



Quality of life and patient satisfaction difference on conventional root care maintenance by dental rofession students, conservative dentistry residents, and conservative dentistry specialist

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Abstract

Background: Patients are important factors that can provide an assessment of the quality of health care received. One of the dental health care is root canal treatment. Complete root canal treatment is primarily to form perceptions of service quality and also influence the level of patient satisfaction.

Purpose: To determine differences in quality of life and patient satisfaction after receiving conventional root canal treatment from dental profession students, conservative dentistry residents, and conservative dentistry specialists at Universitas Airlangga Hospital. **Methods:** Quality of life assessment was carried out using an Oral Health Impact Profile (OHIP) instrument with 7 conceptual dimensions which were then modified for endodontic concepts. For assessing the quality of health services, measured through the level of satisfaction with care on a numerical scale. **Results:** The results obtained varied by group, according to 7 indicators of quality of life and 6 indicators of satisfaction observed. Kruskal Wallis test to determine the relationship between quality of life and patient satisfaction has a significance value of $p < 0.05$. The Mann-Whitney follow-up test for the quality of life showed a value of $p < 0.05$ between professional students, residents, and specialists, and $p > 0.05$ between residents and specialists. Mann-Whitney's follow-up test for satisfaction showed a value of $p < 0.05$. **Conclusion:** There were differences in quality of life and patient satisfaction after conventional root canal treatment between dental profession students, conservative dentistry residents, and conservative dentistry specialists at Dental and Oral Hospital Universitas Airlangga.

Keywords: root canal treatment, quality of life, satisfaction level, health service provider

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INTRODUCTION

Quality of life is a subjective perception formed by individuals about physical, emotional, cognitive abilities (satisfaction), and emotional components or happiness (Awad & Voruganti, 2000). The basic concepts of quality of life include physical, social, and psychological characteristics that are described by the ability of individuals to do something, satisfaction with work and relationships with illness or treatment. Satisfaction is the extent to which a product level is perceived as being following the expectations of the buyer. Patient satisfaction is defined as a condition where the patient's expectations of health service are following the reality (treatment results) received by the patient. Patients' expectations will be known from their own experiences when using these health services, information from other

people, and information obtained from other health advertisements or promotions.

Health problems can affect a person's quality of life. One of the many health problems encountered in Indonesia is dental caries. Dental caries is a disease of dental tissue characterized by tissue damage (Hidayatullah, Agustiani, & Setiawan, 2018; Pratiwi, Akbar, Abdullah, & Maretta, 2018). Indonesia Basic Health Research Data in 2018 shows the national prevalence of dental caries problems is 88.8 percent. Widened caries will involve the part of the periradicular pulp so that it requires treatment of dental nerves or what is known as Root Canal Treatment (RCT).

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A recent study by Gatten et al. (2011) identified patient concerns related to RCTs that most participants in the endodontic group felt that teeth that had been treated by RCTs could return to their initial condition before illness, both in form and function (Gatten, Riedy, Hong, Johnson, & Cohenca, 2011). This revealed that the patient wanted his treated teeth to function and look the same as natural teeth before treatment (Susilawati et al., 2018). Patients are important factors that can provide an assessment of the quality of health care received (Palutturi, Rutherford, Davey, & Chu, 2014). Patient loyalty to come back to health services is influenced by the hospitality and service skills of medical personnel (Haryanto & Ollivia, 2009). Evaluating the quality of life and patient satisfaction after RCT needs to be done (Harahap & Nasution, 2018).

Assessment of quality of life-based on dental and oral health is carried out using the Oral Health Impact Profile (OHIP) instrument aimed at looking at the impact or social effects of treatment with 7 conceptual dimensions which are then modified for the concept of RCT (Dugas, Lawrence, Teplitsky, & Friedman, 2002). For the assessment of the quality of health services, it is done by measuring the level of satisfaction with RCT on a number scale. Dugas et al (2002) conducted a study to assess the effect of RCT on quality of life between two different Canadian groups (119 subjects) (Dugas et al., 2002). The measuring instrument used is a modification of OHIP (OHIP-17). The results of the validity and reliability of the study showed that the instrument had high reliability.

