



E-Boogi Media as an Effort to Increase Knowledge of Dental Health in Junior High School Students

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ABSTRACT

Background: Knowledge about oral health is closely related to children's behavior and skills to maintain good oral health. Effective health education and promotion can contribute to positive behavior change in maintaining oral health. One of the information media that can be used to facilitate the delivery of information to readers is E-Boogi. E-Boogi (electronic dental booklet) is digital, more durable, more environmentally friendly, and more concise. Objective: To analyze the knowledge of dental health before and after counseling using E-Boogi media for seventh grade students at Junior High School. Method: This research uses a quasi experimental research design. The instrument used in data collection was a questionnaire. The sample obtained was 79 people with purposive sampling technique. Results: From the results of this study obtained knowledge of dental health before counseling using E-Boogi media which included the highest category with good criteria as many as 57 people (72.2%), sufficient criteria as many as 19 people (24.0%), and low categories with less criteria as many as 3 people (3.8%). While after counseling using E-Boogi media, the results obtained with the highest category with good criteria were 70 people (88.6%), sufficient criteria were 9 people (11.4%), and the lowest category did not exist. The average knowledge of dental health of seventh grade students at Junior High School increased from 81.51 to 91.01 with a good category. Conclusion: It can be concluded that there is an increase in dental health knowledge with counseling using E-Boogi media in Junior High School.

INTRODUCTION

Knowledge about dental and oral health is everything about how to maintain healthy teeth and mouth, such as eating a good diet for your teeth, brushing your teeth, and regular visits to the dentist. Knowledge about dental and oral health is closely related to children's behavior and skills to maintain good dental and oral health which in turn will encourage them to behave well (Adela et al., 2024; Fauziah & Riolina, 2018). Oral health maintenance means removing food debris and other debris from the mouth to keep the teeth and mouth healthy. The main focus of dental health maintenance is to stop the development of bacteria in the mouth as uncontrolled bacterial growth is the main cause of oral problems (Imran & Wati, 2020).

The results of the Basic Health Research showed that 57.6% of the Indonesian population experienced oral health problems (Risikesdas, 2018). The results of the Basic Health Research Report of West Java Province in 2018, stated that the population in West Java Province in 2018 had oral health problems of 57.99%. The proportion of oral and dental problems in Depok City was 62.05%, while based on the characteristics of the 10-14 year old age group it was 53.79% (Risikesdas, 2018). One of the oral health problems is caused by behavioral factors or attitudes that ignore oral health. This is due to a lack of knowledge about the importance of maintaining oral health (Sihombing, 2020). Research (Dewi, 2021) showed the results of research on the level of knowledge of adolescents about oral health and oral health included in the sufficient category (51.2%). People's behavior in maintaining oral health, including tooth brushing, may differ by group and region. Maintaining oral hygiene is one way to improve health (Purnama T, Rasipin, 2020). The mouth is not only a gateway to eating and drinking, but its function is more than that and few people realize the important role of the mouth in human health and happiness. Therefore, oral health plays a very important role in maintaining one's health. Oral health efforts need to be considered

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from the perspective of environmental aspects, knowledge, education, awareness, and oral health management, including prevention and treatment (Ratih & Yudita, 2019).

Effective health education and promotion can contribute to positive behavior change in maintaining oral health (Purnama et al., 2020). Various things can be done to increase knowledge about maintaining oral health, for example by conducting oral health promotion, including how to brush your teeth, use the right tools, or other ways through certain media. In the delivery of information, the type of information carrier or the way of delivering information must be in accordance with its purpose so that the information conveyed is useful for the creator of the information and the recipient of the information (Rahma Belinda & Sang Surya, 2021). E-booklets have more complete information than other media such as leaflets or pamphlets. In addition, because they are digital, they are more durable, more environmentally friendly, and more compact because they can be accessed through smartphones or other mobile devices (Prananta & Safitri, 2023).

