

# CASE DESCRIPTION OF ORAL CAVITY HARD TISSUE DISEASE IN BANJARMASIN 2017-2020

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## Abstract:

Disease that rank first from the list of ten major diseases that are often complained by Indonesian people is oral cavity diseases. The Hard Tissue of oral cavity lesions can be in the form of caries, periodontal disease, periapical abnormalities, cysts, and tumor in the oral cavity. Based on the Riset Kesehatan Dasar (Riskesdas) in 2018 the prevalence of dental and oral problem in Indonesia in South Kalimantan was 59,6%. The purpose of this study is to determine the description of oral hard tissue lesions in Banjarmasin city in 2017-2020. This research is descriptive study using a cross sectional approach. The variables on this study were oral hard tissue disease and gender, the data used were secondary data that obtained from the recording and reporting of the LB-1 form at Banjarmasin Community Health Center. The results showed that the most common type of disease on oral hard tissue case in 2017-2020 was pulp and periapical tissue disease, in 2017 it was 12,640 cases (78.37%), in 2018 it was 18,184 cases (51,45%). In 2019 it was 22,493 cases (57.07%) and in 2020 it was 3,220 cases (58.59%). In 2017, the most cases were in men with total of 7,887 cases (62.50%), while in 2018, 2019, and 2020, the most cases were in women with a total of 11,621 cases (64,29%), 14,285 cases (63.51%) and 1,892 cases (58.76%). It is necessary to prevent oral hard tissue disease, especially in pulp and periapical tissue disease.

**Keywords:** Gender; Hard tissue; Oral Cavity

## Introduction

Diseases that rank first of ten major diseases list that are often complained of by Indonesian people are oral cavity diseases. Oral cavity disease consists of damage that occurs in hard and soft tissues. Hard tissue is mineralized tissue such as teeth and bone structure. Hard tissue disease in the oral cavity can be in the form of caries, periapical abnormalities, periodontal diseases, cysts to oral cavity tumors.<sup>1</sup>

Hard tissues damage such as caries can be caused by a low pH in the oral cavity. When the oral environment is acidic ( $\text{pH} < 5.5$ ), it will support the growth of cariogenic bacteria and will cause a demineralization process, so that the tooth enamel will dissolve and be damaged. If caries is left unchecked, there will be an inflammatory process that will continue to the pulp chamber and causing pulp disease. The inflammatory process will continue to the chronic stage and will spread to the apical tooth. It will cause periapical abnormalities such as granulomas, periapical abscesses, and periapical cysts.<sup>2</sup> In addition, oral cavity disease may have the potential for malignancy that can invade tissues and metastasize to other organs of the body, for example various types of tumors and oral cancer.<sup>3</sup>

Based on the 2018 Riskesdas, the prevalence of dental and oral problems in South Kalimantan was 59.6%.<sup>4</sup> Regionally, Indonesia has the largest peatland in ASEAN, with an estimated area of 14.95 million hectares spread over 3 large islands, Sumatra, Kalimantan and Papua.<sup>5</sup> South Kalimantan is an area with a fairly large area of wetlands or peatlands. South Kalimantan has 1.48 million hectares or 15% of peatland distribution of Kalimantan and 8% of Indonesia's peatland distribution.<sup>6</sup> In several parts of Indonesia, including Kalimantan, peat water is a source of surface water available to the community and is commonly used for daily life such as bathing, brushing teeth, and gargling.<sup>7</sup> Based

on the Decree of the Minister of Health No. 429/MENKES/PER/IV/2010 and Government Regulation No. 82 of 2001, peat water does not meet the water quality requirements because it has brown water, contains high organic matter, and has a very low Ph.<sup>8</sup> The acidic nature of peatland water can support the growth of acidogenic and aciduric bacteria so that it can lower the pH in the oral cavity which can affect the process of tooth decay.<sup>7</sup>

An overview study of oral hard tissue disease is carried out to describe the health condition of a population or health risk factors and is useful for health planning, both prevention and treatment. Efforts to maintain oral health are a fundamental part of overall health, oral health is the area of the oral cavity including teeth and their supporting structures and tissues that are free from pain, and function optimally. In addition, as a database for developing dental science and technology research in a wetland environment. This action needs to be taken so that there is no disruption of function, activity and decreased work productivity which will certainly affect the quality of life.

