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## TENDENCIES OF GINGIVITIS IN USERS OF FALSE TEETH MADE BY THE DENTALONE IN THE COMMUNITY OF SUNGAI ALANG VILLAGE, BANJAR DISTRICT

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### ABSTRACT

Dental health in Indonesia, a developing country, is still a serious challenge, with the prevalence of dental and oral diseases reaching 60% of the population. The public's low dental hygiene knowledge is the main factor causing this problem. This research aims to increase public understanding and awareness of dental health as a first step towards improving dental health.

Using analytical methods with a cross-sectional approach, the study evaluated the condition of gingivitis in denture users, both made by dentists and dentists/dental technicians in Sungai Alang Village, Banjar Regency. The results of the study showed that the highest level of severe gingivitis was among users of dentures made by dentists, followed by mild gingivitis, while moderate gingivitis was rarely found.

Among users of dentures made by dentists/dental technicians, the most common group is mild gingivitis, followed by moderate and severe gingivitis. Interestingly, individuals who wore dentures for more than ten years had a 5.1 times higher risk of developing severe gingivitis than those who wore them for 1-5 years or 6-10 years. Furthermore, the risk of gingivitis was higher in those who made dentures at a dentist, with a gingival score difference of 0.121 compared to those who made dentures at a dentist/dental technician. These findings provide important insights regarding factors that can influence the level of gingivitis in denture users in the Sungai Alang Village community and Banjar Regency and emphasize the need for more intensive dental health education to increase public awareness and understanding of dental hygiene.

**Keywords:** Gingivitis, False Teeth, Dentalone,

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### INTRODUCTION

As a developing country, dental health in Indonesia is far from satisfactory, as many as 60% of the Indonesian population suffers from dental and oral diseases (Temilola et al., 2014); (Santoso et al., 2020). The causes of dental and oral disease are many kinds, the most important of which is that public knowledge of dental health regarding dental hygiene (oral hygiene) is still very low (Gambhir et al., 2020). Therefore, if we want to improve the degree of dental health in society, then we must be willing and change the view from not knowing to

knowing about dental health (Nurhaeni et al., 2022). In the field of dental health, this task is the main task of health education or counseling. The results of research by Tjandri S.R (2013) found a prevalence of gingivitis of 97% in the age group of 17-22 years consisting of gingivitis and periodontitis, respectively by 20.2% and 77.6% (Nurwahidah et al., 2023).

Generally, gingivitis is chronic so that complaints and symptoms that arise are only realized by patients when the condition is advanced . Complaints that are often expressed by sufferers are the occurrence of bleeding gums, there is an unpleasant odor, pus discharge from the gums, and in very advanced conditions the teeth become loose or fall out spontaneously. The spontaneous loss of teeth is caused by damage or resorption of supporting bone tissue (Syahrul., 2009); (WAHAB, 2022). The use of dentures not only replaces missing teeth, but serves as a maintainer of existing tissues, namely tooth, gum and bone tissue . So that denture users must really pay attention to the cleanliness of dentures and natural teeth. It's just that it is difficult to clean dentures, even with a toothbrush. As a result, teeth are soiled by buildup from food. In fact, it can cause the appearance of other disorders in the mouth, such as fungi. Under certain conditions, this situation can aggravate the inflammatory condition of the dental support tissue, including gingivitis, because the bacteria attached to the removable denture will help the irritation process in the gum tissue that is inflamed (Coulthwaite & Verran, 2007).

