Timur, South Sulawesi province.

Material and Methods

This study was a pathfinder pilot survey with analytical observation type of research and the use of cross-sectional study design. The pilot pathfinder survey in this study was guided according to the standard survey methods recommended by the WHO,[9] so that this research took one index age

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Received: 23 March 2017
Revised: 29 April 2017
Accepted: 21 June 2017
Available Online: 01 August 2017

groups recommended by the WHO, namely the elderly (age ≥50 years). This study used population studies or research subject, the entire population of elderly (aged ≥50 years) who were present in the village hall in every village in the district Malili and met the inclusion criteria to be research subjects, while the exclusion criteria were excluded from the study subjects.

The study covered the entire village in the district Malili, Luwu Timur, South Sulawesi (total 15 villages). The inclusion criteria included elderly subjects (age ≥50 years) who did not have disabilities, did not suffer from mental retardation and used denture, while the exclusion criteria were subjects who were not willing to participate. An interview by using a questionnaire that was already tested. The socio-demographic data was obtained using guided interviews with a list of questions that had been prepared. The socio-demographic data were assessed in a list of questions prepared based on public information, according to WHO[9] criteria, namely age (years), gender, occupation, geographical location, education level, occupation, and income level. The age of research subjects is based on age group according to Friendly Society Act and Neurgarten that classifies the elderly age ≥ 50 years.[3,10] In addition to socio-demographic data, interviews are used to obtain medical history information of research subjects. To examine the relation between the denture use satisfactions on the quality of life of elderly, the Chi-square test was used to determine the relation between gender and denture use satisfactions and Spearman's correlation test to determine the correlation between the denture use satisfactions on quality of life. All statistical tests were performed at the significance level of 5%.

Table 1 Sample characteristics

Characteristics Of Sample	N	%	Mean ± SD
Gender			
Male	28	45.9%	
Female	33	54.1%	
Age (50–82)	61	100%	61.80 ± 9.92
Type Denture			
Full Denture	43	70.5%	
Most Removable Denture	16	26.2%	
Fixed Denture	2	3.3%	
Usable Denture			
Short term (≤ 5 years)	26	42.6%	0.42
Long term (≥ 5 years)	35	57.4%	0.57

Table 2 Relationship between gender and satisfaction of use denture

Gender	Satisfaction Use of Denture			Total	p-value
	Satisfy	Good enough	Not satisfy		
Male	12 (19.6%)	11 (18.03%)	5 (8.19%)	28 (45.9%)	.949*
Female	14 (22.9%)	14 (22.9%)	5 (8.19%)	33 (54.0%)	

*Chi-square test, significant at $p < 0.05$

Quality of life

Quality of life of elderly was measured using OHIP–EDENT (Oral Health Impact Profile) is a form of OHIP-14 index specific denture. The study showed that the prevalence of the number "0" (no impact) are found in many of OHIP-14 answers. Most of the responses are owned by subjects who use denture. Therefore, make OHIP–EDENT specific for the edentulous patient and using denture. Type of denture that is meant here can be a full dentures, a removable partial denture (RPDs), or a fixed denture.[8–12]

Results

Subject of the study consisted of 28 (45.9%) male and 33 (54.1%) female. Minimum and maximum age of respondents was 50 and 82 years, respectively. The average age of the study subjects was 61.80 ± 9.92 years table 1. Distribution of the use of denture on the subject of this study are summarized in table 2.

Based on grouping which has been described previously, the subject of research is distributed by the duration of denture use. For the first group, as many as 26 (42.6%) subjects were using denture for less than or equal to five years. In addition, users of denture ≥5 years were 35 (57.4%)

In table 2 the relationship of gender to the satisfactions of the denture use using a Global Rating of Satisfactions is shown. Subjects: male and female who answered satisfactorily contained as much as 12 and 14, respectively. For the category of response was enough satisfactory, there were 11 and 14, the subject of male and female, respectively. Subjects who answered as not satisfied with their dentures were 5 males and 5 females. After pre-testing and data analysis, the results of data analysis shown by the chi-squared test of gender to the use of denture satisfaction did not have a significant relation.

