# Determination of the Oral Health Quality of Life of Patients in Hospital: A Cross-Sectional Descriptive Study in Turkey

ABSTRACT

Oral health is one of the important and integral components of general health. Impairment of oral health has negative effects on the general health and quality of life of the individual. This study was conducted to determine the oral health quality of life of hospitalized patients. A descriptive cross-sectional design was used in this study. The study was conducted on patients hospitalized in a university hospital in Turkey. The study was conducted with 368 patients. The mean score of the oral health assessment guideline of the patients was found to be 7.45±2.32. The Oral Health Impact Profile-14 score average was 13.47±13.40, and the Oral Health-Related Quality of Life-United Kingdom score average was 51.00±14.58. It was found that the level of education, gender, socio-economic status, chronic disease, and regular drug use affect the oral health of the patients and the quality of life-related to oral health. As a result, it was determined that the patients participating in the study were at moderate risk in terms of oral health problems and their oral health quality of life was above the average. It is necessary to evaluate the patient's entire oral structure daily in terms of risk factors, to determine the ability to perform oral care on his own, to plan oral hygiene with the patient if possible, and to provide appropriate oral and dental care for patients who cannot perform self-care.

Keywords: Nursing, Oral health, Patient, Quality of Life

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INTRODUCTION

Oral health is an important indicator of general health, well-being, and quality of life. At the same time, oral health refers to the health of the teeth, gums, and the entire oral-facial system that enable us to smile, speak and chew. Many oral health diseases are largely preventable and treatable in the early stages (WHO, 2022). Oral health is particularly affected by diseases such as dental caries, periodontal disease, tooth loss, HIV, oral cancer, and cleft lip and palate (WHO, 2022). However, many factors affect the oral health of hospitalized patients. These factors are; conditions such as inpatient treatment of individuals, the inability of patients to perform their daily life activities due to age, pain, stress, anxiety, and diseases and not giving importance to oral health, drugs used, treatments applied, physical limitations and nasogastric tube, receiving oxygen therapy (Carrilho et al., 2011). All these factors cause patients to experience oral health problems and may prevent or make it difficult to fulfill their regular oral health habits (Bek Kurklu et al., 2021). However, the lack of regular oral care and the lack of oral care protocols in clinics increase oral problems. Oral problems cause individuals to experience severe pain and discomfort, prolong their hospital stay, need longer nursing care, and increase the cost of health care. In addition, the deterioration of the oral health of individuals significantly reduces their quality of life by threatening their general health, negatively affecting their social life and psychological state (Prendergast et al., 2013). For this reason, it is very important to draw attention to the issue of oral health in the individuals hospitalized in the clinics, to give oral care, and evaluate oral health regularly. Maintaining oral health is important in ensuring the general health and quality of life of patients. Failure to provide oral health hygiene to individuals may cause some systemic diseases by affecting their general health status (Beaglehole et al., 2009). In addition, insufficient oral care can cause problems such as dry mouth, bad breath, dental caries, stomatitis, and periodontal diseases. These problems affect the individual's nutrition, appearance, speech, communication, and body image negatively, causing the individual to feel unwell, thereby reducing the individual's quality of life. For this reason, the concept of oral health-related quality of life is very important for individuals and is a multidimensional concept that includes functional, psychological, and social factors (Gerritsen et al., 2010). Oral health-related quality of life is a subcomponent of health-related quality of life (John et al., 2004). Today, oral health-related quality of life aims to evaluate "the person's satisfaction with oral health, self-confidence, the comfort of the person while eating, sleeping and social interactions" and shows that the continuity of oral health is one of the requirements of general health (Glick & Meyer, 2014; Satcher & Nottingham, 2017).