Almost all regions of Indonesia easily "practice" dentists with characteristic images of white teeth with fiery red gums can be found. Some dentist practices that endanger the community include: making dentures without removing the remaining roots and filling cavities, making dentures directly without printing, making permanent removable dentures, filling teeth without removing caries tissue or root canal treatment, and installing fixed orthodontic tools with the aim of variation (Dentamedia, 2012);(Ricucci & Bergenholtz, 2003). Based on the observations of researchers in some communities of Sungai Alang village, Karang Intan District, Banjar Regency, many use dentures made at dentists from the number of visits at the Sungai Alang dental poly puskesmas where patients who use dentures complain of pain, until swelling is 21 people from July to December 2009, which is 5% of outpatient visits totaling 462 people. This is an illustration that the health status of dentures made by dentists needs attention. So the author feels interested to know how the gingivitis tendency of denture users made at dentists in Sungai Alang village community, Banjar Regency. This study aims to evaluate the tendency of gingivitis in denture users made by dentists in Sungai Alang village community, Banjar Regency, with zero hypothesis stating that the tendency of gingivitis made by dentists and dentists / dental technicians is the same, while the alternative hypothesis states that the tendency is not the same.

## RESEARCH METHODS

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This research was carried out in Sungai Alang Village, Banjar Regency, South Kalimantan, with a period of time starting from the preparation of proposals in April 2023 until the completion of the Risbinakes Report in November 2023. The research method used is an analytical method with a cross-sectional approach, where cause variables and effect variables in the object of research are measured at the same time (Notoatmodjo, S., 2013); (Siregar, 2021). This study is conclusive descriptive with a single cross-sectional type, which means that it involves only one type of sample, and information collection is carried out only once. Research instruments use diagnostic tool sets, such as mouth glass, sonde, pincet, excavator, and nierbeken, to obtain information on the severity of gingivitis. The study population involved people in Sungai Alang Village, Banjar Regency, who used dentures, both made at dentists and technicians or dentists, with a total of 66 people, divided into 32 people in RT.5 and 33 people in RT.6.

The study used a total sample, because the entire population member was used as a sample (Sugiyono, 2010);(Sharma, 2017). Data collection was carried out through direct examination of respondents who were designated as samples with index gingival examination to measure the severity of gum disease in denture users. The data obtained include general and specific data about respondents, both from direct examination and from the place of research. The data collected, both primary and secondary, are processed in the form of percentage and frequency distribution, then analyzed using cross-tabulation. To determine the tendency between variables, a logistic regression test was carried out on categorical variables.

## RESULTS AND DISCUSSION

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Based on data obtained through research on residents in Sungai Alang Village who use dentures made through dentists, the following results were obtained:

Table 1. Average gingival denture user index

Variable	N	Mean	Median	Modus	Minimum	Maximum
Score gingival	66	1,69	1,8	1	0,2	2,8

From table 1. Above it can be seen that the average gingival index value of respondents who use dentures is 1.69, with a median value of 1.8, and a mode of 1.0 with the lowest gingival index value is 0.2 and the highest gingival index value is 2.8.

Table 2. Gingiva category of respondents who used dentures in Sungai Alang Village, Banjar Regency.

No.	Category: Gingiva	Frequency	Percentage (%)
1	Mild Gingivitis	22	33,3
2	Moderate gingivitis	15	22,7
3	Severe Gingivitis	29	43,9
<b>AMOUNT</b>		<b>66</b>	<b>100,00</b>

Cross-tabulations regarding the long use of dentures made from dentists with gingival conditions in respondents in Sungai Alang Village, Banjar Regency are known: In 30 respondents (45.5%) who used dentures for a long time 1 to 5 years where as many as 17 people (25.8%) experienced mild gingivitis, as many as 8 people (12.1%) experienced moderate gingivitis, and as many as 5 people (7.6%) experienced severe gingivitis conditions. In 24 respondents (36.4%) who used dentures for a long time 6 to 10 years where as many as 5 people (7.6%) had mild gingivitis, as many as 6 people (9.1%) had moderate gingivitis, and as many as 13 people (19.7%) had severe gingivitis conditions. In 12 respondents (18.2%) who used dentures for a long time > 10 years where no one was found to have mild gingivitis, as many as 1 person (1.5%) had moderate gingivitis, and as many as 11 people (16.7%) had severe gingivitis conditions.

