



# Improving Dental and Oral Health through Counseling and Training on Dental and Oral Health Maintenance and Introduction of Dental Radiography Examination in Children and Installation of Sinks at Belawan Islamic Junior High School, Medan Belawan District

**Cek Dara Manja<sup>1\*</sup>, Dewi Kartika<sup>1</sup>, Maria NH Sitanggang<sup>1</sup>, Ika Astrina<sup>1</sup>**

<sup>1</sup>[Faculty of Dentistry, Universitas Sumatera Utara, Medan, Indonesia]

**Abstract.** Healthy behavior can affect the health of everyone's body. Dental and oral health is very important to always pay attention to because it is part of general health. To keep your teeth and mouth healthy, you can always keep your teeth and mouth clean every day. The easiest thing to do is to brush your teeth and wash your hands before eating. Techniques and the correct way of brushing teeth greatly affect dental hygiene. If the oral health is not good, then it requires a dental radiographic examination as a supporting examination to be able to determine the condition of the teeth and the supporting tissues of the teeth as a whole. This activity is based on the need to maintain dental and oral health from an early age, so that good behavior in maintaining health can be accustomed from childhood. In addition, there are still many children in junior high school who are not properly aware of the importance of dental health for general health. This counseling can increase knowledge and provide understanding and awareness about the importance of maintaining personal and oral health by brushing teeth regularly and washing hands properly.

**Keyword:** Healthy Behavior, Dental and Oral Health, Dental Radiography

**Abstrak.** Perilaku yang sehat dapat mempengaruhi kesehatan tubuh setiap orang. Kesehatan gigi dan mulut sangat penting untuk selalu diperhatikan karena merupakan bagian dari kesehatan secara umum. Untuk tetap menjaga gigi dan mulut tetap sehat dapat dilakukan dengan selalu menjaga kebersihan gigi dan mulut setiap hari. Hal yang paling mudah dilakukan yaitu dengan cara menyikat gigi dan mencuci tangan sebelum makan. Teknik dan cara menyikat gigi yang benar sangat mempengaruhi kebersihan gigi. Apabila kesehatan rongga mulut tidak baik, maka membutuhkan pemeriksaan radiografi kedokteran gigi sebagai pemeriksaan penunjang untuk dapat mengetahui kondisi gigi dan jaringan pendukung gigi tersebut secara utuh. Kegiatan ini didasarkan atas perlunya memelihara kesehatan gigi dan mulut sejak dini, agar perilaku yang baik dalam menjaga kesehatan dapat dibiasakan dari kecil. Selain itu masih banyak anak-anak di Sekolah Menengah Pertama yang belum menyadari dengan benar akan pentingnya kesehatan gigi untuk kesehatan secara umum. Penyuluhan ini dapat meningkatkan pengetahuan dan memberikan pemahaman dan

\*Corresponding author at: Faculty of Dentistry, Universitas Sumatera Utara, Medan, Indonesia

E-mail address: cek@usu.ac.id

*kesadaran tentang pentingnya menjaga kesehatan diri dan mulut dengan cara menyikat gigi teratur dan mencuci tangan dengan benar.*

**Kata Kunci:** *Perilaku Sehat, Kesehatan Gigi dan Mulut, Radiografi Kedokteran Gigi*

Received 03 September 2022 | Revised 06 September 2022 | Accepted 26 June 2023

## 1 Introduction

The most important preventive measure so that teeth are not damaged is to maintain proper oral and dental hygiene every day. The most recommended and implemented action so that dental and oral hygiene can always be maintained properly is brushing teeth [1]. Regular brushing is the main method for removing plaque and controlling plaque-related diseases, such as caries and periodontitis [2]. The results of Riskesdas 2013 on dental and oral health, namely the national prevalence of dental and oral problems is 25.9 percent, as many as 14 provinces have the prevalence of dental and oral problems above the national figure. The national prevalence of brushing teeth every day is 94.2% and as many as 15 provinces are below the national prevalence.

