



# Powtoon Media in the Whatsapp Group Application on Dental Hygiene Behavior in Primary School Children

Rena Setiana Primawati<sup>1</sup>, Hilmiy Ila Robbihi<sup>2</sup> 

<sup>1,2</sup>Department of Dental Health, Polytechnic Health of Tasikmalaya, Indonesia

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## ABSTRACT

Preventive measures such as brushing teeth are still considered not good for children. According to the Indonesian Ministry of Health's Data and Data Center in 2018, it was stated that tooth brushing behavior based on age groups in Indonesia, namely the daily brushing behavior of children aged 10-14 years, had a percentage of 96.5% with the percentage of correct tooth brushing time being 2.1%. Riskesdas states that the percentage of brushing teeth correctly is 2.8%. Promotional efforts that can be made are Dental Health Education. Apart from being carried out on children, this effort can also be carried out on parents, especially mothers. Powtoon as a multimedia application that can be used as a learning medium has several advantages, including very interesting animation features such as handwritten animation, cartoon animation and lively transition effects as well as easy timeline management. The research method and stages are development research to produce media products, then to see the effect of media use, a quasi-experimental method with one group pretest and posttest design is used. Research Results: Powtoon media for dental health education because of FGD with media experts, health promotion experts and dental health promotion media has been created with the results of expert validation and declared suitable for use as a media for Dental Health Education. Test the influence of powtoon media on children's teeth brushing practices and parents' knowledge using Wilcoxon test analysis with a p-value of  $0.000 < 0.005$ , which means there is a significant influence.

## INTRODUCTION

Dental and Oral Health Efforts are every activity and/or series of activities carried out in an integrated, integrated and sustainable manner (Karmawati, 2016). Efforts to maintain and improve the level of dental and oral health in the community in the form of improving health, preventing disease, treating disease and restoring health by the government and/or community (Kemenkes, 2016) Preventive measures such as brushing teeth are still considered not good for children (Sariningsih, 2012). According to WHO, 60% -90% of school age children experience dental caries. National data in Indonesia reports that the 10-14 year age group has a caries prevalence of 57.6% (Ulliana. et al., 2021). According to Pusdatin Kemenkes RI tahun 2018, states that tooth brushing behavior based on age groups in Indonesia, namely daily tooth brushing behavior in children aged 10-14 years has a percentage of 96.5% with a percentage of correct tooth brushing time of 2.1% (Kemenkes, 2018). Based on the level of education in Indonesia in 2018, the higher the level of education, the better the tooth brushing behavior. The percentage of daily brushing of teeth in the SD/MI graduate group was 91.8% (Kemenkes, 2018). The percentage of correct brushing time is 2.5%. Riskesdas states that the percentage regarding how to brush your teeth correctly is 2.8% (Napitupulu et al., 2019). Promotional efforts that can be made are Dental Health Education (Puspitawati et al., 2022). Apart from being carried out on children, this effort can also be carried out on parents, especially mothers (Rahayu et al., 2021). A mother's knowledge about maintaining her child's dental and oral health greatly determines the status of her child's dental and oral hygiene (Fadjeri et al., 2022).

Counseling carried out using interactive media can influence a person to retain 90% of what is read, heard, seen, mentioned and created. (Sulistiani et al., 2023). This is because interactive multimedia has text,

\*Corresponding author

E-mail addresses: [renakeysharezka@gmail.com](mailto:renakeysharezka@gmail.com)

graphic, video, audio and animation elements displayed simultaneously (Marludia et al., 2023). Powtoon, as a multimedia application that can be used as a learning medium, has several advantages, including having very interesting animation features such as handwritten animation, cartoon animation and transition effects that look alive as well as easy timeline settings. (Nugroho, 2019) Apart from that, Powtoon also doesn't need to be installed on a computer or cell phone because this application is available online at [www.powtoon.com](http://www.powtoon.com).

Even though it is available online, the results can be used offline in the form of presentations. The communication media that is easiest to reach and use is online media, one of which is WhatsApp media. (Nurdiansyah et al., 2018). Social media is a medium where users can search for information, communicate with each other and make friends online (Fitriansyah, 2018). As is known, there are various types of social media, namely Facebook, Twitter, Line, WhatsApp, Instagram, Path, LinkedIn, Snapchat and several other social media. The use of WhatsApp as an online media in the world of education is increasing every year along with the increasing need for lecturers and students to interact with each other. with a person or group of people who are physically distant (Trisnani, 2017). WhatsApp is available on smartphones which are used as a communication medium. Meanwhile, the WhatsApp application can be downloaded for free via Playstore (Nurdiansyah, 2018).

Research Objective: Developing a Dental Health Education Model using Powtoon media in the WhatsApp application to increase parents' knowledge in maintaining children's dental and oral health as well as children's toothbrushing skills at SDN Condong, Cibereum, Tasikmalaya City.

## METHOD

Research methods and stages, namely development research to produce dental health education media products using powtoon in the WhatsApp application to improve tooth brushing practices and parental knowledge in maintaining children's oral and dental health at SDN Condong Tasikmalaya. The development steps taken are: 1) Looking for potential problems regarding the research title, 2) Collecting data regarding media content by conducting FGDs with experts and users 3) Designing a Powtoon media application based on the results of FGDs and users 4) Validating the media application by experts. 5) Revision of media design 6) application testing in small groups. The research location is at SDN Condong, Tasikmalaya City with a sample size of 50 elementary school students in Class V. To see the effect of using the quasi-experiment method with a pre-test and post-test design. Data analysis used the nonparametric statistical test the Wilcoxon test.

