

The relationship between levels of knowledge and interest in using the partial dentures: A case at Yogyakarta's private dental clinic, Indonesia

Wiworo Haryani *, Rachma Indahsari, Sutrisno

Department of Dental Nursing, Poltekkes Kemenkes Yogyakarta, Jl. Kyai Mojo No.56 Pingit, Yogyakarta, Indonesia.

*Corresponding author. Email: haryaniwiworo@gmail.com

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ABSTRACT

Background: Missing or lost teeth after tooth extraction may lead to tooth decay and infection. Many cases of tooth loss will not be followed with prosthodontics or rehabilitative treatments. Patients might be aware of partial denture, however no concern to replace the missing teeth.

Aims: This study was to determine the relationship between the levels of knowledge and interest in using the partial dentures.

Methods: This study was an observational analytic survey with cross sectional design, conducted in October - November 2017. The work involved 60 patients who had pulled teeth at Kanina Dental Clinic, Yogyakarta, Indonesia, who had been selected using purposive sampling technique. Levels of knowledge and interest among the participants were assessed by a set of questionnaire. The data obtained was then analysed using Kendall's Tau test.

Results: From the study, we found that 35 respondents had good knowledge and high interest to use partial dentures (58.3%), while the other 22 patients (40%) had been noted with less knowledge and poor maintenance. From Kendall's Tau test, we found a significant relationship between the patient's knowledge and partial removal denture maintenance of p value = 0.003. This study also highlights the role of patients' peer to their decision to use the removable partial dentures.

Conclusion: Respondents may consider losing teeth affected to their physical aesthetics, masticatory system, and speaking comfort. Data shows the higher knowledge to the benefits of partial dentures the higher their interest in using removable partial dentures after tooth extraction.

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INTRODUCTION

Based on the result of the Primary Health Care Survey (*Riskesdas*) in 2013, revealed that the number of dental caries (tooth decay or cavity) was 67.2%, and increased into 72.3% in next survey. It's said that the index to assess the status of oral and dental health in terms of permanent dental caries or *Decay Missing Filled-Teeth* (DMF-T Index) in Indonesia was only

4.6%. Only 31.1% cases received treatment from medical personnel in dental practice, while the rest of 68.9% did not undergo any treatment. It is estimated from this data that there will be an increasing prevalence due to the decreasing of people's awareness to rather keep their teeth instead of having it extracted [1].

Missing tooth can be attributed to tooth extraction as a result of tooth decay (hollow tooth, broken tooth,

cracked tooth), and tooth infection [2]. The results of national health survey in the last 10 years showed that 60-70% of dental health prevalence in Indonesia considered in poor level which led to the increase of teeth decay or even toothless condition for permanent teeth [1]. Based on data of dental and oral health visits in Sleman District, permanent tooth extraction cases increased from 6,219 in 2013 to 6,968 cases in 2014 [3].

People tend to choose tooth extraction to avoid or end the prolonged pain, and also due to consideration that tooth extraction is more practical, even though those teeth still actually can be maintained [4]. Loosing tooth after tooth extraction is considered as the biggest problem. Some side effects from tooth extraction can be in form of chewing problem or mastication, for the case of missing a great number of teeth and in a long period of time, there will be what-so-called *Temporomandibular Joint* (TMJ) disorder. Impacts on health include jaw pain, sore around the ear, difficulty chewing, facial pain, difficulty moving the jaw, headache, biting discomfort and uneven bite due to premature contact on one or more teeth.

The later will lead to some further problems of speaking function and psychological aspects like aesthetics, in which event in some certain professions required very excellence dental health. Many cases of tooth missing or removal were not balanced with or followed by prosthodontic or rehabilitative treatments. The average patients in Dental Police of Godean 2, Sleman, Yogyakarta, have tooth loss of 2 to 5 teeth. and as many as 60% of patients have not or do not use denture [5].

Dental rehabilitation is one of recovery efforts or restorations of dental function to shape back the teeth original state [6]. When individuals who loss a tooth visits a dentist, they may have three options; (1) not having replacement for the missing teeth, (2) pairing artificial tooth (dental implant), and (3) consider removable partial denture [7]. Not only reducing physical aesthetics, missing teeth will also result in some problems of chewing and the intake of nutrients which will ultimately affect individual's general health condition and his or her quality of life [8, 9]. In this level, there is a need to increase people's awareness about the importance of restoring the teeth function after dental extraction and dental implant. Moreover, it requires further explanation or information about some possibilities that likely be occurred due to dental implant (artificial teeth). It turns out that the causing factor why people tend to

choose tooth extraction and dental implant is due to their lack of knowledge [10].

Six levels of knowledge including knowledge, comprehension, application, analysis, synthesis, and evaluation, will direct individuals to determine their behavior to make efforts in order to reduce the risk of the threat of health problems [11]. Education may define the knowledge which finally results in a good attitude towards health and can maintain dental health [12]. What mothers taught to their children will also influence their children's dental health [13]. Moreover, previous study also found how gender [14] and age [15] role oral health behavior. Those two factors will also be observed in defining patients' knowledge and interests in using partial dentures after tooth extraction. Our preliminary result on the study site found that among the patients who removed their tooth only around 40% implanted artificial tooth, and the other 60% had not used the removable partial denture. Those who did not use tooth implant experienced antagonist tooth extended to the tipping space (post-extraction hollow space in tooth). This study will gain information and experience about dental and mouth health related to their interest in using the dental implant (artificial teeth as removable partial denture).