For correct behavior in brushing teeth related to factors of gender, economy, and area of residence. The importance of education related to maintaining dental and oral health that is carried out continuously gives good results. Prevention and promotion of dental and oral health must be carried out as early as possible to prevent dental and oral problems [3]. Habits and lifestyles developed at a young age will be more attached because the messages obtained can be further strengthened while they are still in school [4].

Based on Law no. 36 of 2009 concerning health, dental and oral health services are carried out to maintain and improve the health status of the community in the form of improving dental health, preventing dental diseases, treating dental diseases, and restoring dental health which are carried out in an integrated, integrated, sustainable manner, and implemented through health services [5]. individual dentistry, community dental health services, and school dental health efforts. One of the supporting examination efforts in dentistry is using dental radiography. Intra-oral radiographic examination in which the film or sensor is placed in the oral cavity i.e., periapical, bitewing and occlusal. Extra-oral radiographic examination where the film or sensor is placed outside the oral cavity, namely panoramic cephalometry, TMJ and others [6-7].

The purpose of this community service is to improve health status, increase knowledge about how to brush teeth and how to wash hands, increase confidence in dental radiographic examinations, availability of sinks and trash cans as a means of improving health.

## 2 Methods

The community service activity entitled "Health Improvement Through Counseling and Training on Dental and Oral Health Maintenance and Introduction of Dental Radiography Examination in

Children and Installation of Sinks in Belawan Islamic Junior High School, Medan Belawan District" began with remarks from the principal of SMP Islamiyah Belawan and direction from the head of the community service implementation team, followed by lectures and counseling to children. Lectures are conducted using audiovisual media. The counseling activity was assisted by students by demonstrating how to brush their teeth using a phantom tooth with the Bass technique where the tooth brushing method starts from the lower left, front and inside of the lower jaw, followed by the right upper jaw, front and inside left. Then proceed to the left upper jaw, front and right outside, then to the right lower jaw, front and outside left. The entire surface of the teeth should be brushed including the surface of the tongue [8].

This service activity was carried out in several stages, namely the Preparation Stage, Implementation Stage and Evaluation Stage.

#### 1. Preparation stage

Activities that have been carried out in the preparation stage are:

- a. Reviewing the location/place of the activity
- b. Fostering cooperation with partners
- c. Administration and licensing of community service places.

The team that works on community service consists of 4 dentists, 7 students of the Faculty of Dentistry, University of North Sumatra and 1 employee of the Faculty of Dentistry, University of North Sumatra as supporting staff.

#### 2. Implementation Stage

The activities carried out are the manufacture of supporting facilities for dental and oral health as well as general health, namely making hand washing facilities including installing sinks and drains, installing ceramics on sinks and painting walls, painting and installing signs on school prayer rooms, making materials and counseling power points, making educational posters about how to brush teeth properly, how to wash hands properly and types of dental radiography examinations. The counseling presentations were carried out alternately by members of the implementation team and students who were involved in the service using audiovisual media, namely powerpoint and video. The service implementation team gave a direct example of how to brush your teeth using a tooth phantom. In turn, the children will demonstrate how to brush their teeth properly using a tooth phantom. Distribute plastic bags containing pens, snacks, toothbrushes, toothpaste, mouthwash cups and masks to each child.

### 3. Evaluation stage

Practice hands-on how to wash hands and brush teeth correctly and appropriately. The service team will be assisted by teachers. Each child demonstrated directly how to wash their hands using running water in the sink provided. After the child eats a snack, the child's teeth are smeared with a coloring solution (disclosing solution) to show the child that the food they eat leaves food residue on their teeth that needs cleaning. Each child began to brush their teeth using the toothbrush and toothpaste that had been distributed. After brushing their teeth, the children were asked to look at their teeth again in the mirror. If the dye given earlier is still attached, the child must brush his teeth again until the dye is gone, which means that his teeth are clean.