Providing oral care and maintaining oral hygiene is one of the most important practices that should be carried out to ensure the comfort of hospitalized patients, have a healthy diet, feel well, and increase their quality of life. Therefore,

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regular oral evaluation and care can help individuals maintain or improve both oral and general health (Berman et al., 2021). For this reason, protecting the oral health of hospitalized patients, and ensuring oral mucosal cleaning and moistening is an indispensable and inseparable part of nursing practices (Dikmen, 2017; Malkin, 2009). Nurses have important responsibilities in planning effective oral care. The nurse should observe/evaluate the mouth daily, notice the developing oral problems at an early stage, give the necessary oral care, and provide education and counseling to the patients in this regard. Implementation of oral care protocols for inpatients in the clinic will contribute significantly to the preservation or improvement of the oral health of the patients and increase their quality of life (Bek Kurklu et al., 2021).

Oral health affects general health and causes the development of some symptoms in the oral cavity in systemic diseases. In other words, oral health and general health interact with each other (Beaglehole et al., 2009). Oral health is highly effective on quality of life. In recent years, it has been observed that studies in the literature mostly focus on elderly people staying in nursing homes, patients diagnosed with stroke who have been treated for a long time and unable to perform self-care, and hospitalized in the intensive care unit, as well as children and adolescents. In these studies, it is stated that the oral and dental health of the patients is poor and their oral health behaviors and attitudes are not sufficient (Baniasadi et al., 2021; Rantzow et al., 2018; Sarı, 2020). In the literature, no study evaluated the oral health quality of life of patients hospitalized in internal medicine and surgery clinics. In this context, the study will contribute to the literature in terms of regularly evaluating the oral health-related quality of life of the patients to determine the oral health-related problems of the hospitalized individuals in the early period and increasing the awareness of the individuals about oral health. This study was conducted to determine the oral health quality of life of hospitalized patients.

METHODS

Study Design

The study was conducted as descriptive and cross-sectional.

Participants

The study was carried out with inpatients in internal medicine and surgical clinics in a university hospital in Turkey. The study was conducted with 368 patients between 01.04.2021 and 30.12.2021. The criteria for inclusion in the research; Patients aged 18 years and older who volunteered to participate in the study consisted of patients who were hospitalized in internal medicine or surgery clinics and were open to communication and cooperation. Exclusion criteria from the study consisted of patients who did not want to participate in the study, who were under the age of 18, and who was unconscious. G-Power 3.0.10 statistical power analysis software was used for the post power analysis. A factor power of 99%, alpha (α) level = 0.05, a medium effect size = 0.15 were set and resulted 368 samples.

Data collection tool

The first part of data collection tool included questions about the students' socio-demographics. It was prepared by researchers in line with the literature (Malkin, 2009; Prendergast et al., 2013; Top et al., 2019). In the form of demographic characteristics, patients' age, gender, education level, occupation, socio-economic status, clinic, presence of chronic disease, drug use, perception of oral health, frequency of mouth-teeth cleaning, oxygen intake, oral health education status, and questions about the length of stay in the clinic.

The second part consisted of the items of the Oral Health Assessment Tool. This scale was developed by Eiler et al. (1988). The scale was also revised by Ross and Crumpler (2007). The validity and reliability studies of the form were adapted to Turkish by Palloş and its Cronbach Alpha value is 0.71 (Palloş, 2018). In the oral evaluation guide, oral diagnosis is made under 5 headings; lips, oral mucosa/tongue, gums teeth, and saliva. The Oral Evaluation Guide is a simple scale used by health professionals for the oral diagnosis of all sick individuals, especially intubated patients in intensive care units, and patients receiving care and treatment in oncology and transplantation units. The total score obtained from the guide indicates the risk level of the individual in terms of oral health problems. In the scale scoring, 5 points are considered as "no risk", 6-10 points as "moderate risk", and 11-15 points as "high risk". The oral mucosa of the patients was evaluated by the researcher using the inspection method with the help of a light source. In this study, the Cronbach Alpha coefficient of the scale was calculated as 0.83.