The level of patient satisfaction is important in the provision of better and more efficient services. The difference in the level of education and experience of the dentist can be an important factor affecting the dental services provided (Bramma, Trelia, Menik, & Hanna, 2017; Molek et al., 2016). Services received by patients will affect the quality of life and satisfaction of patients themselves (Patandianan, 2017). If the patient is not satisfied, it must be known the causes and the improvement of the health care system (Harahap & Nasution, 2018). If there is no improvement in the health service, the results of measuring the level of patient satisfaction will not be useful. Therefore, the purpose of measuring patient satisfaction levels is to find out the factors that make patients feel dissatisfied (Gerson, 2014).

There is a relationship between quality of life and patient satisfaction with oral health. The emergence of periradicular pulp disease has a negative impact on the quality of life and improvement of quality of life after RCT. Operator satisfaction is also influenced by the level of education of the operator caring for RCT (Gerson, 2014; Akpan, & Udoh, 2017). A study in Jordan evaluated the quality of life and patient satisfaction after root canal treatment by 3 different operators namely dental profession students, dentists, and endodontic specialist

dentists at the Dental Training Center of Jordan University. In this study, an increase in quality of life after root canal treatment and the average patient satisfaction with root canal treatment by 3 different operators was 8-10.

Plenary health services primarily aim to form perceptions of service quality that indirectly affects patient satisfaction (Aliman & Mohamad, 2013). Service quality can be in the form of technical quality (maintenance procedures) and functional (attitude in the delivery of maintenance procedures) (Alrubaiiee, 2011). The quality of plenary service requires an adequate level of education and work experience of medical personnel. By analyzing differences in quality of life and patient satisfaction with care provided, dentists can evaluate the care system and its impact on care in the patient's view (Leong & Yap, 2019). The 2013 Hamasha study inspired this study because knowing the quality of life and patient satisfaction with RCT can be an evaluation of the care and service system in Dental and Oral Hospital. Dental and Oral Hospital Universitas Airlangga is a dental and mouth education hospital where operators who work to treat patients consist of dental profession students, specialist residents, and specialist dentists. Conventional RCT can be done by general dentists or dentists in conservative dentistry specialists. Dentist profession students are students who are still undergoing the Dentist Profession program, conservative dentistry residents are Dentists who are undergoing the Conservative dentistry Specialist Professional Dentist program, while the conservative dentistry specialist is a conservative dentistry specialist.

The level of education can guarantee that medical personnel have the expertise and can think critically about the care provided. Work experience is gained from high flight hours and additional training received by medical personnel (Supriyanto, 2010). Different levels of expertise and experience can make a difference in the quality of life and satisfaction of a patient. Based on this research conducted on differences in quality of life and patient satisfaction after conventional root canal treatment by dental profession students, conservative dentistry residents, and conservative dentistry specialists at Universitas Airlangga Hospital.

MATERIAL AND METHODS

The study began with the preparation of a research permit and ethical clearance issued by the Ethics Commission of the Faculty of Dental Medicine, Universitas Airlangga with certificate number 163 / HRECC.FODM / III / 2020. This cross-sectional study was conducted to evaluate the quality of life and patient satisfaction after root canal treatment by dental profession students, conservative dentistry residents, and conservative dentistry specialists. This research was conducted in February - March 2020 at the Dental

Table 1. Modified OHIP-18 Questionnaire (Dugas et al., 2002)

OHIP#	Questions
OHIP1	Do you have a word interruption due to the condition of your teeth?
OHIP2	Do you feel a decreased taste ability due to the condition of your teeth?
OHIP3	Have you ever felt pain in your teeth?
OHIP4	Do you feel uncomfortable chewing because of the condition of your teeth?
OHIP5	Do you have to make changes to the temperature of the food that you consume because it will affect your tooth condition?
OHIP6	Do you feel insecure because of the condition of your teeth?
OHIP7	Are you worried about the condition of your teeth?
OHIP8	Do you feel dissatisfied with every meal because of the condition of your teeth?
OHIP9	Have you ever decided not to eat one time because of the condition of your teeth?
OHIP10	Have you ever felt unable to rest because of the condition of your teeth?
OHIP11	Has the condition of your teeth ever disturbed your sleep quality?
OHIP12	Have you ever woken up from your sleep because of the condition of your teeth?
OHIP13	Have you ever felt ashamed because of the condition of your teeth?
OHIP14	Have you ever felt angry because of the condition of your teeth?
OHIP15	Have you ever felt a disruption in working because of the condition of your teeth?
OHIP16	Have you ever felt that life became less pleasant because of the condition of your teeth?
OHIP17	Do you feel you cannot do any work because of the condition of your teeth?
OHIP18	Is there a complete difference in your teeth between before treatment and after treatment?

