

# **TOOTH FILLING MOTIVATION WITH THE ACHIEVEMENT OF PERFORMANCE TREATMENT INDEX (PTI) OF ELDERLY PATIENTS IN THE DENTAL CLINIC (STUDY AT SINGOTRUNAN BANYUWANGI HEALTH CENTER)**

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**ABSTRACT.** Oral health in the elderly is very important as it is closely related to overall health. The elderly are expected to have at least 20 functioning teeth. One of the efforts to maintain elderly teeth is to fill in cavities. Problems In elderly patients at the dental clinic Singotrunan Banyuwangi Health Center, the results of the calculation of PTI achievement were 12%, this percentage is lower than the PTI target of 50%. This shows that the problem in this study is the low PTI achievement of elderly patients. Objectives This study aims to determine the relationship between tooth filling motivation and PTI achievements of elderly patients in the dental clinic of Singotrunan Banyuwangi Health Center. Methods The type of research used is cross sectional analytic. The target of this study were elderly patients in the dental clinic from January 2023-February 2023 with sampling techniques using non-random sampling using accidental sampling method. The data collection instruments used were questionnaire sheets and DMF-T examination sheets. The data analysis technique used was the Spearman Rank test. Results The results showed that the value of Sig. (2-tailed) of  $0.04 < \alpha 0.05$ . Conclusion It can be concluded that there is a relationship between tooth filling motivation and PTI achievement of elderly patients in the dental clinic of Singotrunan Banyuwangi Health Center.

**Keywords:** dental filling motivation, performance treatment index (PTI), elderly, dental clinic

## **1 INTRODUCTION**

According to the 2018 Basic Health Research (Riskesdas) data, the prevalence of oral health problems (Riskesdas) data, the prevalence of oral health problems in the Indonesian population was 57.6% and those treated by dental health professionals were 10.2%. In the elderly Population aged  $\geq 65$  years, 54.2% had oral problems, but only 6.4% were treated by dental health professionals (Kemenkes RI, 2018).

Teeth have functions for chewing, speech, and aesthetics (Nurrahim, M. A et al., 2014). Some elderly people have damaged or missing teeth, making it difficult for them to chew their food. Decreased ability to chew food due to cavities and tooth loss is one of the factors that affect the nutritional needs of the elderly (Bukit, 2019). Caries can be treated with a filling to restore the tooth to its original shape and function properly. Dental filling is a dental treatment that places a filling into a hole that has been drilled and cleaned (Young, D. A., Lyon, L., & Azevedo, S,2010). The purpose of drilling is to remove and clean tooth structure damaged by acid produced by bacteria (Machado, F. C. D. A et al., 2022). After the tooth hole is cleaned, it must be filled to restore tooth function and prevent further caries development, thus preventing tooth extraction (Putri *et al.*, 2020).

According to the Indonesian Ministry of Health (2014), the Performance Treatment Index (PTI) is the percentage of the number of permanent teeth filled with the DMF-T number. The PTI value shows a person's motivation to fill cavities as an effort to maintain permanent teeth. According to the Indonesian Ministry of Health (2012), the dental filling index is 50% of all cavities.

The elderly are people who have reached the age of 60 years and above, who are physically different from other age groups. Aging is a process that cannot be avoided by anyone. It causes changes not only in the body's highly complex tissues, but also in the oral cavity (Permenkes RI, 2016). Oral health in the elderly is very important as it is closely related to overall health. An elderly person is expected to have at least 20 functioning teeth. This means that the masticatory function is close to normal, although slightly reduced. Similarly, aesthetic function and speech function can still be considered normal with a minimum of 20 teeth (Kemenkes RI, 2019).

## **2 RESEARCH METHODS**

This type of research is cross sectional analytic. The target of this study were elderly patients in the dental clinic starting in January 2023-February 2023 with sampling techniques using non-random sampling using accidental sampling method. The data

collection instruments used were questionnaire sheets and DMF-T examination sheets. The data analysis technique used was the Spearman Rank test.

### 3 RESULTS

Based on the results of research on "Motivation for Dental Fillings with Achievement of Performance Treatment Index (PTI) for Elderly Patients at the Dental Clinic" has been carried out with 47 research subjects. The data that has been collected is made into a frequency distribution table, then data management and analysis are carried out.

