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Knowledge, attitude, and practice of non-medical students at Trisakti University about gingivitis and its prevention

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ABSTRACT

Background: *Good oral health is related to general health. The prevention of periodontal disease has an impact on general health. 74% of Indonesians suffer from gingivitis, an early stage of infection of the gingiva when left untreated, can develop into periodontitis. The highest age category for gingivitis in Indonesia is 15-24 years and non-medical students are not exposed to oral health in their daily life. Objective: Evaluate the knowledge, attitude, and practice of non-medical students regarding gingivitis and its prevention.* ***Materials and methods:*** *A cross-sectional descriptive study was conducted by distributing a questionnaire consisting of 29 questions about knowledge, attitude, and practice regarding gingivitis and its prevention to 112 non-medical students from Trisakti University.* ***Results:*** *The study showed that 58.9%, 23.2%, and 17.9% of undergraduates had good, average, and poor knowledge respectively. Similarly, the majority of students had good attitude of 48.2%, followed by the average attitude of 47.3% of students and only 4.5% had poor attitude. However, the data depict that 47.3% had average level of practice, followed by good and poor practice with 38.4% and 14.3% respectively.* ***Conclusion:*** *The majority of non-medical students had good knowledge and attitude while in terms of practice were poor.*

Keywords: *attitude; gingivitis; knowledge; practice; prevention*

INTRODUCTION

World Health Organization (WHO) stated that oral and dental health issues provoked by disobedient lifestyles are a serious problem. According to Indonesia Basic Health Research 2018 (Riskesdas 2018), gingivitis ranked number two as the most common oral health problem with approximately 74% prevalence value. Moreover, Riskesdas elaborates that 15-24 years old individuals have the highest risk of gingivitis. In the bigger picture, periodontal problems ranked 11 in the world with over 1 billion cases.

Gingivitis itself is one of the most common periodontal problems in Indonesia. It could be triggered by distortion of lifestyle such as wrong technique in brushing teeth and neglect flossing. Surprisingly, further research by Riskesdas 2018 has shown that the applicability of flossing in Indonesia is only 1.4%.

Generally, gingivitis is inflammation in the gingiva due to excessive accumulation of plaque and it is the beginning of other periodontal diseases such as periodontitis. Thus, in order to reduce the periodontitis risk, prevention such as brushing teeth in the right way, flossing, and regular visit to the dentist are highly recommended. However, the research in Sichuan revealed that non-dental undergraduates tend to neglect the prevention of gingivitis. In addition, research in Jordan and India depict that knowledge and attitude regarding gingivitis are very low.

Gautami et al claimed that practice that is not supported with adequate knowledge and attitude could lead to a fatal situation. Therefore, it is expected that everyone could be well-equipped with good knowledge, attitude, and practice. Acknowledging that the research level about gingivitis among non-medical undergraduates in Indonesia is still low, this paper will explore the knowledge, attitude, and practice of non-medical undergraduates at Trisakti University towards gingivitis and its prevention.

MATERIALS AND METHODS

This research was conducted from September to November 2022 at Trisakti University using descriptive observational incorporating the cross-sectional design. The research samples are non-medical undergraduates at Trisakti University which consist of 7 faculties. The sample will be taken using consecutive sampling. A total of 112 non-medical students from law, economics and business, civil engineering and planning, fine arts and design, landscape architecture and environmental technology, earth and energy technology, and industrial engineering were considered. The number of respondents for each faculty was the same, every 16 people

The questionnaire that consists of 29 questions about knowledge, practice, and attitude will be distributed to 112 undergraduates after passing the validity and reliability test. Research subjects are expected to give consent that is informed prior to filling the questionnaire.

Knowledge of gingivitis and its prevention

The knowledge section consists of 9 questions based on important points about the normal gingiva, gingival inflammation signs, gingivitis, and how to prevent it. Participants were instructed to select what they believed to be the right answer. Answers to questions about knowledge were graded with 1 for the correct response and 0 (zero) for the incorrect response. Interpretation of the score is divided into three category: poor, average, and good if the value is <56%, 56% -75%, and >75%, respectively.

