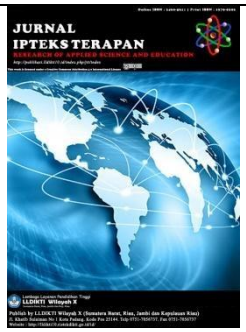

Vol.16 No.4 | Des, 2022

ANALYSIS OF FACTORS OF PATIENT COMPLIANCE WITH MULTI-VISIT ROOT CANAL TREATMENT IN KUPANG CITY

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Submit:
28/10/2022

Accept:
25/12/2022

Publish:
31/12/2022

Abstract

Background: Dental caries that reached the pulp required root canal treatment. Non-compliance in undergoing treatment in the field of conservation and endodontic teeth can cause treatment failure, which results in the treatment having to be repeated. Factors that affected a person's compliance include knowledge, education, income, employment, motivation, perception, satisfaction, and treatment costs. The purpose of the study: to determine the factors of patient compliance with multi-visit root canal treatment in Kupang City. **Research method:** An analytic study with a cross-sectional approach. The sample of this study used accidental sampling, namely patients who received dental root canal treatment at dental practices throughout the city of Kupang with a total sample of 40 people. The Spearman correlation test was used to determine the factors of patient compliance with multi visit root canal treatment in Kupang City**. The results:** There was a significant relationship between income (p=0.006), education (p=0.010), knowledge (p=0.003), motivation (p=0.000), perception (p=0.001), satisfaction (p=0.000), and cost of care (p=0.007) with patient compliance. While the occupational factor (p=0.843) had no relationship with patient compliance. The dominant factor was the cost of root canal treatment. The strength of the relationship between variables was -0.418, meaning that the relationship was sufficient and negative, which meant that the lower the cost of treatment, the higher consumer compliance. **Conclusion:** There was a relationship between the factors of knowledge, income, education, motivation, perception, satisfaction, and cost of care with patient compliance. For the work factor, there was no relationship. Meanwhile, the dominant factor was the cost of root canal treatment.

Keywords: Delvi Hijab, E-CRM, PHP, MySQL.

doi: https://doi.org/10.22216/jit.v16i 4 669-679
1979-9292 / 2460-5611 ©2021 © 2022 Lembaga Layanan Pendidikan Tinggi Wilayah X

JIT is Sinta 3 Journal (https://sinta3.kemdikbud.go.id/journals/profile/2143) accredited by Ministry of Research & Technology, Republic Indonesia

ISSN : 1979-9292
JURNAL IPTEKS TERAPAN
Research of Applied Science and Education V16.i4 (669-679) E-ISSN : 2460-5611

INTRODUCTION

Oral health is important for general health and quality of life. A healthy mouth means free from throat cancer, infections and sores in the mouth, gum disease, tooth decay, tooth loss, and other diseases, so that there are no disturbances that limit biting, chewing, smiling, speaking, and psychosocial well-being. One of oral health is health. teeth (Fortunate and Nurulistyawan, 2008).

Based on the results of Basic Health Research (2018) where the prevalence of caries in Indonesia is 88.8%, the proportion of residents with dental and oral problems is 57.6% and those receiving treatment from dental medical personnel is 10.2% and the average DMF index -T 7,1. The East Nusa Tenggara region shows the percentage of dental caries/cavities or tends to cause pain is around 43.9%. This shows that there are still people who experience dental caries.

Caries is a disease of the hard tissue of the teeth caused by the activity of microorganisms on fermentable carbohydrates. Dental caries that reach the pulp requires root canal treatment. Root canal treatment, also known as endodontic therapy, is an action to remove all vital or pathological pulp tissue from the pulp cavity of a tooth. Next, the cavity formed is filled with an inert material to prevent infection. Thus, the cavity in the tooth will be disinfected, tooth extraction is not necessary, and the tooth can still function, even if it loses its vitality (Veiga et all, 2016). Failure of root canal treatment is usually caused by patients not adhering to multi-visit treatment (more than one visit). That may be due to a lack of public knowledge about oral and dental health (Tiffany CA, 2017).