## Research Method

This research is a descriptive study using a cross sectional approach, because the independent variables and the dependent variables in this study were measured simultaneously. The samples in this study were all patients with diagnosis of oral hard tissue disease recorded in LB-1 at 26 Banjarmasin Community Health Centers in the period January 2017 - December 2020. The sampling technique in this study used saturated sampling, which used the entire population in the study to be sampled. The variables in this study were oral cavity hard tissue disease and gender. Oral cavity hard tissue disease is a disease involving the teeth and their supporting tissues as well as the maxillary and mandibular bones. And gender

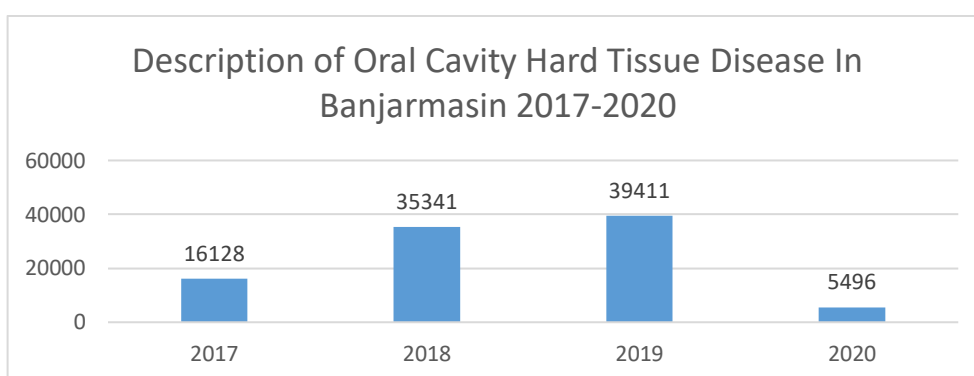
was categorized into male and female. The tools used in this study were writing instruments, data collection sheets, computers, and LB 1 form consisting of a diagnosis of disease and gender.

The data used in this study were secondary data obtained from the LB-1 report of the Banjarmasin Community Health Center. The data according to the criteria were then grouped and analyzed according to the diseases included in the oral cavity hard tissue disease and gender. The collected data were processed to determine the description of

hard tissue disease, data processing was carried out in several stages, namely editing, re-examining the collected data; Coding, coding the data; entry, entering data that has been coded into a computer program; and cleaning, cleaning data before processing.

**Results**

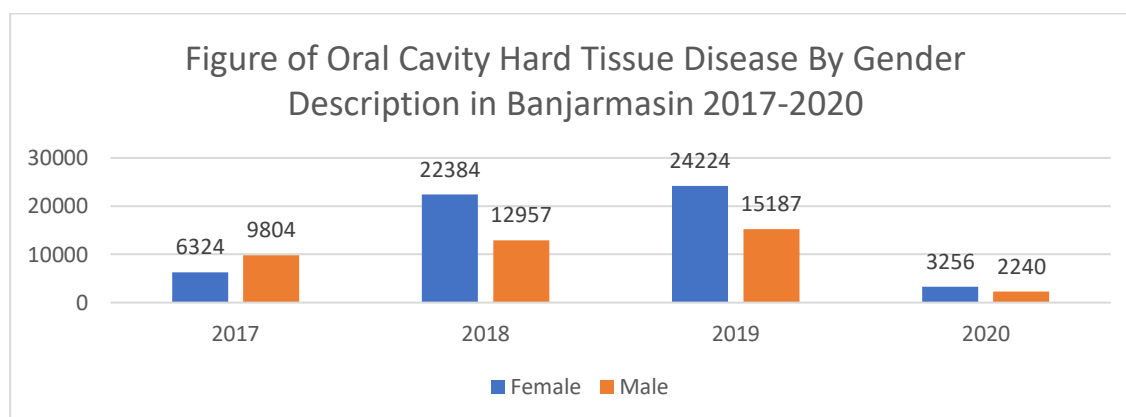
The results of the research on oral hard tissue disease in the City of Banjarmasin in 2017-2020 can be seen in the Figure 1.



**Figure 1** Graphic of oral hard tissue disease cases description in 2017-2020 in Banjarmasin.

Figure 1 illustrates the case of oral hard tissue in 2017-2020 which tends to fluctuate. The most cases were in 2019 with a total of

39,411 cases. The lowest cases were in 2020 with a total of 5,496 cases. Cases of oral hard tissue by gender can be seen in the Figure 2.



**Figure 2** Graphic of oral hard tissue cases by Gender Description in Banjarmasin 2017-2020

The most cases of oral hard tissue in the male sex were in 2019 with a total of 24,224 cases, while the lowest cases were in 2020

with a total of 2.240 cases. Cases of oral hard tissue based on the type of disease can be seen in the Table 1.

