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Relationship Between Dental and Oral Health Actions and Tooth Loss in The Elderly at The Savitri Elderly Posyandu Surabaya

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ABSTRACT One of the essential aspects of overall well-being involves oral health, because it not only prevents diseases of the oral cavity. 60% of the elderly have less than 20 teeth that still function, while 40% of the elderly have more than 20 teeth that function in the Savitri Surabaya elderly posyandu. The purpose of this study was to determine whether there is a relationship between oral health actions and tooth loss in the elderly at the Savitri Surabaya Lantranssia Posyandu in 2024. This type of analytic research involves a cross sectional type. The total sample of 53 respondents was selected based on the inclusion criteria. The research instrument utilized an examination sheet for the number of missing teeth and an observation sheet involving 10 oral health action statements. Chi-square test was involved in statistical analysis. The findings of the study revealed that there was an effect of the relationship between oral health actions and tooth loss in the Savitri elderly posyandu in 2024. The majority of the elderly in the Savitri Surabaya elderly posyandu in 2024 were categorized as sufficient in oral health actions. The level of tooth loss in the elderly at Posyandu Savitri Surabaya in 2024 was found that the majority experienced tooth loss of less than 20.

INDEX TERMS Actions, Oral Health, Tooth Loss, Elderly

I. INTRODUCTION

Health is an essential aspect of life, encompassing both physical and spiritual dimensions. Among the various aspect of health that require attention, dental health emerges as the most important, given its vital role in the context of everyone's overall well-being. Neglecting oral health can substantially disrupt dailt activities, causing problems including speech impairment [23].

Elderly referring to individuals over 60 years of age, are physically very vulnerable, exhibiting different physical characteristic compared to younger individuals. Physiological changes are seen as attrition, plup chamber narrowing, and gum recession, wich affect the curative decline in salivary flow. These physiological transformations are likely to culminate in various oral pathologies among the elderly, including caries and accelerated tooth loss [30]. Action represents an attitude that has not yet translated into tangible behavior. For an attitude to manifest into real action, certain supporting factors or facilities must be present.

However, a person's attitude does not automatically lead to action. The quality of actions, whether positive or negative, is shaped by factors such as knowledge, the health-related behaviors of others, role models, available resources, and cultural influences [20].

Teeth serve as a vital organ in the human body, fulfilling a variety of functions, including mastication, speech, and aesthetics. Tooth decay can affect the rest of the body, thus affecting daily activities [22]. Tooth loss is one of the disorders in the oral cavity wich has an influence in terms of functional, aesthetic, and social aspects. Some of the problems that come to the oral cavity of the elderly are periodontal disease, untreated caries, and poor oral hygiene [8].

Problems in the oral cavity can inscrease the risk of health problems in the elderly such as the risk of heart attack, stroke, increase the severity of diabetes, osteoporosis, reduce the body's resistance to infection, and reduce the age of [24].

According to data from the 2018 National Basic Health Research, the prevalence of tooth loss in Indonesia is approximately 19%. In comparison, East Java reports a tooth loss index of 18%. Meanwhile, the World Health Organization (WHO) indicates that the prevalence of tooth loss among older adults globally is 30.6% [18].

One of the health programs designed specifically for the elderly is managed by posyandu lansia or posbindu. The main objective of the program is to provide physical health service to the elderly and guide helath-conscious behavior, thereby improving physical health [16].

The result of the initial survey on January 14, 2024 research conducted a dental examination totaling 10 elderly people at the savitri gunungsari surabaya elderly posyandu. The result of examtion were obtained by the elderly where the number of functioning teeth under 20 include 60%, on the other hand 40% of the elderly had functioning teeth above 20. This happened because there was no counseling for the elderly regarding oral health which made it difficult for the elderly to understand how to maintain oral health. The population at an advanced age can be said to have functioning teeth if the oral cavity has 20 teeth provided that the posterior teeth are still functioning [41].

Several factors contribute to the issues observed, including the knowledge and behavior of the elderly, the role of their families, and the attitudes of healthcare providers. Considering these challenges, researchers are particularly interested in studying the connection between oral health actions and tooth loss among the elderly at the Savitri Elderly Posyandu in Surabaya.

