The Level of Knowledge of Dental Profession Students of Universitas Airlangga on Leukoplakia as an Oral Potentially Malignant Disorder: An Observational Analytic Cross-Sectional Study

by Desiana Radithia

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The Level of Knowledge of Dental Profession Students of Universitas Airlangga on Leukoplakia as an Oral Potentially Malignant Disorder: An Observational Analytic Cross-Sectional Study

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Abstract

Introduction Some oral cancers are preceded by oral potentially malignant disorders (OPMD), clinically and histologically characterized by epithelial dysplasia. Leukoplakia is one of the OPMDs which clinically categorized into homogenous and nonhomogenous. Nonhomogeneous leukoplakia has a higher potential for malignant change. Therefore, dentists are required to recognize leukoplakia early during an oral (visual) examination, and this competency must be one of the requirements before graduation.

Objective This study aimed to understand the level of knowledge of the dental undergraduate students about leukoplakia as an OPMD.

Methods This research was an observational analytic study using a cross-sectional design. Data were collected via a questionnaire survey conducted using Google Forms. The total score was divided into high (9–12), medium (5–8), and low (0–4). Data were analyzed using SPSS version 25 using comparative analysis Mann–Whitney techniques test.

Results A total of 180 dental profession students completed the questionnaire. Of these, 74 (41.40%) respondents were 22 years old, and 146 (81.10%) respondents were female. A high level of knowledge was achieved by 130 (72.20%) respondents, with each revealing 68 respondents from the 2019 batch and 62 from the 2018 batch, 49 (27.20%) respondents with a medium level of knowledge with 26 from the 2018 batch and 23 from the 2019 batch, and 1 respondent (0.60%) from the 2019 batch with a low level of knowledge. The results showed a p-value of 0.211.

Keywords
► leukoplakia
► level of knowledge
► OPMD
► cancer

Conclusion There is no significant difference between the levels of knowledge of dental profession students in Universitas Airlangga batches 2018 and 2019 with regard to leukoplakia as an OPMD.

Introduction

Oral cancer is the sixth most common cancer in the world.[1] It is the four most common types of cancer in the Southeast Asia region.[2] Oral cancer is also the 15th leading cause of cancer death in Indonesia.[3] Some oral cancer may be preceded by oral potentially malignant disorders (OPMDs). The potential for progression of OPMD to oral cancer varies depending on multiple factors associated with the patient or the OPMD.[4]

OPMD has been shown to have an increased risk of malignant conversion to oral cancer.[5] The Asian population has the highest prevalence of OPMD, namely, 10.54%.[6] OPMD more often occurs in men than women.[7] Mello et al have reported that the most common form of OPMD in the Asian population is oral leukoplakia with a prevalence of 7.77%.[6]

Leukoplakia is a predominantly white plaque of questionable risk, having excluded (other) known diseases or disorders that carry no increased risk for cancer.[8] The potential for malignant change of leukoplakia is more often histologically characterized by epithelial dysplasia. The overall mean of malignant transformation of leukoplakia was 12.10% where the nonhomogeneous leukoplakia has been shown to have a higher risk of malignancy than homogeneous leukoplakia.[9,10] Among the OPMD, the majority is leukoplakia. Therefore, there is a need to have more dentists in Indonesia to be able to detect leukoplakia early for them to make referrals to specialists for the treatment of patients to prevent the potential for progression to malignancy.[8] The occurrence of leukoplakia may be influenced by various established risk factors, such as tobacco chewing, smoking, alcohol consumption, and areca nut (betel quid) chewing. Other risk factors, such as the use of Sanguinaria mouth rinse and other systemic factors have also been reported to be risk factors for leukoplakia.[11,12] The existence of contributing factors indicates that the risk of developing the lesion is related to the continuation of the influencing activity.[4]