**Table 1.** Frequency Distribution of Sex of Elderly Patients in the Dental Clinic of Singotrunan Banyuwangi Health Center in 2023

Characteristics	Frequency	Percentage (%)
<b>Gender</b>		
Male	19	40,4
Female	28	59,6
Total	47	100,0

Based on table 1, it is known that the frequency distribution of research subjects based on gender is dominated by female as many as 28 people (59.6%) and the least male as many as 19 people (40.4%).

**Table 2.** Frequency Distribution of Age of Elderly Patients in the Dental Clinic of Singotrunan Banyuwangi Health Center in 2023

Age	Frequency	Percentage (%)
45-59 years	29	61,7
60-74 years	18	38,3
75-90 years	0	0
>90 years	0	0
Total	47	100,0

Based on table 2, it is known that the frequency distribution of research subjects based on age is dominated by elderly people aged 45-59 years as many as 29 people (61.7%) and the least elderly people aged 60-74 years as many as 18 people (38.3%).

**Table 3.** Frequency Distribution of Education of Elderly Patients in the Dental Clinic of Singotrunan Banyuwangi Health Center in 2023

Education	Frequency	Percentage (%)
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Elementary School	4	8,5
Junior High School	8	17,0
Senior High School	27	57,4
College	8	17,0
Total	47	100,0

Based on table 3, it is known that the frequency distribution of research subjects based on education level is dominated by senior high school graduates as many as 27 people (57.4%) and the least is elementary school graduates as many as 4 people (8.5%).

**Table 4.** Frequency Distribution Results of Measuring Motivation for Dental Fillings of Elderly Patients at the Dental Clinic Singotrunan Banyuwangi Health Center in 2023

Motivation Criteria	Frequency	Percentage (%)
Strong	31	66
Medium	16	34
Weak	0	0
Total	47	100

Based on table 4, it is known that the elderly have strong motivation in tooth filling, namely 31 (66%) elderly.

**Table 5.** Results of Frequency Distribution of PTI Outcome Measurements of Elderly Patients at the Dental Clinic Singotrunan Banyuwangi Health Center in 2023

PTI Indicator	Frequency	Percentage (%)
Achieved ( $\geq 50\%$ )	7	15
Not Achieved ( $< 50\%$ )	40	85
Total	47	100

Based on table 5, it is known that the elderly have PTI measurements that are not achieved, namely 40 (85%) elderly. Based on the results of data collection that has been presented in tabular form, then the results of data collection are tested using the Spearman Rank test.

**Table 6.** Results of Data Analysis of the Relationship between Motivation for Dental Fillings with PTI Outcomes of Elderly Patients at the Dental Clinic Singotrunan Banyuwangi Health Center in 2023

Elderly Motivation	PTI Achievement				Total	Sig.	
	Achieved		Not Achieved				
	N	%	N	%	N	%	
Strong	7	15%	24	51%	31	66%	0,04
Medium	0	0%	16	34%	16	34%	
Weak	0	0%	0	0%	0	0%	
Total	7	15%	40	85%	47	100%	

Based on table 6, it is known that as many as 7 (15%) elderly people have strong motivation in doing dental fillings which shows the PTI category is achieved, as many as 24 (51%) elderly people have strong motivation in doing dental fillings which shows the PTI category is not achieved. Meanwhile, as many as 16 (34%) elderly people have medium motivation in performing dental fillings which indicates that the PTI category is not achieved.

Based on the results of statistical tests, it is known that the Sig. (2-tailed) of 0.04 <  $\alpha$  0.05. So it can be concluded that H1 is accepted and H0 is rejected. Thus it can be interpreted that there is a significant relationship between motivation for dental fillings and the achievement of PTI for elderly patients in the dental clinic of Singotrunan Banyuwangi Health Center.

## 4 DISCUSSION

### 4.1 Motivation for Dental Fillings

Based on the results of the data analysis of the tooth filling motivation questionnaire in the elderly, it is obtained that the motivation for tooth filling in the elderly is included in the strong category. In accordance with Herzberg's motivation theory, there are two types of factors that drive a person's motivation, including motivation factors (intrinsic factors) and hygiene factors (extrinsic factors) (Ozgon, I, 2022)

The results of data analysis which state that elderly motivation in the strong category can be caused by several factors including factors within the elderly (intrinsic factors), one of which is the factor of developing individual potential. Doing dental fillings is one form of elderly efforts to have the opportunity to advance in maintaining their teeth. This is in accordance with research (Putri *et al.*, 2020) which states that in addition to preventing the process of further tooth decay, dental fillings can prevent tooth extraction.