The third part consisted of the items of the Oral Health Impact Profile-14 (OHIP-14). The Oral Health Impact Profile Scale was developed by Slade and Spencer (1997) to comprehensively measure the discomfort, disability, and deficiencies related to oral and dental health. In scoring the scale, 0 points are given for never (never), 1 for rarely (hardly ever), 2 points for sometimes (occasionally), 3 points for often (fairly often), and 4 points for always (often). While the lowest score that can be obtained from the scale is 0, the highest score that can be obtained is 56. Since all of the questions are in a negative form, a score close to 0 indicates that the quality of life regarding oral and dental health is good, while a score approaching 56 indicates poor quality of life regarding oral and dental health. There are

seven dimensions (functional limitation, pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap) in the OHIP-14 scale and two expressions in each dimension. The translation, adaptation, and validity of these two scales were done by Mumcu et al. (2006) in Turkey. The Cronbach alpha value of the scale was determined as 0.94. In this study, the Cronbach Alpha coefficient of the scale was calculated as 0.95.

The fourth part consisted of the items of the Oral Health-Related Quality of Life-United Kingdom (OHRQoL-UK). Oral Health-Related Quality of Life-United Kingdom scale, based on the World Health Organization's "structure-function-ability-participation" model, was determined by McGrath and Bedi (2002) to evaluate the quality of life of individuals regarding oral and dental health and general health both positively and positively. It was created based on the view that it can affect both negatively and negatively. The scale has 16 questions in total and 4 dimensions: symptom (symptom) (2 questions), physical status (5 questions), psychological status (5 questions), and social status (4 questions). Response categories are 5-point Likert-type, ranging from "Very bad" to "Very good". The lowest score that can be obtained from the scale is 16 and the highest score is 80. A high score on the scale indicates a good quality of life for oral and dental health, while a low score indicates poor quality of life for oral and dental health. The validity and reliability studies of the scale were adapted to Turkish by Mumcu et al. (2006), and the Cronbach Alpha value for the scale was determined as 0.96. In this study, the Cronbach Alpha coefficient of the scale was calculated as 0.98.

Data Collection

After obtaining permission from the patients who were hospitalized in internal and surgical clinics and who met the criteria for participation in the study, intraoral structures were evaluated by the researcher with a light source according to the oral evaluation guide. Afterward, patients were asked to fill out the questionnaire. Each interview lasted an average of 20-25 minutes.

Data analysis

The data obtained from the study were evaluated using the IBM SPSS 22.0 (Statistical Package for the Social Sciences) package program. Number, percentage calculation, mean measures (minimum, maximum) were used in the evaluation of the data. Student's t-test and One-Way ANOVA test were used for the comparison of non-normally distributed parameters between groups. A p value <.05 was used to determine statistical significance. Pearson correlation was used to evaluate the relationships. In the literature, definitions of the strength of the correlation coefficient are stated as 0.00 0.25 very weak, 0.26-0.49 weak, 0.50-0.69 moderate, 0.70-0.89 strong, and very strong if it is between 0.90-1.00 (Erdoğan et al., 2015). The relationship between the variables in the study was interpreted based on this definition.

Ethical considerations

According to the Declaration of Helsinki (WMA, 1964), ethical guidelines for research related to register data were followed. Institutional permission and ethics committee approval (Approval Number: 2020.03.04) was obtained to conduct the study. Patients were informed about the purpose and procedure of the study before participation, and informed consent was obtained from those who agreed to participate.

RESULTS

Table 1 shows the characteristics of participants. The mean age of the patients was 51.86±19.17, 61.4% were female and 45.4% were primary school graduates. Patients of 79.6% stated that they were not working, 75.8% stated their socio-economic status as moderate, 52.7% of them were hospitalized in the surgery clinic, 39.1% of them had chronic diseases and 41.8% of them stated that they used regular medication. It was determined that 57.1% of the patients stated their perception of oral and dental health as moderate, 29.9% of them cleaned their mouth and teeth once a day, 26.4% received oxygen therapy, and 91.3% did not receive training on oral health. The hospitalization period of the patients was found to be 4.95±6.01.