Indonesia has insufficient epidemiological data on OPMD prevalence. Attaining less attention than other cancerous lesions and lack of epidemiological data in the Indonesian health system, OPMD, especially leukoplakia, is often diagnosed late and even misdiagnosed as another oral lesion.[13] It happens because of its asymptomatic appearance in the early stages of development.[14] When dentist or dental undergraduate students do not suspect leukoplakia and a definite diagnosis has not been established, patients will lose time to seek treatment.[15] Therefore, other than the dentists, the knowledge of leukoplakia is also essential for dental undergraduate students who are prospective dentists.[16]

Early detection of leukoplakia should be performed given the potential to develop cancer which once developed will affect patients' quality of life and their survival rates.[11] To reach a correct diagnosis, dentists should have basic knowledge of leukoplakia as an OPMD which is influenced by their education, experience, belief, sociocultural practice, and age.[17,18] Those factors would influence the dentists' decision to choose the relevant treatment for their patients. For example, the decision to treat lesions with mild dysplasia must estimate the extent of the lesion, risk factors, and patient preferences.[19] Being able to derive the appropriate diagnosis and/or treatment would only be possible through having appropriate knowledge, thus leading to early detection and improving patient lives. The objective of this study was to determine the level of differences in knowledge of leukoplakia as an OPMD among dental profession students in Universitas Airlangga.

Materials and Methods

Study Design and Participants

This is an observational analytic study with a cross-sectional design where dental profession students' batches 2018 (year 2) and 2019 (year 1) of Dental Medicine Faculty in Universitas Airlangga participated voluntarily. Dental professional students in the Indonesian system are students who are doing clinical work within year 1 and year 2 of the dental clinical bachelor's degree program. Before this, they would have completed a prerequisite dental science degree program for 3.5 to 4 years which has no clinical component.

By applying the Slovin formula ($e = 0.05$), the minimum samples needed was 175 samples with the proportion of 87 dental profession students from batch 2018 and 88 dental profession students from batch 2019, due to the slight difference in the number of dental profession students from each batch. The research was conducted online from middle of October 2020 until early December 2020. Informed consent which contains the respondent's consent to participate in this study has been done.

Questionnaire Format

The research was done by using a 12-item questionnaire. There is no pilot version of the questionnaire because it is a new study, but the authors exclude the invalid and unreliable items to make sure the understandability, validity, and reliability of the questionnaire as a tool which had been statistically tested for validity and reliability on SPSS version 25 for Windows. The questionnaire was divided into two groups which were respondents' sociodemographic data and the items to measure the knowledge level of respondents. From the 12-item questionnaire, 6 items referred to OPMD in

general and the other 6 items referred to leukoplakia as an OPMD. All questionnaire items are based on textbooks and journals as shown in discussion.

The data were taken through a questionnaire on the Google form. Some comprehensive and adequate explanations about the aim of the research were also given there. The link was distributed via social media. If the respondents were willing to take part, they needed to tick the box provided as the substitute for giving consent before entering the questionnaire section. Respondent's answers will be measured using the Guttman scale which required a firm answer from respondents in the form of "true" or "false." The answers to the questionnaire were assessed with a score of 0 and 1. Questionnaire numbers 1, 2, 3, 5, 7, 8, 9, 11, and 12 have a score of 1 if the respondents answered true and 0 if false. Questionnaire numbers 4, 6, and 10 have a score of 1 if the respondents answered false and 1 if true.

Results

Out of 310 dental profession students at Faculty of Dental Medicine of Universitas Airlangga who were given the questionnaire's link, 180 decided to participate. The result is not only fulfilling the minimum respondents needed but also getting 58.00% of the response rate. The sociodemographic

Table 1 Frequency distribution of respondent based on sociodemographic characteristics

Category		n	%
Age (y)	20	1	0.60
	21	7	3.90
	22	74	41.40
	23	73	40.60
	24	24	13.30
	25	1	0.60
Batch	2018	88	48.90
	2019	92	51.10
Gender	Female	146	81.10
	Male	34	18.90

characteristic of the respondents is described in ►Table 1. Seventy-four (41.40%) respondents were 22 years old. Most of the respondents were female (81.10%) and approximately 51.10% of them were from batch 2019.