Motivation from within the elderly (intrinsic factors) can also be influenced by achievement or the results of efforts and skills that have been achieved (Schnell, J. T, 2023). Achievement can be obtained through knowledge, one of which is knowledge of the importance of doing dental fillings in an effort to maintain teeth and restore dental function. This is in accordance with research (Faot, 2019) which states that there is a relationship between knowledge and motivation to perform dental caries filling.

#### **4.2 PTI Achievement**

Based on the results of the analysis of measuring the achievement of PTI in the elderly, the results of measuring the achievement of PTI in the category of not achieved. The results of this measurement can be said that the achievement of PTI in the elderly did not reach the Ministry of Health's 2020 long-term target (2012), namely the PTI rate of 50% of all teeth with caries. This is in line with research (Nadlifah *et al.*, 2022) which showed that the PTI rate was not achieved at 10%.

The non-fulfillment of this PTI achievement is due to the behavior of the elderly who do not take advantage of oral health services and only go to oral health services when their cavities hurt and interfere with their activities (Risteska, S., & Dimova, C, 2009). This is in accordance with research In addition, the non-fulfillment of PTI achievements can be influenced by health services, one of which is the performance of health workers. Poor performance of health workers can affect the satisfaction and willingness of the elderly to go to oral health services (Seiders, K et al., 2015). This is in accordance with research (Nurhidayat *et al.*, 2020) which states that there is a relationship between the performance of health workers and patient satisfaction (Fasoulas, A et al., 2019)

#### **4.3 Relationship between Motivation for Dental Fillings and Achievement of Performance Treatment Index (PTI)**

Based on the results of data analysis, it shows that there is a relationship between tooth filling motivation and the achievement of the Performance Treatment Index (PTI) of elderly patients in the dental clinic of Singotrunan Banyuwangi Health Center. This is in accordance with the results of research (Pertiwani et al., 2022) which states that there is a significant relationship between dental filling motivation and PTI achievement (Balsita, M. C. B, 2012) (Tomar, G et al., 2011)

Although the motivation for tooth filling is in the strong category, if it is not balanced with proper oral health maintenance behavior, it will affect the achievement of PTI in elderly patients (Khanna, A. K, 2012).. As can be seen from the results of data

analysis, there is a difference between the motivation of the elderly and the PTI achievements of the elderly, where it appears that the elderly's motivation is strong but the PTI rate is not achieved (Nallaswamy, D,2017) (Kelkar, S, 2021)

In line with HL Blum's behavioral theory which states that a person's health status is influenced by behavior, environment, health services, and heredity. Motivation is included in a person's internal factors in shaping behavior. This is in accordance with research (Keumala, 2020) which states that motivation is something that encourages from within a person to act, take initiative, and behave. So with this motivation, behavior can determine a person's health status, one of which is in achieving the number of dental fillings (PTI) (Kim, K. H, 2005) (Emilda, Y, 2017)

Efforts that can be made to generate motivation in the elderly in maintaining oral health so that it can affect the behavior of the elderly in maintaining oral health is to conduct oral health counseling. Counseling can be addressed to the elderly directly or to the elderly family. So that the elderly and their families can understand when dental care should be done if there are indications of tooth filling. This is in accordance with research (Hanik et al., 2021) which states that education using leaflets and Whats Up Group is very useful for increasing understanding of the importance of maintaining dental health in elderly groups.

## **5 CONCLUSION AND RECOMMENDATION**

Based on data analysis, it can be concluded that the motivation for tooth filling of elderly patients in the dental clinic of Singotrunan Banyuwangi Health Center in 2023 is in the strong category, the PTI achievement of elderly patients in the dental clinic of Singotrunan Banyuwangi Health Center in 2023 is in the unachieved category, and there is a relationship between tooth filling motivation and PTI achievement of elderly patients in the dental clinic of Singotrunan Banyuwangi Health Center.

Suggestions that can be given by researchers are that elderly patients at the dental clinic Singotrunan Banyuwangi Health Center are expected to visit once every 6 months at the dental clinic for dental and oral health checks and fillings of cavities in an effort to maintain permanent teeth. Dental health workers are expected to conduct oral health counseling, as well as conduct routine dental examinations for the elderly so that the elderly can understand when dental care should be carried out if there are indications for dental fillings. For further researchers, it is hoped that further research will be conducted on the motivation for dental fillings with PTI achievements in other targets in order to get more varied research results.

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