PREVALENCE OF ORAL DISEASES AT ULIN HOSPITAL BANJARMASIN IN 2017-2019

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ABSTRACT

Background: Oral disease is a condition that causes lesions in the oral cavity, which can be influenced by age, gender, and level of education. Oral health is still becoming a problem in society that needs attention. According to basic health research 2018, the prevalence of oral disease in Indonesia remains considerably high reaching 57.6%. Oral diseases have practically been observed in Banjarmasin, yet no research has presented the prevalence of oral diseases in Ulin General Hospital, Banjarmasin. The purpose of this study was to determine the prevalence of oral disease in Ulin Hospital, Banjarmasin in 2017-2019
Method: This research is a descriptive study using secondary data from medical record. Sampling method was carried out by total population sampling of oral disease patients who were treated at Oral and Dental Clinic, Ulin Hospital in 2017-2019
Result: It showed that out of 102 oral disease patients, there were 78 patients suffering from recurrent aphthous stomatitis (76.5%), 8 patients from oral candidiasis (7.8%), 7 patients from oral squamous cell carcinoma (6.9%), 4 patients from oral submucous fibrosis (3.9%), 3 patients from burning mouth syndrome (2.9%), and 2 patients from allergic stomatitis (2%). Oral diseases were mostly found in over-45-years age group (54.9%), with the highest gender proportion is female reaching of 64.7%. Approximately 31.4% patients had completed high school education. Medical management was given to 60,8% patients with oral diseases.
Conclusion: Recurrent aphthous stomatitis was the most common oral disease in Ulin Hospital, in 2017-2019, followed by oral candidiasis and oral squamous cell carcinoma.

INTRODUCTION

Oral disease is usually characterized by mucosal lesions in the oral cavity. There are various types of oral disease, including oral tuberculosis, herpangina, primary herpetic gingivostomatitis, and allergic stomatitis. Oral health is still becoming a problem in society that needs attention. According to Riskesdas 2018, the prevalence of oral disease in Indonesia remains considerably high reaching 57.6%.1

Oral problems can be caused by various etiologies and predisposing factors, such as trauma (biting or poor denture design), drugs, viral, bacterial, and fungal infections. Risk factors for the occurrence of oral disease can be influenced by age, gender, and level of education. Oral diseases can cause discomfort, difficulty speaking and

eating, can affect aesthetics when ulcers are present, and produce an unpleasant odor.2

Oral diseases have practically been observed in Banjarmasin, yet no research has presented the prevalence of oral diseases in Ulin General Hospital, Banjarmasin. Ulin General Hospital, Banjarmasin is a referral center in South Kalimantan Province, so it is necessary to do further research related to the prevalence of oral disease. This study aims to determine the description of oral disease in Ulin Hospital Banjarmasin in 2017-2019.

METHODS

This research has received ethical approval by the ethics committee of the Faculty of Dentistry ULM with No. 005/KEPKG-FKGULM/EC/II/2021. This research is a descriptive study using secondary data. Secondary data were obtained from the medical records of oral disease patients at the Dental and Oral Polyclinic, Ulin Hospital Banjarmasin. The sampling technique in this study used a total population sampling technique. The sample of this study was oral disease patients who were treated at the Dental and Oral Polyclinic of Ulin Hospital Banjarmasin in 2017-2019 and the inclusion in this study was the medical records of oral disease patients who went to the Dental and Oral Polyclinic at Ulin Hospital Banjarmasin with complete medical record data, as well as medical records of patients who tested positive for oral disease. The exclusion criteria in this study were incomplete data from the required variables and patients with a diagnosis outside the category of oral disease.

The variables of this study were oral diseases based on the type of age, gender, level of education, and management of patients, who visited the Dental and Oral Polyclinic of Ulin Hospital, Banjarmasin in 2017-2019. The data analysis which used is a descriptive analysis that aims to describe the prevalence of oral disease based on age, gender, education level, and management at Ulin Hospital.

RESULTS

The study entitled Prevalence of Oral Diseases at Ulin Hospital Banjarmasin in 2017-2019 was conducted to determine the prevalence of oral diseases based on age, gender, level of education, and management. This research was conducted in November 2020-April 2021 at Ulin Hospital using total population sampling and obtained a total of 102 samples. Each subject has different characteristics based on age, gender, education level, and management, which are represented in Figures 1 to 5.