Based on the background of the school problem, researchers conducted interviews and found that seventh grade students at Junior High School still did not know how to maintain good and correct dental health. One of the information media that can be used to facilitate the delivery of information to readers is E-Boogi. E-Boogi (electronic dental booklet) is an e-booklet media that researchers developed so that researchers are very interested in making promotive efforts.

METHOD

This research uses a quasi-experimental method in its research design. The definition of quasi-experiment. This design includes a control group that has limitations in controlling external variables that can influence the overall implementation of the experiment (Sugiyono, 2017). In this study, data were obtained based on filling out a questionnaire which aims to determine the effectiveness of dental health E-Boogi media on knowledge in Junior High School students.

In this study the sample used was seventh grade students totaling 79 people. The sampling method used in this study was purposive sampling. The purposive sampling technique is a method where researchers select and take samples based on special considerations. Inclusion criteria: Willing to be sampled marked by signing the respondent's consent letter; Respondents were present during the pretest and posttest; Own a smartphone.

The data used is primary data, data collection using questionnaire sheets collected directly from seventh grade students of Junior High School. This research was conducted by filling out a questionnaire on the target using a questionnaire sheet. To measure the level of knowledge of oral health in seventh grade Junior High School students, 10 questions were given in the form of a questionnaire before and after counseling with E-Boogi media. The results of the questionnaire were obtained from 79 seventh grade students of Junior High School. Data analysis used in this study used the SPSS program with paired sample t tests. The data collection stages carried out by researchers are as follows:

1. Provide informed consent.
2. At the first meeting, the seventh grade students of Junior High School were given a pre-test to measure their knowledge of dental health, using a questionnaire.
3. After that, the researcher then collected data in the form of phone numbers of seventh grade students to be included in the whatsapp group which would later be given a learning link in the form of E-Boogi media.
4. Then the intervention was carried out for 3 days in the form of independent learning using E-Boogi media.
5. Within 3 days, seventh grade students Junior High School were always reminded in the WhatsApp group to read E-Boogi media every day.
6. The second meeting the researcher gave a post-test in the form of the same questions as the questions that had been given at the time of the pre-test.
7. Researchers recapitulated dental health knowledge data before and after being given counseling with E-Boogi media.

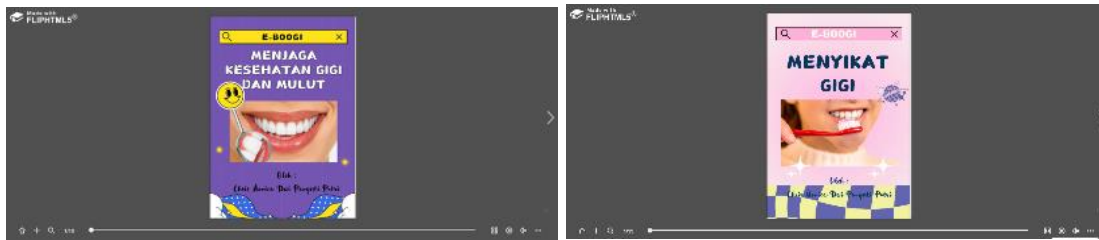


Figure 1. E-Boogi Cover View

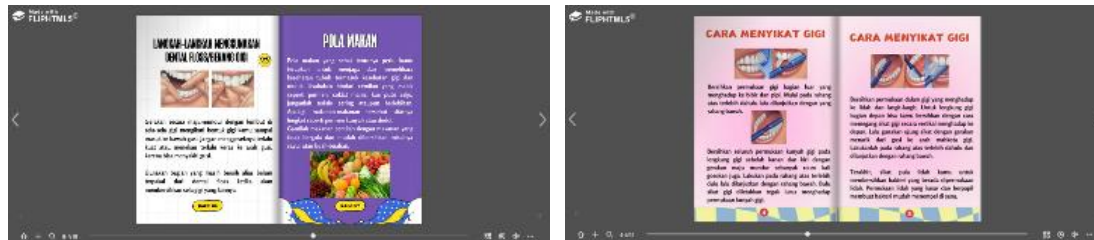


Figure 1. Display of E-Boogi Material Content

RESULT

Table 1. Distribution of knowledge criteria before and after counseling with dental health E-Boogi media