FL (functional limitations); P1 (physical pain); P2 (psychological discomfort); D1 (physical disability); D2 (psychological disability); D3 (social disability); H (handicap); the average OHIP–EDENT score for the first domain (FL) was 4.57 (2.90%), the second domain (P1) was 5:11 (3:55%), a third domain (P2) was 3.62 (2:26%), domain fourth (D1) was 3.77 (2.90%), domain fifth (D2) was 1:36 (1.72%), sixth domain (D3) was 1.70 (2:05%), seventh domain (H) was 0.95 (1:27%) and the OHIP–EDENT total score was 21:10 (13:23%).

Table 3 Distribution of samples based on quality of life

Quality of Life	Mean (± SD)		0	1	2	3	4
			n (%)	n (%)	n (%)	n (%)	n (%)
FL	4.57 (±2.90)	1	19 (31.1)	20 (32.8)	10 (16.4)	9 (14.8)	3 (4.9)
		2	16 (26.2)	17 (27.9)	8 (13.1)	12 (19.7)	8 (13.1)
		3	15 (24.6)	17 (27.9)	12 (19.7)	10 (16.4)	7 (11.5)
		4	0	0	0	0	0
P1	5.11 (±3.55)	1	20 (32.8)	12 (19.7)	18 (29.5)	10 (16.4)	1 (1.6)
		2	19 (31.1)	14 (23.0)	15 (24.6)	9 (14.8)	4 (6.6)
		3	26 (42.6)	14 (23.0)	11 (18.0)	8 (13.1)	2 (3.3)
		4	25 (41.0)	13 (21.3)	10 (16.4)	10 (16.4)	3 (4.9)
P2	3.62 (±2.26)	1	16 (26.2)	18 (29.5)	10 (16.4)	11 (18.0)	6 (9.8)
		2	12 (19.7)	13 (21.3)	6 (9.8)	19 (31.1)	11 (18.0)
		3	0	0	0	0	0
		4	0	0	0	0	0
D1	3.77 (±2.90)	1	15 (24.6)	15 (24.6)	10 (16.4)	16 (26.2)	5 (8.2)
		2	26 (42.6)	18 (29.5)	10 (16.4)	6 (9.8)	1 (1.6)
		3	23 (37.7)	20 (32.8)	7 (11.5)	11 (18.0)	0 (0)
		4	0	0	0	0	0
D2	1.36 (±1.72)	1	35 (57.4)	18 (29.5)	4 (6.6)	3 (4.9)	1 (1.6)
		2	34 (55.7)	16 (26.2)	5 (8.2)	6 (9.8)	0 (0)
		3	0	0	0	0	0
		4	0	0	0	0	0
D3	1.70 (±2.05)	1	38 (62.3)	14 (23.0)	9 (14.8)	0 (0)	0 (0)
		2	37 (60.7)	14 (23.0)	10 (16.4)	0 (0)	0 (0)
		3	38 (62.3)	13 (21.3)	5 (8.2)	5 (8.2)	0 (0)
		4	0	0	0	0	0
H	0.95 (±1.27)	1	38 (62.3)	14 (23.0)	7 (11.5)	2 (3.3)	0 (0)
		2	38 (62.3)	22 (36.1)	1 (1.6)	0 (0)	0 (0)
		3	0	0	0	0	0
		4	0	0	0	0	0
OHIP-EDENT TOTAL	21.10(±13.23)						

Note: 0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often

Table 4 Correlation between satisfaction using denture and the quality of life

	OHIP–EDENT							
	FL	P1	P2	D1	D2	D3	H	Total
Satisfaction use of denture	-.294[a]	-.319[a]	-.306[a]	-.442[a]				-.329[a]
	.022[b]	.012[b]	.016[b]	.000[b]	.224 (ts)	.357 (ts)	734 (ts)	.010[b]

[a]Coefficient correlation Spearman
[b]Spearman's correlation test, significant at p<0.05
*: not significant at p<0.05

FL (functional limitations); P1 (physical pain); P2 (psychological discomfort); D1 (physical disability); D2 (psychological disability); D3 (social disability); H (handicap).

