

# Effectiveness of the "Brush My Teeth Challenge" Program on the Participation of Parents in Dental and Oral Hygiene in Children in the Working Area of the Technical Implementation Unit of the Pandean Public Health Center, Trenggalek Regency

Poppy Hidayat<sup>1\*</sup>, Yuly Peristiowati<sup>2</sup>

<sup>1</sup>Institut Ilmu Kesehatan STRADA Indonesia

<sup>2</sup>Institut Ilmu Kesehatan STRADA Indonesia

[ppyhdy.ph@gmail.com](mailto:ppyhdy.ph@gmail.com)

## Abstract

*This study aims to determine effectiveness of the "brush my teeth challenge" program on the participation of parents in dental and oral hygiene in children in the working area of the technical implementation unit of the Pandean Public Health Center, Trenggalek Regency. The method used in this study is a quantitative method. The type of research used in this study is a quasi experimental design type of research. The population to be studied in this study are all students of SDN 1 Petung and SDN 3 Petung according to the results of the online 2020/2021 dental health screening evaluation results obtained by SDN 1 Petung and SDN 3 Petung filling in completely despite the condition of mountainous areas with limited internet access. For the 2021/2011 academic year the number of SDN 1 Petung is 85 students, and the number of students is SDN 3 Petung 100 students, the total is 185 students. The number of samples is 64 students at SDN 1 Petung as the experimental group and 64 students at SDN 3 Petung as the control group. Analysis of the data in this study using the wilcoxon test. The results show that there is a significant effect before and after intervention on dental and oral hygiene get value  $Z=5.593$  ( $>1.96$ ) and  $p$  value 0.000 ( $\alpha < 0.05$ ) in children in the working area of the technical implementation unit of the Pandean Public Health Center, Trenggalek Regency.*

## Keywords

effectiveness; dental; oral; hygiene; children



## I. Introduction

Health development aims to create Indonesian people who live and behave in a healthy environment and are able to reach quality health services. Health services provided throughout Indonesia must be carried out fairly, evenly, and optimally (Kementerian Kesehatan, 2012).

To be able to achieve this goal, 4 missions of health development have been set, namely: (1) mobilizing health-oriented national development, (2) encouraging community independence for healthy living, (3) maintaining and improving quality, equitable and affordable health services, and (4) maintaining and improving the health of individuals, families, communities and their environment (Kementerian Kesehatan, 2012)

Dental and oral health services as an integral part of overall health services have set indicators of community dental and oral health status which refer to the Global Goals for Oral Health 2020 developed by FDI, WHO, and IADR. One of the technical programs from the Department of Non-communicable Disease Prevention and Health Promotion which accommodates dental and oral health programs globally is the WHO Global Oral

---

Health Program. This program advises countries in the world to develop policies to prevent dental and oral diseases and promote dental and oral health. This policy also supports the integration of dental and oral health programs with general health programs. One of the priority actions of the Global Oral Health Program, especially for school children and adolescents is the promotion of dental health in schools (Kementerian Kesehatan, 2012).

One of the indicators of the Global Goals for Oral Health 2020 is an increase in the proportion of caries free at the age of 6 years by x%, a decrease in the D component of DMFT at the age of 12 years by x%, with special attention to high-risk groups (Kementerian Kesehatan, 2012).

Dental and oral health services for school children are not only carried out through basic dental and oral health activities at the Public Health Center but are also held in an integrated manner with main activities in the form of the School Dental Health Business program (Kementerian Kesehatan, 2012).

School Dental Health Efforts are public health efforts aimed at maintaining, improving the dental and oral health of all students in fostered schools which are supported by individual health efforts in the form of curative efforts for individuals who need dental and oral health care. Public health efforts in the School Dental Health Business are in the form of planned, directed and sustainable activities that require behavioral intervention, one of which is the movement of parents (Kementerian Kesehatan, 2012).

Based on the results of the 2018 Riskesdas, it was found that the low tooth brushing behavior in the proportion of brushing teeth correctly in the population aged 3 years was 2.8% (National), 1.83% (East Java), and 0.83% (Trenggalek) (Kementerian Kesehatan, 2019).