**Table 1** Cases of Hard Tissue in the Oral Cavity by Type of Disease

Types Of Oral Cavity Hard Tissue Disease	Year 2017		Year 2018		Year 2019		Year 2020	
	Case	%	Case	%	Case	%	Case	%
Dental caries (K02)	3249	20.15	6177	17.48	5940	15.07	778	14.16
Pulpal and periapical tissue diseases (K04)	12640	78.37	18184	51.45	22493	57.07	3220	58.59
radicular cyst (K04.8)	0	0.00	28	0.08	17	0.04	100	1.82
Dental hard tissue disease (K03)	0	0.00	449	1.27	558	1.42	26	0.47
Plaque, calculus and stain (K03.6)	0	0.00	1563	4.42	1566	3.97	163	2.97
Dental development disorders and tooth eruption (K00)	0	0.00	7997	22.63	7801	19.79	1021	18.58
Impacted and submerge teeth (K01)	0	0.00	346	0.98	327	0.83	84	1.53
Dentofacial disorders (K07)	239	1.48	592	1.68	667	1.69	90	1.64
Jaw disease (K10)	0	0.00	5	0.01	8	0.02	0	0.00
Dental dislocation (S03.2)	0	0.00	0	0.00	8	0.02	0	0.00
Fracture of maxilla, mandible, and dental fractures (S02)	0	0.00	0	0.00	26	0.07	6	0.11
Trigemius nerve disorders (G50)	0	0.00	0	0.00	0	0	8	0.15
Total Case	16128	100	35341	100	39411	100	5496	100

Table 1 illustrates the most common types of disease in oral hard tissue cases in 2017-2020 were pulp and periapical tissue diseases. The number of cases of pulp and periapical tissue disease in 2017 was 12640 cases (78.37%), pulp and periapical tissue disease cases in 2018 was 18184 cases

(51.45%), pulp and periapical tissue disease cases in 2019 was 22493 cases (57.07%), and pulp and periapical tissue disease cases in 2020 amounted to 3220 cases (58.59%). Cases of oral hard tissue by gender on the type of oral hard tissue disease can be seen in table 2.

**Table 2.** Types of Oral Cavity Hard Tissue Disease by Gender in 2017-2020 in Banjarmasin.

Types of Oral Cavity Hard Tissue Disease	Year 2017				Year 2018				Year 2019				Year 2020			
	M	%	F	%	M	%	F	%	M	%	F	%	M	%	F	%
Dental Caries (K02)	1812	55.	14	44.	21	34.	40	65.	244	41.	34	58.	238	30.	54	69.
		77	37	23	51	82	26	18	5	16	95	84	59	0	41	
Pulpal dan Periapical tissue diseases (K04)	7887	62.	47	37.	64	35.	11	64.	820	36.	14	63.	132	41.	18	58.
		40	53	60	93	71	69	29	8	49	28	51	8	24	92	76
							1				5					
Radicular cyst (K04.8)	0	0.0	0	0.0	8	28.	20	71.	0	0.0	17	100	47	47.	53	53.
		0	0	0	8	57	43	0	0	0	.00	00	00	00	00	
Dental hard tissue disease (K03)	0	0.0	0	0.0	12	28.	32	71.	226	40.	33	59.	9	34.	17	65.
		0	0	0	9	73	0	27	50	2	50	62	38	38		
Plaque, Calculus and Stain (K03.6)	0	0.0	0	0.0	39	25.	11	74.	454	28.	11	71.	38	23.	12	76.
		0	0	0	6	34	67	66	99	12	01	31	5	69		
Dental development disorders and tooth eruption (K00)	0	0.0	0	0.0	34	42.	45	57.	343	44.	43	55.	489	47.	53	52.
		0	0	0	06	59	91	41	5	03	66	97	89	2	11	
Impacted and submerged teeth (K01)	0	0.0	0	0.0	11	33.	23	66.	127	38.	20	61.	54	64.	30	35.
		0	0	0	6	53	0	47	84	0	16	29	71	71		
Dentofacial disorders (K07)	105	43.	13	56.	25	43.	33	56.	276	41.	39	58.	34	37.	56	62.
		93	4	07	7	41	5	59	38	1	62	78	22	22		
Jaw disease (K10)	0	0.0	0	0.0	1	20.	4	80.	2	25.	6	75.	0	0.0	0	0.0
		0	0	0	00	00	00	00	00	00	00	00	0	0	0	
Dental dislocation (S03.2)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	100	0	0.0	0	0.0
		0	0	0	0	0	0	0	0	0	.00	0	0	0		
Fractures of maxilla, mandible and dental fracture (S02)	0	0.0	0	0.0	0	0.0	0	0.0	14	53.	12	46.	0	0.0	6	100
		0	0	0	0	0	0	0	85	15	15	0	0	.00		
Trigemius nerve disorders (G50)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	37.	5	62.
		0	0	0	0	0	0	0	0	0	0	0	50	50		

