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QUALITY OF LIFE ANALYSIS AMONG ELDERLY PATIENTS USING REMOVABLE PARTIAL DENTURES

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ABSTRACT

Background: Elderly individuals are prone to the process of the gradual decreasing ability of the tissue for self-healing. This process significantly impacts dental structure and periodontal tissue, leading to tooth decay. When it is not properly treated, it may disturb oral functions and activities influencing their life quality.
Objectives: This research aims to analyze the quality of life among elderly patients with removable dentures at the Prosthodontic Installation of Islamic Dental Hospital (RSIGM) Sultan Agung, Semarang, Indonesia.
Methods: Research was conducted with a descriptive method using the consecutive technique sampling method. Data were collected from 31 elderly patients with removable denture at the Prosthodontic Islamic Dental Hospital (RSIGM) Sultan Agung Semarang Indonesia and quality of life was measured by Geriatric Oral Health Assessment Index (GOHAI) questionnaire. The assessment criteria were that if the score was 0.0–1.67, it meant the quality of life was poor; a score of 1.67–2.3 meant the quality of life was moderate; and a score of 2.4–3 meant the quality of life was good.
Results: The results showed that the dimensions of physical function fell into the moderate criteria (2,25), while the dimensions of pain and inconvenience (2,55) and psychosocial aspects were considered good (2,50).
Conclusion: It can be concluded that the general quality of life on elderly patients with removable denture at the Prosthodontic Installation of Islamic Dental Hospital (RSIGM) Sultan Agung were good.

INTRODUCTION

All individuals will eventually reach old age, during which they hope to have healthy, prosperous, useful, productive, quality, and dignified conditions. According to the Republic of Indonesia Law No. 13 of 1998 article 1 paragraph 2 regarding the welfare of the elderly, the elderly are individuals who have reached the age of sixty years and above.[1] The proportion of the elderly

population continues to grow worldwide, especially in developing countries. The elderly population is growing at a faster rate than other age groups. Globally, the population aged 60 and over has reached 600 million, and this figure is estimated to double by 2025. By 2050, it will reach 2 billion, with 80% residing in developing countries.[2]

In Indonesia, the elderly population according to the Central Bureau of Statistics in 2010 reached 52,094,585 out of a total population of 237,641,326 (22%), while in West Java, according to the same source, it is estimated to be 3,032,937.[3] It is estimated that the number of elderly people in Indonesia in 2025 could reach 85,321,800, a significant number for a developing country like Indonesia.[4,5] The increased life expectancy can be influenced by the advancement of healthcare services, the decline in infant and child mortality rates, improvements in nutrition and sanitation and increased surveillance of infectious diseases.[6] The increase in life expectancy and the growing number of elderly people, on one hand, is a success in social and economic development, but this success has consequences and responsibilities, both for the government and society, to pay more serious attention. This is because as people age, their conditions and abilities to be active decline.[7]

In the elderly, there is a decline in mental and physical abilities, partly due to the aging process. Aging is a gradual loss of tissue's ability to repair or replace and maintain its normal function.[8] Dental problems such as tooth decay, tooth mobility, cavities, bad breath, gingivitis, gingival recession, loss of periodontal attachment, and alveolar bone loss are common tissue changes found in the elderly. If left untreated, these conditions can lead to tooth mobility and loss, which will later affect oral cavity function and activities, thus impacting their quality of life. Individuals who lose teeth require dentures to restore some tooth functions.[8,9] The loss of one or more teeth can be replaced by fixed or removable dentures. The difference between the two types of dentures is whether the dentures can be removed by the patient without the dentist's assistance.[10]

Oral health, according to the World Health Organization (2012), means "Freedom from chronic pain in the mouth and face, oral and throat cancer, mouth lesions, congenital anomalies such as cleft lip or palate, periodontal diseases, tooth damage and loss, and other diseases or disorders that affect the oral cavity." Quality of life, according to the World Health Organization (1997), is "An individual's perception in the context of cultural and societal norms in which they live, and in relation to their goals, expectations, standards, and concerns throughout life".[11] Dental and oral health problems are one of the issues that have a negative impact on overall health, ultimately affecting the quality of life of the elderly.[12] Oral health in the elderly is assessed using the Geriatric Oral Health Assessment Index (GOHAI), consisting of twelve questions divided into three dimensions: physical function, pain and discomfort, and psychosocial aspects.[13] Based on the above background, the author is interested in conducting research on the level of quality of life among elderly users of removable dentures at the

Prosthodontics Installation of the Islamic Dental Hospital (RSIGM) Sultan Agung Semarang Indonesia.