Provision of dental and oral health services in the form of dental and oral health examinations and screenings for students, individual dental and oral health counseling, prevention/protection against dental and oral diseases, dental and oral health care, dental and oral health referrals (Kementerian Kesehatan, 2012).

According to the Pandean Public Health Center monthly service report in 2020, it was found that there was a lack of SD/MI students who needed to receive dental health care, namely 383 students out of a total target of 2,415 students, the number of SD/MI students receiving dental health care was nil, and the number of dental referral services was nil. This is due to the fact that during the COVID-19 pandemic, there were very few or even zero activities for the School Dental Health Business (UPT Puskesmas Pandean, 2021).

The results of Riskesdas 2007 show the behavior of the population aged 10 years and over related to the habit of brushing their teeth, and when to brush their teeth. Most of the population aged 10 years and over (91.1%) have a habit of brushing their teeth every day. To get optimal results, brushing your teeth properly is brushing your teeth every day in the morning after breakfast and at night before going to bed. It was found that in general the community (90.7%) brushed their teeth every day in the morning and or afternoon shower. The proportion of people who brush their teeth every day after breakfast is only 12.6% and before going to bed at night is only 28.7%. This situation shows the need to improve the joint toothbrushing program according to program recommendations in schools by considering information facilities and media, especially at an early age, because behavior is a habit that will be more formed when done at an early age (Kementerian Kesehatan, 2012).

With the COVID-19 pandemic, the development of the program "Dias Menkes Gilut dalam Selikur Dino (21 hari)" in digital form or also called the program "Dias Menkes Gilut dalam Selikur Dino Disig" stands for Dias Menkes Gilut in Selikur Dino Digital Diversi using the google form application.

Since the non-natural disaster of the spread of COVID-19 as a national disaster in accordance with Presidential Decree of the Republic of Indonesia Number 2 of 2020, and the Circular Letters of the Minister of Education and Culture Number 2 of 2020 and Number 3 of 2020 concerning online learning and working from home in order to prevent the spread of COVID-19, counseling and mass toothbrushing activities in schools as part of the School Dental Health Business and efforts to change tooth brushing behavior in school and preschool age children cannot be carried out, including the innovation activities of the Gilut Menkes Dias in Selikur Dino at the Technical Implementation Unit of the Pandean Public Health Center cannot be carried out during the COVID-19 pandemic (Kementerian Kesehatan, 2020).

Due to the COVID-19 pandemic, it is necessary to modify the implementation of school-age and adolescent health services in order to prevent transmission and ensure that every child has his/her right to essential health services. It is necessary to consider the risk of COVID-19 transmission in schools. Networking activities are encouraged to be carried out online using information and communication technology and the use of google forms (Kementerian Kesehatan, 2020).

Based on the results of Riskesdas in 2018 that the proportion of actions received by the community to overcome dental and oral problems in the category of dental and oral hygiene and health care counseling was 7.80% (Trenggalek), 7.13% (East Java) and the proportion of dental and oral problems and received services from dental medical personnel was 57.6% (Indonesia), and the proportion of dental and oral health problems was 14.8% (Trenggalek), and 15.20% (East Java).

During the COVID-19 pandemic, there were restrictions on dental and oral services, where services that could be provided included emergency services such as unbearable pain, swollen gums that could potentially interfere with the airway, uncontrolled bleeding and trauma to the teeth and facial bones that could potentially interfere with the airway. Emergency dental and oral services that use ultrasonic scalers and high speed air driven are carried out with complete personal protective equipment in accordance with the guidelines because they trigger the occurrence of aerosols and there are limitations in dental and oral hygiene and health care counseling, namely being able to use the telemedicine system or by online consultation.

This study aims to determine effectiveness of the "brush my teeth challenge" program on the participation of parents in dental and oral hygiene in children in the working area of the technical implementation unit of the Pandean Public Health Center, Trenggalek Regency.

## **II. Research Method**

The method used in this study is a quantitative method. Quantitative method is experimental and survey research methods (Jibril et al., 2022; Pandiangan et al., 2018; Pandiangan, 2022). The experimental research method is a research method used to find the effect of certain treatments (Octiva et al., 2021; Pandiangan et al., 2021; Pandia et al., 2018). The survey method is used to obtain data from certain natural places, but the researchers carry out treatments in data collection, for example by distributing

questionnaires, tests, structured interviews, and so on (Octiva et al., 2018; Pandiangan, 2018).