Knowledge	Before		After	
	F	%	F	%
Good	57	72.2	70	88.6
Moderate	19	24.0	9	11.4
Enough	3	3.8	0	0
Total	79	100	79	100

Based on the data listed in Table 1, it can be observed that before the counseling was carried out, out of a total of 79 samples, there were 57 people (72.2%) who were in the good knowledge category, 19 people (24.0%) in the sufficient knowledge category, and 3 people (3.8%) were in the enough of knowledge category. After counseling with E-Boogi media was carried out, there were 70 people (88.6%) who were in the good knowledge category, 9 people (11.4%) in the sufficient knowledge category, and none were in the poor knowledge category.

Table 2. Different test of knowledge before and after counseling with dental health E-Boogi media

Variable		Mean	p-value
Knowledge	Pre-test	81.51	0.001
	Pos-test	91.01	

Table 3 shows that the results of the paired sample t-test analysis obtained a knowledge p-value of 0.001 ($p < 0.05$), meaning that E-Boogi media dental health is effective in increasing knowledge in Junior High School students.

DISCUSSION

A person's knowledge greatly supports his life activities, in this case knowledge in the field of dental health. Knowledge is the result after people make senses of a particular object. Sensing occurs through the human five senses, namely: sight, hearing, smell, taste and touch. Most human knowledge is obtained through the eyes and ears (Notoatmodjo, 2014).

Based on research on seventh grade students at Junior High School before counseling using E-Boogi media obtained good criteria as many as 57 people with a percentage (72.2%), obtained sufficient criteria as many as 19 people with a percentage (24.0%), obtained less criteria as many as 3 people with a percentage (3.8%).

The results of this study are in line with the results of research that has been done Koch et al., (2023) where it is known that of the 30 people sampled in this study, the majority of 20 people (66.7%) had good dental health knowledge. This is because technological advances are developing rapidly, so that people's

lifestyles are also shifting to the digital world. There are promotional media switching from physical to digital media, be it television, other electronic media such as the internet that can be easily accessed by all ages (Nand et al., 2019).

Health promotion is an effort to influence the community, both individuals and groups, to have healthy living behaviors. Dental health promotion is not only a process of making someone aware in terms of increasing knowledge, but an effort to change one's behavior to pay attention to oral health (Nurmala et al., 2020). Dental health promotion using media aims to facilitate efforts to convey information to increase knowledge.

Researchers conducted an intervention in the form of dental health counseling using E-Boogi media for seventh grade students at Junior High School, as many as 79 respondents by giving a questionnaire sheet of 10 questions. Respondents' knowledge was measured and categorized into 3 criteria, namely good criteria if the respondent answered the questionnaire correctly 8-10 questions, sufficient criteria if the respondent answered the questionnaire correctly 6-7 questions, and poor criteria if the respondent answered the questionnaire correctly 1-5 questions. The research implementation was carried out for 5 days. On the first day the researcher distributed the respondent's consent letter and distributed a pre-test questionnaire with a questionnaire sheet before counseling, the second day the researcher conducted counseling by sharing the E-Boogi link about Maintaining Dental and Oral Health, the third day the researcher confirmed in the whatsapp group with a poll to ensure that seventh grade students at Junior High School read the E-Boogi media, the fourth day the researcher conducted counseling by sharing the E-Boogi link about Brushing Teeth and the fifth day the researcher distributed a post-test questionnaire with a questionnaire sheet after counseling.

The results of this study are in line with research that has been conducted (Rimadina & Herdhianta, 2023) where the data collection method is carried out by providing an explanation of the research procedures to be carried out, giving informed consent as an agreement to become a respondent, giving a pre-test knowledge and attitude questionnaire, providing intervention with the 1000 HPK E-Booklet media 2 times with an interval of 3 days, and giving a post-test knowledge and attitude questionnaire.