Table 1: Descriptive characteristics of the patients (n=368)

Descriptive characteristics	n	%
Age ($\bar{\mathbf{X}} \pm$ SD)	51.86±19.17 (Min-Max=18-94)	
Gender		
Female	226	61.4
Male	142	38.6
Educational Status		
Primary school	167	45.4
Middle School	149	40.5
High School- Graduate	52	14.1
Working Status		
Working	75	20.4
Not working	293	79.6
Socio-economic level		
Good	47	12.8
Low	42	11.4
Middle	279	75.8
Inpatient clinic		
İnternal medicine clinics	174	47.3
Surgery clinics	194	52.7
Chronic disease status		
Yes	144	39.1
No	224	60.9
Regular drug use		
Yes	154	41.8
No	214	58.2
Oral health perception		
Good	86	23.4
Middle	210	57.1
Bad	72	19.6
Mouth-teeth cleaning frequency		
Once a day	110	29.9
Twice a day	79	21.5
Once or twice a week	58	15.8
when it comes to mind	98	26.6
I never brush	23	6.3
Oxygen therapy status		
Yes	97	26.4
No	271	73.6
Oral health education status		
Yes	32	8.7
No	336	91.3
Length of stay in the clinic (days) ($\bar{\mathbf{X}} \pm$ SD)	4.95±6.01 (Min-Max=1-61)	

Table 2 indicates the means, standard deviations. The mean oral health evaluation score of the patients was found to be 7.45±2.32. The mean OHIP-14 score is 13.47±13.40, and the sub-dimension mean scores; functional limitation 1.89±2.32, physical pain 1.95±2.34, psychological discomfort 3.08±2.26, physical disability 1.91±2.15, psychological disability was 1.61±2.11, social disability was 1.49±2.00, and the handicap was 1.51±2.13. OHRQoL-UK mean score was 51.00±14.58, sub-dimension mean scores; symptom 6.25±2.13, physical condition 16.01±5.17, psychological status 15.94±4.57 and social status 12.79±3.45.

Table 3 shows the comparison of patients according to their OHIP-14, OHRQoL-UK, and Oral Health Evaluation mean scores according to their descriptive characteristics. The mean OHIP-14 and mouth evaluation scores of male patients were higher than female patients, and the difference was found to be statistically significant (p<0.05). The mean OHRQoL-UK score of male patients was lower than that of female patients, and the difference was found to be statistically significant (p<0.05). The OHIP-14 and mouth evaluation mean scores of primary school graduates were higher, and the difference was found to be statistically significant (p<0.05). The OHRQoL-UK mean score of the patients with a university-postgraduate degree was higher, and the difference was found to be statistically significant (p<0.05). The mean OHIP-14 and oral evaluation scores of the patients hospitalized in the internal medicine clinic were higher than the patients hospitalized in the surgery clinic, and the difference was found to be statistically significant (p<0.05). The mean OHRQoL-UK score of the patients hospitalized in the internal medicine clinic was lower than the patients hospitalized in the surgery clinic, and the difference was found to be statistically significant (p<0.05). The OHIP-14 and mouth evaluation mean scores of patients with chronic disease were higher than those of patients without chronic disease, and the difference was found to be statistically significant (p<0.05). The mean OHRQoL-UK score of patients with chronic disease was lower than patients without chronic disease, and the difference was found to be statistically significant (p<0.05). The OHIP-14 and oral evaluation averages of the patients who received oxygen therapy were higher than those who did not, and the difference was found to be

statistically significant (p<0.05). The OHRQoL-UK mean score of the patients who received oxygen therapy was lower than the patients who did not, and the difference was found to be statistically significant (p<0.05).

Table 2: Oral Health Assessment Tool of the patients, OHIP-14 and OHRQoL-UK scale and sub-dimension total score averages

Scales		$\overline{X}$ ±SD	Min.	Max.
Oral Health Assessment Tool		7.45±2.32	5.00	15.00
OHIP-14*	Functional Limitation	1.89±2.32	0.00	8.00
	Physical Pain	1.95±2.34	0.00	8.00
	Psychological Discomfort	3.08±2.26	0.00	8.00
	Physical Disability	1.91±2.15	0.00	8.00
	Psychological Disability	1.61±2.11	0.00	8.00
	Social Disability	1.49±2.00	0.00	8.00
	Handicap	1.51±2.13	0.00	8.00
	OHIP-14 Total score	13.47±13.40	0.00	56.00
OHRQoL-UK**	Symptom	6.25±2.13	2.00	10.00
	Physical Condition	16.01±5.17	5.00	25.00
	Psychological Status	15.94±4.57	5.00	25.00
	Social Status	12.79±3.45	4.00	20.00
	OHRQoL-UK Total score	51.00±14.58	16.00	80.00

*OHIP-14, Oral Health Impact Profile-14; **OHRQoL-UK, Oral Health Related Quality of Life-United Kingdom.