Table 2. Sematic Differential Scale

	1	2	3	4	5	6	7	8	9	10	
Expensive	<input type="checkbox"/>	Cheap									
A long duration of treatment	<input type="checkbox"/>	Fast treatment duration									
Painful	<input type="checkbox"/>	No pain									
Unaesthetic results	<input type="checkbox"/>	Aesthetic result									
Chewing disorder	<input type="checkbox"/>	Easy to chew									
Uncomfortable	<input type="checkbox"/>	Comfortable									
Not satisfied	<input type="checkbox"/>	Satisfied									

and Oral Hospital of Universitas Airlangga, Surabaya, East Java, Indonesia. Quality of life was measured 2 weeks after treatment.

Sampling as a research subject was carried out by a systematic random sampling method. Each root canal treatment patient who met the study criteria was included in the study until the minimum sample size was met. Criteria for inclusion of samples are a) ages ranging from 18 - 60 years, b) Patients are systemically healthy, mentally healthy, able to legally make an informed consent. Exclusion criteria are a) Patients with diabetes mellitus, blood disorders, pregnancy, and patients who are on orthodontic treatment, b) patients who are taking antibiotics and or pain relievers. The number of samples based on the formula found 58 patients. Following the statement of Champion (1981) in Setyawan (2017) that existing statistical tests will be effective if applied to 30-60 samples (Setyawan, 2017).

The dependent variable in this study was quality of life and patient satisfaction, while the independent variable was root canal treatment by dental profession students, conservative dentistry residents, and conservative dentistry specialists.

Data collection in this study was carried out by researchers through questionnaires in compliance with research ethics, namely protecting the rights of respondents in the form of informed consent, anonymity, and confidentiality. The questionnaire used in this study consisted of 3 parts: a) personal and demographic information (age, gender, occupation, last education, smoking), b) modification of the Oral Health Impact Profile (OHIP) questionnaire (Dugas et al., 2002) to

evaluate the quality of life after root canal treatment (**Table 1**) and translate it in Indonesian. OHIP with 7 conceptual dimensions was modified for endodontic concepts and assessment of the quality of health services by measuring the level of satisfaction with care with a numerical scale, c) a semantic differential scale that can evaluate patient satisfaction after root canal treatment (**Table 2**). The questionnaire was given to respondents using Google forms.

Frequency distribution uses means, medians, and standard errors. The normality test using Shapiro-Wilk and homogeneity test is done to see the distribution of data and check the parametric test requirements. In this study, the data proved homogeneous but the distribution was not normal, so the test to see differences in quality of life and patient satisfaction was carried out by the Kruskal-Wallis test followed by the Mann-Whitney test to see the significance between each group.

RESULTS

In this study, data were collected on several characteristics such as sex, age, education level, and smoking habits of patients. Test equipment in the form of OHIP questionnaire is used to see the quality of life and a scale of numbers to see patient satisfaction from each group observed. The questionnaire was given 2 weeks after receiving root canal treatment by dental profession students or conservative dentistry residents, or conservative dentistry specialists.

Based on **Table 3**, 45.8% were men and 54.2% were women, 55.6% under 30 years, and 44.4% over 30 years. The most recent bachelor education was 65.3%. About

Table 3. Patients Prevalence

Variable	Category	N	Percentage (%)
Gender	Female	39	54,2%
	Male	33	45,8%
	Total	72	100,0%
Age	<30	40	55,6%
	>30	32	44,4%
	Total	72	100,0%
Educational Background	Junior High School	1	1,4%
	High School	13	18,1%
	Bachelor	47	65,3%
	Master	5	6,9%
	Doctor	1	1,4%
	Diploma	5	6,9%
Total	72	100,0%	
Job	Unemployed	5	6,9%
	Employed	64	88,9%
	Students	3	4,2%
	Total	72	100,0%
Smoking habit	Yes	29	40,3%
	No	43	59,7%
	Total	72	100,0%
Operator	Dental profession students	24	33,3%
	Conservative Dentistry Residents	24	33,3%
	Conservative Dentistry Specialists	24	33,3%
	Total	72	100,0%

6.9% of the subjects were unemployed, 88.9% were employed, and 4.2% were students. Around 40.3% are smokers and 59.7% are non-smokers. 33.3% were treated by dental profession students 33.3% by conservative dentistry residents and 33.3% by conservative dentistry specialists.