The prevalence of oral disease in Ulin Hospital in 2017-2019 included 78 patients with recurrent aphthous stomatitis (RAS) (76.5%), 8 patients with oral candidiasis (7.8%), 7 patients with oral squamous cell carcinoma (OSCC) (6, 9%), 4 patients with oral submucous fibrosis (OSF) (3.9%), 3 patients with burning mouth syndrome (BMS) (2.9%), 2 patients with allergic stomatitis (2%) (Figure 1).

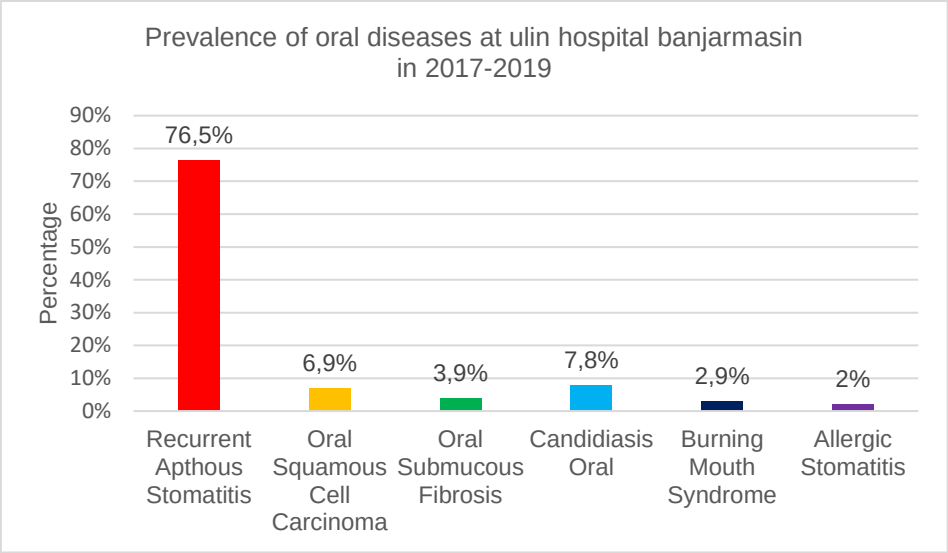

Figure 1. Characteristics of the Prevalence of Oral Disease

The prevalence of oral disease by age can be seen in Figure 2, which includes the population group aged more than 45 years with a total of 56 people (54.9%), 27 people (26.5%) in the 26-45 years' age group, 11 people (10.8%) in the 12-25 years' age group, and 0-11 years' age group with a total of 8 people (7.8%).

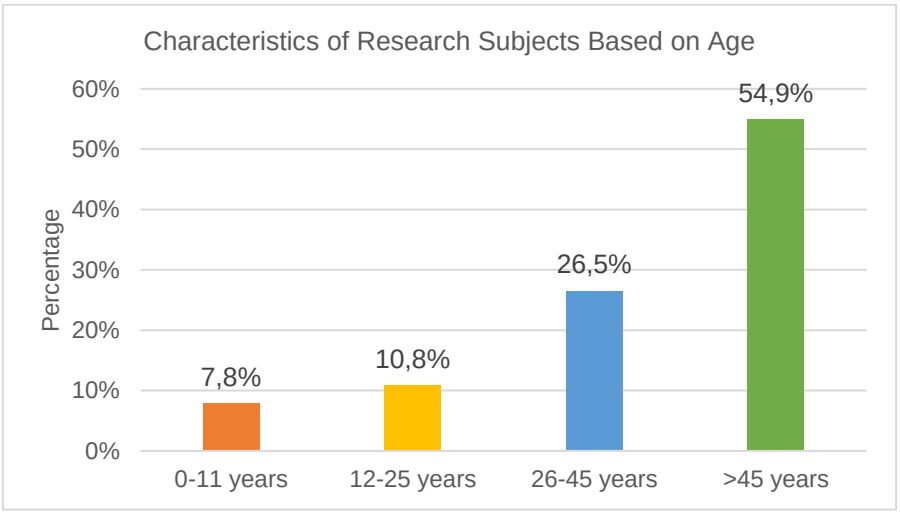

Figure 2. Characteristics of Research Subjects Based on Age

The prevalence of oral disease by gender can be seen in Figure 3, which includes 66 female subjects (64.7%) and 36 male subjects (35.3%). These results indicate that the most cases of oral disease are in females.