OHRQoL-UK, Oral Health Assessment, Age, and duration of clinical hospitalization. OHIP-14 was weak in the positive direction (r=0.440, p=0.000) between the mean total score and age, very weak in the positive direction (r=0.124, p=0.017) in the duration of clinical hospitalization, and strong in the positive direction in the evaluation of oral health (r=. 0.720, p=0.000) a statistically significant relationship was determined (p<0.05). The mean OHRQoL-UK score and age, it was weak (r=-0.335, p=0.000), the length of stay in the clinic was very weak (r=-0141, p=0.007) and the oral health evaluation was moderate (r=-0.699, p=0.000) a statistically significant relationship was determined (p<0.05). A statistically significant correlation was found between the mean oral evaluation score and age (r=0.410, p=0.000) and a very weak positive (r=0.104, p=0.046) relationship between the length of stay in the clinic (p<0.05) (Table 4).

DISCUSSION

Oral health is an important indicator of general health. Having good oral health nowadays is not only aimed at tooth health, but as amply demonstrated in the literature, it is a starting point for the general health and well-being of our body (Fiorillo, 2019). Oral health can be measured objectively by means of oral examinations by health professionals and also subjectively as reported by the individual (Kwon et al., 2021). Nurses in the healthcare team will evaluate oral health and provide oral care within the scope of individualized, holistic nursing care, which will ensure patient safety and comfort (Stout et al. 2009). In this context, it is necessary to evaluate the oral health quality of life of hospitalized patients, which affects the nutrition, sleep, social communication, and self-confidence of people with other individuals and determines the satisfaction of individuals with their oral health. This study was conducted to determine the oral health quality of life of hospitalized patients and the study findings were discussed in the light of the literature.

It was found that the patients participating in the study were at moderate risk (7.45±2.32) in terms of oral health problems (Table 2). This situation reveals that patients should be supported in the protection and maintenance of oral mucosal health. In addition, in this study, 91.3% of the patients did not receive training on oral health, 29.9% of them did their mouth-tooth cleaning even once a day, It was determined that 58.2% of them did not use regular medication, the majority were in the middle age group (51.86±19.17) and the average length of hospitalization was short (4.95±6.01) (Table 1). These findings are consistent with the fact that the patients were found to be at moderate risk for oral health problems. Again, in this study, a weak and statistically significant positive correlation was determined between the average oral health evaluation score and age (Table 4). To determine the risk in terms of oral health in clinics and to maintain the integrity of the oral mucosa, the oral evaluation must be done first. Daily observation of the oral mucosa, besides deciding on the frequency of care, is extremely important in terms of detecting developing infections in the early period, preventing the development of various oral problems such as periodontal diseases, bad breath, dry mouth, and stomatitis, and is necessary for immediate intervention. Evaluation of the mouth is the responsibility of the nurse and the frequency of evaluation may vary according to the patient's needs (Dikmen, 2017; Özveren 2010). These results show the importance of regular oral evaluation of the inpatients by nurses according to the patient's condition.

Table 3: Comparison of the patients according to their descriptive characteristics according to their OHIP-14, OHRQoL-UK, and Oral Health Assessment mean scores (n=368)