Attitude toward gingivitis and its prevention

The attitude section consists of 10 items that focused on attitudes about maintaining oral health to prevent gingivitis. First, the items related to the attitude were divided into five response categories: strongly agree (5), agree (4), undecided (3), disagree (2), and strongly disagree (1). Interpretation of the score is divided into three category: poor, average, and good if the value is <56%, 56% -75%, and >75%, respectively.

Practice toward gingivitis and its prevention

The practice section consists of 10 items that focused on the fundamental acts or practices that non-medical students perform to preserve their oral health to prevent gingivitis. The items and score interpretation is corresponding with the attitude aspect as stated in the prior section. Interpretation of the score is divided into three category: poor, average, and good if the value is <56%, 56% -75%, and >75%, respectively.

Ethical Clearance

The ethical clearance are approved by Trisakti University Health Research Ethics Committee under the reference number, 594/S1/KEPK/FKG/9/2022. Before gathering the study participants' data, informed consent was sought. The participants received a brief description of the goals of our study, the methods, and the privacy of the information gathered.

RESULTS

Table 1 depicts the essential information of the respondents. Based on the age, majority of the participants were 19 years old (34.8%). Looking at the gender category, female dominates with approximately 58%. In addition, more than half of the respondents received oral health education through internet.

Table 1. Characteristics of Respondents

No	Characteristics	%
1	Age	
	17	2.7
	18	32.1
	19	34.8
	20	16.1
	21	10.7
	22	3.6
2	Gender	
	Female	58
	Male	42
3	Faculty	
	Law (FH)	14.3
	Economics and Business (FEB)	14.3
	Civil Engineering and Planning (FTSP)	14.3
	Fine Arts and Design (FSRD)	14.3
	Landscape Architecture and Environmental Technology (FALTL)	14.3
	Earth and Energy Technology (FTKE)	14.3
	Industrial Engineering (FTI)	14.3
4	Have you ever received oral health education?	
	Yes	85.7
	No	14.3
5	Source of information	
	Internet (Google, social media, youtube, etc)	55.1
	Dentist	48
	Television	18.4
	Health education	31.6

The level of students' knowledge can be seen in Table 2. The majority of students have good knowledge at 58.9%. Students who have average knowledge are 23.2%, and followed with the poor knowledge (17.9%). The distribution of answers to the knowledge questionnaire are shown in Table 3. Based on Table 3, the question about healthy gum color has the most correct answer with 95.5% answered correctly. Question with the least percentage of correct answers was regarding clinical signs of gingivitis, only 17% answered correctly.

Table 2. Categories of knowledge level of respondents

Knowledge Level	n (%)
Poor	20 (17.9%)
Average	26 (23.2%)
Good	66 (58.9%)

Table 3. Distribution of answers to the knowledge questionnaire regarding gingivitis and its prevention

No	Questions	Correct	False
		n (%)	n (%)
1	Gums bleed easily when brushing teeth cannot be healed again	99 (88.4)	13 (11.6)
2	Brushing teeth is a prevention of gingivitis	100 (89.3)	12 (10.7)
3	Plaque is the main cause of gum inflammation	87 (77.7)	25 (22.3)
4	Smooth and shiny red gums are a normal gum condition	19 (17)	93 (83)
5	Using dental floss between the teeth prevents gingivitis	80 (71.4)	32 (28.6)
6	Gingivitis may be associated with systemic disease (eg: diabetes, cardiovascular disease, etc.)	67 (59.8)	45 (40.2)
7	The correct time to brush your teeth is in the morning after breakfast and at night before going to bed	105 (93.8)	7 (6.2)
8	Gums that bleed easily are caused by bacteria	80 (71.4)	32 (28.6)
9	Healthy gums are coral pink	107 (95.5)	5 (4.5)