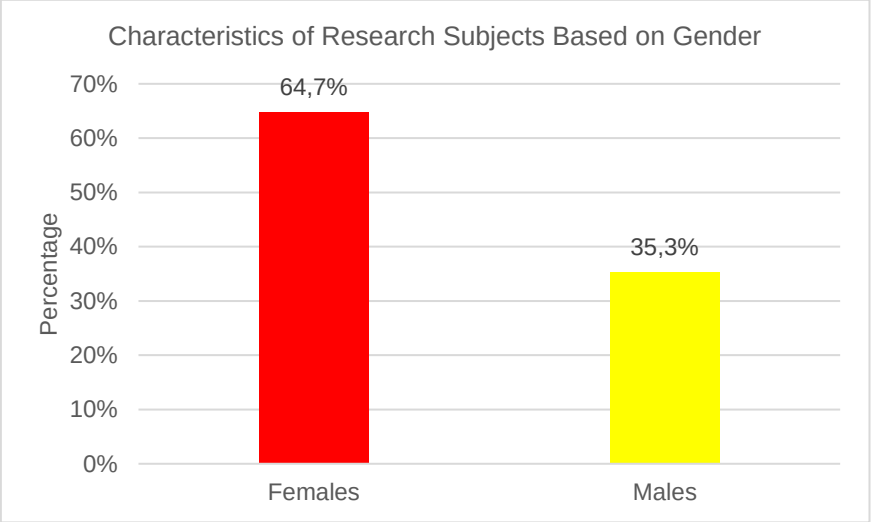

Figure 3. Characteristics of Research Subjects Based on Gender

The prevalence of oral disease based on education level can be seen in Figure 4 which includes subjects who completed high school education with a total of 32 people (31.4%), did not attend school with a total of 27 people (26.5%), elementary school with a total of 22 people (21.6%), Junior High School with 13 people (12,7%), and University Education with 8 people (7.8%).

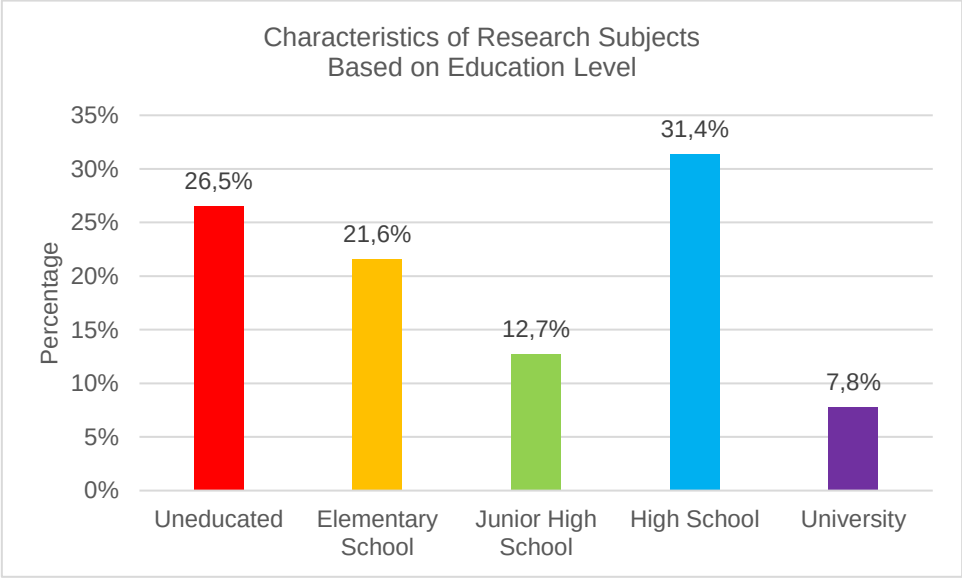

Figure 4. Characteristics of Research Subjects Based on Education Level

The prevalence of oral disease based on management can be seen in Figure 5, which includes subjects with medication prescription of 62 people (60.8%), referrals of 20 people (19.6%) followed by medication prescription and referrals of 15 people (14.7%), non-medical management as many as 3 people (2.9%), then the combination of non-medical management and medication prescription group with total number of 2 people (2%).