	OHIP-14 total score $\bar{X} \pm SD$	OHRQoL-UK total score $\bar{X} \pm SD$	Oral Health Assessment Tool $\bar{X} \pm SD$
Gender			
Female	11.82±12.53	52.30±14.22	7.13±2.06
Male	16.09±14.34	48.94±14.95	7.95±2.60
Statistical Evaluation	t=-2.912	t=2.161	t=-3.197
	p=0.004	p=0.031	p=0.002
Educational Status			
Primary school	17.67±14.39	45.58±13.18	8.25±2.31
Middle School	11.69±12.39	53.22±14.09	6.98±2.21
High School- Graduate	5.05±5.85	62.03±12.37	6.21±1.64
Statistical Evaluation	F= 22.027	F= 33.060	F= 22.737
	p=0.000	p=0.000	p=0.000
Working Status			
Working	8.61±9.48	55.48±13.75	6.62±1.88
Not working	14.71±13.97	49.86±14.59	7.66±2.37
Statistical Evaluation	t=-4.466	t=3.011	t=-4.007
	p=0.000	p=0.003	p=0.000
Socio-economic level			
Good	7.14±6.68	58.71±11.15	6.07±1.55
Middle	13.29±13.25	51.09±14.39	7.48±2.30
Bad	20.19±15.79	43.59±14.91	8.51±2.43
Statistical Evaluation	F= 11.200	F= 12.702	F= 13.157
	p=0.000	p=0.000	p=0.000
Inpatient Clinic			
İnternal medicine clinics	17.71±15.25	47.88±16.68	8.11±2.60
Surgery clinics	9.67±10.12	53.80±11.75	6.85±1.84
Statistical Evaluation	t= 5.889	t=-3.893	t= 5.295
	p=0.000	p=0.003	p=0.000
Chronic disease status			
Yes	16.72±14.22	48.30±14.47	7.91±2.36
No	11.37±12.44	52.74±14.41	7.15±2.24
Statistical Evaluation	t= 3.695	t=-2.876	t= 3.122
	p=0.000	p=0.004	p=0.002
Regular drug use			
Yes	16.93±13.65	48.09±14.24	8.11±2.38
No	10.98±12.67	53.10±14.49	6.97±2.16
Statistical Evaluation	t= 4.302	t=-3.296	t= 4.682
	p=0.000	p=0.001	p=0.000
Oral health perception			
Good	5.77±8.54	62.13±11.15	5.94±1.17
Middle	12.43±11.75	50.83±12.57	7.35±2.09
Bad	25.69±14.42	38.20±12.97	9.54±2.46
Statistical Evaluation	F= 58.802	F= 73.737	F= 63.879
	p=0.000	p=0.000	p=0.000
Oxygen therapy status			
Yes	21.54±14.91	42.44±14.07	8.78±2.50
No	10.58±11.54	54.07±13.52	6.97±2.05
Statistical Evaluation	t= 6.568	t=-7.189	t= 6.393
	p=0.000	p=0.000	p=0.000
Oral health education status			
Yes	7.75±10.47	61.31±14.84	6.21±1.73
No	14.01±13.53	50.02±14.19	7.56±2.33
Statistical Evaluation	t= -2.546	t= 4.282	t= -4.061
	p=0.011	p=0.000	p=0.000

t: Student's t-test; F: One-Way ANOVA.

Questionnaires developed and widely used for oral health-related quality of life measures are the OHIP-14 and OHRQoL-UK questionnaires (Naito, 2006). The OHIP-14 scale determines how patients' oral problems can negatively affect their lives, while the OHRQoL-UK scale determines the positive effects of oral health as well as negative effects (McGrath & Bedi, 2002). For these reasons, in this study, these two quality of life scales were used together to see the positive and negative effects. In this study, the patients participating in the study were OHIP-14, 13.47±13.40 on both scales; OHRQoL-UK showed that they scored 51.00±14.58 and evaluated their oral health-related quality of life above the average (Table 2). These results show that the patients participating in the study are above the average in terms of nutrition, sleep, social communication with other individuals, and the variables that affect their self-confidence, and oral health satisfaction. In the study, the fact that the majority of the patients were in the middle age group, the number of patients with chronic diseases, regular medication and oxygen therapy, and the moderate level of oral health perceptions may have affected the oral health quality of life perceptions positively.