The gap between pre-test and intervention should not be too long. This is done to minimize any outside influence before the intervention (Arimurti, 2012). Meanwhile, the time gap between the intervention and the post test is highly dependent on theory and previous research and also depends on the type of memory to be seen (short term or long term memory). The post test conducted to look at short term memory in this study uses a time interval shortly after the intervention is given.

Based on research on seventh grade students at Junior High School after counseling using E-Boogi media, 70 people obtained good criteria with a percentage (88.6%) and obtained sufficient criteria as many as 9 people with a percentage (11.4%).

The results of this study are in line with previous researchers by Huriati (2022) the results obtained after the promotion of knowledge and interest of respondents increased to 79.4% in the good category. This shows that E-booklets have the advantage of a more attractive appearance compared to other media such as leaflets, booklets can contain more and detailed information (Sari & Werdiharini, 2020).

E-booklet is one of the media that presents material in summary form and has attractive images, so that it can be used as a source of information to better understand learning material (Fauziyah, 2017). E-booklets can be implemented as a learning media that helps students in improving competence and can be used anywhere, making it more practical to carry anywhere and e-booklets present information in a structured and interesting way (Amalia et al., 2020).

Based on the results of the study, it was found that the average knowledge of maintaining dental health in seventh grade students at Junior High School before counseling was 81.51 and after counseling it increased to 91.01.

CONCLUSION

Based on the results of the research that has been conducted, it can be concluded that the dental health E-Boogi is effective in increasing knowledge in Junior High School students.

REFERENCES

- Adela, A. N., Kristianto, J., & Lestari, S. Y. (2024). Dental and oral health e-book on knowledge of debris index for elementary school students. *Journal Center of Excellent: Health Assistive Technology*, 2(1), 33–38. <https://doi.org/10.36082/jchat.v2i1.1529>
- Amalia, N. I., Yuniawatika, Y., & Murti, T. (2020). Pengembangan E-Booklet Berbasis Karakter Kemandirian Dan Tanggung Jawab Melalui Aplikasi Edmodo Pada Materi Bangun Datar. *JKTP: Jurnal Kajian*