Table 4 shows the correlation of the denture use satisfactions on the quality of life of the elderly. In table 3, the results of each test for each domain by Spearman's correlation and OHIP–EDENT total shown. Correlation of satisfactions using the denture and the first (FL), the second (P1), third (P2) and fourth (D1) domain indicates a significant value (p<0.05 for the domain FL, P1, P2 and p< 0.01 for domain D1) with a correlation coefficient (r) is negative, but for the fifth (D2), sixth (D3) and seventh (H) domain, there are no significant correlation between the denture use satisfactions on quality of life (p>0.05). For the OHIP–EDENT total score, the Spearman's correlation test showed a significant negative correlation between the denture use satisfactions and OHIP–EDENT total score.

Discussion

This research had a total of 61 research subjects who had met the inclusion and exclusion criteria. A total of 28 (45.9%) males and 33 (54.1%) females had been the subject of research. The number of female and male who came to the village hall did not differ

too much, but the number of female who visited the village hall were more than male. According to Ingle et al.[13] who states that the number of female were more than male because female were more concerned about teeth health, so they often came to the dental service. Research by Adam[11] showed more women are found to have edentulous than male, reasoning the use of denture were more in female.

Distribution of denture use based on the denture prosthesis type showed full denture users ranked among the highest in the entire subject of study, followed by a removable partial denture users and the use of fixed denture. According to Petersen et al.[14] removable denture, in particular, are often used in developing countries. Some countries reported third to half number of the elderly population using a full denture for upper and lower jaw, while as many as three-fourth of seniors using full dentures for one jaw and/or a removable partial denture. Of course, the prevalence of the use of removable denture showed variation influenced by socio-economic status, particularly among those with socio-economic status are less. Distribution of denture use are more for short-term group (≤5 years) than the long-term group.

For the relation between the denture use and satisfactions by gender, research subjects showed no significant correlation ($p>0.05$). This study is similar with research conducted by Adam[11] who found no association between the gender and the satisfactions of the denture. The results of data analysis showed no significance between the relationship of gender and the satisfactions of the denture caused by the uneven distribution of sex. Similar to this study, the research conducted by Barreto et al.[6] and by Adam[11] showed that the two variable sex types, male and female, have no effect on the results of the denture use satisfactions and the quality of life between male and female. Based on the test results and analysis of the correlation between denture use satisfaction on the quality of life, the correlation between denture use satisfactions on the first, second, third, and fourth domain shows the correlation coefficients significantly negative which means increased denture use satisfactions causes a decrease in complaints related to quality of life, particularly in view the first domain to the fourth domain. For the fifth domain until the seventh domain showed no significant correlation between denture use satisfactions and quality of life. When doing the testing and data analysis between denture use satisfactions with OHIP–EDENT total score, the statistical test showed a significant correlation between the denture use satisfactions to OHIP–EDENT total score with correlation coefficients are negative, an increase in the denture use satisfactions led to a decrease in OHIP– EDENT total score.

The higher the OHIP–EDENT total score mean more complaints expressed by research subjects who use denture, so the research subject's denture use satisfaction will be decreased. Similarly with the study by Yoshida et al.[15] patients who expressed satisfactions with the denture use will also feel satisfied with their quality of life. The results of the present study is also consistent with the results of the research.

Dentures age and denture quality that is being used by the subject is not taken into account in the present study, so those factors become limitations of the present study.

Conclusion

Gender relation to the satisfactions of the denture use does not have the significance, which means gender is not an influential factor for the denture use satisfactions among subjects (male and female). The denture use satisfaction had a significant negative correlation with quality of life of elderly, which was measured using OHIP–EDENT Total, which means that the higher a person's level of satisfaction of the prosthesis used, the lower the complaint in the oral cavity that impact on quality of life.

Conflict of Interest

The authors report no conflict of interest.

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