Jing Jin et al (2008) stated that there were several factors that influenced adherence in several groups, namely patient factors, current treatment, socioeconomic conditions, existing diseases and available health systems. Meanwhile, according to Vermeire et al (2002) stated the higher age, educational level, socioeconomic status, patient satisfaction, easy treatment procedures, easy payments and good relations between doctors and patients can increase patient compliance in treatment. Many factors influence the formation of a person's compliance, including motivation, level of change in style needed, perception of the severity of health problems, knowledge, the impact of change, culture, and the level of satisfaction and quality of health services received (Kozier, 2009). Meanwhile, according to Kamidah (2015) states that the factors that influence a person's compliance are knowledge, motivation, and family support. 8 The cost of care greatly determines patient compliance in undergoing treatment, especially in the treatment of chronic diseases and in treatments that require a long time and are repeated. The relatively expensive cost of treatment causes patients to choose not to undergo treatment until it is complete (Jing Jin et all, 2008). There are so many factors that influence the level of patient compliance, so in this study it is limited to factors of income, education, knowledge, motivation, perceptions and patient satisfaction.

RESEARCH METHODS

This study is an analytical study with a cross-sectional approach to determine patient adherence to multi-visit root canal treatment in Kupang City. The sample of this study used accidental sampling, namely patients who received root canal treatment at dentists' offices in Kupang City with a total sample of 40

ISSN : 1979-9292
JURNAL IPTEKS TERAPAN
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people. The data obtained was statistically processed using univariate analysis and multivariate analysis using the Spearman correlation test to determine the most dominant factor of patient compliance with multivisit root canal treatment.

RESULTS AND DISCUSSION

Income	obey		Obedient Enough		Not obey		Total		Correlation coefficient	Sig (2-tailed)
	Total	%	Total	%	Total	%	Total	%		
Tall	6	15.0	0	0.0	0	0.0	6	15.0	0.430	0.006
Currently	12	30.0	9	22.5	1	2,5	22	55.0		
Low	4	10.0	5	12.5	3	7,5	12	30.0		
Total	22	55.0	14	35.0	4	10.0	40	100.0		

Table 1. Revenue With Compliance

In table 1 it can be seen that patients with high incomes tend to comply with as many as 6 people (15%), moderate incomes tend to comply with as many as 12 people (30%) while low incomes tend to be quite obedient namely as many as 5 people (12.5%) and there is a relationship between income and compliance with p = 0.006 so that p < 0.05. While the level of strength of the relationship between variables is 0.430 which means that it includes a strong relationship between income and compliance.

Profession	obey		Obedient Enough		Not obey		Total		Correlation coefficient	Sig (2-tailed)
	Total	%	Total	%	Total	%	Total	%		
civil servants and state-owned enterprises	2	5.0	2	5.0	0	0.0	4	10.0	0.83	0.032
Private	7	17.5	4	10.0	0	0.0	1	27.5		
Entrepreneurs and Entrepreneurs	5	12.5	2	5.0	3	7,5	10	25.0		
Housewife	1	2,5	1	2,5	1	2,5	3	7,5		
Students and Students	7	17.5	5	12.5	0	0.0	12	30.0		
Total	**22**	**55.**	**14**	**35.**	**4**	**10.**	**40**	**100.**		

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0	**0**	**0**	**0**	

Table 2. Work With Obedience

In table 2 it can be seen that patients with private jobs tend to comply as many as 7 people (17.5%) and patients with student jobs also tend to comply as many as 7 people (17.5%). And there is no relationship between work and compliance with p = 0.843 so that p > 0.05. While the level of strength of the relationship between variables is 0.032 which means there is no relationship and a very weak relationship between work and compliance.

Education	**obey**		**Obedient Enough**		**Not obey**		**Total**		**Correlation coefficient**	**Sig (2-tailed)**
	Total	**%**	**Total**	**%**	**Total**	**%**	**Total**	**%**		
Tall	13	32.5	2	5.0	1	2,5	16	40.0	0.403	0.010
Currently	9	22.5	12	30.0	3	7,5	24	60.0		
Low	0	0.00	0	0.00	0	0.00	0	0.00		
Total	**22**	**55.0**	**14**	**35.0**	**4**	**10.0**	**40**	**100.0**		

Table 3. Education By Obedience

In table 3 it can be seen that 13 patients (32.5%) with higher education tend to comply and 12 patients (30.0%) with moderate education tend to be quite obedient. And there is a relationship between education and compliance with p = 0.010 so that p <0.05. While the level of strength of the relationship between variables is 0.403 which means that there is a sufficient relationship between education and compliance.

