Available online at ajdhs.com

Asian Journal of Dental and Health Sciences

Open Access to Dental and Medical Research

Open Access Research Article

Storgi Media as an effort to Improve Dental Health Behavior in Orphanage Children

Indrayati Fadjeri[1], Tedi Purnama[2]*, Eliati Sri Suharja[3], Widi Nurwanti[4]

[1,2] *Department of Dental Health, Health Polytechnic of Jakarta I, Jakarta, Indonesia*

[3] *Department of Dental Health, Health Polytechnic of Tasikmalaya, Tasikmalaya, Indonesia*

[4] *Department of Dental Health, Puskesad Dental Health Academy, Jakarta , Indonesia*

Article Info:

Article History:

Received 05 August 2023
Reviewed 19 August 2023
Accepted 13 September 2023
Published 15 September 2023

Cite this article as:

Fadjeri I, Purnama T, Suharja ES, Nurwanti W, Storgi Media as an effort to Improve Dental Health Behavior in Orphanage Children, Asian Journal of Dental and Health Sciences. 2023; 3(3):42-46

DOI: http://dx.doi.org/10.22270/ajdhs.v3i3.53

*Address for Correspondence:

Tedi Purnama, Department of Dental Health, Health Polytechnic of Jakarta I, Jakarta, Indonesia.

Abstract

Background: Orphanage children can also be classified as one of the groups that are vulnerable to dental disease, this is due to a lack of dental health maintenance behavior due to low socioeconomic status. To improve dental and oral health maintenance behavior, dental health promotion can be done with interesting and appropriate media. Storgi media is one of the outreach media that is integrated with tooth brushing facilities in the form of toothbrush lockers. Objective: The research aims to analyze the effectiveness of Storgi Media as an effort to Improve Dental Health Behavior in Orphanage Children. Method: This research used a quasi-experimental design with a pretest and posttest control group design. The research sample was 50 children from orphanages taken using purposive sampling technique. The intervention group was given dental health education using storgi media, while the control group was given dental health education using flipcharts. The data was tested using paired sample t-test/Wilcoxon analysis, namely a pre-post design, while to compare the means of the treatment and control groups, the independent t-test/Mann Whitney test was used. Results: The results of the test of differences in knowledge, attitudes and actions of brushing teeth show that the p-value between the intervention group and the control group is 0.000 (p <0.05), meaning that there is a difference between the values of knowledge, attitudes and actions of brushing teeth after dental health education with children's storgi media and dental health education with filpchart. Conclusion: dental health education using storgi media is more effective in increasing the knowledge, attitudes and actions of brushing teeth in in orphanage children

Keywords: Storgi, media, dental health education, behavior, orphanage

INTRODUCTION

Dental and oral diseases remain a significant health problem throughout the world. Dental caries and periodontal disease affect almost 100% of the population worldwide. In Indonesia, the results of Basic Health Research in 2018 reported that the prevalence of the Indonesian population who had dental and oral health problems was 57.6%. Nelwan's research on children from orphanages showed that the prevalence of dental caries was 69.7%. So it could be interpreted that children in orphanages have higher levels of caries than children in general.[1–3]

The problem of the high prevalence of dental caries is caused by a lack of knowledge and awareness about the importance of maintaining oral health. Maintaining dental and oral health is a form of health behavior. An overview of behavior regarding dental health can be seen from the 2018 Riskesdas results showing that the behavior of brushing teeth correctly among the population aged 3 years in Indonesia reached 2.8%. The results of community service carried out by Ngatemi et al also proved that 83 children (64.0%) had poor knowledge of dental health care (83 children (64.0%), 36 children (27.6%) had moderate criteria and 11 children (8.4%) had good criteria.[2,4,5]

Behavior is influenced by the presence or absence of health infrastructure as a supporting factor. Difficulty in accessing communities in disadvantaged areas is one of the factors that influences community behavior.[6–8] The level of education and socio-economic level also influence dental and oral health behavior, that is, the lower a person's educational and economic level, the lower the dental and oral health behavior will be. Dental and oral health maintenance behavior in rural areas is lower than in urban areas. Underdeveloped areas are rural areas where the basic facilities and infrastructure in the area are still inadequate or non-existent, causing obstacles to the growth or development of people's lives in the economic and educational fields. Based on these data, it is necessary to make efforts to improve dental and oral health. Efforts to maintain dental and oral health in children in orphanages through dental health education.[9–11]