METHOD

This study was descriptive research. The sample consisted of elderly patients using removable dentures at the Prosthodontics Installation of RSIGM Sultan Agung Semarang who met the inclusion criteria. The sampling technique used was consecutive sampling, which involved selecting samples by enrolling subjects who met the research criteria within a certain period. The study was conducted for 1 month.

The inclusion criteria were individuals aged at least 60 years who used removable dentures and were willing to participate as respondents (cooperative). The exclusion criteria were patients with abnormalities in the teeth and mouth that caused discomfort, physical or mental limitations, patients with special needs, and those unwilling to participate as respondents.

The measurement tool used was the Geriatric Oral Health Assessment Index (GOHAI) questionnaire, which was one of the instruments for measuring oral health-related quality of life. The GOHAI questionnaire was recommended for clinical and epidemiological surveys assessing oral health in the elderly. Additionally, this questionnaire was widely used in various countries and had been validated. The number of questions in the GOHAI questionnaire tended to be fewer compared to other quality of life questionnaires.

The research procedure began with research preparation, such as obtaining research permits and ethical clearance letters (No: 442/UN6.C1.3.2/KEPK/PN/2015), followed by conducting the research by selecting patients who met the criteria, administering the GOHAI questionnaire to the research subjects for completion, and collecting the questionnaires. Data processing was obtained from the results of completing the GOHAI questionnaire using three value scales: a value of 1 for "always" responses, a value of 2 for "sometimes" responses, and a value of 3 for "never" responses. The total scores were categorized into good, fair, and poor categories according to the criteria obtained using the formula, Quality of Life Score = (Highest Score - Lowest Score): Interval

The assessment criteria were that if the score was 0.0–1.67, it meant the quality of life was poor; a score of 1.67–2.3 meant the quality of life was moderate; and a score of 2.4–3 meant the quality of life was good. The data obtained were processed simply and presented in the form of tables and calculations in the form of percentages.

RESULT

Based on the research conducted on 31 patients who used removable dentures at the Prosthodontic Installation of RSIGM Sultan Agung, Data on the general characteristics of the respondents are presented in Tables 1 to 4.

Table 1. Distribution of Respondents Based on Gender

Gender	Number (People)	Percentage (%)
Female	17	54.83
Male	14	45.17
Total	31	100

Table 1 showed the distribution of respondents based on gender. Most respondents were female (54.83%), while males accounted for 45.17%. This indicated that females dominated the study population.

Table 2. Distribution of Respondents Based on Age

Age	Number (People)	Percentage (%)
60 - 64	26	83.87
65 - 69	4	12.9
70 - 74	0	0
75 - 79	1	3.22
Total	31	100

Table 2 illustrates the distribution of respondents by age. Most respondents were in the 60–64 age group (83.87%), followed by those aged 65–69 (12.9%). Only one respondent (3.22%) was in the 75–79 age group, and there were no respondents aged 70–74.

Table 3. Distribution of Respondents Based on Types of Dentures

Types of Dentures	Number (People)	Percentage (%)
Partial Removable Dentures	7	22.5
Full Removable Dentures	24	77.5
Total	31	100

Table 3 showed the types of dentures used by respondents. Most respondents used full removable dentures (77.5%), while the remaining 22.5% used partial removable dentures.

Table 4. Distribution of Respondents Based on Duration of Denture Use

Duration of Denture Usage	Number (People)	Percentage (%)
Less than 1 Month	7	22.58
1 to 6 Months	21	67.74
More than 6 Months	3	9.67
Total	31	100

Table 4 described the duration of denture use among respondents. Most respondents had used dentures for 1–6 months (67.74%), followed by those who had used them for less than 1 month (22.58%) and more than 6 months (9.67%).

Table 5. GOHAI Index of Patients Using Removable Dentures at the Prosthodontic Installation of RSIGM Sultan Agung Semarang

No	Questions	Always		Sometimes		Never	
		n	%	n	%	n	%
1	Limiting the amount or types of food you consume because of your dentures condition	0	0 %	10	32 %	21	66 %
2	Experiencing problems when chewing or biting various types of food such as whole meats or apples	0	0 %	21	68 %	10	32 %
3	Feeling comfortable when swallowing	31	100 %	0	0 %	0	0 %
4	Experiencing difficulty speaking as desired	0	0 %	4	13 %	27	8 %
5	Eating without experiencing any disturbances	0	0 %	23	74 %	8	26 %
6	Limiting your social interaction with others due to your dentures condition	0	0 %	0	0 %	31	100 %
7	Feeling satisfied or happy with the appearance of your teeth or dentures	31	100 %	0	0 %	0	0 %
8	Using medication to alleviate pain or discomfort in the oral cavity	0	0 %	0	0 %	31	100 %
9	Feeling worried or anxious about dental or denture issues	0	0 %	4	12 %	27	88 %
10	Feeling insecure due to problems caused by the condition of your teeth or dentures	0	0 %	0	0 %	31	100 %
11	Feeling uncomfortable eating in front of others because of the condition of your teeth or dentures	0	0 %	2	7 %	29	93 %
12	Your teeth or gums are sensitive to hot, cold, or sweet foods or drinks	0	0 %	7	23 %	24	77 %

Table 5 presented the results of the GOHAI (Geriatric Oral Health Assessment Index) to assess oral health-related quality of life. Most respondents did not experience limitations in food consumption, speaking, or social interaction. They felt satisfied with the appearance of their dentures, did not experience pain, and were not anxious about their denture conditions.