Based on **Table 4**, functional limitation, physical pain, psychological discomfort, physical disability,

psychological disability, social disability after root canal treatment showed the highest number of treatments performed by dental profession students followed by conservative dentistry residents and conservative dentistry specialists. Significant changes were felt by dental profession student students by 13%, conservative dentistry resident patients 79%, and conservative dentistry specialist patients by 83%.

Table 4. Patient's Quality of Life

Operator	Questionnaire's Object	Description	Yes	No
Dental profession students 24 respondents	Function Limit	Speech disorder	0,0%	100,0%
		Tasting disorder	4,0%	96,0%
	Physical Pain	Pain	83,0%	17,0%
		Uncomfortable	54,0%	46,0%
		Temperature changes of food	25,0%	75,0%
	Psychological Aspect	Lower self confidence	33,0%	67,0%
		Anxiety	92,0%	8,0%
	Physical Disability	Not satisfied when eating	25,0%	75,0%
		Choose not to eat	21,0%	79,0%
		Unable to rest	25,0%	75,0%
	Psychological disability	Interferes with sleep quality	42,0%	58,0%
		Awakened	29,0%	71,0%
		Feel embarrassed	37,0%	63,0%
		Easily angry with others	50,0%	50,0%
	Social Disability	Interference while working	25,0%	75,0%
		Life's not fun	54,0%	46,0%
		Can't function properly	4,0%	96,0%
Significant changes in teeth pre and post Root Canal Treatment			13,0%	87,0%
Conservative Dentistry Residents 24 Respondents	Function Limit	Speech disorder	0,0%	100,0%
		Tasting disorder	0,0%	100,0%
	Physical Pain	Pain	29,0%	71,0%
		Uncomfortable	25,0%	75,0%
		Temperature changes of food	12,0%	88,0%
	Psychological Aspect	Lower self confidence	17,0%	83,0%
		Anxiety	42,0%	58,0%
	Physical Disability	Not satisfied when eating	29,0%	71,0%
		Choose not to eat	8,0%	92,0%
		Unable to rest	12,0%	88,0%
	Psychological disability	Interferes with sleep quality	17,0%	83,0%
		Awakened	17,0%	83,0%
		Feel embarrassed	21,0%	79,0%
		Easily angry with others	12,0%	88,0%
	Social Disability	Interference while working	8,0%	92,0%
		Life's not fun	8,0%	92,0%
		Can't function properly	4,0%	96,0%
Significant changes in teeth pre and post Root Canal Treatment			21,0%	

Table 4 (continued). Patient's Quality of Life

Operator	Questionnaire's Object	Description	Yes	No
Conservative Dentistry Specialists 24 Respondents	Function Limit	Speech disorder	0,0%	100,0%
		Tasting disorder	0,0%	100,0%
	Physical Pain	Pain	8,0%	92,0%
		Uncomfortable	8,0%	92,0%
		Temperature changes of food	71,0%	29,0%
	Psychological Aspect	Lower self confidence	12,0%	88,0%
		Anxiety	12,0%	88,0%
	Physical Disability	Not satisfied when eating	4,0%	96,0%
		Choose not to eat	12,0%	88,0%
	Psychological disability	Unable to rest	4,0%	96,0%
		Interferes with sleep quality	8,0%	92,0%
		Awakened	0,0%	100,0%
		Feel embarrassed	8,0%	92,0%
		Easily angry with others	8,0%	92,0%
		Interference while working	8,0%	92,0%
	Social Disability	Life's not fun	8,0%	92,0%
		Can't function properly	4,0%	96,0%
Significant changes in teeth pre and post Root Canal Treatment				17,0%