II. METHOD

The correlation analytic nature of this study where it use a cross sectional type. The target population of study involed elderly people at the savitri surabaya elderly posyandu who were taken using purposive sampling method. A total of 53 respondents were selected based on respondent inclusion criteria, include: elderly people in the age range 60-69 years, elderly people do not wear denture, elderly people visit the elderly posyandu, willing to become respondents. While the respondents exclusion criteria, among other : the elderly are at an age of more than 70 years, the elderly wear denture, the elderly do no visit the elderly posyandu, the elderly are not willing be respondents. This research was conducted at the savitri elderly posyandu balai RW 03 Jl. Golf 2 Dukuh Kupang Surabaya District, east Java Province. Primary data was utilized in the study, in the form of statement observation sheet containing oral health and then subjected to the Chi-Square correlation non parametric test.

III. RESULTS

TABLE 1
Respondent Characteristics

Characteristic	Frequency (f)	Percentage (%)
Gender		
Female	47	88.7
Male	6	11.3
Age		
60-69 years	53	100
70-79 years	0	0
80-90 years	0	0
>90 years	0	0
Number of teeth		
<20 (high tooth loss)	21	39.6
>20 (low tooth loss)	32	60.4

A total 53 sampels were studied with respondent falling into all predetermined inclusion crietria, namely the elderly with a vulnerable age of 60-69 years in September 2024, the elderly did not wear dentures,the elderly made visits to the

posyandu, the elderly who were willing to become respondents.

According to the data in [TABLE 1](#), the majority of respondent include female gender where the percentage reaches 88.7% with an average age of 60-69 years, which is 100%. There are 32 elderly respondents who have the number of teeth >20 with a low tooth loss category.

TABLE 2
Frequency Distribution Of Dental And Oral Health Action Values Of The Elderly At Savitri Elderly Posyandu Surabaya In 2024.

Oral health measures	Frequency (f)	Percentage (%)
Low (<56)	15	28.3
Medium (57-87)	25	47.2
High (>88)	13	24.5
Total	53	100

According to the data in [TABLE 2](#), there were 25 respondents with oral health action score in the moderate category with score of 57-87 at 47.2%.

TABLE 3
Frequency Distribution Of The Number of Ther Missing Teeth Based on Age an Gender In at Savitri Elderly Posyandu Surabaya In 2024.

Age	Number of teeth				Total	
	<20 teeth (high tooth loss)		>20 teeth (loss tooth loss)			
	f	%	f	%	f	%
female						
60-69 years	20	37.73	27	50.94	47	88.7
70-79 years	0	0	0	0	0	0
80-89 years	0	0	0	0	0	0
>90 years	0	0	0	0	0	0
Male						
60-69 years	1	1.88	5	9.43	6	11.32
70-79 years	0	0	0	0	0	0
80-89 years	0	0	0	0	0	0
>90 years	0	0	0	0	0	0
Total					53	100

According to the in data [TABLE 3](#), obtained form the analysis of the results of the examination of the number of missing teeth, it shows that the number of missing teeth in the savitri Surabaya elderly posyandu tends to have a number of teeth >20 with the category of tooth lost most experienced by the elderly with female gender at the age of 760-69 years, namely 27 elderly people at 50.94%.

Bivariate analysis in this study used the spss type 27.0 application to test whether or not there was a relationship between oral health actions and tooth loss in the elderly at the savitri elderly posyandu. This study waa tested using the *ChiSquare* non-parametic correlation test with an ordinal data measurement scale for the dental health action variavle and a nominal data measurement scale for the dental health action variable and a nominal data measurement scale for tooth loss. Based on the table obtained p value $(0,004) < \alpha (0,05)$ or there is a significant relationship between oral health actions and tooth loss in elderly people at the savitri elderly posyandu.

IV. DISCUSSION

Oral health is an essential condition for the body. This health involves the condition of the oral cavity as a whole. Where the oral cavity consists of soft and hard tissue health in the teeth has several functions [39] . Action is a concrete manifestation of attitude, but a person's attitude does not

always turn into action. The quality of action is determined by knowledge, exemplary behavior of others as inspirational figures, resources (including facilities, time, money, and energy), and cultural factors [17].

The results of the study conducted on dental and oral health actions were categorized as "moderate". This study is in line with the study by Heningtyas et al., (2021), which revealed that dental and oral health actions in the study were in the moderate category. Understanding lifestyle habits, health conditions, medical history, and specific oral health details is essential for identifying risk factors associated with tooth loss in older adults [11]. Such information helps healthcare professionals assess the risks tied to oral hygiene and determine the necessary care for the elderly [32].