Dental health education in schools is the first step in preventing dental problems. One of the health education efforts is through outreach efforts to increase knowledge and attitudes in maintaining dental health. Success in providing dental health education to school children cannot be separated from educational methods and the important role of the media.[12,13]

Health education is an educational activity carried out by spreading messages, instilling confidence, so that people are not only aware, know and understand, but are also willing and able to carry out recommendations related to health. Health education is identical to health education because both are oriented towards changing behavior. Success in providing

dental health education to school children cannot be separated from educational methods and the important role of the media.[8,14]

Learning media is a tool used to help convey information from teachers to students. Providing health education material is easier to convey if you use media that can attract attention. Through the correct method and use of appropriate teaching aids, the material presented in the counseling will be easily accepted by the target audience. Delivery of material is more effective if it is delivered in a pleasant atmosphere and methods that attract students' attention.[13,15]

Storgi media is an innovation in education media that is integrated between education media and tooth brushing facilities in the form of toothbrush lockers. This really helps improve the dental health behavior of children in orphanages who have limited access and facilities for maintaining oral health.

METHOD AND MATERIAL

The research design used was a quasi-experimental study with a pretest-posttest control group design. The aim of the study was to analyze the effectiveness of Storgi Media as an effort to improve dental health behavior in orphanage children. This research was carried out from June to July 2023 in 4 orphanages located in Cilandak District, South Jakarta and Cinere District, Depok City. The sample used in this research was 50 respondents consisting of 25 people for the intervention group carried out at the Mizan Amanah Orphanage, Karang Tengah and Cilandak, South Jakarta, while for the control group there were 25 people at the Mizan Amanah Orphanage, Cinere and Pangkalanjati, Depok City.

The intervention data collection stage begins with a pretest where all orphanage children fill out a knowledge and attitude questionnaire and brush their teeth before being given the intervention. The intervention group was given dental health education using storgi media, while the control group was given dental health education using flipcharts. Children filled out a knowledge and attitude questionnaire and performed the same action of brushing their teeth after 10 days. The data was tested using paired sample t-test/Wilcoxon analysis, namely a pre-post design, while to compare the means of the treatment and control groups, the independent t-test/Mann Whitney test was used.

RESULT

Table 1: Frequency Distribution based on respondent characteristics

Variable	Intervention		Control	
	N	%	N	%
Age				
8 years	4	16,0	3	12,0
9 years	3	12,0	4	16,0
10 years	6	24,0	5	20,0
11 years	1	4,0	2	8,0
12 years	5	20,0	6	24,0
13 years	6	24,0	5	20,0
Total	25	100	25	100
Gender				
Man	11	44,0	13	52,0
Women	14	56,0	12	48,0
Total	25	100	25	100

Table 1 shows that the majority of respondents in the intervention group were 13 years old (24.0%) and female, while in the control group the majority were 12 years old (24.0%) and male.

Table 2: Mean knowledge, attitudes and actions of brushing teeth in the intervention and control groups

Variable	Intervention		Control	
	Pre-test	Post-test	Pre-test	Post-test
Knowledge				
Mean	57,20	94,40	57,20	58,00
SD	11,00	7,118	9,363	10,00
Attitudes				
Mean	41,20	46,84	40,00	40,24
SD	3,948	2,528	3,162	3,099
Actions				
Mean	45,20	89,20	52,80	53,20
SD	11,94	10,77	11,37	11,80

Table 2 shows that the mean value of knowledge has increased, in the intervention group it increased from 57.20 to 94.40 while in the control group it increased from 57.20 to 58.00. The mean attitude value increased, in the intervention group it increased from 41.20 to 46.84 and in the control group it increased from 40.00 to 40.24. The mean score for brushing teeth increased, in the intervention group from 45.20 to 89.20, while in the control group there was an increase from 52.80 to 53.20.

Table 3: Data normality test

Variable	Groups	
	Intervention	Control
Knowledge pre-test	0,000	0,005
Knowledge post-test	0,000	0,042
Attitudes pre-test	0,454	0,166
Attitudes post-test	0,016	0,327
Actions pre-test	0,005	0,006
Actions post-test	0,000	0,006

Table 3 shows the results of the normality test for knowledge and actions of brushing teeth in the intervention and control groups, the distribution is not normal, because the p-value is <0.05, then the non-parametric test is continued, while for attitudes in the intervention and control groups the distribution is normal, because the p-value is > 0.05 then continue with parametric testing.