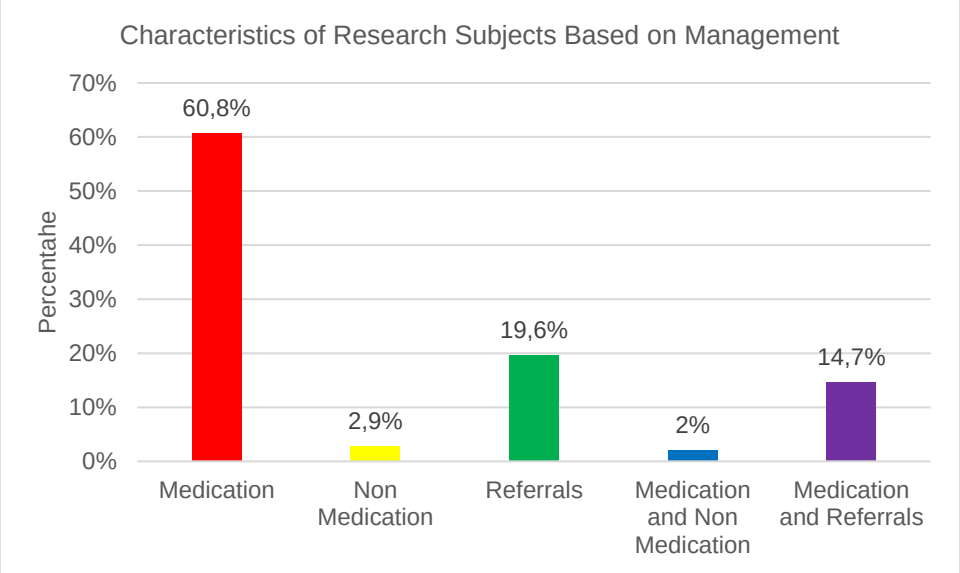

Figure 5. Characteristics of Research Subjects Based on Management

The descriptive data obtained will be analyzed by cross-tabulation to determine the prevalence of oral disease based on age, gender, education level, and management at Ulin Hospital Banjarmasin in 2017-2019, which are represented in Table 1 to Table 6. Hereby are the results of the analysis of oral disease in Ulin General Hospital Banjarmasin 2017-2019

Table 1. Characteristics of RAS

Characteristic	Recurrent Aphthous Stomatitis Total (%)
Age	
0-11 years	7 (9%)
12-25 years	10 (12,8%)
26-45 years	21 (26,9%)
>45 years	40 (51,3%)
Gender	
Females	48 (61,5%)
Males	30 (38,5%)
Education Level	
Uneducated	16 (20,5%)
Elimentary School	18 (14,3%)
Junior High School	10 (12,8%)
High School	26 (33,3%)
University	8 (10,3%)
Management	
Medication	52 (66,7%)
Non medication	2 (2,6%)
Referrals	11 (14,1%)
Medication dan non medication	2 (2,6%)
Medication dan referrals	11 (14,1%)

Most cases of RAS were found in the age group of 45 years and over, which mostly female with the highest level of education being Senior High School education. Medication prescription was the most treatment which given for RAS patients.

Table 2. Characteristics of Oral Candidiasis

Characteristic	*Candidiasis Oral* Total (%)
Age	
0-11 years	0 (0%)
12-25 years	0 (0%)
26-45 years	2 (25%)
>45 years	6 (75%)
Gender	
Females	4 (50%)
Males	4 (50%)
Education Level	
Uneducated	4 (50%)
Elimentary School	1 (12,5%)
Junior High School	1 (12,5%)
High School	2 (25%)
University	0 (0%)
Management	
Medication	2 (25%)
Non medication	1 (12,5%)
Referrals	3 (37,5%)
Medication dan non medication	0 (0%)
Medication dan referrals	2 (25%)

Oral candidiasis was mostly found at the age of 45 years and over, with the same proportion of female and male, and the highest level of education is uneducated. Most patients with oral candidiasis were referred for further management.

Table 3. Characteristics of OSCC Patients

Characteristic	*Oral Squamous Cell Carcinoma* Total (%)
Age	
0-11 years	1 (14,3%)
12-25 years	0 (0%)
26-45 years	0 (0%)
>45 years	6 (85,7%)
Gender	
Females	7 (100%)
Males	0 (0%)
Education Level	
Uneducated	4 (57,1%)
Elimentary School	1 (14,3%)
Junior High School	1 (14,3%)
High School	1 (14,3%)
University	0 (0%)
Management	
Medication	2 (28,6%)
Non medication	0 (0%)
Referrals	5 (71,4%)
Medication dan non medication	0 (0%)
Medication dan referrals	0 (0%)

Most OSCC cases were found at the age of 45 years and over, in uneducated female patients. Most patients with OSCC were referred for further management.

