



## Dental and Oral Health Maintenance Behavior in Students of SMAN 5 Palembang in The Covid-19 Pandemic

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### Abstract

**Introduction:** Caries and periodontitis are the most common dental and oral health problems in Indonesia. Tooth brushing is one way to prevent caries and maintain dental and oral health. In addition, education and knowledge level are the influencing factors. During the COVID-19 pandemic, the dental practice was mostly closed and only accepted emergency patients, access to dental practice was limited. **Purpose:** To describe the behavior of dental and oral health maintenance in class XI students of SMAN 5 Palembang during the COVID-19 pandemic. **Methods:** The descriptive survey research used an online questionnaire using Google form containing 21 questions. Subjects involved in this study were 70 students in class XI SMAN 5 Palembang. **Results:** Most students brush their teeth at the right time, duration and method. Visits to the dentist are still relatively low. Only 50% of students had been to the dentist before the COVID-19 pandemic, and only 14% had been to the dentist during the pandemic. Students who attended webinars on social media during the COVID-19 pandemic were only 16%. **Conclusion:** Students' behavior in maintaining dental and oral health is quite acceptable, but health promotion is needed.

**Keywords:** COVID-19 pandemic; oral health maintenance; students' behaviour

### Introduction

Riskesdas was held again in 2018 and recorded the proportion of dental and oral problems of 57.6%, with the highest cases of caries and periodontitis. Only 10.2% of those who received medical services.<sup>1</sup> Meanwhile, the national proportion of correct tooth brushing behavior is relatively low, 2.8%, specifically in the province of South Sumatra, only 1.4%. The population of adolescents aged 15-24 who brush their teeth properly in Indonesia is only around 3.3%.<sup>2</sup>

Prevention of dental caries and maintenance of oral hygiene is not only attributed to tooth brushing, it is also strongly related to the level of knowledge and behavior.<sup>3</sup> Gede et al. find the relationship between knowledge with the dental and oral health of high school students in Manado, where most of the students with good knowledge about health teeth and mouth also have good OHI-S.<sup>4</sup> WHO has determined that schools and youth are important target groups



for dental and oral health promotion.<sup>5</sup> However, the limited access to dental care during the COVID-19 pandemic can affect an individual's dental and oral health.

The extraordinary event of the coronavirus disease-19 (COVID-19) began in Wuhan, China, in December 2019 in a short time became an important public health problem for all countries in the world.<sup>6</sup> The main transmission of COVID-19 is through personal contact directly or indirectly through respiratory droplets from an infected person.<sup>7</sup> Dental practice generates large amounts of aerosols and involves close contact with patients during treatment, which increases the risk of transmitting COVID-19 infection to the respiratory tract, and poses a risk to dentists and dental nurses.<sup>8,9</sup> Therefore, the ADA (American Dental Association) recommends that the dental practice does not operate normally and only accepts emergency patients.<sup>10</sup>

The disruption of regular dental visits during the pandemic may impact the oral health of the population, including school students who are prone to dental health problems. Iwasaki et al. investigate if there is any impact of the disruption of routine dental visits to the dentist on the oral condition of high school students. The results revealed that students who discontinued their regular visits to the dentist experienced a higher percentage of gingivitis than the group who continued to visit the dentist during the pandemic.<sup>11</sup> Therefore, maintaining oral hygiene at home in this situation is more important than ever. This study aims to describe the behavior of dental and oral health maintenance in class XI students of SMAN 5 Palembang during the COVID-19 pandemic.

### **Methods**

This descriptive survey was conducted in August 2021, using a total sampling technique involving 70 subjects consisting of 35 students of class XI IPA 2 and 35 students of class XI IPS 1 SMAN 5 Palembang. The research instrument was an online questionnaire through the Google Form media filled out by respondents, containing questions to get an overview of the behavior of maintaining the oral health of respondents at home. Data analysis was performed using computer software.



## Results

Table 1 shows that the number of male and female respondents is equal. Respondents were 16 years old (58.6%), and the rest were 17 (41.4%). Table 2 shows that all subjects brush their teeth every day. The use of mouthwash is quite a lot (84%). As many as 44% of respondents still use toothpicks. The use of dental floss among students can be said to be very low.

**Table 1.** Frequency distribution of sex and age of Class XI students at SMAN 5 Palembang

Sex		Age (years)		Total
		16	17	
Male	N	20	15	35
	%	28,6	21,4	50
Female	N	21	14	35
	%	30	20	50
Total	N	41	29	70
	%	58,6	41,4	100

**Table 2.** Frequency distribution of dental and oral health maintenance behaviors of Class XI students at SMAN 5 Palembang

Category		Yes	No	Total
Brushing teeth daily	N	70	0	70
	%	100	0	100
Dental floss usage	N	3	67	70
	%	4	96	100
Mouthwash usage	N	59	11	70
	%	84	16	100
Tooth pick usage	N	31	39	70
	%	44	56	100

Tables 3 and 4 show the duration and time of tooth brushing, respectively. In Table 3, 71% of respondents have brushed their teeth for more than 120 seconds. Table 4 shows that 83% of students answered "Yes" when asked whether to brush their teeth before going to bed.