From cross-tabulations regarding the remaining roots with gingival conditions in respondents residents in Sungai Alang Village, Banjar Regency, it is known that as many as 21 respondents (37.9%) who make dentures at doctors / dental technicians, most or 17 people (25.8%) the condition of gingivitis is still mild, as many as 2 people (3%) have moderate gingivitis, and 2 people (3%) have severe gingivitis conditions.

A total of 45 respondents (68.2%) who made dentures at the dentist, as many as 5 people (7.6%) had mild gingivitis, 13 people (19.7%) had moderate gingivitis, and 27 people (40.9%) had severe gingivitis conditions. To evaluate the tendency of gingivitis related to the length of use of dentures and the origin of their manufacture, bivariate analysis was carried out. First, the analysis between the length of dentures and gingivitis showed significant results with an omnibus test value of  $p = 0.000$  in the first block, allowing it to proceed to multivariate analysis. The output showed an Odds Ratio (OR) value of 6.787 (95% CI: 2.654 – 17.359),

indicating that every increase in age 1 year carries a risk of increasing gingivitis by 6.7 times. Second, in the analysis between the origin of denture manufacture and gingivitis, the output showed omnibus test results in the first block with  $p$  value = 0.001, which is smaller than 0.25, allowing it to proceed to multivariate analysis. The Odds Ratio (OR) of the Exp (B) column is 14.250 (95% CI: 2.952 – 68.794).

Analysis of the tendency to gingivitis showed that the OR of the variable length of denture use was 5.1. That is, individuals who use dentures for more than 10 years have a higher risk of 5.1 times to experience severe gingivitis compared to those who use dentures for 1-5 years and 6-10 years in the community of Sungai Alang Village, Banjar Regency. In addition, the results of the analysis showed that the OR of the denture manufacturing origin variable was 0.121, indicating that individuals who made dentures at the dentist had a higher risk of 0.121 to have a higher gingival score compared to those who made dentures at the doctor or dental technician in the community.

Based on the data obtained, it is known that the average value of the gingival condition of respondents who use dentures is 1.69, with a median value of 1.8, and a mode of 1.0 with the lowest gingival index value is 0.2 and the highest gingival index value is 2.8. Where the results of the study showed that each respondent had an average gingival condition of 1.69, which is in the category of moderate gingivitis. Based on data obtained from the figure in table 4.4. In 30 respondents (45.5%) who used dentures for a long time 1 to 5 years where as many as 17 people (25.8%) had mild gingivitis, as many as 8 people (12.1%) had moderate gingivitis, and as many as 5 people (7.6%) had severe gingivitis conditions, while in 24 respondents (36.4%) who had long used dentures for 6 to 10 years where as many as 5 people (7.6%) had mild gingivitis, A total of 6 people (9.1%) had moderate gingivitis, and as many as 13 people (19.7%) had severe gingivitis conditions. In 12 respondents (18.2%) who used dentures for a long time > 10 years where no one was found to have mild gingivitis, as many as 1 person (1.5%) had moderate gingivitis, and as many as 11 people (16.7%) had severe gingivitis conditions.

The results of the analysis obtained OR from the variable length of use of dentures is 5.1, meaning that people who use dentures > 10 years have a higher risk of 5.1 times experiencing severe gingivitis than those who use 1 to 5 years and 6 to 10 years. This shows that the length of use of dentures made can have an impact on gingival tissue, where from the data above it can be explained, that the longer respondents wear dentures, the greater the chance of causing gingivitis.

This research is in accordance with Arinika, 2008, that making dentures in dentists has many effects that over time affect the condition of the gum tissue of people who use these teeth (Sugier et al., 2023). This is because they make their dentures original without paying

attention to the anatomy, physiology of the oral cavity, hygiene and health of gum tissue and dental support. A good denture is an artificial tooth that is easy to clean, does not press or cause trauma to the soft tissues of the mouth, does not press / damage the abutment teeth in addition to good functional and aesthetic aspects. Based on data obtained from the description on cross-tabulation regarding the long use of dentures made from dentists with gingival conditions in respondents residents of Sungai Alang Village, Banjar Regency, it is known that as many as 21 respondents (37.9%) who make dentures at dental doctors / technicians, most or 17 people (25.8%) the condition of gingivitis is still mild, as many as 2 people (3%) have moderate gingivitis, and 2 people (3%) had severe gingivitis. While 45 respondents (68.2%) who made dentures at the dentist, as many as 5 people (7.6%) had mild gingivitis, 13 people (19.7%) had moderate gingivitis, and 27 people (40.9%) had severe gingivitis conditions.