However, the perception of oral health varies according to what the person understands from 'ideal' oral health, cultural values, general health, and psychosocial happiness (Natio et al., 2006). The low oral health quality of life of individuals with poor quality of life may not affect them. Conversely, individuals with high expectations may be dissatisfied even with good oral health (Carr et al., 2001). Another remarkable finding in this study is that the psychological discomfort dimension among the OHIP-14 scale dimensions had the highest mean (3.08±2.26). From this point of view, it can be said that according to the OHIP-14 scale, the oral health problems of the participants mostly affect their psychological state. In addition, there are similar results in terms of scale score averages in studies conducted with different sample groups in the literature (Top et al., 2019; Malicka et al., 2022; Masood et al., 2017; Skośkiewicz-Malinowska et al., 2015). When complaints such as pain and discomfort are added to the structural and functional disorders in the oral mucosa, it is expected that the mental states, social lives, and needs of the individuals will be negatively affected and their quality of life will decrease (Baker, 2007; Naito, 2006).

Table 4: Correlation analysis between OHIP-14, OHRQoL-UK, Oral Health Assessment, Age, and Length of Clinical Hospitalization

	OHIP-14 total score	OHRQoL-UK total score	Oral Health Assessment Tool
Age	r=0.440 p=0.000	r=-0,335 p=0.000	r= 0.410 p=0.000
Length of stay in the clinic (days)	r=0.124 p=0.017	r=-0.141 p=0,007	r=0.104 p=0.046
Oral Health Assessment Tool	r=0.720 p=0.000	r = -0.699 p=,000	1

The effects of some socio-demographic and clinical data, which we evaluated within the scope of this study, on oral health were determined. In particular, the scores obtained from the oral health evaluation guide of the male, primary school graduates, employees, who express their poor socio-economic status, who are treated in the internal clinic, who have chronic diseases, who use regular drugs, and who receive oxygen therapy, are significantly affected and that the oral and dental health quality of life is significantly affected were found to be worse than the other groups (Table 3). The level of education affects the level of occupation and income of individuals, changing their living standards and thus affecting their quality of life (Ng & Leung, 2006). In this study, it was found that the oral health quality of life increased with the increase in education level, that is, the OHIP-14 scores of individuals with university degrees and graduate education levels were significantly lower (Table 3). There are many studies supporting this in the literature (Meusel et al., 2015; Verrips & Schuller, 2013). In addition, in the meta-analysis conducted by Baniasadi et al. (2021), a positive correlation was found between low education level (i.e. ≤8th grade) and poor oral health quality of life in the elderly. This situation has been associated with the increase in the attention and awareness shown to oral care as the education level increases and routine health checks.

Oral health problems disproportionately affect poor and socially disadvantaged members of society. There is a very strong and consistent relationship between socio-economic status (income, occupation, and education level) and the prevalence and severity of oral diseases (Peres et al., 2019). Overall, a survey of adults expressing a need for oral health care found that access to service was less than 35% in low-income countries, 60% in middle-income countries, 75% in upper-middle-income countries, and 82% in high-middle-income countries (Hosseinpoor et al., 2012). In addition, it is stated that even in high-income environments, dental treatment is costly and accounts for 20% of out-of-pocket health expenditure (OECD, 2017). As a result of the meta-analysis by Knorst et al (2020) the lower the socio-economic status of individuals, the poorer their oral health quality of life. In this study, it was found that the oral health quality of life of the participants who reported their socio-economic status as poor, supporting the literature, was weaker/worse than the other groups (Table 3).

Different results have been reported in studies investigating the effect of gender on oral health quality of life. Evaluating the effects on women and men in terms of quality of life, Castrejon-Parez et al. (2017) found that men's oral and dental health-related quality of life was lower than women's. Top et al. (2019) and Caglayan et al. (2009) reported that women had higher OHIP-14 scores than men. In a study by Skośkiewicz-Malinowska et al. (2021) on 500 elderly adults, no gender-based differences were found in oral health parameters, except for a higher number of decayed teeth in males. Dry mouth is significantly more common in women than men (36.9% vs. 25.5%), men are significantly more likely to have high treatment needs (36.1% vs. 26.9%) and need urgent dental treatment. (7.2% vs. 2.8%). In the same study, no significant difference was found between men and women in terms of quality of life as assessed by the OHIP-14 questionnaire (Skośkiewicz-Malinowska et al. 2021). It should be taken into account that these differences in the results of the study may be related to the cultural characteristics and economic opportunities of the individuals included in the study and the region where the study was applied, differences in personal perception, the importance given to oral health, the size of the study sample and other factors that may affect the quality of life. In this study, it was found that the oral and dental health quality of life of women was better than that of men (Table 3). This is consistent with the literature (Drachev et al., 2018; Hamasha et al., 2018) showing that women benefit from dental services more frequently, exhibit more positive behaviors toward oral health, care about their oral health, and frequently apply for control and aesthetic purposes, not because of any complaints.