Table 2 shows that Pulp and Periapical Tissue Diseases were the most common cases in 2017-2020 in the hard tissues of the oral cavity. Pulp and Periapical Tissue Diseases in 2017 were most common in males, while in 2018-2020 Pulp and Periapical Tissues were most prevalent in females. Pulp and Periapical Tissue Diseases in 2017 were mostly found in men with 7887 cases (62.40%), Pulp and Periapical Tissue Diseases in 2018 were mostly found in women with 11621 cases (64, 29%), Pulp and Periapical Tissue Diseases in 2019 were mostly found in women with a total of 14285 cases (63.51%), and Pulp and Periapical Tissue Diseases in 2020 were mostly found in women with 1892 cases (58.76%).

## Discussion

Figure 1 shows cases of oral hard tissue disease tend to increase from 2017-2019 and decrease in 2020, this can be due to the Covid-19 pandemic that hit. This condition makes people afraid to come for treatment at community health center.

In addition, dentists and dental nurses at puskesmas have limited activities of dental health services during this pandemic because dental procedures are classified as a high risk of transmission and contamination of the SARS-CoV2 virus. Some Puskesmas can only take action in the form of premedication and delay dental treatment during the pandemic.<sup>9</sup>

In the case of oral hard tissue disease based on gender, it can be seen in Figure 2 above that women experience more oral hard tissue disease. According to Daud, in his research on the visits of patients seeking treatment at Puskesmas based on gender, it showed that women visited Puskesmas more for treatment than men. This can be caused by, among other things, female teeth erupting faster than men so that teeth are exposed to saliva and food residue longer and if dental and oral hygiene is neglected, it will accelerate the process of dental caries. Women also have

a habit of consuming sweet foods between meals.<sup>10</sup>

According to Tarigan, the caries presentation was higher in women than men, this was caused by masticatory factors and neglect of dental and oral hygiene. In addition, women also experience hormonal imbalances during pregnancy which can lead to inflammation of the gums (pregnancy gingivitis) thus facilitating plaque attachment; so that if not cleaned, it can lead to dental caries.<sup>10</sup>

Dental and oral disease, especially caries, if left unchecked, will continue and over time will cause nerve death in the tooth or pulp necrosis.<sup>11</sup> Untreated cavities will become a source of infection that can penetrate deeper tissues such as the dental pulp, which consists of nerves, blood vessels and lymph. The pulp tissue can become inflamed both acutely and chronically due to microbial irritation that begins in the pulp tissue and then continues to the tissue around the root or periapical.<sup>12</sup> It can be seen in table 1 where the most common types of disease in the case of oral hard tissues are pulp and periapical tissue diseases. Pulp disease and periapical tissue damage are still problems, based on data from the Ministry of Health on DTD (Basic Tabulation List) showing that pulp and periapical disease in Indonesia is still relatively high and ranks 7<sup>th</sup> out of 10 list of diseases in outpatients in Indonesian hospitals with a total of 86,421 cases.<sup>13</sup>

In table 2 it can be seen that patients who have a lot of problems with pulp and periapical tissue disease are more common in women than men. This is also in line with Utami's research (2018) where the incidence of periapical lesions is related to age and gender. type which is closely related to oral hygiene where the behavior patterns of men and women will have a different impact on the person's oral hygiene. Like the pattern of snacking habits, besides, women have a

longer cariogenic exposure to the environment. Women also have greater interest in receiving dental care, so cases in women are more common.<sup>11</sup>

### Conclusions

From the results of the research that has been carried out, there is a description of cases of hard tissue disease which increased from 2017-2019 and decreased in 2020. Cases of hard tissue disease that often occur in the Banjarmasin Community health center are cases of pulp and periapical tissue disease and are more common in women. compared to men.

It is necessary to improve the prevention of oral hard tissue disease, especially in cases of pulp and periapical tissue disease.

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