Table 4. Characteristics of OSF Patients

Characteristic	*Oral Submucous Fibrosis (OSF)* Total (%)
Age	
0-11 years	0 (0%)
12-25 years	1 (25%)
26-45 years	2 (50%)
>45 years	1 (25%)
Gender	
Females	3 (75%)
Males	1 (25%)
Education Level	
Uneducated	2 (50%)
Elimentary School	1 (25%)
Junior High School	0 (0%)
High School	1 (25%)
University	0 (0%)
Management	
Medication	3 (75%)
Non medication	0 (0%)
Referrals	0 (0%)
Medication dan non medication	0 (0%)
Medication dan referrals	1 (25%)

Most OSF cases were found at the age range of 26-45 years, in uneducated female patients. Medication prescription was the most treatment which given for OSF patients

Table 5. Characteristics of BMS Patients

Characteristic	*Burning Mouth Syndrome (BMS)* Total (%)
Age	
0-11 years	0 (0%)
12-25 years	0 (0%)
26-45 years	1 (33,3%)
>45 years	2 (66,7%)
Gender	
Females	2 (66,7%)
Males	1 (33,3%)
Education Level	
Uneducated	0 (0%)
Elimentary School	1 (33,3%)
Junior High School	1 (33,3%)
High School	1 (33,3%)
University	0 (0%)
Management	
Medication	1 (33,3%)
Non medication	0 (0%)
Referrals	1 (33,3%)
Medication dan non medication	0 (0%)
Medication dan referrals	1 (33,3%)

Most BMS cases were found at the age of 45 years and over, in female patients, with the same proportion of elementary, junior high school, and senior high school education levels. The management of BMS was proportionally given for the patients, including medication prescription, referral and both medication prescription and referrals

Table 6. Characteristics of Allergic Stomatitis Patients

Characteristic	Allergic Stomatitis Total (%)
Age	
0-11 years	0 (0%)
12-25 years	0 (0%)
26-45 years	1 (50%)
>45 years	1 (50%)
Gender	
Females	2 (100%)
Males	0 (0%)
Education Level	
Uneducated	1 (50%)
Elementary School	0 (0%)
Junior High School	0 (0%)
High School	1 (50%)

University	0 (0%)
Management	
Medication	2 (100%)
Non medication	0 (0%)
Referrals	0 (0%)
Medication dan non medication	0 (0%)
Medication dan referrals	0 (0%)

Allergic stomatitis was found proportionally at the age range of 26-45 years and above, mostly in uneducated female and in those who completed senior high school. The allergic stomatitis patients were mostly got medication prescription.

DISCUSSION

The results showed that of the 102 oral disease patients who were treated at the Ulin Hospital Banjarmasin in 2017-2019, there were 78 patients with RAS (76.5%), 8 patients with Oral Candidiasis (7.8%), 7 patients with OSCC . (6.9%), 4 patients with OSF (3.9%), 3 patients with BMS (2.9%), and 2 patients with Allergic Stomatitis (2%). The highest prevalence of oral disease in Ulin Hospital Banjarmasin in 2017-2019 was RAS at 76.5%.

The results of this study are in accordance with Hongfeng et al (2020), that the highest prevalence of oral disease in China is RAS. The same results were also found in the research of Hatta et al (2018), which stated that the highest prevalence of oral disease at RSGM Gusti Hasan Aman Banjarmasin was Recurrent Aphthous Stomatitis.1,3-4

Recurrent aphthous stomatitis (RAS) is most commonly found in the elderly age (> 45 years). In the elderly age, there is a decrease in the function of the oral mucosa, making it easier for oral lesions to occur. This condition is also influenced by a degenerative process that continues to run in elderly patients, so that it reduces masticatory function, saliva production, and changes in diet for these patients. The presence of systemic disease will affect the reduction of efforts to maintain oral hygiene.5

This study shows that the number of patients suffering from RAS was mostly female. It was associated with the hormonal imbalance during menstruation. During the menstrual cycle, the luteal phase undergoes a decrease in the levels of the estrogen and progesterone. Estrogen plays a role in stimulating the maturation of epithelial cells of the oral mucosa. The decrease in the estrogen level will cause a decrease in the degree of epithelial keratinization, which causing RAS. Low progesterone level will cause a decrease in vascular permeability, which makes bacterial invasion of the oral mucosa becomes easier.6

