

COUNSELING AND TRAINING TO IMPROVE THE LEVEL OF DENTAL AND ORAL HEALTH IN JUNIOR HIGH SCHOOL TAMAN SISWA BELAWAN MEDAN

Cek Dara Manja^{1*}, Rini Octavia Nasution², Dewi Kartika³, Maria NH Sitanggang⁴

^{1,3,4}Department of Dentomaxillofacial Radiology, Faculty of Dentistry, Universitas Sumatera Utara

²Department of Periodontics, Faculty of Dentistry, Universitas Sumatera Utara
email: cek@usu.ac.id

Abstract: SMP Taman Siswa Belawan Medan, North Sumatra, faces significant dental and oral health issues, particularly among students who suffer from cavities and periodontal problems. Additionally, anxiety about dental visits and radiographic examinations further complicates efforts to improve oral health. This community service program aims to enhance knowledge and skills related to oral health through counseling, proper tooth-brushing training, and intra-oral radiographic examinations. The program was conducted in two phases: the first phase involved counseling and training, while the second phase focused on evaluation. The evaluation results indicated a significant increase in knowledge. In the pre-test, 28% of students had good knowledge, 56.67% had sufficient knowledge, and 15.33% had poor knowledge; following the intervention, 60% had good knowledge, 30.67% had sufficient knowledge, and 9.33% had poor knowledge. For teachers, the pre-test showed 52.94% with good knowledge, 47.06% with sufficient knowledge, and 0% with poor knowledge, which increased to 100% with good knowledge in the post-test. This program was effective in raising awareness and knowledge about oral hygiene, cavity prevention, and the importance of dental check-ups, which ultimately contributed to reducing the prevalence of dental problems among students and teachers, thereby improving overall oral health.

Keywords: counseling, dental and oral health, training

Abstrak: SMP Taman Siswa Belawan Medan, Sumatera Utara, menghadapi masalah kesehatan gigi dan mulut, terutama di kalangan siswa, yang banyak menderita gigi berlubang dan gangguan jaringan periodontal. Selain itu, kecemasan terhadap kunjungan ke dokter gigi dan pemeriksaan radiografi juga menjadi hambatan dalam upaya perbaikan kesehatan gigi. Program pengabdian masyarakat ini bertujuan untuk meningkatkan pengetahuan dan keterampilan kesehatan gigi melalui penyuluhan, pelatihan cara menyikat gigi yang benar, serta pemeriksaan radiografi intra-oral. Program ini dilaksanakan dalam dua tahap, yaitu tahap pertama berupa penyuluhan dan pelatihan, sedangkan tahap kedua adalah evaluasi. Hasil evaluasi menunjukkan peningkatan pengetahuan yang signifikan. Pada pretest, 28% siswa memiliki pengetahuan yang baik, 56.67% cukup, dan 15.33% kurang; sedangkan pada post-test, 60% memiliki pengetahuan baik, 30.67% cukup, dan 9.33% kurang. Pada guru, hasil pretest menunjukkan 52.94% memiliki pengetahuan baik, 47.06% cukup, dan 0% kurang, yang meningkat menjadi 100% pada post-test. Program ini terbukti efektif dalam meningkatkan pengetahuan tentang kebersihan gigi dan mulut, pencegahan gigi berlubang, serta pentingnya pemeriksaan gigi, yang pada akhirnya dapat menurunkan prevalensi masalah gigi di kalangan siswa dan guru serta meningkatkan kesehatan gigi dan mulut secara keseluruhan.

Kata kunci: kesehatan gigi dan mulut, penyuluhan, pelatihan

INTRODUCTION

Everyone's health can be impacted by healthy behavior. Since dental and oral health are a component of overall health, they should constantly be taken into consideration. The WHO states that oral and dental health has a significant impact on overall health and well-being (Boel et al., 2021). Thus, it is crucial to keep teeth and oral cavities healthy by keeping them clean at all times. People feel more comfortable speaking, eating, and interacting with others when their teeth and oral cavities are clean and free of pain, discomfort, or shame (Septiani et al., 2021). Because unhealthy teeth and gums can lead to discomfort, trouble biting, and other health issues, oral and dental health is crucial. Although they can be avoided, many cavities, gingivitis, and periodontitis need to be treated right away. Brushing teeth is the primary preventive measure, and it is one of the indicators of community dental care behavior in preserving oral and dental health (Agung & Dewi, 2019). The most effective method of removing plaque and preventing problems like cavities and periodontitis is to brush your teeth regularly (Aspinall et al., 2021).