The type of research used in this study is a quasi experimental design type of research. Quasi experimental design is an experimental design that has a control group, but cannot fully function to control external variables that affect the implementation of the experiment because it does not yet have the characteristics of the actual experiment, namely the absence of randomization and the variables that should be controlled (Asyraini et al., 2022; Octiva, 2018; Pandiangan, 2015).

The population to be studied in this study are all students of SDN 1 Petung and SDN 3 Petung according to the results of the online 2020/2021 dental health screening evaluation results obtained by SDN 1 Petung and SDN 3 Petung filling in completely despite the condition of mountainous areas with limited internet access. For the 2021/2011 academic year the number of SDN 1 Petung is 85 students, and the number of students is SDN 3 Petung 100 students, the total is 185 students. The number of samples is 64 students at SDN 1 Petung as the experimental group and 64 students at SDN 3 Petung as the control group.

Analysis of the data in this study using the wilcoxon test. The Wilcoxon test is a nonparametric test that is used to measure the difference between 2 groups of paired data on an ordinal or interval scale but the data is not normally distributed (Pandiangan et al., 2022; Tobing et al., 2018).

### **III. Results and Discussion**

#### **3.1 Profile of Research Place**

The Technical Implementation Unit of the Pandean Public Health Center is located on Jalan Raya Panggul - Trenggalek, Dongko District 66363. The Working Area of the Technical Implementation Unit of the Pandean Public Health Center consists of 5 villages, namely Petung, Pandean, Cakul, and Salamwates, all of which are mountainous or highland areas.

Administratively, Trenggalek Regency is bordered to the north by the regencies of Tulungagung and Ponorogo, to the east by the Tulungagung Regency, to the south by the Indonesian Ocean and to the west by the Pacitan and Ponorogo regencies. Trenggalek Regency consists of 14 sub-districts, 152 villages and 5 sub-districts, 555 hamlets/neighborhoods and neighborhoods of the 14 sub-districts, only 4 sub-districts where the majority of the villages are plains,

Health development aims to create Indonesian people who live and behave in a healthy environment and are able to reach quality health services. Health services provided throughout Indonesia must be carried out in a fair, equitable and optimal manner. In order to achieve this goal, 4 missions of health development have been set, namely (1) mobilizing health-oriented national development, (2) encouraging community independence for healthy living, (3) maintaining and improving quality, equitable and affordable health services, and (4) maintaining and improve the health of individuals, families, communities and their environment.

Dental and oral health services as an integral part of overall health services have set indicators of community dental and oral health status which refer to the Global Goals for Oral Health 2020 developed by FDI, WHO and IADR. One of the technical programs from the Department of Non-communicable Disease Prevention and Health Promotion which accommodates dental and oral health programs globally is the WHO Global Oral Health Program (GOHP). This program advises countries in the world to develop policies to

prevent dental and oral diseases and promote dental and oral health. This policy also supports the integration of dental and oral health programs with general health programs. One of the priority actions of GOHP, especially for school children and adolescents is the promotion of dental health in schools

One of the indicators of the Global Goals for Oral Health 2020 is an increase in the proportion of caries free at the age of 6 years by x%, a decrease in the D component of DMFT at the age of 12 years by x%, with special attention to high-risk groups.

Based on the results of the 2018 Riskesdas, it was found that the low tooth brushing behavior in the proportion of brushing teeth correctly in the population aged 3 years was 2.8% (National), 1.83% (East Java), and 0.83% (Trenggalek).

Based on the results of Riskesdas in 2018 that the proportion of actions received by the community to overcome dental and oral problems in the category of dental and oral hygiene and health care counseling was 7.80% (Trenggalek), 7.13% (East Java), and the proportion of dental and oral problems and received services from dental medical personnel was 57.6% (Indonesia), and the proportion of dental and oral health care professionals was 14,18% (Trenggalek), and 15.20% (East Java).

During the COVID-19 pandemic, there were restrictions on dental and oral services, where services that could be provided included emergency services such as unbearable pain, swollen gums that could potentially interfere with the airway, uncontrolled bleeding and trauma to the teeth and facial bones that could potentially interfere with the airway. Emergency dental and oral services that use ultrasonic scalers and high speed air driven are carried out with complete personal protective equipment in accordance with the guidelines because they trigger aerosols and there are limitations in dental and oral hygiene and health care counseling, namely being able to use the telemedicine system or in online consultations.