Table 4: Test the effectiveness of knowledge, attitudes and actions before and after intervention in the intervention and control groups

Groups		Knowledge*		Attitudes**		Actions*	
		Mean± SD	P-value	Mean± SD	P-value	Mean± SD	P-value
Intervention	Pre-test	57,20± 11,00	0.000	41,20±3,948	0.000	45,20±11,94	0.000
	Post-test	94,40± 7,118		46,84±2,528		89,20±10,77	
Control	Pre-test	57,20± 9,363	0.317	40,00±3,162	0.425	52,80±11,37	0.655
	Post-test	58,00± 10,00		40,24±3,099		53,20±11,80	

** Wilcoxon ** Paired sampel t-test*

Table 4 shows the results of the data effectiveness test before and after being given dental health education using posters as media, showing the knowledge p-value of the intervention group was 0.000, the p-value of attitude was 0.000 and the p-value of the action of brushing teeth was 0.000 (p < 0.05) means that dental health education using storgi media is effective in increasing knowledge, attitudes and actions of brushing teeth in children in orphanages. The control group's p-value for knowledge was 0.317, the attitude p-value was 0.425 and the p-value for the action of brushing teeth was 0.655, meaning that dental health education using flipcharts was not effective in increasing the knowledge, attitudes and actions of brushing the teeth of children in orphanages.

Table 5: Test differences in knowledge, attitudes and actions before and after intervention in the intervention and control groups

Groups	Knowledge*		Attitudes**		Actions*	
	Mean	P-value	Mean	P-value	Mean	P-value
Intervention	94,40	0.000	46,84	0.000	89,20	0.000
Kontrol	58,00		40,24		53,20	

* mann whitney ** t-independen

Table 5 shows the results of the test of differences in knowledge, attitudes and actions of brushing teeth, showing that the p-value between the intervention group and the control group is 0.000 (p <0.05), meaning that dental health education using storgi media is more effective in increasing knowledge, attitudes and actions of brushing teeth compared to control group.

DISCUSSION

Dental and oral health behavior is influenced by various factors. One of them is a lack of knowledge about dental and oral health. Knowledge is a very important domain for the formation of a person's behavior. Behavior is formed from knowledge which then stimulates attitudes and actions. The research results showed that the average knowledge of respondents before the intervention was 57.20, including the poor category. Lack of knowledge about dental and oral health can be a major factor in low behavior, because behavior is formed from knowledge which then stimulates attitudes and actions. Factors that influence knowledge include educational and socio-economic levels.[16–18]

Low socio-economic conditions also influence knowledge about maintaining oral health. Those with low social conditions have less awareness and knowledge of the importance of maintaining oral health.[10]

The results of research on respondents' knowledge are in line with respondents' attitudes before the dental health education intervention, which was also included in the poor category with an average of 41.20. Attitudes are formed due to stimulation from knowledge. Knowledge, thoughts, beliefs and emotions play a very important role in determining attitudes. Poor attitudes are caused by poor knowledge, so that respondents' attitudes are included in the category of lacking in maintaining dental and oral health due to the respondent's lack of knowledge about maintaining dental and oral health. Attitudes are greatly influenced by other people, especially

people who are considered important, especially parents. Where children in orphanages already have parents, this could be the cause of the lack of attitudes of respondents regarding maintaining oral health.[4,19,20]

The results of research on the action of brushing teeth before dental health education from respondents were also included in the poor category with an average of 45.20. The overall results of research on respondents' teeth brushing actions are in line with research on respondents' knowledge and attitudes which are included in the poor category. This is in accordance with the theory which states that the actions a person takes are based on their attitudes. A lack of attitude will result in a lack of action.[19]

Health promotion is an action or activity aimed at increasing the abilities or activities of individuals, groups and communities in terms of knowledge, attitudes and skills to achieve the best healthy living standards. Promoting health in children is an ideal time to practice motor skills and improve cognition. Children's attention spans are short, so they need training that is fun and motivating. Using attractive integrated media for health promotion can increase knowledge and change behavior.[21–23]

Dental health education as an effort to provide knowledge about dental health basically emphasizes aspects of dental health which are closely related to targeted daily efforts in maintaining dental health, so that the selection of education material is prioritized regarding efforts to maintain dental and oral health. The selection of extension materials and extension priorities must consider the magnitude of the impact of the problem/material to be presented.[12,24,25]

The choice of media is one of the factors that can influence the promotion of oral health, the media can foster motivation and attention to learning and the meaning of the information conveyed will be clearer, so that children can understand and better understand the learning objectives.[26,27]

This storgi media is designed to make it easier for orphanage children to maintain dental health, especially brushing their teeth. Promotion of dental health through storgi media is used because storgi media is an education media that is integrated between education media and tooth brushing facilities in the form of toothbrush lockers, meaning that it combines toothbrush lockers and their contents in the form of brushes, toothpaste and mouthwash glasses with learning media in the form of health care posters. teeth, especially about brushing teeth in one medium. This really helps improve the dental health behavior of children in orphanages who have limited access and facilities for maintaining oral health.