## RESULT

**Table 1.** FGD Results for Media Experts and Dental Health Promotion Experts

| Expert name                    | Value | Interpretation |
|--------------------------------|-------|----------------|
| Health Promotion Expert        | 91.66 | Very High      |
| Media Expert                   | 79.1  | High           |
| Dental Health Promotion Expert | 84    | Very High      |
| Total                          | 84.92 |                |

Table 1 shows that the average value obtained from experts is 84.92 with a very high interpretation, meaning that the media is very suitable for use for DHE.

**Table 2.** Frequency Distribution of Teeth Brushing Practices before being given Dental Health Education Intervention Using Powtoon Media (Pretest)

| Brushing Teeth Practice | n  | Percentage (%) |
|-------------------------|----|----------------|
| Good                    | 4  | 8              |
| Moderate                | 28 | 56             |
| Enough                  | 18 | 22             |
| Total                   | 50 | 100            |

Table 2 shows that the practice scores for brushing teeth before being given the DHE intervention using Powtoon media were mostly in the adequate criteria for 28 people (56%).

**Table 3.** Frequency Distribution of Teeth Brushing Practices After Being Given Dental Health Education Intervention Using Powtoon Media (Posttest)

| Brushing Teeth Practice | n  | Percentage (%) |
|-------------------------|----|----------------|
| Good                    | 38 | 76             |
| Moderate                | 12 | 24             |
| Enough                  | 0  | 0              |
| Total                   | 50 | 100            |

Table 3 shows that the practice scores for brushing teeth after being given the DHE intervention using Powtoon media were mostly in the good criteria for 38 people (76%).

**Table 4.** Frequency Distribution of Parental Knowledge before being given Dental Health Education intervention using Powtoon media (Pretest)

| Knowledge | n  | Percentage (%) |
|-----------|----|----------------|
| Good      | 8  | 16             |
| Moderate  | 29 | 58             |
| Enough    | 13 | 26             |
| Total     | 50 | 100            |

Table 4 shows that the knowledge scores of parents before being given the DHE intervention using Powtoon media were mostly in the sufficient criteria, as many as 29 people (58%).

**Table 5.** Frequency Distribution of Parental Knowledge before being given Dental Health Education intervention using Powtoon media (Pretest)

| Knowledge | n  | Percentage (%) |
|-----------|----|----------------|
| Good      | 36 | 72             |
| Moderate  | 14 | 28             |
| Enough    | 0  | 0              |
| Total     | 50 | 100            |

Table 5 shows that the knowledge scores of parents after being given the DHE intervention using Powtoon media were mostly in the good criteria as many as 36 people (72%).

**Table 6.** Wilcoxon Analysis Test Results of the Effect of Dental Health Education using Powtoon Media on Children's Teeth Brushing Practices and Parental Knowledge

|                         | P Value |
|-------------------------|---------|
| Brushing Teeth Practice | 0.000   |
| Parental Knowledge      |         |

Table 6 shows that the results of the Wilcoxon analysis test show an influence of DHE using Powtoon media on children's toothbrushing practices and parents' knowledge with a p-value of 0.000.

## DISCUSSION

Dental Health Education is the first step to increase knowledge and skills in maintaining dental and oral health. This is important because at this age children begin to develop behavior that will last into

adulthood (Sulistiani et al., 2022). Children's behavior in maintaining dental health is also influenced by the behavior of their parents (Fadjeri et al., 2022). The formation of individual children's toothbrushing behavior is influenced by individual knowledge obtained, among others, through Dental Health Education using appropriate Audio-Visual media (Sutomo et al., 2016).

Learning Media can be used as an aid to improve understanding, thoughts and feelings for children (Nurwanti, 2019). Counseling carried out using interactive media can enable a person to retain 90% of what is read, heard, seen, said and created. This is because interactive multimedia has text, graphic, video, audio and animation elements displayed simultaneously. Interactive media that is suitable for use with children is using Powtoon media.

The results of research on tooth brushing practices before being given the Powtoon Intervention were mostly in the fair category, 29 people (58%), while after being given the intervention, the majority were in the good category, namely 38 people (76%).

The results of research on parents' knowledge before being given the intervention using Powtoon was mostly in the fair category, 28 people (58%), while after being given the intervention, the majority were in the good category, namely 36 people (72%).

There is an influence of Dental Health Education using Powtoon media on the practice of brushing the teeth of Class V children at SDN Condong, Tasikmalaya City, as proven by the results of the analysis test using the Wilcoxon p value of 0.000.

## CONCLUSION

Powtoon media has been created with appropriate expert validation results and can be used for Dental Health Education. There was an increase in students' toothbrushing practices before and after being given Dental Health Education using Powtoon Media to students at SDN Condong, Tasikmalaya City. There is an increase in parental knowledge before and after being given Dental Health Education using Powtoon media. There is an influence of Dental Health Education using Powtoon media on children's toothbrushing behavior and parents' knowledge of SDN Condong students, Tasikmalaya City.

This research activity is expected to be able to increase parents' knowledge and improve children's tooth brushing skills, so there needs to be support from all parties including family at home and teachers at school in maintaining the health of the teeth and mouth of all students at school.

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## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

## ETHICAL CLEARANCE

All participants were signed the informed consent prior to the data collection.

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