Cited in the Ministry of Health (2018), it is noted that the majority of the Indonesian population does not visit the dentist, despite recommendations for regular dental and oral examinations, ideally carried out once every six months, along with the recommended consistent use of dental floss along with toothbrushes to provide improved oral hygiene [12]. Consistent with the findings of Skripsa et al. (2021), the study revealed that the strategies utilized by the elderly to maintain oral health were categorized as moderate, mainly due to a lack of understanding regarding the accuracy of oral health care. The majority of respondents indicated that practices such as routine dental visits and the use of dental floss were still poorly implemented. [35].

Various essential factors influence the success of oral health measures in the elderly. One of them involves the level of awareness and knowledge of the elderly regarding the importance of maintaining oral health. Elderly people with better understanding tend to take better care of their oral health. Another factor is getting support from the family, which can help the elderly to carry out routine checks at health care facilities. In addition, adequate health care facilities must also be easily accessible, and the elderly are more likely to get the necessary treatment in a timely manner [2].

Tooth loss is one of the health problems where it is often found and is often an important indicator of a person's oral health status [10]. Supported by Marsigid, D., & Lorenta, (2020) revealed that the quality of life of the elderly is significantly affected by tooth loss [15]. In addition to affecting the ability to chew and digest food properly, tooth loss can also affect the way of speaking and facial aesthetics of loss [40].

Decreased chewing ability can reduce the nutritional intake status of the elderly, in addition to changes in appearance due to tooth loss can also affect self-confidence [11]. Research by Auralia et al., (2024) also stated that the state of oral health of elderly people the most common problems faced were periodontitis, dental caries, and xerostomia (dry mouth). These problems can worsen oral health conditions if not handled properly. Some inappropriate habits or actions can actually trigger tooth decay. For example, the elderly often rarely visit health facilities for routine examinations or dental care. Elderly people usually only come when they feel pain and many do

not clean tartar regularly, which can lead to worsening oral conditions. The habit of smoking is also a factor that accelerates tooth and gum decay in the elderly [5].

The study findings indicate that most respondents have fewer than twenty missing teeth. This aligns with research by Wahyuni et al. (2021), which highlights that tooth loss can disrupt several critical functions, including chewing, speaking, aesthetics, and even social interactions [40]. It also influences other factors such as trauma, attitudes, and individual characteristics regarding dental health services. The primary causes of tooth loss are poor oral health, particularly due to caries and periodontal disease [33]. According to WHO (2013), an elderly individual is considered to have functional teeth if their oral cavity contains at least 20 teeth, with the posterior teeth remaining functional [41]. Tooth loss can be caused by several things, one of which is knowledge. If the elderly's knowledge is limited, the oral hygiene of the elderly tends to be neglected [40].

. Supported by Khalishah et al., (2024) which states that several causes of problems in the oral cavity, such as cavities caused by plaque or food debris. In addition, lack of oral hygiene also causes tooth loss, both due to severe cavities and tooth supporting tissues such as damaged gums. One of the main problems is periodontal disease, an infection of the gums and bone around the teeth that can cause tooth loss.

Without proper understanding and care, this risk can increase so proper oral care is essential for seniors [13].

The attitude of health workers also plays an important role in building positive relationships with older people. The elderly need a friendly and caring attitude from health workers, because this can create a sense of comfort and security as long as they receive services [2]. In line with research conducted by Muliati, (2022), the Savitri Surabaya Elderly Posyandu has a program organized by health services in the form of an elderly posyandu, which provides physical health services such as checking blood sugar once a month when doing posyandu, morning exercises on Sundays [16].

According to the results of the correlation test that has been carried out using the Chi-square correlation test, out of 53 respondents, the results obtained H1 are accepted and H0 is rejected. In addition, it was also found that the correlation coefficient between the two variables had sufficient closeness. The direction of the relationship between oral health actions and tooth loss is positive or unidirectional, meaning that the higher the action score, the more teeth you have. From the results of the correlation test of the two variables, it was concluded that there was a significant relationship between oral health actions and tooth loss in the elderly at the Savitri Surabaya Elderly Posyandu.

V. CONCLUSION

Based on research on the correlation between dental and oral health measures and tooth loss in the elderly at savitri elderly posyandu in 2024, it can be concluded that the majority of the elderly at the savitri elderly posyandu surabaya 2024 have oral health actions included in the moderate category.

The level of tooth loss in the elderly at posyandu Savitri Surabaya in 2024 was found that the majority experienced the number off teeth >20, which means that tooth loss is in the low category. There is a relationship between oral health actions and tooth loss in the elderly at the savitri elderly posyandu in 2024.

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