►Table 2 shows the distribution of results regarding the 12-questionnaire items asked. The first item shows that most

Table 2 Distribution of questionnaire answers

Questionnaire	Percentage of answer "true"			Percentage of answer "false"		
	Batch 2018 (%)	Batch 2019 (%)	Total (%)	Batch 2018 (%)	Batch 2019 (%)	Total (%)
1. OPMD lesions are dominated by clinical features of white plaque lesion that do not heal after two weeks of treatment	43.90	47.20	91.10	5	3.90	8.90
2. OPMD lesions are caused by multifactorial causative factor	40	38.30	78.30	8.90	12.80	21.70
3. OPMD lesions are caused by smoking habit	43.30	46.10	89.40	5.60	5	10.60
4. OPMD lesions are not caused by betel quid chewing habit	17.20	17.20	34.40	31.70	33.90	65.60
5. OPMD lesions are caused by the habit of drinking alcoholic beverages	43.30	45	88.30	5.60	6.10	11.70
6. Dysplasia is always found in OPMD lesions	28.30	22.20	50.50	20.60	28.90	49.50
7. Invasive cancer of the oral cavity can be preceded by leukoplakia lesions	44.50	50.50	95	4.40	0.60	5
8. Leukoplakia lesions are common in men	38.30	37.80	76.10	10.60	13.30	23.90
9. Smoking is the contributing factor of leukoplakia	44.50	45.50	90	4.40	5.60	10
10. Homogeneous leukoplakia has more potential to become malignant than non-homogeneous leukoplakia	14.40	15	29.40	34.50	36.10	70.60
11. The diagnosis of leukoplakia can be made by excluding other white lesions	30.60	35.50	66.10	18.30	15.60	33.90
12. Biopsy is the main supporting examination to diagnose leukoplakia	40.60	47.2	87.80	8.30	3.90	12.20

Abbreviation: OPMD, oral potentially malignant disorders.

dental profession students (91.10%) already know the definition and clinical features of OPMD lesion in general. Item numbers 2, 3, 4, and 5 indicated that the dental profession students also well realized the etiology and predisposing factors for OPMD. The sixth item, where 50.50% of the respondents agree with the statement that dysplasia is always found in OPMD which is false, is used to see the knowledge of dental profession students regarding histopathological examination for the diagnosis of OPMD.

As many as 95.00% of dental profession students are aware that item number 7 is the definition of leukoplakia as OPMD, while 76.10% of the respondents agree to item number 8 which describes the epidemiology of leukoplakia. Item number 9 suggests that most of the respondents (90.00%) realize that smoking is one of the predisposing factors for leukoplakia. Item number 10 which mentions the clinical features and potential for malignancy of leukoplakia showed that as many as 70.60% of the respondents disagree that homogeneous leukoplakia has more potential to become malignant than nonhomogeneous leukoplakia. The last two items portray the diagnosis of leukoplakia as an OPMD. The diagnosis of leukoplakia which can be made by excluding other white lesions showed agreement by 66.10% of the respondents. Item number 12 showed that 87.80% of the respondents agree that biopsy is the main supporting examination to diagnose leukoplakia.

The assessment of the respondent's total score exhibited as many as 130 respondents (72.20%) having a high level of knowledge, followed by 49 respondents (27.20%) with a medium level of knowledge and 1 respondent (0.60%) had a low level of knowledge.

►Fig. 1. shows the distribution of the knowledge level of respondents in the 2018 and 2019 batches. They are included in the high level of knowledge category with each revealing 68 respondents from the 2019 batch and 62 respondents from the 2018 batch. The rest of the respondents are divided into the medium level category, 26 respondents from the 2018 batch and 23 respondents from the 2019 batch, as well as the low-level knowledge category where one respondent was from the 2019 batch.

The result of Mann–Whitney analysis shows a *p*-value of 0.211. It is concluded that there is no significant difference between the levels of knowledge of Universitas Airlangga's dental profession students' batches 2018 and 2019 about leukoplakia as OPMD lesion.