As shown in the Table 4, majority had a good attitude at 48.2%, followed by average attitude at 47.3%, and poor attitude at 4.5%. The distribution of answers to the attitude questionnaire can be seen in Table 5. The statement with the most strongly agree answers (56.3%) is "I will learn the correct tooth brushing technique". On the other hand, the least percentage of strongly agree (8%) is "I will use dental floss before brushing my teeth"

Table 4. Categories of attitude level of respondents

Attitude Level	n (%)
Poor	5 (4.5%)
Average	53 (47.3%)
Good	54 (48.2%)

Table 5. Distribution of answers to the attitude questionnaire regarding gingivitis and its prevention

No	Question	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
		n (%)	n (%)	n (%)	n (%)	n (%)
1	I brush my teeth in a circular motion (not just horizontally)	4 (3.6)	2 (1.8)	13 (11.6)	44 (39.3)	49 (43.8)
2	I still brush my teeth even if I don't eat	4 (3.6)	4 (3.6)	13 (11.6)	40 (35.7)	51 (45.5)
3	I always change my toothbrush every 3-4 months	8 (7.1)	6 (5.4)	22 (19.6)	31 (27.7)	45 (40.2)
4	I always use dental floss before brushing my teeth	17 (15.2)	19 (17)	46 (41.1)	19 (17)	11 (9.8)
5	I regularly use dental floss once a day	20 (17.9)	19 (17)	43 (38.4)	17 (15.2)	13 (11.6)
6	I regularly rinse my mouth with mouthwash	9 (8)	26 (23.2)	31 (27.7)	31 (27.7)	15 (13.4)
7	I rinse my mouth with mouthwash for 30 seconds	5 (4.5)	13 (11.6)	30 (26.8)	34 (30.4)	30 (26.8)
8	I regularly go to the dentist without any complaints	12 (10.7)	21 (18.8)	40 (35.7)	28 (25)	11 (9.8)
9	I always visit the dentist every six months for scaling.	10 (8.9)	19 (17)	36 (32.1)	28 (25)	19 (17)
10	If my gums bleed, I go to the dentist	5 (4.5)	15 (13.4)	34 (30.4)	39 (34.8)	19 (17)

DISCUSSION

Knowledge, attitude, and practice in this study have 3 categories: poor, average, and good. This study revealed that most students have good knowledge at 58.9% that implies the majority of non-health students at Trisakti University are able to obtain and understand well the information they received. This contrast to the study in Jordan regarding knowledge about periodontal disease and its prevention where the majority had poor knowledge.11 Research on non-medical students in Semarang showed the same results as this research, which the majority had good knowledge.13 Majority of the students have good knowledge, and it can be supported by the characteristics of the majority of students that 85.7% received oral health education.

The most correct questions being answered is regarding healthy gum color, about 95.5% already knew that pink coral is the normal color of gingiva. The question "smooth and shiny red gums are a normal gum condition" shows only 17% knew that this condition is a clinical sign of gingivitis. Research by Alzammam and Riolina showed that the majority of students recognized the clinical signs of gingivitis such as redness, swelling, and bleeds easily.11,14 Smooth gum is a clinical sign of gingivitis as normal gums should have stippling. However, the majority of non-health students probably do not understand that their gingiva has stippling texture on gingiva and think that smooth gums are a normal condition because they don't specifically study about the anatomy of gingiva.

The result from attitude aspect suggest that majority have good attitude about gingivitis and its prevention, at 48.2%. In some previous studies, females' attitudes were better than males'. However, this study shows the opposite results.1,15 Statement with the most strongly agree answers regarding brushing teeth, about 56.3% chose strongly to agree to learn the right technique of tooth brushing. Supported by respondents' answers to the knowledge question where 89.3% know that brushing teeth is a prevention of gingivitis.