The disease process, drug use, complications of the disease, social and psychological indirect effects, and quality of life of individuals with chronic diseases are adversely affected. In this study, it was found that patients who were hospitalized in the internal medicine clinic, had a chronic disease, and regularly took medication were riskier in terms of oral health and their oral health quality of life was worse than the other groups (Table 3). Baykan et al. In a study conducted (2011) on elderly people in nursing homes, similar to this study results, the satisfaction levels of individuals with chronic diseases regarding their general health were found to be significantly lower than those without the chronic disease (Baykan et al., 2011). Assiri et al. (2020) reported that most patients with a history of systemic disease showed significantly poorer oral health than those without a medical history. The fact that the patients hospitalized in the internal medicine clinic had a chronic disease compared to the patients in the surgery clinic, the treatment/drugs they received, and their longer hospital stay may have affected this result. Again, in this study, it was determined that there was a very weak and statistically significant positive correlation between the mean oral health evaluation score and the length of stay in the clinic (Table 4). In a study, it was found that the oral health of hospitalized patients was increased in the amount of dental plaque and gingivitis present over 7 to 20 days (Terezakis et al., 2011). On the other hand, Bek Kurklu et al. (2021) of patients hospitalized in the neurology service for seven days; determined a significant decrease in tooth brushing habits, a significant increase in plaque index, and saliva S. mutans level. Insufficient brushing due to hospitalization and functional regression may result in an inability to mechanically remove plaque from the teeth. This inadequacy in oral health can cause an increase in bacteria, which is usually included in plaque accumulation (Marsh, 2006; Bek Kurklu et al., 2021). The drugs used by the patients (anticholinergics, antiemetics, analgesics, antibiotics, diuretics, antihypertensives, anticonvulsants, antidepressants, antispasmodics, analgesics, oral contraceptives, steroids, chemotherapy, etc.) can change the oral cavity flora by reducing the protective salivary secretion. At the same time, they can cause conditions such as dry mouth, gingival hyperplasia, tooth decay, painful ulcers, oral thrush, and taste change (Malkin, 2009). Today, it is known that polypharmacy increases remarkably with chronic diseases. Therefore, preventive education and interventions related to oral health should be structured to appeal to wider audiences. In particular, nurses who spend the longest time with the patient should consider factors such as the presence of chronic disease, oxygen therapy, drug use, educational status, and socio-economic status when planning their patients' oral health care. It is necessary to evaluate the patient's entire oral structure daily in terms of risk factors, to determine the ability to perform oral care on his own, to plan oral hygiene with the patient if possible, and to provide appropriate oral and dental care for patients who cannot perform self-care (Kalav & Bektaş, 2016; Malkin, 2009). Nurses hold a key position in raising awareness, education, and oral care for hospitalized patients. It should not be forgotten that patients' oral health-related quality of life is significantly affected by the individual's culture, experiences, oral health problems or service experience in the face of problems, psychological state such as happiness or depression, and the answers to the questions about the health status they plan for the future (Inglehart & Bagramian, 2002).

Limitations

This study has two limitations. The first of these is that the study was conducted in a single center and the results of the study could be generalized to patients treated in this institution. Another is that the average hospital stays in the study was short.

CONCLUSION

As a result, it was determined that the patients participating in the study were at moderate risk in terms of oral health problems and their oral health quality of life was above the average. Oral health and oral health-related quality of life were found to be affected by education level, gender, socio-economic status, taking oxygen therapy, chronic disease, and regular drug use. In line with this study results, it is recommended to study with a larger sample patient group to generalize the data to a wider population and to conduct qualitative studies to understand the barriers and needs of patients in providing oral health.

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