Discussion

The difference in the frequency distribution of respondents based on gender occurs because of the large number of female dental profession students compared with males who are involved as respondents. However, gender was not related to the level of knowledge about leukoplakia as OPMD.

Age affects an individual's perceptive ability and mindset; with increasing age, the amount of knowledge gained will improve.[18] However, the relationship between age and level of knowledge of dental profession students' batches 2018 and 2019 regarding leukoplakia as OPMD lesion in this study was not studied, as this relates to the fact that the age range of each respondent is quite close, and the number is not evenly distributed for each age group.

The level of knowledge examined in this study only reaches the first level of knowledge, namely, "know." It means that dental profession students from batches 2018 and 2019 are limited in their knowledge based on the previously studied theoretical knowledge of leukoplakia as OPMD during their prerequisite program. The student have to rely on their memory to recall accurately theoretical knowledge about leukoplakia. The abilities at this level are in the form of describing, mentioning, defining, and stating.

The detailed analysis of each item is shown in ►Table 2. The first item provides the definition and clinical features of OPMD. This statement is true because most OPMD lesions appear in the form of white plaques with or without a speckled or reddish component.[4] The results of this study indicate that most dental profession students understand the definition and the clinical features of OPMD in general. This knowledge is useful for dental profession students to become dental coassistant and as future dentists to be able to differentiate leukoplakia from other OPMDs.

According to Scully, the etiology and predisposing factors for OPMD are smoking, drinking alcohol, areca nut (betel-quid) chewing, sun radiation, immune system disorders, genetic factors, and others.[7] Several studies have shown that the combination of areca nut (betel-quid) chewing
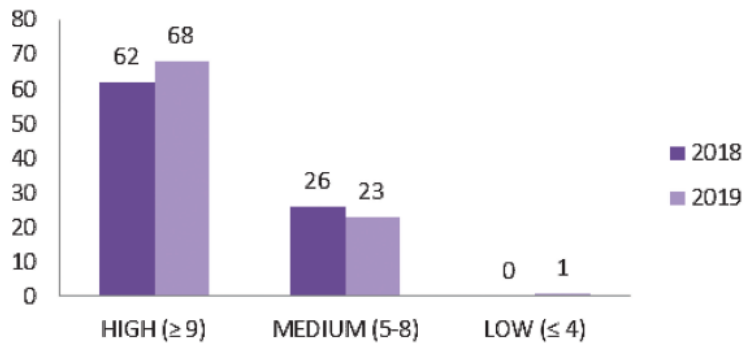

Fig. 1 Frequency distribution of the knowledge level of dental profession student based on batch.

and smoking has the highest risk of developing OPMD compared with other predisposing factors.[5] The results of this study indicated that theoretically, most of the respondents understand the etiology and predisposing factors of OPMD. Therefore, with a high level of knowledge about OPMD, dental profession students can educate patients who are at risk of experiencing OPMD.

The sixth item related to the histopathological examination which showed 50.50% answered agreeing that dysplasia was always found in OPMD lesions. However, it has been reported that dysplasia may not always be found in OPMD but there are still a few of OPMD, such as leukoplakia without dysplasia, that develops into oral cancer.[7,19] The results showed that only 50% of the respondents have a high level of knowledge on the histopathological examination of OPMD, and there is the need to intensify future training for more dental profession students to understand the histopathology of dysplasia in leukoplakia.

The last six items discuss leukoplakia as an OPMD. The respondents recognized that invasive cancer of the oral cavity can be preceded by leukoplakia lesions. The item was quoted from Warnakulasuriya where OPMD lesions are the condition that precedes the onset of invasive oral cancer.[8] According to the results, the dental profession students are already familiar with the definition of leukoplakia as an OPMD.