Majority have average level of practice at 47.3%. Based on the result, it can be concluded that good knowledge and attitude do not always result in good practice. Research in Semarang and Mysore showed the same result which the majority of students show average practice.12,13 Females' practices are better than males', different from the attitudes' result according to gender. According to Hariyani, female tends to pay more attention to aesthetics and appearance.16

Based on the results on practice, majority answered strongly agree to brush their teeth in a circular motion. Tooth brushing using the modified Bass method is recommended and said more effective to reduce plaque and gingival inflammation compared to using a horizontal technique which can damage the cervical area.9

According to the attitudes' results, the statement about flossing has the least percentage of strongly agree. More than half of the students feel undecided about flossing while only 8% answered strongly agree to floss before brushing teeth. This result is not in line with the question of knowledge regarding the prevention of gingivitis with dental floss, where up to 71.4% answered correctly. This result correspond to the research in India that revealed less than 50% of students had positive attitude towards the usage of dental floss.15 In practice category, only 9.8% always flossing before brushing their teeth and 11.6% do floss routine every day. Similarly, the research on non-medical students in China showed that up to 71.6% of students never used dental floss.9 The level of attitude and practice towards flossing are still poor and it can be due to the difficult usage of dental floss. Many people do not get used to interdental cleaning and tend to only brushing teeth. Whereas, it is more effective to reduce plaque and gingivitis if performing both ways.

Most people strongly agreed with the practice statement about brushing their teeth, with 45.5% demonstrating very positive practice by brushing their teeth constantly regardless after eating or not. Supported by the majority has an attitude of strongly agree, so the attitude and practice are in line.

Results from category dental visit on practice shows below 50% who answered strongly agree to always visit the dentist without having any complaints and once every 6 months for scaling. Only 9.8% strongly agreed to go to the dentist without any complaints and only 17% strongly agreed to scaling once every 6 months as recommended by Indonesian Dentist Association. Likewise, only 15.3% of students in Semarang go to the dentist regularly.13 Furthermore, riskesdas 2018 shows that 95.5% of Indonesian have never visited a dentist.2 In contrast to research in India, 69.7% of regular students check-up to the dentist as an early preventive measure against oral health diseases.15 According to Al Subait, the majority of students visit the dentist only when there are complaints of pain in the teeth or gums.17 Periodic dental examinations are important for early detection of oral disease, patient education, and motivating patients to maintain oral health.1 In line with the lack of attitude towards visiting the dentist, only 19.6% agreed to go to the dentist regularly every 6 months. Awareness of students in visiting the dentist must be increased again.

Based on the faculty, the results indicate that FEB students have the most good knowledge, attitude, and practice. Meanwhile, FSRD students dominated the poor knowledge and practice. In contrast to Al Zarea, the results show that good knowledge regarding the prevention of periodontal disease is dominated by science faculty students because they have more interest in the health sector.18 Research at Panjab University showed similar results where art students showed a lack of knowledge, due to different interests from science students in the health sector.19 Moreover, research in India shows the same results on the attitude variable where economics students are better than engineering students.15

This research can be an evaluation to increase oral health education. Many developing countries do not provide enough oral health care education in primary, secondary, and high schools. Thus, knowledge, attitude, and practice regarding several oral health subjects such as periodontal disease must be improved.

The limitations of this research are observational research with a short time and only at one university. It would be more accurate to take a larger population and sample size. The questionnaire's distribution method was online and can lead to biased answers because the respondent fills it in without direct monitoring by the researcher and there is no time limit for filling-in Google Form. This could lead respondents to seek information before filling out the questionnaire.

CONCLUSION

Referring to the result and discussion, it can be concluded that the majority of Trisakti University's non-medical students have knowledge and attitudes that fall

into the "good" category, but their practices fall into the "average" category. This research is expected to provide information regarding knowledge, attitude, and practice in non-medical students and can be an evaluation for professionals to improve the provision of health education, especially to non-health students. A wider population needs to be included in future studies that can demonstrate the connections between knowledge, attitude, and practice, as well as the effects of oral health education before and after it is implemented.