Knowledge	**obey**		**Obedient Enough**		**Not obey**		**Total**		**Correlation coefficient**	**Sig (2-tailed)**
	Total	**%**	**Total**	**%**	**Total**	**%**	**Total**	**%**		
Well	20	50.0	9	22.5	1	2,5	30	75.0	0.456	0.003
Currently	2	5.0	5	12.5	3	7,5	10	25.0		
Bad	0	0.00	0	0.00	0	0.00	0	0.00		
Total	**22**	**55.0**	**14**	**35.0**	**4**	**10.0**	**40**	**100.0**		

Table 4. Knowledge with obedience

In table 4 it can be seen that patients with good knowledge tend to comply as many as 20 people (50.0%), patients with moderate knowledge tend to be quite obedient as many as 5 people (12.5%). And there is a relationship between education and compliance with p = 0.003 so that p <0.05. While the level of the strength of the relationship between variables is 0.456 which means there is an adequate relationship between knowledge and compliance.

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Motivation	obey		Obedient Enough		Not obey		Total		Correlation coefficient	Sig (2-tailed)
	Total	%	Total	%	Total	%	Total	%		
Well	20	50.0	6	15.0	1	2,5	27	67.5	0.562	0.000
Currently	2	5.0	8	20.0	3	7,5	13	32.5		
Bad	0	0.00	0	0.00	0	0.00	0	0.00		
Total	**22**	**55.0**	**14**	**35.0**	**4**	**10.0**	**40**	**100.0**		

Table 5. Motivation with obedience

In table 5 it can be seen that 20 patients (50.0%) with good motivation tend to comply, 8 patients (20.00%) with moderate knowledge tend to be quite obedient. And there is a relationship between education and compliance with p = 0.000 so that p <0.05. While the level of strength of the relationship between variables is 0.562 which means that there is a strong relationship between motivation and compliance.

Satisfaction	obey		Obedient Enough		Not obey		Total		Correlation coefficient	Sig (2-tailed)
	Total	%	Total	%	Total	%	Total	%		
Satisfied	20	50.0	6	15.0	1	2,5	27	67.5	0.562	0.000
Quite satisfied	2	5.0	8	20.0	3	7,5	13	32.5		
Not satisfied	0	0.00	0	0.00	0	0.00	0	0.00		
Total	**22**	**55.0**	**14**	**35.0**	**4**	**10.0**	**40**	**100.0**		

Table 6. Perceptions with compliance

In table 6 it can be seen that 13 patients (32.5%) with good perceptions tend to comply, 12 patients (30.00%) with moderate perceptions tend to be quite obedient. And there is a relationship between education and compliance with p = 0.001 so that p <0.05. While the level of the strength of the relationship between variables is 0.498 which means that there is an adequate relationship between perception and compliance.

Satisfaction	obey		Obedient Enough		Not obey		Total		Correlation coefficient	Sig (2-tailed)
	Total	%	Total	%	Total	%	Total	%		
Satisfied	20	50.0	6	15.0	1	2,5	27	67.5	0.562	0.000
Quite satisfied	2	5.0	8	20.0	3	7,5	13	32.5		
Not satisfied	0	0.00	0	0.00	0	0.00	0	0.00		
Total	**22**	**55.0**	**14**	**35.0**	**4**	**10.0**	**40**	**100.0**		

Table 7. Satisfaction with compliance

In table 7 it can be seen that 20 patients (50.00%) who said they were satisfied tended to comply, 8 people (20.00%) who stated they were quite satisfied tended to be quite obedient. And there is a relationship between education with compliance with p = 0.000 so that p < 0.05. While the level of strength of the relationship between variables is 0.562 which means that there is a strong relationship between satisfaction and compliance.