Brushing your teeth twice a day, namely in the morning after breakfast and before bed, is a beneficial habit to maintain dental and oral health (Anggraeni et al., 2022). Brushing your teeth twice a day is essential because failing to do so after eating, and particularly before bed, can cause harm to your teeth due to the millions of bacteria that reside in your mouth. Your teeth will have fewer debris and cavities the longer you brush them regularly (Saputri et al., 2022).

Continuous education about the necessity of maintaining oral and dental health will yield positive outcomes. To avoid dental issues, dental and oral health promotion and prevention must begin as soon as possible (Kurniawati et al., 2023). Because the information they get can be further reinforced in school, habits and lifestyles established early on will

endure longer (Bramantoro et al., 2021).

According to Law No. 36 of 2009 concerning health, dental and oral health services are provided in order to preserve and enhance the community's health. These services include promoting dental health, preventing dental diseases, treating dental diseases, and restoring dental health. These services are provided in an integrated, ongoing manner and are carried out through individual, community, and school dental health initiatives. Dental radiography is one of the supporting examination methods used in dentistry. Intraoral radiography examination in which the bitewing, occlusal, and periapical regions of the mouth are exposed to the film or sensor (Putri & Yunus, 2023).

Because of its widespread effects and the need for prompt treatment before it's too late, oral and dental health is one of the public health issues that needs to be handled thoroughly. Data on how long people spend brushing their teeth reveals that Indonesians have very poor oral health self-care habits. Even though 91.1% of Indonesians wash their teeth, data indicates that just 7.3% do so. 6.7% of Indonesians acknowledge having dental and oral hygiene issues, per the findings of a basic health study (Riseskdas 2018). This figure is substantially below the World Health Organization's (WHO) goal that 50% of kids between the ages of 10 and 14 understand dental and oral hygiene (Riseskdas, 2018).

People in North Sumatra Province do not yet realize how important it is to preserve dental and oral health, as evidenced by the 19.4% incidence of dental and oral disorders in the province. When a person's teeth start to erupt at the age of one year, the proportion of those who suffer from oral and dental issues rises. With corresponding prevalences of 26% and 25.9%, dental and oral disorders can arise in both urban and rural settings. There is no discernible change. Because there are more dentists in cities than in

rural areas, dental treatment is better in cities than in rural ones. Therefore, early prophylaxis is crucial to avoiding oral and dental problems (Risksdas, 2018).

This community service project aims to raise awareness of periodontal tissue disease and tooth brushing techniques, boost confidence in intraoral radiography dental exams, and give sinks as a way to promote better health.

METHOD

This study used community education and training methods. Oral health improvement activities through education and counseling were conducted twice. At SMP Taman Siswa Belawan in Medan, North Sumatra, 150 students and 17 teachers participated in education and training activities on July 23, 2024, and evaluation activities on August 7, 2024. SMP Taman Siswa Belawan and the Community Service Institute of the University of North Sumatra collaborated on this project. There are three phases in the implementation of this community service project, namely planning, training and counseling, and evaluation. Analyzing the location and area of activity, forming partnerships, obtaining permission for the location of service, and building sinks in the toilets and courtyards of Taman Siswa Belawan Junior High School are part of the preparation phase.

A questionnaire was given out as a pre-test during the counseling and training phase to gauge teachers' and students' understanding of periodontal tissue, intraoral dental radiography kinds, and dental cleanliness. Following that, a phantom head and direct practice utilizing a sink constructed by the community service team were used in conjunction with discussion, lecture, and practice approaches to provide the counseling contents. In the evaluation stage, activities

were carried out in the schoolyard, starting with repeating the material using posters, followed by a question-and-answer activity with prizes. The distribution of questionnaires was carried out as a post-test to evaluate students' and teachers' understanding of the material presented. The evaluation activity ended with the provision of plaques, posters, refreshments, and goodie bags.

DISCUSSION

The schoolyard and classrooms of SMP Taman Siswa Belawan became the place for implementing community service. The program began with a counseling and training stage on the first visit and ended with an evaluation stage on the second visit. Lecturers from the Faculty of Dentistry, Universitas Sumatera Utara, carried out counseling using audiovisual media in the form of videos and PowerPoint.