A month after the counseling and training activities, the community service team returned to visit SMP Islamiyah Belawan to conduct further evaluations. The evaluation activities were in the form of evaluating how to brush teeth and how to wash hands properly in the available sinks as well as knowledge about dental radiography examinations. The activities carried out are as follows:

Back test:

- a. The distribution of the questionnaires and the return of the questionnaires for students and teachers were assisted by class teachers and submitted to the service team. Children and teachers filled out a questionnaire containing questions about hand washing, dental hygiene and types of dental radiography.
- b. Distributing pens, snacks, toothbrushes and toothpaste to children.
- c. Each child demonstrated directly how to wash their hands using running water in the sink provided.
- d. Brushing children's teeth using a liquid dye (disclosing solution)
- e. Re-examine the correct way of brushing teeth while observing whether the child has the correct way of brushing his teeth and whether the child has used toothpaste when brushing his teeth.
- f. Data analysis of knowledge and behavior of students and teachers regarding how to brush teeth and how to wash hands as well as knowledge of the types of dental radiographic examinations.

### 3 Result and Discussion

The community service program is a regular mono-year partnership program carried out at SMP Islamiyah Belawan, Medan Belawan District. This activity starts from counseling to how to brush teeth together and evaluation. The delivery of counseling materials using the lecture method, using powerpoint and dental phantoms, as well as playing videos on how to brush teeth properly, how to wash hands properly and introduction to the types of dental radiography examinations. In this activity the children seemed very enthusiastic about brushing their teeth and washing their hands and getting to know the types of dental radiographic examinations. This can be seen by following the instructions given by the implementing team and students, namely trying to improve the way of brushing their teeth, how to wash their hands and no longer feeling afraid and confident when they need a dental radiographic examination. It can be seen that there is a better change after being given counseling and training than before being given counseling and training. After that, a question and answer session was held and the activity ended with a group photo. This community service makes it possible to produce human resources who care about general health and dental health. Increased knowledge about how to brush teeth and wash hands properly as well as the types of dental radiographic examinations and the construction of health facilities at the Belawan Islamic Junior High School will affect efforts to achieve the priority goals of achieving the SDGs of the 3rd Community Service Institute, University of North Sumatra, namely a healthy life and Prosperous (Good Health and Well-being) Ensure a healthy life and improve the welfare of all residents of all ages.



**Figure 1.** Counseling using powerpoint and audiovisual media



**Figure 2.** Training on how to brush your teeth using phantom teeth



**Figure 3.** Apply disclosing solution and brush your teeth together



**Figure 4.** Dissemination of questionnaires to evaluate the results of counseling and training



**Figure 5.** Group photo with school administrators and students participating in counseling and training

**Table 1.** An overview of the knowledge of students at the Belawan Islamic Junior High School

No.	Question	Right (n)	%	Wrong (n)	%
1	How many times do you brush your teeth in a day?	95	95	5	5
2	When do you brush your teeth in a day?	90	90	10	10
3	What type of toothbrush to use?	84	84	16	16
4	Do you use toothpaste when brushing your teeth?	98	98	2	2
5	How do you brush your teeth properly?	90	90	10	10
6	How many types of dental radiographic examination?	72	72	28	28
7	What are the types of dental radiography?	81	81	19	19

8	How long are we advised to wash our hands to prevent covid 19?	77	77	23	23
9	How many steps are there in washing hands to prevent covid 19 according to WHO?	89	89	11	11