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Maintenance costs	obey		Obedient Enough		Not obey		Total		Correlation coefficient	Sig (2-tailed)
	Total	%	Total	%	Total	%	Total	%		
Expensive	5	50.0	8	20.0	2	5.0	15	37.5	-0.418	0.007
Currently	10	25.0	6	15.0	2	5.0	18	45.0		
Cheap	7	17.5	0	0.00	0	0,00	7	17,5		
Total	**22**	**55,0**	**14**	**35,0**	**4**	**10,0**	**40**	**100,0**		

Table 8. Cost of Treatment with Obedience

In table 8 it can be seen that patients who stated that treatment costs were expensive tended to be quite obedient as many as 8 people (20.00%), patients who stated care costs were moderate tended to be obedient as many as 8 people (20.00%) and those who stated care costs were cheap tended to be obedient as many as 7 people (17.5%). And there is a relationship between maintenance costs and compliance with p = 0.007 so that p <0.05. While the level of strength of the relationship between variables is -0.418 which means that the relationship is sufficient and negative, which means that the lower the maintenance cost, the consumer compliance will increase.

In the cross-tabulation results shown in table 1, it can be seen that 6 people (15%) with high income tend to comply, 12 people (30%) with moderate income tend to comply, while 5 people with low income tend to be quite obedient, namely 5 people (12, 5%). This shows the highest frequency of moderate income as many as 22 people (55%) and the highest frequency of compliance with moderate income as many as 12 people (30%), and there is a relationship between income and compliance with p = 0.006 so that p <0.05. While the level of strength of the relationship between variables is 0.430 which means that it includes a strong relationship between income and compliance.

This research is in line with research from Haryani et al (2017) where the highest frequency of respondents was in the medium economic status category (Rp. 1,500,000– Rp. 2,499,999) namely 15 people (34.9%), the highest frequency of compliance was in the medium economic status category, namely 10 people (23.3%) . Kendall's Tau test results showed that there was a significant relationship between education level and adherence to care of removable denture wearers (p=0.049) and economic status with adherence to care of removable denture wearers (p=0.004) . Economic status also affects the condition of a person's oral health, as one of the influential factors in creating demand care tooth, as well as is means of ability in the maintenance of dental health and mouth including root canal treatment (Harini, 2005). The results of this study are supported by the opinion of Tulangow et al (2013) who say that economic status in this case income is one of the factors that influence health status, because it is more possible to meet the necessities of life and get the desired health service. for group social economy higher compared to low socioeconomic groups .

Based on the results shown in table 2, it can be seen that patients with private jobs tend to comply by 7 people (17.5%) and patients with student jobs also tend to comply by 7 people (17.5%). And there is no relationship between work and compliance with p = 0.843 so that p >

ISSN : 1979-9292
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0.05. While the level of strength of the relationship between variables is 0.032 which means there is no relationship and a very weak relationship between work and compliance.

The results of this study are not in line with the research of Rahmadani et al (2018) that in the research results there is a relationship between work with obedience. Profession effect on the economic functioning of the family function to meet the needs of the family economically, and a place to develop individual abilities increase income to meet family needs. The patient tries for looking for money for medical expenses is also included in receiving a health service because all patients want to recover and live healthy (Bachrun, 2017).

The results of the cross tabulation between education and compliance are shown in table 3 where 13 patients with higher education tend to comply (32.5%) and patients with moderate education tend to be quite obedient as many as 12 people (30.0%). This shows that patients with higher education have a tendency to comply in receiving root canal treatment. While the relationship that can be seen is that there is a relationship between education and compliance with p = 0.010 so that p <0.05. While the level of strength of the relationship between variables is 0.403 which means that there is a sufficient relationship between education and compliance.

The results of this study are in line with the research of Haryani et al (2017) where the results showed that respondents with a higher education level had the greatest compliance, namely 13 people (30.2%). The Kendall's Tau test results showed that there was a significant relationship between education level and compliance (p=0.049). The level of education influences changes in attitudes and healthy living behavior. A higher level of education will make it easier for a person or community to absorb information and implement it in daily behavior and lifestyle, especially in terms of health and dental health (Herijulianti et al, 2002). The level of education is one of the factors that influence patients in receiving root canal treatment, this is according to Setyowati et al (2012).