The first material provided is related to the importance of maintaining dental health and the negative impacts that occur if teeth are not treated. Sick teeth will affect the health of the body as a whole. Food and drink residue that sticks to the surface of the teeth can cause plaque to form. Plaque is a local and primary cause of other dental and oral diseases such as caries, calculus, and periodontal disease. The second material includes counseling on periodontal tissue diseases, namely gingivitis and periodontitis. Gingivitis is an inflammation of the gums with symptoms of bright red or dark red gums, swelling, easy bleeding when brushing teeth, and bad breath. Treatment can be done by scaling (cleaning tartar) and filling or replacing damaged teeth. Periodontitis is an inflammation of the supporting tissue of the teeth and a continuation of gingivitis that is not treated. Symptoms are pain when chewing, reddish or purplish gums, receding gums, and loose or loose teeth.

The final piece of content discusses the various forms of intraoral radiography used in dentistry, specifically, bitewing, occlusal, and periapical radiographs, which can aid in the diagnosis, planning, and assessment of oral and dental conditions (Figure 1). To enable dentists to see the state of the teeth's interior from the crown, roots, and supporting tissues that are invisible to the naked eye, radiographic examination is a necessary tool. The fourth piece of content discusses everyday dental health maintenance strategies, like limiting sugary foods, drinking fewer colored beverages, and maintaining a balanced diet. Preventive strategies include brushing and flossing your teeth regularly, visiting the dentist every six months, and using a toothbrush and toothpaste.

Next, training was conducted on how to brush teeth using a tooth phantom, and students were instructed to demonstrate it again (Figure 2). During a fifteen-minute break, each student received a goodie bag containing snacks, toothpaste, and a toothbrush from the community service team.



Figure 1. Counseling Activities

After consuming snacks, students applied a disclosing solution to the students' tongues and were instructed to spread it evenly over the entire surface of their teeth to show students that there was food residue stuck. The students immediately practiced the correct tooth-brushing technique using a sink that had been made by the community service team.

Each student began brushing their teeth using the toothbrush and toothpaste that had been provided. The correct way to brush your teeth is to use the Bass Method. This method is done by holding the toothbrush until the tip of the bristles forms a 45° angle to the axis of the teeth, then the bristles are pressed towards the gums so that they enter the gap between the gums and teeth, then moved horizontally, back and forth (Figure 3). It is recommended to students that brushing their teeth should be done twice a day, namely in the morning after breakfast and at night before sleeping (Wati et al., 2020).



Figure 2. Training on how to brush teeth using tooth phantom



Figure 3. Direct practice of brushing teeth together

The community service team held an assessment exercise in the schoolyard two weeks after the initial visit. Using posters titled How to Brush Your Teeth Properly, Types of Intraoral Radiography in Dentistry, and Periodontal Disease, the exercise started by repeating the content. In addition, a test with questions about the counseling content was

administered. Correct answers would earn students practical rewards. The community service team then administered a post-test questionnaire with identical items to the pre-test to teachers and pupils. A plaque, posters, snacks, and gift bags were given out when the evaluation session came to a close (Figure 4).



Figure 4. Poster handover to partners

The results of the pre-test and post-test, which included questions regarding periodontal tissue, intraoral radiography types in dentistry, and dental and oral health care, will be compared to assess the degree of success. Based on the right answers, the knowledge level is separated into three groups: good (10–12), sufficient (7-9), and bad (0–6). In the post-test, a higher proportion of teachers and students were able to properly answer every question than in the pre-test. Table 1 displays the full distribution of general knowledge among SMP Taman Siswa Belawan students and teachers.

According to the study's findings, the majority of students (54.00%) fell into the sufficient category on the pre-test, demonstrating that they understood and knew enough about periodontal tissue, intraoral radiography types in dentistry, and dental and oral health care. Furthermore, a minor percentage of students (18.00%) fell into the poor category, whereas 28.00% of students were in the good category. Additionally, the teachers were separated into several categories; 47.06% fell into the sufficient

category, while 52.94% fell into the good category. Additionally, the community service team used the same questionnaire as a post-test during the evaluation phase to gauge how much the teachers and students knew about periodontal tissue, intraoral radiography types in dentistry, and proper tooth brushing techniques.