The level of education in RAS patients in the study was mostly senior high school subjects. The level of knowledge is a very important component, in efforts to improve dental and oral health. The higher a person's level of education, the individual will be more aware of the importance of maintaining oral health.7

All RAS patients was mostly got medication prescription, including the administration of drugs such as antiseptics, 0.2% chlorhexidine, and triamcinolone acetonide. Management of RAS is intended to reduce symptoms, reduce the number and size of ulcers in the oral cavity.2,5,6

The second highest prevalence of oral disease in Ulin Hospital Banjarmasin in 2017-2019 was Oral Candidiasis at 7.8%. Most oral candidiasis case was found in the category of elderly patients (> 45 years). Oral candidiasis is more common in elderly patients, due to the use of dentures which produce a micro-environment that is conducive to candida growth with low oxygen, low pH, and an anaerobic environment. It is associated with lack of salivary flow on the underside of the denture

surface, the use of the wrong denture, or poor oral hygiene.8

In this study, the number of patients suffering from oral candidiasis was mostly female. The level of education in oral candidiasis patients in this study was mostly uneducated. Education is an important source for knowledge. The use and maintenance of good and correct dentures are one of the predisposing factors for the occurrence of oral candidiasis. Individuals with high education level will have better understanding about how to maintain dentures and oral hygiene.7,9

Most patients with oral candidiasis were referred for further management, especially to oral disease specialists who have special competence in this field for further treatment. Medical prescription will be intended to identify and eliminate possible causative factors, and also to prevent systemic spread. The medication which categorized into primary care should be given first, such as nystatin, amphotericin B, and clotrimazole; followed by second line of medication includes ketoconazole, fluconazole, itraconazole.2,9

The third-highest prevalence of oral disease at Ulin Hospital Banjarmasin in 2017-2019 was OSCC at 6.9%. The results of this study showed that the most OSCC case was found in the category of elderly patients (>45 years). One of the predisposing factors for malignancy is closely related to the age factor. Physical deterioration at all cellular, organ, and system levels is happened in the elderly. In this study, there were 7 women (100%) who suffered from OSCC. One of the predisposing factors for malignancy is the habit of chewing betel nut. Chewing betel nut will release large amounts of reactive oxygen species, which become the main genotoxic agent involved in oral cancer. The habit of chewing betel nut is more common in women than in men. Research data in Indonesia said that the prevalence of betel nut chewing in women was 79.8%. The OSCC cases in Ulin Hospital Banjarmasin were mostly found in women because the habit of chewing betel nut is still cultivated as cultural traditions and considered as a need that is equal to food needs.10,11

The OSCC cases were mostly found in uneducated patients. Lack of knowledge, in conjunction with low economic level will impact on difficulty in accessing oral health facilities and increase the risk of OSCC.10

Most patients with OSCC were referred to a surgical oncology specialist for further management. This is associated with the efforts to provide further management in the form of surgery, radiotherapy, and staging. Surgical management is the first line management for OSCC, followed by chemotherapy and radiotherapy treatment programs.12

The fourth highest prevalence of oral disease in Ulin Hospital Banjarmasin in 2017-2019 was OSF of 3.9%. All 4 patients with OSF, were found in the age range of 26-45 years, which might be related to the existence of social and economic freedom. It was also associated with the habit of chewing betel nut, smoking, alcohol to relieve stress and also the influence of surrounding environment. In this study, most OSF cases were found in women. According to the World Health Organization (WHO), the habit of chewing betel nut is more common in women than in men. The habit of chewing betel nut often causes lesions on the oral mucosa, which can be developed as OSF.13

Most OSF patients were generally uneducated. The low level of education will correlate with low public awareness about the impact of chewing betel nut on oral health. The management of 4 patients suffering from OSF is mostly in the form of medication prescription. Management of OSF by stopping bad habits is

carried out through education and the provision of medications such as steroids.14

The fifth highest prevalence of oral disease in Ulin Hospital Banjarmasin in 2017-2019 was BMS at 2.9%. The BMS, most commonly affects the elderly (>45 years), which often occurs at the age of menopause. There is a permanent cessation of the primary function of the human ovary associated with other systemic disorders in menopause. This study shows that BMS was mostly found in middle-aged women who are in the peri- and post-menopausal stages. Women who experience hormonal changes during menopause can experience anxiety and stress.15,16