Knowledge is an important domain for determining one's actions, because research experience proves that behavior is based on knowledge (A.Wawan and Dewi. M, 2011). In accordance with the results of the study shown in table 4 where patients with good knowledge tend to obey as many as 20 people (50.0%), patients with moderate knowledge tend to be quite obedient as many as 5 people (12.5%). And there is a relationship between education and compliance with p = 0.003 so that p < 0.05. While the level of the strength of the relationship between variables is 0.456 which means there is an adequate relationship between knowledge and compliance.

Knowledge is one of the factors that influence the formation of behavior. Knowledge will be processed through several stages so as to give rise to a perception that will determine a person's attitude then motivation arises that will support the realization of a behavior, in this case is patient compliance in receiving root canal treatment (Notoadmojo, 2012). This research is in line with research conducted by Tiffany CA (2017) where the results showed a positive relationship between knowledge and adherence in receiving multivisit endodontic treatment, where p = 0.000 so p < 0.005.

ISSN : 1979-9292
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Motivation is a human psychological characteristic that contributes to one's level of commitment. This includes the factors that cause, channel and maintain human behavior towards a certain determination (Suarli and Bahtiar, 2013). The results of the study can be seen in table 5. It can be seen that 20 patients (50.0%) with good motivation tend to comply, 8 patients (20.00%) with moderate knowledge tend to be quite obedient. And there is a relationship between education and compliance with p = 0.000 so that p <0.05. While the level of strength of the relationship between variables is 0.562 which means that there is a strong relationship between motivation and compliance.

Perception literally means sight, that is how one sees something. Meanwhile, in a broader sense, it means view or understanding, namely how someone perceives or interprets something (Sobur, 2009). The results of the study are shown in table 6 where 13 patients (32.5%) with good perceptions tend to comply, 12 patients (30.00%) with moderate perceptions tend to be quite obedient. And there is a relationship between education and compliance with p = 0.001 so that p <0.05. While the level of the strength of the relationship between variables is 0.498 which means that there is an adequate relationship between perception and compliance (based on the correlation coefficient table). This shows that the perception factor is quite related to patient adherence to multi-visit root canal treatment.

Patient satisfaction is the patient's expectation arising from within efforts to improve quality quality of health services, it is necessary measuring the level of patient satisfaction itself in order to know the dimensions of service quality so far where the fulfillment of patient expectations has been held (Pohan, 2007). In table 7 it can be seen that 20 patients (50.00%) who said they were satisfied tended to comply, 8 people (20.00%) who stated they were quite satisfied tended to be quite obedient. And there is a relationship between education and compliance with p = 0.000 so that p <0.05. While the level of strength of the relationship between variables is 0.562 which means that there is a strong relationship between satisfaction and compliance (based on the correlation coefficient table). This shows that there is a relationship between patient satisfaction and adherence of patients receiving multi-visit root canal treatment.

The cost of treatment is one of the factors that influence patient compliance in receiving health care, including root canal treatment in addition to relationships with health workers and patients, access to health places and information provided by health workers (Tanna, 2016). The results can be seen in table 8 where the results of cross-tabulations show that those who think expensive tend to be quite obedient as many as 8 people (20.0%), moderate costs tend to obey as many as 10 people (25.0%) and low costs tend to obey as many as 7 people (17 .5%) and there is a relationship between maintenance costs and compliance with p = 0.007 so that p <0.05. While the strength level of the relationship between variables is -0.418 which means that the relationship is sufficient and is negative which means that the lower the maintenance cost, the consumer compliance will increase. This shows that the dominant factor in patient adherence to root canal treatment is the cost of treatment.

CONCLUSION

There is a relationship between factors of education, income, knowledge, motivation, perception, satisfaction and cost of treatment with patient compliance in receiving root canal treatment, while work has no relationship with adherence. The dominant factor is maintenance costs because the value of the relationship is negative which means that the lower the maintenance costs, the consumer compliance will increase.

THANK YOU NOTE

The author would like to thank the financial assistance from the Health Polytechnic of the Kupang Ministry of Health, the Directorate General of Health Workers, the Ministry of Health of the Republic of Indonesia

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