According to the post-test results, 100.00% of teachers fell into the good category, meaning that all of them understood periodontal tissue, intraoral radiography kinds in dentistry, and proper tooth brushing techniques. The majority of pupils (60.00%) had a good comprehension, 33.33% had a decent understanding, and 6.67% were in the low group, according to the evaluation results. Table 2 displays the full distribution of the evaluation results.

Figure 5 shows that, according to the findings of the pre-test and post-test, the knowledge of Taman Siswa Belawan Middle School's teachers and pupils has grown. According to the pre-test results, the majority of instructors and students (89 total) fell into the sufficient category, and the majority of teachers and students (107 total) fell into the good category. This indicates how the lecture-style counseling and training, which used audio-visual materials like PowerPoint, videos, and tooth phantom demonstrations, was highly successful in raising the level of understanding among Taman Siswa Belawan Middle School teachers and students about maintaining dental and oral hygiene, the various forms of intraoral radiography in dentistry, and periodontal tissue.

Increasing the knowledge of students and teachers at Taman Siswa Belawan Middle School will have an impact on efforts to achieve the priority targets of Sustainable Development Goals (SDGs) 3, namely Good Health and Welfare, ensuring healthy living and improving the welfare of all ages.

Table 1. General description of knowledge of students and teachers of SMP Taman Siswa Belawan

Overview of knowledge of students and teachers									
No.	Questions	Pre-Test				Post-Test			
		Right		Wrong		Right		Wrong	
		n	%	n	%	n	%	n	%
1.	How many times do you brush your teeth in a day?	157	94.01	10	5.99	159	95.21	8	4.79
2.	When do you brush your teeth in a day?	125	74.85	42	25.15	141	84.43	26	15.57
3.	What type of tooth brush to use?	146	87.43	21	12.57	146	87.43	21	12.57
4.	Do you use toothpaste when brushing your teeth?	167	100.00	-	-	167	100.00	-	-
5.	How do you brush your teeth properly?	95	56.89	72	43.11	133	79.64	34	20.36
6.	What are the types of dental radiography?	123	73.65	44	26.35	125	74.85	42	25.15
7.	How many types of intraoral radiographic examinations?	59	35.33	108	64.67	119	71.26	48	28.74
8.	What are the risks that can occur if you don't clean your teeth and mouth?	147	88.02	20	11.98	152	91.02	15	8.98
9.	What are the symptoms of gum inflammation (gingivitis)?	100	59.88	67	40.12	117	70.06	50	29.94
10.	What can cause bleeding gums?	140	83.83	27	16.17	144	86.23	23	13.77
11.	What can you do if you have gum disease (gingivitis)?	75	44.91	92	55.09	128	76.65	39	23.35
12.	If gum disease is not treated, what will happen?	47	28.14	120	71.86	119	71.26	48	28.74

Table 2. Knowledge level of students and teachers at SMP Taman Siswa Belawan

Pre-Test and Post-Test Knowledge Level					
Category		Students		Teachers	
		Frequency	%	Frequency	%
Good	Pre-Test	42	28.00	9	52.94
	Post-Test	90	60.00	17	100.00
Moderate	Pre-Test	81	54.00	8	47.06
	Post-Test	50	33.33	-	-
Poor	Pre-Test	27	18.00	-	-
	Post-Test	10	6.67	-	-

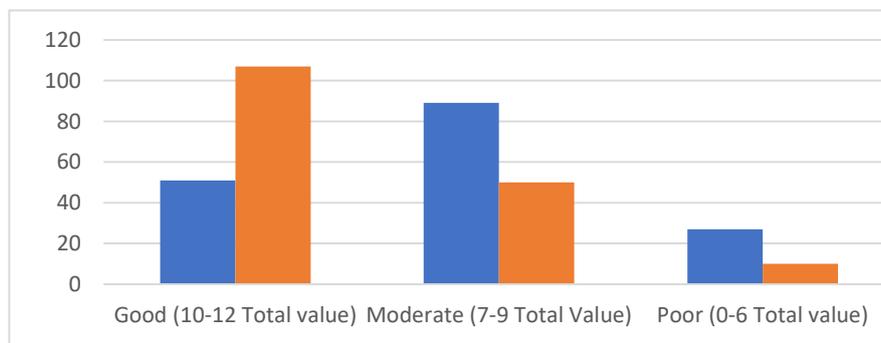


Figure 5. Comparison of the level of knowledge of students and teachers at SMP Taman Siswa Belawan

CONCLUSION

The Community Service Program conducted at SMP Taman Siswa Belawan Medan for two visits through training and counseling has succeeded in achieving its goal of improving the level of dental and oral health. The evaluation results showed an increase in the percentage of knowledge levels in students and teachers, especially related to maintaining dental and oral health. periodontal tissue, types of intraoral radiography, and counseling on proper tooth brushing. The positive results of this training and counseling can be an effective solution to improve the level of dental and oral health in other schools.