Table 6. GOHAI Index of Patients Using Removable Dentures at the Prosthodontic Installation of RSIGM Sultan Agung Semarang

Dimension	GOHAI Index	Criteria
Physical Function	2.25	Moderate
Pain and Discomfort	2.55	Good
Psychosocial Aspect	2.55	Good
Average	2.4	Good

Table 6 summarized the average GOHAI scores across three dimensions: physical function (2.25 - moderate), pain and discomfort (2.55 - good), and psychosocial aspects (2.55 - good). Overall, the average score indicated that respondents' quality of life related to denture use was in the good category.[2,4]

DISCUSSION

The research findings indicate that the quality of life of elderly patients using removable dentures at RSIGM Sultan Agung falls within the good category, as observed across three aspects: pain and discomfort, psychosocial aspects, and to some extent, physical function. This suggests that the dentures used by the respondents can enhance their quality of life. Quality of life itself is a broadly used term across various contexts related to the impact of diseases and health on an individual's experience. According to a study by Kim S, in 2020, in line with World Health Organization (WHO) policies, oral health is an integral and crucial part of overall health, serving as a determinant of quality of life.[3,4]

In terms of gender, there were more female patients using removable dentures compared to males. This could be attributed to women being more attentive to their oral health and appearance than men, and due to the higher number of elderly female populations compared to males. According to a study by Su et al, in 2022, women go through menopause, which can affect the condition of their teeth and mouth, such as reduced saliva secretion. Reduced saliva secretion can lead to periodontal disease and cavities, resulting in tooth loss.[15]

The study found that elderly patients using removable dentures at RSIGM Sultan Agung ranged from 60 to 79 years old. Mun’s study (2019) found that oral health in individuals over 65 is often neglected. Similarly, Hung (2011) reported that 80% of individuals in this age group suffer from at least one chronic disease, making it difficult for them to seek treatment and requiring special care.[7,16,17] Based on the type of denture use, more complete denture users were found compared to partial denture users. According to Lauritano's study in 2019, as age increases, there is a tendency to lose all teeth because the structure, shape, and colour of the teeth change.[18]

In terms of the duration of denture use, it was observed that the most common range was 1-6 months. This could be influenced by the patient's and operator's appointment schedules to return to RSIGM Sultan Agung. All respondents felt comfortable when swallowing, and 87% of respondents did not have trouble in speaking. This is consistent with Rosa's study in 2020, which stated that aesthetic and phonetic factors are considerations for denture use.[19] The research also showed that none of the respondents had ever used medication for issues related to their dentures, indicating that their dentures did not cause significant problems in their oral cavity conditions. The research findings revealed that some respondents experienced problems when using dentures during meals. Friel's study in 2020 mentioned that the lack of retention and stabilization in dentures can disrupt chewing function, especially in lower teeth.[20]

Twenty-two percent of respondents sometimes experienced sensitivity to hot, cold, or sweet foods or drinks. This may be due to cavities and dentin hypersensitivity. Cavities can cause discomfort or pain when consuming hot, cold, or sweet foods or drinks. Inamochi's study in 2020 defined dentin

hypersensitivity as short-lasting, sharp pain due to stimulation of exposed dentin (exposed to the oral environment).[21] Although the pain is short-lived, it can make eating processes difficult. This pain will affect the comfort and oral health of the individual and if left untreated, it can lead to nutritional deficiencies.[22,23]

All respondents never limited themselves in socializing with others due to their denture condition and were satisfied or happy with the appearance of their teeth or dentures. This is consistent with Magda et al.'s study in 2018, which concluded that tooth loss can affect a person's physical and psychological state, such as reduced self-confidence and limitations in social activities.[24]

CONCLUSION

The research findings concluded that the quality of life among elderly users of removable dentures at the Prosthodontic Installation of RSIGM Sultan Agung was categorized as good, both in terms of pain and discomfort, as well as psychosocial aspects, and moderately in terms of physical function. This study recommends that dentists consider all relevant aspects in denture fabrication to optimize the quality of life for users.

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