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by Albert FKG

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The attitude section consists of 10 items that focused on attitudes about maintaining oral health to prevent gingivitis. First, the items related to the attitude were divided into five response categories: strongly agree (5), agree (4), undecided (3), disagree (2), and strongly disagree (1). Interpretation of the score is divided into three category: poor, average, and good if the value is <56%, 56% -75%, and >75%, respectively.

Practice toward gingivitis and its prevention

The practice section consists of 10 items that focused on the fundamental acts or practices that non-medical students perform to preserve their oral health to prevent gingivitis. The items and score interpretation is corresponding with the attitude aspect as stated in the prior section. Interpretation of the score is divided into three category: poor, average, and good if the value is <56%, 56% -75%, and >75%, respectively.

Ethical Clearance

The ethical clearance are approved by Trisakti University Health Research Ethics Committee under the reference number, 594/S1/KEPK/FKG/9/2022. Before gathering the study participants' data, informed consent was sought. The participants received a brief description of the goals of our study, the methods, and the privacy of the information gathered.

RESULTS

Table 1 depicts the essential information of the respondents. Based on the age, majority of the participants were 19 years old (34.8%). Looking at the gender category, female dominates with approximately 58%. In addition, more than half of the respondents received oral health education through internet.

Table 1. Characteristics of Respondents

No	Characteristics	%
1	Age	
	17	2.7
	18	32.1
	19	34.8
	20	16.1
	21	10.7
	22	3.6
2	Gender	
	Female	58
	Male	42
3	Faculty	
	Law (FH)	14.3
	Economics and Business (FEB)	14.3
	Civil Engineering and Planning (FTSP)	14.3
	Fine Arts and Design (FSRD)	14.3
	Landscape Architecture and Environmental Technology (FALTL)	14.3
	Earth and Energy Technology (FTKE)	14.3
	Industrial Engineering (FTI)	14.3
4	Have you ever received oral health education?	
	Yes	85.7
	No	14.3
5	Source of information	
	Internet (Google, social media, youtube, etc)	55.1
	Dentist	48
	Television	18.4
	Health education	31.6

The level of students' knowledge can be seen in Table 2. The majority of students have good knowledge at 58.9%. Students who have average knowledge are 23.2%, and followed with the poor knowledge (17.9%). The distribution of answers to the knowledge questionnaire are shown in Table 3. Based on Table 3, the question about healthy gum color has the most correct answer with 95.5% answered correctly. Question with the least percentage of correct answers was regarding clinical signs of gingivitis, only 17% answered correctly.

Table 2. Categories of knowledge level of respondents

Knowledge Level	n (%)
Poor	20 (17.9%)
Average	26 (23.2%)
Good	66 (58.9%)

Table 3. Distribution of answers to the knowledge questionnaire regarding gingivitis and its prevention

No	Questions	Correct	False
		n (%)	n (%)
1	Gums bleed easily when brushing teeth cannot be healed again	99 (88.4)	13 (11.6)
2	Brushing teeth is a prevention of gingivitis	100 (89.3)	12 (10.7)
3	Plaque is the main cause of gum inflammation	87 (77.7)	25 (22.3)
4	Smooth and shiny red gums are a normal gum condition	19 (17)	93 (83)
5	Using dental floss between the teeth prevents gingivitis	80 (71.4)	32 (28.6)
6	Gingivitis may be associated with systemic disease (eg: diabetes, cardiovascular disease, etc.)	67 (59.8)	45 (40.2)
7	The correct time to brush your teeth is in the morning after breakfast and at night before going to bed	105 (93.8)	7 (6.2)
8	Gums that bleed easily are caused by bacteria	80 (71.4)	32 (28.6)
9	Healthy gums are coral pink	107 (95.5)	5 (4.5)