### 3.2 Wilcoxon Test Results

**Table 1.** Wilcoxon Test Results

Variable	Inf.	Kolmogrov-Smirnov	Wilcoxon Test				P Value
			Negative Ranks	Positive Ranks	Ties	Z	
Experimental Group							
Dental and Oral Hygiene	Pre Test	0.200	0	41	23	5.593	0.000
	Post Test	0.083					
	Selisih	0.000					

The results show that there is a significant effect before and after intervention on dental and oral hygiene get value  $Z=5.593$  ( $>1.96$ ) and p value 0.000 ( $\alpha < 0.05$ ) in children in the working area of the technical implementation unit of the Pandean Public Health Center, Trenggalek Regency.



## IV. Conclusion

The results show that there is a significant effect before and after intervention on dental and oral hygiene get value  $Z=5.593$  ( $>1.96$ ) and p value 0.000 ( $\alpha < 0.05$ ) in children in the working area of the technical implementation unit of the Pandean Public Health Center, Trenggalek Regency.

Suggestions for this research are:

### 1. Scientific Benefit

The results of the study can add scientific insight and can be useful for future researchers.

### 2. Benefits for Health Institution, Public Health Center, and Health Office

Research results can be an alternative choice for digital or indirect School Dental Health Business innovation activities.

### 3. Benefits for Researcher

The results of the study can add insight and knowledge from researchers so that they can develop knowledge related to dental and oral health, especially School Dental Health Businesses through existing information technology.

### 4. Benefits for Elementary School Children and School Institution

The results of the study can be an alternative choice in practicing good habits in an effort to improve dental and oral health.

## References

- Asyraini, Siti, Fristy, Poppy, Octiva, Cut Susan, Nasution, M. Hafiz Akbar, & Nursidin, M. (2022). Peningkatan Kesadaran Protokol Kesehatan di Masa Pandemi Bagi Warga di Desa Selamat Kecamatan Biru-biru. *Jurnal Pengabdian Kontribusi (Japsi)*, 2(1), 33-36.
- Jibril, Ahmad, Cakranegara, Pandu Adi, Putri, Raudya Setya Wismoko, & Octiva, Cut Susan. (2022). Analisis Efisiensi Kerja Kompresor pada Mesin Refrigerasi di PT. XYZ. *Jurnal Mesin Nusantara*, 5(1), 86-95.
- Kementerian Kesehatan. (2012). *Pedoman Usaha Kesehatan Gigi Sekolah*. Jakarta: Kementerian Kesehatan Republik Indonesia.
- Kementerian Kesehatan. (2019). *Hasil Utama Riskesdas 2018*. Jakarta: Badan Penelitian dan Pengembangan Kesehatan.
- Kementerian Kesehatan. (2020). *Pedoman Pelayanan Kesehatan Anak Usia Sekolah dan Remaja di Masa Pandemi COVID-19 Bagi Tenaga Kesehatan di Puskesmas*. Jakarta: Kementerian Kesehatan Republik Indonesia.
- Octiva, C. S., Irvan, Sarah, M., Trisakti, B., & Daimon, H. (2018). Production of Biogas from Co-digestion of Empty Fruit Bunches (EFB) with Palm Oil Mill Effluent (POME): Effect of Mixing Ratio. *Rasayan J. Chem.*, 11(2), 791-797.
- Octiva, Cut Susan, Indriyani, & Santoso, Ari Beni. (2021). Effect of Stirring Co-digestion of Palm Oil and Fruith for Biogas Production to Increase Economy Benefit. *Budapest International Research and Critics Institute-Journal*, 4(4), 14152-14160. DOI: <https://doi.org/10.33258/birci.v4i4.3521>.
- Octiva, Cut Susan. (2018). *Pengaruh Pengadukan pada Campuran Limbah Cair Pabrik Kelapa Sawit dan Tandan Kosong Kelapa Sawit terhadap Produksi Biogas*. Tesis. Medan: Fakultas Teknik, Program Studi Teknik Kimia, Universitas Sumatera Utara. <https://repositori.usu.ac.id/bitstream/handle/123456789/12180/157022002.pdf?sequence=1&isAllowed=y>.