The results of the analysis obtained the OR of the variable origin of denture manufacture is 0.121, meaning that people who make dentures at the dentist have a higher risk of 0.121 higher gingival scores than those who make at the doctor / dental technician (Rahayu, 2019). The results of the above research are in accordance with what Adhistry (2009) said that dentists are different from dentists because dentists usually only study teeth such as making dentures without considering other things (Mervelito et al., 2021). The dentist learns all about the teeth and mouth including the supporting tissues of the teeth. In making dentures, dentists pay attention to the health of the tissues around dentures, retention, occlusion, and others, so that the possibility arising from the installation of dentures that do not pay attention to dental medical ethics, both things related to dental anatomy, usually patients will experience severe infections, swelling of the face, almost all red and swollen gums, accompanied by trismus / cannot open the mouth (Sheikh & Perry, 2021).

In addition, denture wearers must really pay attention to the cleanliness of dentures and natural teeth. It's just that it is difficult to clean dentures, as a result of which the teeth are dirty by the accumulation of food. In fact, it can cause the appearance of other disorders in the mouth, such as fungi. Under certain conditions this situation can aggravate the condition of inflammation of the dental support tissue, including gingivitis, because bacteria attached to removable dentures will help the irritation process in the gum tissue that is inflamed) (Umum, 2007). This shows that the condition of the remaining roots in the installation of dentures can have an effect on inflammation of gingival tissue, where in the condition of the installation of dentures where no remaining roots are found underneath shows a low number of events of inflammation of gingival tissue, compared to the opposite condition in the condition of dentures found residual roots below, showing a high number of events of inflammation of gingival tissue, Even everyone who suffers from severe gingivitis is sure to find root residue in the installation of dentures.

The results of this study are in accordance with what was explained by Dhyiauddin, E, 2012, that the act of installing the wrong dentures is indeed a phenomenon in the dental business in Indonesia, where the condition of the remaining roots that are still left covered with dentures without extraction efforts will cause more dangerous conditions (Frencken et al., 2017). In conditions like this it is clearly a problem, because the complicating factor in the removal will be obtained by paying attention to the patient's condition, the patient must be treated first for swelling, then it can be removed when it is cured (Christersson et al., 1991). In addition, there are still other problems caused by the remaining roots that have not been removed in dentures, which in addition to causing inflamed gum tissue, swelling (oedem), and causing very bad oral hygiene, as well as canker sores (denture stomatitis) due to dentures that are not well adapted (Sultana et al., 2022).

## CONCLUSION

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Research on the gingival index of denture users in Sungai Alang Village, Banjar Regency, yielded several significant conclusions. First, the results showed that the category of severe gingivitis was the largest group among users of dentures made in dentists. This is followed by mild levels of gingivitis, while moderate gingivitis conditions are the least common group. Second, for denture users made at dentists or dental technicians in Sungai Alang Village, the largest group is those who experience mild gingivitis, followed by moderate and severe gingivitis levels. Furthermore, the risk analysis showed that individuals who used dentures for more than 10 years had a higher risk, as much as 5.1 times, of developing severe gingivitis compared to those who used dentures for 1-5 years and 6-10 years in the community of Sungai Alang Village, Banjar Regency. Lastly, people who make dentures at the dentist have a higher risk, of 0.121, to have a higher gingival score compared to those who make dentures at the dentist or dental technician in Sungai Alang Village community, Banjar Regency. These conclusions underscore the important role when dentures are used and where they are made in understanding the risk of gingivitis in local communities.

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