As shown in the Table 4, majority had a good attitude at 48.2%, followed by average attitude at 47.3%, and poor attitude at 4.5%. The distribution of answers to the attitude questionnaire can be seen in Table 5. The statement with the most strongly agree answers (56.3%) is "I will learn the correct tooth brushing technique". On the other hand, the least percentage of strongly agree (8%) is "I will use dental floss before brushing my teeth"

Table 4. Categories of attitude level of respondents

Attitude Level	n (%)
Poor	5 (4.5%)
Average	53 (47.3%)
Good	54 (48.2%)

Table 5. Distribution of answers to the attitude questionnaire regarding gingivitis and its prevention

No	Question	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
		n (%)	n (%)	n (%)	n (%)	n (%)
1	I brush my teeth in a circular motion (not just horizontally)	4 (3.6)	2 (1.8)	13 (11.6)	44 (39.3)	49 (43.8)
2	I still brush my teeth even if I don't eat	4 (3.6)	4 (3.6)	13 (11.6)	40 (35.7)	51 (45.5)
3	I always change my toothbrush every 3-4 months	8 (7.1)	6 (5.4)	22 (19.6)	31 (27.7)	45 (40.2)
4	I always use dental floss before brushing my teeth	17 (15.2)	19 (17)	46 (41.1)	19 (17)	11 (9.8)
5	I regularly use dental floss once a day	20 (17.9)	19 (17)	43 (38.4)	17 (15.2)	13 (11.6)
6	I regularly rinse my mouth with mouthwash	9 (8)	26 (23.2)	31 (27.7)	31 (27.7)	15 (13.4)
7	I rinse my mouth with mouthwash for 30 seconds	5 (4.5)	13 (11.6)	30 (26.8)	34 (30.4)	30 (26.8)
8	I regularly go to the dentist without any complaints	12 (10.7)	21 (18.8)	40 (35.7)	28 (25)	11 (9.8)
9	I always visit the dentist every six months for scaling.	10 (8.9)	19 (17)	36 (32.1)	28 (25)	19 (17)
10	If my gums bleed, I go to the dentist	5 (4.5)	15 (13.4)	34 (30.4)	39 (34.8)	19 (17)

DISCUSSION

Knowledge, attitude, and practice in this study have 3 categories: poor, average, and good. This study revealed that most students have good knowledge at 58.9% that implies the majority of non-health students at Trisakti University are able to obtain and understand well the information they received. This contrast to the study in Jordan regarding knowledge about periodontal disease and its prevention where the majority had poor knowledge.11 Research on non-medical students in Semarang showed the same results as this research, which the majority had good knowledge.13 Majority of the students have good knowledge, and it can be supported by the characteristics of the majority of students that 85.7% received oral health education.

The most correct questions being answered is regarding healthy gum color, about 95.5% already knew that pink coral is the normal color of gingiva. The question "smooth and shiny red gums are a normal gum condition" shows only 17% knew that this condition is a clinical sign of gingivitis. Research by Alzammam and Riolina showed that the majority of students recognized the clinical signs of gingivitis such as redness, swelling, and bleeds easily.11,14 Smooth gum is a clinical sign of gingivitis as normal gums should have stippling. However, the majority of non-health students probably do not understand that their gingiva has stippling texture on gingiva and think that smooth gums are a normal condition because they don't specifically study about the anatomy of gingiva.

The result from attitude aspect suggest that majority have good attitude about gingivitis and its prevention, at 48.2%. In some previous studies, females' attitudes were better than males'. However, this study shows the opposite results.1,15 Statement with the most strongly agree answers regarding brushing teeth, about 56.3% chose strongly to agree to learn the right technique of tooth brushing. Supported by respondents' answers to the knowledge question where 89.3% know that brushing teeth is a prevention of gingivitis.