- Pandia, S., Tanata, S., Rachel, M., Octiva, C., & Sialagan, N. (2018). Effect of Fermentation Time of Mixture of Solid and Liquid Wastes from Tapioca Industry to Percentage Reduction of TSS (Total Suspended Solids). *IOP Conference Series: Materials Science and Engineering*, 309, 012086. DOI: 10.1088/1757-899X/309/1/012086.
- Pandiangan, Saut Maruli Tua, Oktafiani, Fida, Panjaitan, Santi Rohdearni, Shifa, Mutiara, & Jefri, Riny. (2022). Analysis of Public Ownership and Management Ownership on the Implementation of the Triple Bottom Line in the Plantation Sector Listed on the Indonesia Stock Exchange. *Budapest International Research and Critics Institute-Journal*, 5(1), 3489-3497. DOI: <https://doi.org/10.33258/birci.v5i1.4016>.
- Pandiangan, Saut Maruli Tua, Resmawa, Ira Ningrum, Simanjuntak, Owen De Pinto, Sitompul, Pretty Naomi, & Jefri, Riny. (2021). Effect of E-Satisfaction on Repurchase Intention in Shopee User Students. *Budapest International Research and Critics Institute-Journal*, 4(4), 7785-7791. DOI: <https://doi.org/10.33258/birci.v4i4.2697>.
- Pandiangan, Saut Maruli Tua, Rujiman, Rahmanta, Tanjung, Indra I., Darus, Muhammad Dhio, & Ismawan, Agus. (2018). An Analysis on the Factors which Influence Offering the Elderly as Workers in Medan. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 23(10), 76-79. DOI: 10.9790/0837-2310087679. <http://www.iosrjournals.org/iosr-jhss/papers/Vol.%2023%20Issue10/Version-8/K2310087679.pdf>.
- Pandiangan, Saut Maruli Tua. (2015). *Analisis Lama Mencari Kerja Bagi Tenaga Kerja Terdidik di Kota Medan*. Skripsi. Medan: Fakultas Ekonomi dan Bisnis, Program Studi Ekonomi Pembangunan, Universitas Sumatera Utara. [https://www.academia.edu/52494724/Analisis\\_Lama\\_Mencari\\_Kerja\\_Bagi\\_Tenaga\\_Kerja\\_Terdidik\\_di\\_Kota\\_Medan](https://www.academia.edu/52494724/Analisis_Lama_Mencari_Kerja_Bagi_Tenaga_Kerja_Terdidik_di_Kota_Medan).
- Pandiangan, Saut Maruli Tua. (2018). *Analisis Faktor-faktor yang Mempengaruhi Penawaran Tenaga Kerja Lanjut Usia di Kota Medan*. Tesis. Medan: Fakultas Ekonomi dan Bisnis, Program Studi Ilmu Ekonomi, Universitas Sumatera Utara. <http://repositori.usu.ac.id/bitstream/handle/123456789/10033/167018013.pdf?sequence=1&isAllowed=y>.
- Pandiangan, Saut Maruli Tua. (2022). Effect of Packaging Design on Repurchase Intention to the Politeknik IT&B Medan Using E-Commerce Applications. *Journal of Production, Operations Management and Economics (JPOME)*, 2(1), 15–21. <http://journal.hmjournals.com/index.php/JPOME/article/view/442>.
- Tobing, Murniati, Afifuddin, Sya'ad, Rahmanta, Huber, Sandra Rouli, Pandiangan, Saut Maruli Tua, & Muda, Iskandar. (2018). An Analysis on the Factors Which Influence the Earnings of Micro and Small Business: Case at Blacksmith Metal Industry. *Academic Journal of Economic Studies*, 5(1), 17-23. <https://www.ceeol.com/search/article-detail?id=754945>.
- UPT Puskesmas Pandean. (2021). *Laporan Hasil Penjaringan Kesehatan dan Pemeriksaan Berkala Anak Usia Sekolah Berbasis Online Tahun Ajaran 2020/2021 di Wilayah Kerja UPT Puskesmas Pandean*. Trenggalek: UPT Puskesmas Pandean.