ACKNOWLEDGMENT

In addition to the head of the Taman Siswa Belawan Middle School Foundation and the teaching staff who supported and assisted the community service team during the implementation of this community service activity, gratitude is also expressed to the Community Service Institute of Universitas Sumatera Utara in 2024, which has provided funding for community service activities.

BIBLIOGRAPHY

Agung, A. A. G., & Dewi, N. K. E. P. (2019). Hubungan Perilaku Menyikat Gigi dan Karies Gigi Molar Pertama Permanen Pada Siswa Kelas V di SDN 4 Pendem Tahun 2018. *Jurnal*

- Kesehatan Gigi (Dental Health Journal)*, 6(2), 5–8.
- Anggraeni, A. N. D. F., Prasetyowati, S., & Mahirawatie, I. C. (2022). Tingkat Pengetahuan Menyikat Gigi Anak Sekolah Dasar Kelas 1-3 Di SDN 2 Sumberejo Kabupaten Trenggalek. *Indonesian Journal of Health and Medical*, 2(4), 523–533.
- Aspinall, S. R., Parker, J. K., & Khutoryanskiy, V. V. (2021). Oral Care Product Formulations, Properties and Challenges. *Colloids and Surfaces B: Biointerfaces*, 200, 111567. <https://doi.org/10.1016/j.colsurfb.2021.111567>
- Boel, T., Zulkarnain, M., Nasution, R. O., Nainggolan, L. I., & Kartika, D. (2021). Improving Oral and Dental Health Through Counseling, Video and Phantom Demonstration During The Covid-19 Pandemic to The Medan Belawan Community. *ABDIMAS TALENTA: Jurnal Pengabdian Kepada Masyarakat*, 6(1), 74–80.
- Bramantoro, T., Santoso, C. M. A., Hariyani, N., Setyowati, D., Zulfiana, A. A., Nor, N. A. M., Nagy, A., Pratamawari, D. N. P., & Irmalia, W. R. (2021). Effectiveness of the school-based oral health promotion programmes from preschool to high school: A systematic review. *PLOS ONE*, 16(8), e0256007. <https://doi.org/10.1371/journal.pone.0256007>
- Kurniawati, D., Ningsih, J. R., Kirom, F. F., & Haya, A. H. A. (2023). Impact of School Dental Health Education Programme on Elementary School Students in Kartasura, Indonesia. *Journal of International Dental and Medical Research*, 16(3), 1200–1205.
- Putri, N. P. S. S., & Yunus, B. (2023). Penggunaan teknik radiografi konvensional dan digital pada perawatan endodontik (Tinjauan Pustaka). *Cakradonya Dental Journal*, 13(2), 97–105. <https://doi.org/10.24815/cdj.v13i2.23531>
- Riskesdas. (2018). *Data Laporan Nasional Riset Kesehatan Dasar*.
- Saputri, D. Y., Hadi, S., & Marjianto, A. (2022). Hubungan cara menyikat gigi dengan karies gigi pada siswa kelas xi sma widya darma surabaya. *Indonesian Journal of Health and Medical*, 2(3), 233–243.
- Septiani, D., Sughesti, D., Susanti, D., Sihombing, M. T. P., & Novitasari, S. (2021). Pentingnya menjaga kesehatan gigi dan mulut di era pandemi Covid'19, demi kelangsungan aktivitas usah. *Dedikasi Pkm*, 3(1), 56–66.
- Wati, R., Said, F., & Sari, E. (2020). Perbedaan menyikat gigi metode fone's dan metode bass terhadap skor debris pada murid kelas iii dan iv sekolah dasar negeri gambut 11. *Jurnal Terapis Gigi Dan Mulut*, 1(2), 40–45.