Majority have average level of practice at 47.3%. Based on the result, it can be concluded that good knowledge and attitude do not always result in good practice. Research in Semarang and Mysore showed the same result which the majority of students show average practice.12,13 Females' practices are better than males', different from the attitudes' result according to gender. According to Hariyani, female tends to pay more attention to aesthetics and appearance.16

Based on the results on practice, majority answered strongly agree to brush their teeth in a circular motion. Tooth brushing using the modified Bass method is recommended and said more effective to reduce plaque and gingival inflammation compared to using a horizontal technique which can damage the cervical area.9

According to the attitudes' results, the statement about flossing has the least percentage of strongly agree. More than half of the students feel undecided about flossing while only 8% answered strongly agree to floss before brushing teeth. This result is not in line with the question of knowledge regarding the prevention of gingivitis with dental floss, where up to 71.4% answered correctly. This result correspond to the research in India that revealed less than 50% of students had positive attitude towards the usage of dental floss.15 In practice category, only 9.8% always flossing before brushing their teeth and 11.6% do floss routine every day. Similarly, the research on non-medical students in China showed that up to 71.6% of students never used dental floss.9 The level of attitude and practice towards flossing are still poor and it can be due to the difficult usage of dental floss. Many people do not get used to interdental cleaning and tend to only brushing teeth. Whereas, it is more effective to reduce plaque and gingivitis if performing both ways.

Most people strongly agreed with the practice statement about brushing their teeth, with 45.5% demonstrating very positive practice by brushing their teeth constantly regardless after eating or not. Supported by the majority has an attitude of strongly agree, so the attitude and practice are in line.

Results from category dental visit on practice shows below 50% who answered strongly agree to always visit the dentist without having any complaints and once every 6 months for scaling. Only 9.8% strongly agreed to go to the dentist without any complaints and only 17% strongly agreed to scaling once every 6 months as recommended by Indonesian Dentist Association. Likewise, only 15.3% of students in Semarang go to the dentist regularly.13 Furthermore, riskesdas 2018 shows that 95.5% of Indonesian have never visited a dentist.2 In contrast to research in India, 69.7% of regular students check-up to the dentist as an early preventive measure against oral health diseases.15 According to Al Subait, the majority of students visit the dentist only when there are complaints of pain in the teeth or gums.17 Periodic dental examinations are important for early detection of oral disease, patient education, and motivating patients to maintain oral health.1 In line with the lack of attitude towards visiting the dentist, only 19.6% agreed to go to the dentist regularly every 6 months. Awareness of students in visiting the dentist must be increased again.

Based on the faculty, the results indicate that FEB students have the most good knowledge, attitude, and practice. Meanwhile, FSRD students dominated the poor knowledge and practice. In contrast to Al Zarea, the results show that good knowledge regarding the prevention of periodontal disease is dominated by science faculty students because they have more interest in the health sector.18 Research at Panjab University showed similar results where art students showed a lack of knowledge, due to different interests from science students in the health sector.19 Moreover, research in India shows the same results on the attitude variable where economics students are better than engineering students.15

This research can be an evaluation to increase oral health education. Many developing countries do not provide enough oral health care education in primary, secondary, and high schools. Thus, knowledge, attitude, and practice regarding several oral health subjects such as periodontal disease must be improved.

The limitations of this research are observational research with a short time and only at one university. It would be more accurate to take a larger population and sample size. The questionnaire's distribution method was online and can lead to biased answers because the respondent fills it in without direct monitoring by the researcher and there is no time limit for filling-in Google Form. This could lead respondents to seek information before filling out the questionnaire.

CONCLUSION

Referring to the result and discussion, it can be concluded that the majority of Trisakti University's non-medical students have knowledge and attitudes that fall

into the "good" category, but their practices fall into the "average" category. This research is expected to provide information regarding knowledge, attitude, and practice in non-medical students and can be an evaluation for professionals to improve the provision of health education, especially to non-health students. A wider population needs to be included in future studies that can demonstrate the connections between knowledge, attitude, and practice, as well as the effects of oral health education before and after it is implemented.

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