The results of the study showed that there was a significant increase in the value of knowledge (p=0.000), attitude (p=0.000) and the act of brushing teeth (p=0.000) after being given dental health education using storgi media, compared to the group that was only given education using flipcharts. This shows that storgi media is more effective in improving dental health behavior which can prevent caries in children in orphanages. According to Rama et al's statement, behavior is influenced by attitudes and also requires facilities. To translate attitudes into real form (action), supporting factors such as facilities are needed.[19] Existing facilities in the respondent's environment are inadequate. Facilities for maintaining oral health in an orphanage environment include tools and places for brushing teeth. This is also a supporting factor in the low level of dental health care taken by respondents. Purnama et al stated that by providing toothbrush storage facilities in the form of brushes, toothpaste and personal mouthwash cups, brushing your teeth becomes more precise.[28]

CONCLUSION

Based on the results of the study, it can be concluded that the dental health education using storgi media is more effective in increasing the knowledge, attitudes and actions of brushing teeth in in orphanage children

ACKNOWLEDGEMENTS

The authors thank to all participants and research assistants.

CONFLICT OF INTEREST

The authors declare that they have no conflict interests.

ETHICAL CLEARANCE

The study was conducted after obtaining approval from the Ethics Committee of the Health Polytechnic of Yogyakarta No.DP.04.03/e-KEPK.1/725/2023.

REFERENCES

1. Hamid A, Wijaya D, Sulaiman Z, Ismalayani I. Kualitas Hidup Anak Usia 3-5 Tahun Dengan Early Chilhood Caries Yang Tidak Ditangani. J Kesehatan Gigi. 2019;6(1):14-18. https://doi.org/10.31983/jkg.v6i1.3824

2. Kemenkes RI K. Hasil utama riskesdas 2018. Jakarta Kemenkes RI. 2018;

3. Nelwan JJ. Faktor-faktor yang Mempengaruhi Tingginya Kasus Karies Gigi pada Anak Panti Asuhan Yataama Al-Firdausi di Wilayah Kerja Puskesmas Ngesrep Tahun 2011. J Kesehatan Gigi (Dental Health Journal). 2015;3(2):106-112.

4. Purnama T, Rasipin R, Ngatemi N. Tedi's behavior change model to improving brushing teeth behavior parents. J Appl Heal Manag Technol. 2020;2(1):1-12. https://doi.org/10.31983/jahmt.v2i1.5475

5. Ngatemi N, Lestari SY, Karmawati IA, Yulita I, Budiarti R, Kristianto J, et al. Pemeliharaan Kesehatan Gigi Dan Gerakan 3m (Menjaga Jarak, Memakai Masker, Mencuci Tangan) Pada Masa Pandemi Covid-19 Di Panti Asuhan Dan Panti Jompo. GEMAKES J Pengabdi Kpd Masy. 2021;1(1):29-34.

6. Budiharto J. Pengantar ilmu perilaku kesehatan pendidikan kesehatan gigi. Jakarta EGC. 2010;18-20.

7. Hiremath SS. Textbook of preventive and community dentistry. Elsevier India; 2011.

8. Notoatmodjo. Promosi Kesehatan dan Perilaku Kesehatan, Edisi Revisi. Jakarta: Rineka Cipta; 2012.

9. Budisuari MA, Oktarina O, Mikrajab MA. Hubungan pola makan dan kebiasaan menyikat gigi dengan kesehatan gigi dan mulut (karies) di Indonesia. Bul Penelit Sist Kesehat. 2010;13(1):21306.