Table 5. Patients Satisfaction

Operator	Variable	Score 1-3 (Dissatisfied)	Score 4-6 (Well satisfied)	Score 7-9 (Satisfied)	Score 10 (Very satisfied)
Dental profession students 24 respondents	Cost satisfaction	4,2%	8,3%	37,5%	50,0%
	Treatment time	62,5%	29,2%	8,3%	0,0%
	Pain during treatment	16,7%	37,5%	29,2%	16,7%
	Aesthetic results	37,5%	33,3%	20,8%	8,3%
	Ability to chew	4,2%	12,5%	45,8%	37,5%
	Comfort	4,2%	33,3%	29,2%	33,3%
	Overall satisfaction	12,5%	37,5%	20,8%	29,2%
ConservativeDentistry Residents 24 Respondents	Cost satisfaction	0,0%	20,8%	50,0%	29,2%
	Treatment time	12,5%	41,7%	41,7%	4,2%
	Pain during treatment	0,0%	8,3%	58,3%	33,3%
	Aesthetic results	0,0%	8,3%	45,8%	45,8%
	Ability to chew	4,2%	0,0%	37,5%	58,3%
	Comfort	4,2%	12,5%	41,7%	37,5%
Conservative Dentistry Specialists 24 Respondents	Overall satisfaction	4,2%	12,5%	45,8%	33,3%
	Cost satisfaction	4,2%	25,0%	41,7%	29,2%
	Treatment time	4,2%	8,3%	29,2%	58,3%
	Pain during treatment	0,0%	12,5%	29,2%	58,3%
	Aesthetic results	0,0%	8,3%	29,2%	62,5%
	Ability to chew	0,0%	4,2%	37,5%	58,3%
Overall satisfaction	Comfort	4,2%	4,2%	25,0%	66,7%
	Overall satisfaction	0,0%	8,3%	25,0%	66,7%

Table 5 shows patient satisfaction with a semantic differential scale. Patients were asked to rate the results of root canal treatment on a scale of 1 (dissatisfied) to 10 (very satisfied). The treatment carried out by conservative dentistry specialists showed the highest value on overall satisfaction. Very satisfied 66.7%, Resident conservative dentistry 33.3%, while dental profession students were 29.2%. Cost satisfaction on treatment by dental profession students shows the highest satisfaction. The treatment time indicated that treatment by conservative dentistry specialists was followed faster by resident conservation, while the dental care student's professional treatment time was very high at a score of 1-3 (dissatisfied). Patient satisfaction in the category of pain during treatment, post-action aesthetics, chewing ability, comfort, and overall satisfaction with the highest number in conservative dentistry specialists followed by conservative dentistry residents and dental profession students.

The Kruskal Wallis test was carried out to see significant differences whose purpose was to determine whether there were statistically significant differences

between each independent variable (the group of caring operators) on the dependent variable (quality of life and patient satisfaction). Based on **Table 6**, the two observed variables have a significance value of 0.000 so that $p < 0.05$ can be interpreted as a hypothesis accepted and there is an influence between operators caring for the quality of life and patient satisfaction after root canal treatment.

Further testing needs to be done to see the significant differences from each group on the quality of life of patients after root canal treatment. The Mann Whitney test was carried out with the results in **Table 7** showing that the significance value was 0,000 between the group of dentist profession students with conservation residents and conservative dentistry specialists so that $p < 0.05$ could be interpreted as being significantly different. Results 0.171 ($p > 0.05$) between conservative dentistry resident groups and conservative dentistry specialists so that there was no significant difference or no effect. The hypothesis is accepted and there is an effect of quality of life after root canal treatment for groups of students towards residents and

Table 6. Kruskal Wallis Test Results

	Operator	Significance (P)
Quality of Life	Dental profession students	0.000
	Conservative dentistry residents	
Patients Satisfaction	Conservative dentistry specialist	0.000
	Dental profession students	
	Conservative dentistry residents	
	Conservative dentistry specialist	

Table 7. Quality of life test

	Operator	Dental profession students	Conservative dentistry residents	Conservative dentistry specialist
Quality of Life	Dental profession students	-	0.000 **	0.000 **
	Conservative dentistry residents		-	0.171
	Conservative dentistry specialist			-

** Significance difference

Table 8. Satisfaction Test

	Operator	Dental profession students	Conservative dentistry residents	Conservative dentistry specialist
Patients Satisfaction	Dental profession students	-	0.000 **	0.000 **
	Conservative dentistry residents		-	0.002 **
	Conservative dentistry specialist			-

** Significance difference

specialists, while for residents against specialists there is no significant difference.

Further testing needs to be done to see the significant differences from each group on patient satisfaction after root canal treatment. The Mann Whitney test was carried out with the results in **Table 8** showing that the significance value was 0,000 between all groups of dentistry profession students with conservation residents and conservative dentistry specialists so that $p < 0.05$ could be interpreted that the hypothesis was accepted and there was an influence between operators caring for patient satisfaction after treatment of root canal.