METHODS

This study employed an observational analytic survey from October to November 2017. Data was collected by cross sectional design where no treatment offered. A total of 60 patients who had tooth extraction was selected purposively from Kanina Dental Clinic, a Yogyakarta's private dental clinic of Indonesia, with following inclusive criteria; aged 45-59 years, tooth loss of 1 to 5 teeth, not using artificial teeth, cooperative, and willing to be respondents. All procedures in this study have been approved by ethic commission of Politeknik Kesehatan Kemenkes Yogyakarta on 19 September 2017 following the 1975 Helsinki Declaration, with number LB.01.01/KE-01/XLI/827/2017.

Respondents' answers to a set of questionnaire consisted of 15 questions were score to define their knowledge (Good, 15-11; Sufficient, 10-6; Poor, ≤ 5) and interest in using the partial dentures (High, 15-11; Adequate, 10-6; Low, ≤ 5). Validity and reliability tests to the offered questions show the measurement tool used in this study was valid, with the p value was less than 0.005 for both validity and reliability test. The *cronbach alpha* value $0.930 > 0.700$ supports the

questions given to the respondents were valid and reliable. Data was then analyzed using Kendall's Tau test, a non-parametric test to find out the correlation between levels of knowledge and the interest in using the removable partial denture among the participants.

RESULTS

As shown in Table 1, during the study, more females (66.7%) are willing to be involved compared to the male counterpart (33.3%). More patients aged after 27 years considers to use the removable partial denture, with the highest age group of 28-38 years. Only 3.3% of those who use the implants have poor knowledge, while 47 out of 60 patients were notified with better information and knowledge to the importance of replacing the missing teeth with the artificial to avoid tooth migration. Patients' interest in using removable partial denture, was divided as high, adequate, and low. Most of respondents (61.7%) have adequate interest while only 3 of 60 had declared low interest in using the artificial implants.

From *Kendall's Tau* test, we found there was a significant correlation between patients' interest in using removable partial denture and their knowledge to that implants with level of 0.003. As shown in Table 2, of 20 patients who had high interest, they were acknowledged having good (N=10) and sufficient (N=10) level of knowledge. When they have high interest in using the partial denture, none of them has poor knowledge. Interestingly, 3.3% of participants, even they have low interest to the implants, they had been notified with good knowledge to the removable partial denture.

Table 1. Respondents' characteristics

Characteristics	N	%
Age		
17-27 years	15	25
28-38 years	24	40
39-50 years	21	35
Gender		
Male	20	33.3
Female	40	66.7
Knowledge		
Good	47	78.3
Sufficient	11	18.3
Poor	2	3.3
Interest		
High	20	33.3
Adequate	37	61.7
Low	3	5

DISCUSSION

From results, we assume that female group tends to be more sensitive and faster in giving response. Women may consider the impacts of losing teeth to their physical aesthetics, masticatory system, and speaking comfort. Replacing the missing tooth with removable partial denture is for the sake of physical aesthetic and facial appearance [8]. Data shows as aged increased, more request for tooth extraction. Poor dental and mouth condition lead to the highest interest in using removable partial denture [16].

Respondents consider replacing their missing teeth to better masticatory (chewing) function [9]. Moreover, respondents highly wanted to have immediate removal to keep their dental and mouth in healthy condition. As higher their knowledge of the benefits of the removable partial dentures to their dental health, the patients will be more interesting to use the implants and maintain their behavior to healthy life [12]. No doubt we found in this study knowledge to the implant has a significant correlation to patients' interest in using the removable partial denture.

What we found from this study, there were 2 patients having good knowledge but low interest in using the implant. From this recent study we noted that lack of attention and time to maintain the teeth implant may lower their interest in using the removable partial dentures, even they know the adverse impacts of missing teeth. Moreover, respondents may declare discomfort by having artificial teeth, and story of swallowing the artificial teeth may avoid them to using the dentures [17].

Among the respondents who had high interest in using the implants received recommendation from their friends and family who had been used and experienced to the benefits of that dental treatment. Interest increased when a person has a good or high knowledge thereby he or she will be able to understand about the benefits of the treatment. Lack of knowledge would lead to a tendency in which a person will not be interested in doing certain activity. It could be happened because respondents with poor knowledge about artificial teeth considered that removable partial denture was not important or even needed, therefore they did not have any interest in applying artificial teeth [16].

This recent study found patients may trust their peers and received the information as true knowledge and as result their interest to use the partial dentures increased. Information given to the patients lead to a

good desire as well, it's expected consequently to grow a positive attitude that will evoke and even increase someone's interest [18]. Respondents may see better appearance of having teeth implant and may

neglect the bad experience of others. Thus, it should be noted that friends and family also play important role in improving patients' knowledge and interest in using the artificial teeth after tooth extraction.

Table 2. Knowledge and Interest in using removable partial denture (N=60)

Characteristics	Interest in Using Removable Partial Denture						p value	rho coef.
	High		Adequate		Low			
Level of knowledge	N	%	N	%	N	%		
Good	10	16.7	35	58.3	2	3.3	0.003	0.379
Sufficient	10	16.7	1	1.7	0	0		
Poor	0	0	1	1.7	1	1.7		

CONCLUSION

Among the patients in the study site of Yogyakarta's private dental clinic, we found level of knowledge to the benefits of partial dentures significantly higher their interest in using removable partial dentures after tooth extraction.

CONFLICT OF INTERESTS

No potential conflict of interest declared.

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