Leukoplakia is the more frequently found OPMD as compared with others. Most dental profession students recognize that leukoplakia lesions are more common in patients, especially those who have habits related to tobacco.[12] At item number 9, as many as 90.00% of the respondents accept that smoking is one of the contributing factors of leukoplakia. This finding indicated that the dental profession students, who will be dental coassistant studies and dentists in the future, will be able to provide better educational information to patients who had undergone the examination and diagnosis.

The item for assessing the clinical features and the potential for malignancy of leukoplakia lesion indicated that the dental profession students had a high level of knowledge. It indicated that their knowledge is correct that nonhomogeneous leukoplakia has the potential to become malignant change.[20] Having a good level of knowledge about OPMD, especially leukoplakia, will affect the success rate of early detection of OPMD which in the past had received less attention than lesions of other cancer types.[13]

Item numbers 11 and 12 elaborate on the diagnosis of leukoplakia. If in diagnosing leukoplakia, other white lesions, such as frictional keratosis or hyperplastic chronic candidiasis, are not excluded, misdiagnoses cannot be avoided. A clinician needs to remember that delay in diagnosis and misdiagnoses of a disorder can worsen the patient's condition.[13] Biopsy is used to see whether there is a progression to malignancy in disorders which does not heal for more than 2 weeks.[14] Both the results illustrate that the respondents know how to diagnose leukoplakia, so that early detection of leukoplakia is possible.

Most of the dental profession students had an overall high level of knowledge for all items where the percentage is above 50.00% of each item. ►Fig. 1 also illustrates that both batches 2018 and 2019 have a high knowledge level category with 68 respondents from batch 2019 and 62 respondents from batch 2018. The remaining respondents are divided into a moderate category where 26 respondents from batch 2018 and 23 respondents are from batch 2019. There is only one person from batch 2019 who is in the low category. Until now, there is no similar study in analyzing the level of knowledge of dental profession students about leukoplakia as OPMD based on different batches of students.

As the hypothesis test was conducted, the p-value obtained was 0.211 which implies that there is no significant difference between the level of knowledge of dental profession students in Universitas Airlangga batches 2018 and 2019 about leukoplakia as OPMD lesion. Where there is a similarity in findings between the two batches, it indicated the consistency in the delivery of education and exposure on OPMD to the students of different batches at Universitas Airlangga. While there is dissimilarity, the authors assume that this occurred because there are some dental profession students who have not been exposed to dental coassistant studies in the Oral Medicine Department. Meanwhile, those who have done dental coassistant studies in Oral Medicine Department are dental profession students batch 2019 who have just entered dental coassistant studies. Most of them might have not encountered leukoplakia patients, so they do not have adequate experience either. It is strengthened by the low-visiting data of patients with leukoplakia at Rumah Sakit Gigi dan Mulut Unair because most patients are already experiencing oral cancer when they are seen in Oral Medicine Clinic. Based on this, the authors also assume that both dental profession students' batches 2018 and 2019 are less experienced in dealing with leukoplakia cases but have good theoretical knowledge of leukoplakia as an OPMD, even though they are from different years of study and have the knowledge that comes from the education received during bachelor program.

Limitation

The limitation of this research is that it is a single-center research on dental students at the Faculty of Dentistry of Universitas Airlangga. The standard of learning modules given to Universitas Airlangga students can be different from other universities even with the same study program. Therefore, the results of this study do not reflect the knowledge that can be generalized to all universities with dentistry education study programs.

Conclusion

From this study, it may be concluded that the majority of the Universitas Airlangga dental profession students have a high level of knowledge about leukoplakia as OPMD based on a high theoretical level of knowledge. The study also showed that there is no significant difference between the level of

knowledge of the Universitas Airlangga dental profession student batch of 2018 and batch of 2019 on leukoplakia as an OPMD.

Ethical Approval

It was approved by Health Research Ethical Clearance Commission in Faculty of Dental Medicine, Universitas Airlangga, on July 30, 2020, with certificate number: 340/HRECC.FODM/VII/2020.

Conflict of Interest

None declared.