**Table 2.** Knowledge level of students at Belawan Islamic Junior High School

Category	Frequencyi	%
Well	83	83
Enough	17	17
Total	100	100

**Table 3.** An overview of the knowledge of teachers at the Belawan Islamic Junior High School

No.	Question	Right (n)	%	Wrong (n)	%
1	How many times do you brush your teeth in a day?	21	95,4	1	4,5
2	When do you brush your teeth in a day?	21	95,4	1	4,5
3	What type of toothbrush to use?	16	72,7	6	27,2
4	Do you use toothpaste when brushing your teeth?	22	100	0	0
5	How do you brush your teeth properly?	19	86,3	3	13,6
6	How many types of dental radiographic examination?	18	81,8	4	18,1
7	What are the types of dental radiography?	19	86,3	3	13,6
8	How long are we advised to wash our hands to prevent covid 19?	15	68,1	7	31,8
9	How many steps are there in washing hands to prevent covid 19 according to WHO?	17	77,2	5	22,7

**Tabel 4.** Knowledge level of teachers at Belawan Islamic Junior High School

Category	Frequencyi	%
Well	18	18,6
Enough	4	4,1
Total	22	100

#### 4 Conclusion

SMP Islamiyah Belawan already has supporting facilities for dental and oral health as well as general health in the form of hand washing facilities that are in accordance with health standards that can be utilized by all students and teachers. Increasing healthy behavior, especially in terms of maintaining oral health so that it can reduce the incidence of cavities. Changes in student behavior for the better by frequently washing hands using the available sink. Counseling on how to brush teeth, how to wash hands and the introduction of types of dental radiography delivered to students and teachers can be passed on to the whole family and the environment so that the behavior of students in the Belawan Islamic Junior High School environment becomes better in maintaining their own health.

#### 5 Acknowledgments

This article is one of the mandatory outputs of the Community Service Program funded by the University of Sumatera Utara Community Service Institute in 2022, a regular mono-year partnership scheme. Thank you to the Rector of the University of Sumatera Utara for the financial support and facilities provided. Thank you also to the partners of this service activity. This article is one of the results of the Community Service Program Non-PNBP sources of funds at the University of Sumatera Utara in accordance with the Letter of Assignment for the Implementation of Community Service for the Mono Program Regular Year for Fiscal Year 2022 Number 319/UN5.2.4.1/PPM/2022, May 25 2022.

#### REFERENCES

- [1] Asadoorina, J., 2016, Tooth Brushing, *Canadian Journal of Dental Hygiene (CJDH)*, 40(5): 1-14.
- [2] Gallagher, A., Sowinski, J., Bowman, J., Barrett, K., Lowe, S., Patel, K., Bosma, M. L., and Creeth, J. E., 2015, The Effect of Brushing Time and Dentifrice on Dental Plaque Removal in vivo. *The Journal of Dental Hygiene*, 83(3):111-6.
- [3] Deljo, E., Barbacic, R., Meskovic, B., and Grabus, J., 2017, Impact of Continous Education About Oral hygiene on the Changes of CPI-index for 12-15 Year Old Schoolchildren, *Acta Inform med*, 19(4):220-3.
- [4] Kwan, S.Y.L., Petersen, P.E., Pine, C.M., and Borutta, A., 2015, Health Promoting Schools: an Apporunity for Oral Health Promotion, *Bulletin of the World Health Organization*, 83(9): 677-85.
- [5] Departemen Kesehatan Republik Indonesia, Data laporan nasional riset kesehatan dasar, 2013.
- [6] Sanjay Mallya, Ernest Lam, 2018, *White and Pharoah's Oral Radiology 8th Edition: Principle and Interpretation*, Elsevier.
- [7] Bangash, R.Y., Khan, A. U., Tariq, K. M., and Dil, R., 2012, Evaluation of Tooth Brushing Technique and Oral Hygiene Knowledge at Afid, Rawalpindi, Pakistan *Oral & Dental Journal*, 32(1):124-7.
- [8] Jürgensen, N., and Petersen, P.E., 2016, Oral Health and The Impact of Socio-Behavioral factors in a Cross Sectional Survey of 12-year Old School Children in Laos, *Biomed Central Oral Health*, 9 (29):1-11.