- Teknologi Pendidikan*, 3(3), 282–291. <https://doi.org/10.17977/um038v3i32020p282>
- Arimurti, D. I. (2012). Pengaruh Pemberian Komik Pendidikan Gizi Seimbang Terhadap Pengetahuan Gizi Siswa Kelas V SDN Sukasari 4 Kota Tangerang. *Jurnal Kesehatan Masyarakat*.
- Dewi, K. S. (2021). *Gambaran Tingkat Pengetahuan Kesehatan Gigi dan Mulut pada Remaja di RW 15 Perum Baros Kencana Kota Sukabumi*. Politeknik Kesehatan Kemenkes Bandung.
- Fauziah, R., & Riolina, A. (2018). Hubungan Pengetahuan Kesehatan Gigi dan Mulut Terhadap Indeks Plak Pada Siswa Kelas V SD Mendak 1 Delanggu. *JIKG (Jurnal Ilmu Kedokteran Gigi)*, 1(2). <https://doi.org/10.23917/jikg.v1i2.4877>
- Fauziyah, Z. Z. (2017). Pengembangan Media Pembelajaran Berbasis Booklet Pada Mata Pelajaran Biologi Untuk Siswa Kelas XI Mia I Madrasah Aliyah Alauddin Pao-Pao Dan Man 1 Makassar. *Skripsi. Jurusan Pendidikan Biologi FTK UIN Alaudin Makassar*.
- Huriati, H. (2022). *Pengaruh Penggunaan Media E-Booklet Terhadap Pengetahuan dan Minat Pasien Dalam Melakukan Penunpungan Gigi*. Poltekkes Kemenkes Yogyakarta.
- Imran, H., & Wati, N. K. (2020). Hubungan Tindakan Pemeliharaan Kesehatan Gigi Dengan Status Kebersihan Gigi dan Mulut Pada Murid Kelas VII Madrasah Tsanawiyah Negeri 8 Kabupaten Aceh Besar. *Jurnal Online Keperawatan Indonesia*, 3(2), 58–64. <https://doi.org/10.51544/keperawatan.v3i2.1217>
- Koch, N. M., Tahulending, A., & Musa, S. D. S. (2023). Analisis Pengetahuan Pemeliharaan Kesehatan Gigi dan Mulut pada Remaja di Kelurahan Mahawu, Kota Manado. *Bhakti Persada*, 9(2), 75–80. <https://doi.org/10.31940/bp.v9i2.75-80>
- Nand, K., Baghaei, N., Casey, J., Barmada, B., Mehdipour, F., & Liang, H.-N. (2019). Engaging children with educational content via Gamification. *Smart Learning Environments*, 6, 1–15. <https://doi.org/10.1186/s40561-019-0085-2>
- Notoatmodjo, S. (2014). Ilmu Perilaku Kesehatan. Jakarta: Rineka Cipta. *Biomass Chem Eng*, 49(23–6).
- Nurmala, I., Rahman, F., Nugroho, A., Erlyani, N., Laily, N., & Anhar, V. Y. (2020). *Promosi kesehatan*. Airlangga University Press.
- Prananta, R., & Safitri, N. Q. L. (2023). Tahapan Pembuatan E-Booklet Sebagai Media Informasi Objek Wisata Kedung Kandang di Desa Wisata Nglanggeran. *E-Sospol*, 9(4), 393. <https://doi.org/10.19184/e-sospol.v9i4.36929>
- Purnama T, Rasipin, N. (2020). Tedi's Behavior Change Model to Improving Brushing Teeth Behavior Parents. *Journal of Applied Health Management and Technology*, 2(1), 1–12.
- Purnama, T., Ngatemi, N., Sofian, R., Kasihani, N. N., RE, P. R., & Nurbayani, S. (2020). Model 5 Days Gosgi sebagai upaya pembentukan kemandirian menggosok gigi anak usia dini di sekolah. *Quality: Jurnal Kesehatan*, 14(1), 19–24. <https://doi.org/10.36082/qjk.v14i1.96>
- Rahma Belinda, N., & Sang Surya, L. (2021). Media Edukasi Dalam Pendidikan Kesehatan Gigi dan Mulut Pada Anak-Anak. *Jurnal Riset Intervensi Pendidikan (JRIP)*, 3(1), 55–60.
- Ratih, I. A. D. K., & Yudita, W. H. (2019). Hubungan Tingkat Pengetahuan Tentang Cara Memelihara Kesehatan Gigi Dan Mulut Dengan Ketersediaan Alat Menyikat Gigi Pada Narapidana Kelas IIB Rutan Gianyar Tahun 2018. *Dental Health Journal*, 6(2), 1–4.
- Rimadina, F., & Herdhianta, D. (2023). Media E-Booklet The First 1000 Days of Life Towards Increasing The Knowledge and Attitudes of Posyandu Cadres. *Jurnal Bahana Kesehatan Masyarakat (Bahana of Journal Public Health)*, 7(2), 67–74. <https://doi.org/10.35910/jbkm.v7i2.659>
- Riskesdas. (2018a). Laporan Riskesdas 2018 Nasional.pdf. In *Lembaga Penerbit Balitbangkes* (p. 156).
- Riskesdas. (2018b). Laporan Riskesdas Provinsi Jawa Barat. In *Lembaga Penerbit Badan Litbang Kesehatan*.
- Sari, V. R., & Werdiharini, A. E. (2020). Pengembangan Media Booklet dalam Membantu Pengaturan Diet Penderita DM Tipe 2. *Jurnal Kesehatan*, 8(2), 71–77. <https://doi.org/10.25047/j-kes.v8i2>
- Sihombing, K. P. (2020). *Gambaran Pengetahuan Cara Menyikat Gigi Siswa-Siswi Kelas V SD Negeri 050633 Mojosari Kecamatan Kuala Kabupaten Langkat Sebelum dan Sesudah Diberikan Penyuluhan Metode Demonstrasi*.
- Sugiyono. (2017). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung: Alfabeta.