References

1 Kumar M, Nanavati R, Modi TG, Dobariya C. Oral cancer: etiology and risk factors: a review. J Cancer Res Ther 2016;12(02):458–463

2 Shrestha AD, Vedsted P, Kallestrup P, Neupane D. Prevalence and incidence of oral cancer in low- and middle-income countries: a scoping review. Eur J Cancer Care (Engl) 2020;29(02):e13207

3 World Health Organization. Indonesia: incidence, mortality and prevalence by cancer site. Accessed April 27, 2022 at: https://gco.iarc.fr/today/data/factsheets/populations/360-indonesia-fact-sheets.pdf

4 Speight PM, Khurram SA, Kujan O. Oral potentially malignant disorders: risk of progression to malignancy. Oral Surg Oral Med Oral Pathol Oral Radiol 2018;125(06):612–627

5 Zohaib Khan MPH, Sheraz Khan MPH, Lara Christianson MLS, Sara Rehman BDS, Ekwunife O, Samkange-Zeeb FD. . Smokeless tobacco and oral potentially malignant disorders in South Asia: a systematic review and meta-analysis. Rev Financ Stud 2018;29(09):2341–2386

6 Mello FW, Miguel AFP, Dutra KL, et al. Prevalence of oral potentially malignant disorders: a systematic review and meta-analysis. J Oral Path Med 2018;47(07):633–640

7 Scully C. Oral and Maxillofacial Medicine: The basis of diagnosis and treatment. 3rd ed. New York, NY: Elsevier; 2013:1–435

8 Warnakulasuriya S. Clinical features and presentation of oral potentially malignant disorders. Oral Surg Oral Med Oral Pathol Oral Radiol 2018;125(06):582–590

9 Odell E, Kujan O, Warnakulasuriya S, Sloan P. Oral epithelial dysplasia: Recognition, grading and clinical significance. Oral Dis 2021;27(08):1947–1976

10 Gopinath D, Thannikunnath BV, Neermunda SF. Prevalence of carcinomatous foci in oral leukoplakia: a clinicopathologic study of 546 Indian samples. J Clin Diagn Res 2016;10(08):ZC78–ZC83

11 Gondivkar SM, Bhowate RR, Gadbail AR, Sarode SC, Patil S. Quality of life and oral potentially malignant disorders: Critical appraisal and prospects. World J Clin Oncol 2018;9(04):56–59

12 John PR. Textbook of Oral Medicine. 3rd ed. New Delhi, India: Jaypee Brothers Medical Publishers (P) Ltd; 2014:169–200

13 Alqhtani N, Alenazi A, Nasyam F, Almalki S, Mohammed A. Role of the dentist in early detection of oral cancer. J Int Oral Health 2019;11(02):66–69

14 Greenberg M, Glick M. Burket's Oral Medicine. . 12th ed. Shelton, CT: People's Medical Publishing House; 2018

15 Hadžić S, Gojkov-Vukelić M, Pašić E, Muharemović A, Jahić IM. Knowledge assessment among the fourth and fifth year students on the potentially malignant lesions of oral cavity. Balk J Dent Med. 2020;24(01):14–20

16 Notoatmodjo S. Promosi Kesehatan dan Perilaku Kesehatan. . edisi revisi. Jakarta: Rineka Cipta; 2014:140–141

17 Notoatmodjo S. Metodologi Penelitian Kesehatan. Jakarta: Rineka Cipta; 2012:138–140

18 Mubarak WI, Chayatin N, Rozikin K. Supradi. Promosi Kesehatan Sebuah Pengantar Proses Belajar Mengajar dalam Pendidikan. Yogyakarta: Graha Ilmu; 2007:81–83

19 Wetzel SL, Wollenberg J. Oral potentially malignant disorders. Dent Clin North Am 2020;64(01):25–37

20 Soares AB, Perschbacher K, Perez-Ordonez B. Oral potentially malignant disorders. Diagn Histopathol 2018;24(05):161–165

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GENERAL COMMENTS

Instructor

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