**Table 3.** Frequency distribution of tooth brushing duration of Class XI students at SMAN 5 Palembang

Category		Yes	No	Total
Tooth brushing >120 seconds	N	50	20	70
	%	71	29	100



**Table 4.** Frequency distribution of tooth brushing time of Class XI students at SMAN 5 Palembang

Category		Yes	No	Total
Tooth brushing in the morning	N	60	10	70
	%	86	14	100
Tooth brushing after dinner	N	42	28	70
	%	60	40	100
Tooth brushing before sleep	N	58	12	70
	%	83	17	100

**Table 5.** Frequency distribution of tooth brushing method of Class XI students at SMAN 5 Palembang

Category		Yes	No	Total
The facial surface of anterior teeth (incisor and canine) brushed with horizontal up-and-down motion	N	60	10	70
	%	86	14	100
The lingual/palatal surface of anterior teeth (incisor and canine) brushed by tilting the brush to a 45-degree angle	N	51	19	70
	%	73	27	100
The facial surface of posterior teeth (molar) brushed with circular motion	N	57	13	70
	%	81	19	100
The lingual/palatal surface of posterior teeth (molar) brushed by tilting the brush to a 4-degree angle	N	54	16	70
	%	77	23	100

Based on Table 5, most students admitted to brushing their teeth with the correct method and cleaning the entire surface of their teeth. The most used method of tooth brushing the anterior teeth was to brush the outer surface with an up and down motion (86%), while on the posterior teeth was to brush the outer surface with a circular motion (81%). Table 6 shows that most students did not visit the dentist during the pandemic.

**Table 6.** Frequency distribution of dental visit of Class XI students at SMAN 5 Palembang

Category		Yes	No	Total
Visit the dentist before the COVID-19 pandemic	N	35	35	70
	%	50	50	100
Regular dental visit before the COVID-19 pandemic	N	14	56	70
	%	20	80	100
Visit the dentist every 6 months before the COVID-19 pandemic	N	11	59	70
	%	16	84	100
Visit the dentist during the COVID-19 pandemic	N	10	60	70
	%	14	86	100
	N	9	61	70



Visit the dentist 2-3 times during the COVID-19 pandemic	%	13	87	100
Visit the dentist more than 3 times during the COVID-19 pandemic	N	3	67	70
	%	4	96	100

According to Table 7, only a small proportion of students attended dental counseling through webinars during the pandemic.

**Table 7.** Frequency distribution of participation in oral health counseling of Class XI students at SMAN 5 Palembang

Category		Yes	No	Total
Oral counseling by an organization or institution before pandemic	N	36	34	70
	%	51	49	100
Webinar via social media during COVID-19 pandemic	N	11	59	70
	%	16	84	100

## Discussion

All respondent students involved in this study were aware of brushing their teeth every day during the COVID-19 pandemic. It is in contrast to the results of a survey published by the Indonesian Ministry of Health, which stated that the habit of brushing teeth decreased during the COVID-19 pandemic.<sup>10</sup> This difference can occur due to several factors, including good knowledge, understanding, and awareness to maintain oral hygiene.<sup>12</sup> In addition, the level of dental and oral hygiene is also strongly related to the environment.<sup>13</sup> In this case, SMAN 5 Palembang is located in the city of Palembang, which has adequate transportation, communication, and public health services widespread throughout the city.

In this current study, the respondents who use dental floss as part of the oral health regime are still very few, only 4% (table 2), which is quite in contrast to other country.<sup>14</sup> However, mouthwash is highly used, with 84% of students admitting they use mouthwash daily. This is not in line with a survey published by the Ministry of Health of the Republic of Indonesia, which stated that only 20% of people used mouthwash.<sup>10</sup> It may be due to the different target respondents. In the Ministry of Health survey, the targets were various people aged > 18 years, while this study focused on the age of 16-17 years and in second grade of high school. In addition, economic factors may also have an effect. Parents with adequate income may provide



better health services for the family, and could afford to buy household health supplies, and receive health advice from the dentist.<sup>15</sup>

The ADA (American Dental Association) recommends brushing the teeth for 120 seconds (2 minutes).<sup>16</sup> Our findings showed that 71% of respondents brushed their teeth accordingly. Likewise, in terms of tooth brushing time, most students followed the recommendation to brush before bed. The most important time for a person to brush their teeth is before going to bed at night because salivary flow decreases during sleep and the protective effect of saliva is lost.<sup>17</sup>

The Indonesian Ministry of Health stated the importance of routinely performing dental and oral examinations every six months,<sup>18</sup> but only 16% (Table 6) of class XI students of SMAN 5 Palembang had routine dental and oral examinations prior to the onset of the pandemic. During the current pandemic, only very few (Table 5) students of class XI SMAN 5 Palembang visit the dentist. This is because, during the COVID-19 pandemic, the dental practice was limited to carrying out emergency procedures and postponing all non-essential examinations and procedures.<sup>19</sup>

Before the pandemic, only half of the respondents (Table 7) had received dental and oral health counseling. According to Sutrisman A, the level of knowledge, attitudes, and actions are improved after counseling on dental and oral health.<sup>20</sup> During the pandemic, there were restrictions on face-to-face counseling activities and difficulties in accessing dental practices and shifted to telemedicine and counseling through social media platforms and various webinars. Unfortunately, only a small proportion of respondents during the pandemic attended webinars on dental and oral health maintenance. These findings can be advisement for related institutions to encourage health promotion through various social media platforms as long as the pandemic status in Indonesia has not been revoked by the government. According to Koesoemawati R, teenagers are the younger generation as agents of change have the speed, toughness, intelligence, and networks to initiate technology-based innovations to make it easier for people to follow the development and prevention of COVID-19 disease digitally. In addition, teenagers can also disseminate and receive Dental Health Education (DHE) digitally through social media in the form of videos, Youtube, Google form, Instagram, Facebook, and virtually online.<sup>21</sup>



## Conclusion

Students' behavior in maintaining dental and oral health is quite acceptable, but health promotion is needed.

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