Most BMS cases were found with the same proportion of elementary, junior high school, and senior high school education levels. Lack of knowledge about dental and oral health will increase the risk of oral disease in patients. Behavior-based on knowledge has better impact than those with low levels of knowledge.17

The management of BMS was proportionally given for the patients, including medication prescription, referral and both medication prescription and referrals. Various medication was prescribed according to the possible etiologies of this disease, such as antidepressants, analgesics, antifungals, antibacterials, antihistamines, antiepileptic drugs, antioxidants, and capsaicin. Management with local and systemic or topical capsaicin will cause long-term desensitization and reduces symptoms. Topical lidocaine can also relieve the burning sensation. Anticonvulsant drug, such as clonazepam (1 mg tablet 3 times/day) is also used for the treatment of BMS. Neuropathic pain can be treated with gabapentin or pregabalin. Antidepressants and antipsychotics are also needed in the treatment of BMS for neuropathic pain. Hormonal and behavioral therapy can also be done for BMS patients.16

The sixth highest prevalence of oral disease at Ulin Hospital Banjarmasin in 2017-2019 was allergic stomatitis at 2%. Allergic stomatitis was found proportionally at the age range of 26-45 years and above. However, allergic stomatitis can occur at any age. Allergies will occur after an allergen stimulates a hypersensitivity reaction. Allergic stomatitis can occur in both men and women. The prevalence of allergic stomatitis in Ulin Hospital Banjarmasin was found mostly in women. Women tend to experience allergies due to the influence of the hormone estrogen. The estrogen hormone will increase the release of histamine, which is an inflammatory mediator in allergic reactions.18,19

Allergic stomatitis was found equally in both uneducated patients and in those who completed senior high school. The level of education will affect oral health behavior indirectly through one's knowledge of efforts to maintain oral hygiene. The allergic stomatitis patients were mostly got medication prescription, accompanied by oral hygiene maintenance and using mouthwash three times a day. It is necessary to stop the cause of allergies in the management of allergic atomatitis. Topical steroids such as triamcinolone can also be used. Patients with allergic stomatitis were instructed to start eating lots of fruits and vegetables and drinking enough water, and all patients were instructed to maintain oral hygiene.20,21

This is the first study on the prevalence of oral disease in Ulin General Hospital Banjarmasin. Ulin General Hospital Banjarmasin is a referral center hospital for South Kalimantan, Central Kalimantan, and East Kalimantan, as well as being a general hospital with Class A classification. The limitation of this study is the number of samples, which only taken from one research location conducted at the Dental and Oral Polyclinic of Ulin Hospital Banjarmasin. The COVID-19 pandemic conditions was also affected this study. The risk

factors for oral disease which observed in this study were also still limited, including age, gender, education level, and also management.

According to the findings in this study, recurrent aphthous stomatitis is the most common oral disease, followed by oral candidiasis and oral squamous cell carcinoma.

CONCLUSION

The prevalence of oral disease at Ulin Hospital Banjarmasin in 2017–2019 was RAS with a total of 78 people (76.5%), oral candidiasis with a total of 8 people (7.8%), OSCC with a total of 7 people (6.9%), OSF with 4 people (3.9%), BMS with 3 people (2.9%), and allergic stomatitis with 2 people (2%). The age of oral disease patients at Ulin Hospital Banjarmasin in 2017–2019 was in the age group of more than 45 years, with a total of 56 people (54.9%), the age group of 26–45 years with a total of 27 people (26.5%), the age group ages 12–25 years with a total of 11 people (10.8%), and 0–11 years with a total of 8 people (7.8%).

The gender of oral disease patients at Ulin Hospital Banjarmasin in 2017–2019 was female, with a total of 66 people (64.7%), and male, with a total of 36 people (35.3%). The level of education in oral disease patients at Ulin Hospital Banjarmasin in 2017–2019 was subjects who completed high school with a total of 32 people (31.4%), did not attend school with a total of 27 people (26.5%), elementary school with a total of 22 people (21.6%), junior high school with 13 people (12.7%), and higher education with 8 people (7.8%). The management of oral disease patients at Ulin Hospital Banjarmasin in 2017–2019 was in the form of giving medication to a total of 62 people (60.8%), referrals to a total of 20 people (19.6%), medical management groups and referrals to a total of 15 people (14.7%), non-medical with 3 people (2.9%), medical management group and non-medical with 2 people (2%).

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