10. Rama S, Suwargiani AA, Susilawati S. Perilaku anak sekolah dasar daerah tertinggal tentang pemeliharaan kesehatan gigi Underdeveloped area elementary school children's behaviour towards dental health care. J Kedokt Gigi Univ Padjadjaran. 2017;29(2). https://doi.org/10.24198/jkg.v29i2.18574

11. Nurhidayat O. Perbandingan Media Power Point Dengan Flip Chart Dalam Meningkatkan Pengetahuankesehatan Gigi Dan Mulut. Unnes J Public Heal. 2012;1(1).

12. Pudentiana Rr RE, Subandini SL. Pendidikan Kesehatan Gigi. Jakarta: EGC; 2019.

13. Arsyad A. Media pembelajaran. Jakarta: PT Raja grafindo persada; 2011.

14. Anwar I. Pengembangan bahan ajar. Bahan Kuliah Online Direktori UPI Bandung. 2010;

15. Daryanto D. Media Pembelajaran. Bandung: Nurani Sejahtera; 2011.

16. RE PR, Tauchid SN, Purnama T. Determinants of Tooth Brushing Behavior in Sixth Grade Elementary School Students in Lebak

Bulus Sub-District, South Jakarta. Int Res J Pharm Med Sci. 2021;4(4):41-41.

17. Silaban S. Prevalensi Karies Gigi Geraham Pertama Permanen Pada Anak Umur 8-10 Tahun Di SD Kelurahan Kawangkoan Bawah. e-GiGi. 2013;1(2). https://doi.org/10.35790/eg.1.2.2013.3147

18. Newacheck PW, Hung YY, Jane Park M, Brindis CD, Irwin Jr CE. Disparities in adolescent health and health care: does socioeconomic status matter? Health Serv Res. 2003;38(5):1235-52. https://doi.org/10.1111/1475-6773.00174 PMid:14596388 PMCid:PMC1360944

19. Notoatmodjo S. Ilmu perilaku kesehatan. Jakarta: rineka cipta. 2010;200:26-35.

20. Worang TY, Pangemanan DHC, Wicaksono DA. Hubungan tingkat pengetahuan orang tua dengan kebersihan gigi dan mulut anak di TK Tunas Bhakti Manado. e-GiGi. 2014;2(2). https://doi.org/10.35790/eg.2.2.2014.5777

21. Notoatmodjo S. Promosi Kesehatan: Teori dan Aplikasi. Jakarta: Rineka cipta; 2012.

22. Kurniawan A, Putri RM, Widiani E. Pengaruh Promosi Kesehatan Terhadap Pengetahuan Dan Sikap Tentang Perilaku Hidup Bersih dan Sehat Kelas IV dan V Sekolah Dasar. Nurs News J Ilm Keperawatan. 2019;4(1). https://doi.org/10.47317/dmk.v1i1.138

23. Tandilangi M, Mintjelungan C, Wowor VNS. Efektivitas dental health education dengan media animasi kartun terhadap perubahan perilaku kesehatan gigi dan mulut Siswa SD Advent 02 Sario Manado. e-GiGi. 2016;4(2). https://doi.org/10.35790/eg.4.2.2016.13503

24. Puspitawati Y, Ulliana U, Sulistiani S, Fadliyah NK, Nurwanti W. Dental Health Promotion Using Fliphchart Media on Knowledge of Elementary School Student. JDHT J Dent Hyg Ther. 2022;3(1):21-5. https://doi.org/10.36082/jdht.v3i1.486

25. Nurilawaty V, Purnama T, Zahra MF. Carbohydrate Diet during the Covid-19 Pandemic (Case Study: 4 th Grade Students of Elementary School 02 Meruya Utara, West Jakarta). Int Res J Pharm Med Sci. 2021;4(4):37-40.

26. Hanif F, Prasko P. Perbedaan Pengaruh Penyuluhan Menggunakan Media Video dan Boneka Tangan terhadap Peningkatan Pengetahuan Kesehatan Gigi dan Mulut pada Siswa Sekolah Dasar. J Kesehat Gigi. 2018;5(2):1-6. https://doi.org/10.31983/jkg.v5i2.3854

27. Ngatemi; Lestari SY, Purnama T. Pillow Book Media as Dental Health Promotion in Preschool Children: is it effective? Int J Drug Res Dent Sci. 2022;4(1):7-13.

28. Purnama T, Ngatemi N, Sofian R, Kasihani NN, RE PR, Nurbayani S. Model 5 Days Gosgi sebagai upaya pembentukan kemandirian menggosok gigi anak usia dini di sekolah. Qual J Kesehat. 2020;14(1):19-24. https://doi.org/10.36082/qjk.v14i1.96