DISCUSSION

The results showed there were differences in quality of life and patient satisfaction after conventional root canal treatment by dental profession students, conservative dentistry residents, and conservative dentistry specialists. In this study, obtained a quality of life with a significance value of 0,000 between the group of dentistry profession students with conservation residents and conservative dentistry specialists so that $p < 0.05$ is interpreted to mean a significant difference. Results 0.171 ($p > 0.05$) between conservative dentistry resident groups and conservative dentistry specialists so that there was no significant difference or no effect. So based on the results of the study, the quality of life felt by patients after root canal treatment by dental profession students differed from the satisfaction of life after root canal treatment by conservative dentistry residents and conservative dentistry specialists. The satisfaction test obtained a significance value of 0,000 between the dental profession student group with the resident conservation and conservative dentistry

specialist so that $p < 0.05$ was interpreted as meaningful. So that there is a difference in patient satisfaction with the care performed by dental profession students with conservative dentistry residents and conservative dentistry specialists.

The difference in the quality of life obtained from the results of the study is following the statement of Supriyanto (2010), which states the quality of plenary services requires an adequate level of education and work experience of medical personnel. The level of education ensures that medical personnel have the expertise and can think critically about the care that will be provided. Work experience is gained from the experience and additional training received by medical personnel (Supriyanto, 2010). Thus, differences in the level of education of dentistry profession students with conservative dentistry residents and conservative dentistry specialists affect the health services provided. Plenary health services primarily aim to form perceptions of service quality that indirectly affects patient satisfaction (Aliman & Mohamad, 2013). Service quality can be in the form of technical quality (maintenance procedures) and functional (attitude in the delivery of maintenance procedures) (Alrubaiee, 2011). The absence of significant differences between groups of patients treated by conservative dentistry residents and conservative dentistry specialists can be caused by data on improving quality of life for most OHIP indicators with close to 79% and 83% results, leaving little chance for differences between group significantly. Besides, the reason why the quality of life between residents and specialists is not significantly different can be caused by the age of various residents who are also dentists who have worked in clinics/hospitals / other private practices in different periods (researchers do not measure time practice of each operator). Although they are still

residents, they already have quite a lot of working experience.

The results of the patient satisfaction questionnaire with a numerical scale indicate that the difference in the operators who perform care affects patient satisfaction after root canal treatment with a p-value <0.05. The treatment carried out by conservative dentistry specialists showed the highest value on overall satisfaction. Very satisfied 66.7%, Resident conservative dentistry 33.3%, while dental profession students were 29.2%. The group of patients treated by dentistry profession students was "satisfied" and "very satisfied" with the cost, masticatory function, and pain felt, but not satisfied enough for the duration of treatment and aesthetics. The same thing is also seen for the satisfaction of patients treated by conservative dentistry residents. Patients in the resident group showed "satisfied" and "very satisfied" percentages of cost satisfaction, chewing satisfaction, and greater pain satisfaction compared to the dental profession student group coupled with high aesthetic satisfaction. However, dissatisfaction remained visible for the duration of treatment time. Conservative dentistry specialists have a higher level of satisfaction after root canal treatment in terms of cost satisfaction, treatment time satisfaction, pain satisfaction, aesthetic satisfaction, chewing satisfaction, and comfort satisfaction. Conservative dentistry specialists have a higher level of satisfaction after root canal treatment in terms of cost satisfaction, treatment time satisfaction, pain satisfaction, aesthetic satisfaction, chewing satisfaction, and comfort satisfaction.

Differences in patient satisfaction can be influenced by knowledge, skills, and time efficiency in treatment by conservative dentistry specialists in performing care. Conservative dentistry specialists demonstrate better communication skills in managing symptoms, fears, and expected treatment outcomes of patients than general dentists. Patients are significantly less satisfied with the costs of care provided by specialists. This result is slightly different from Dugas et al., (2002) did not show higher satisfaction in the comfort indicators of root canal treatment when given by conservative dentistry specialists. However, the similarity of this study with Dugas et al., (2002) is the overall satisfaction and overall treatment time seen in the group of patients treated by conservative dentistry specialists.

CONCLUSION

There are differences in quality of life and patient satisfaction after conventional root canal treatment between dental profession student groups, conservative dentistry residents, and conservative dentistry specialists at Universitas Airlangga Hospital. Differences in quality of life were seen between groups of conservative dentistry residents and conservative dentistry specialists. However, it was not seen between residents of conservative dentistry and conservative dentistry specialists. Differences in patient satisfaction were seen by patients from all groups with the highest overall satisfaction in the conservative dentistry specialist group.

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