

Dental Health Education with print media during the Covid-19 pandemic: Is it still effective?

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Objective: To analyze the effectiveness of dental health education using print media during the Covid-19 pandemic.

Methodology: This study had pretest and posttest. The research sample was parents of early childhood, using a total sampling technique of 67 people. We used a questionnaire and the printed educational media used was a booklet. Data analysis was done using descriptive analysis and Wilcoxon's test.

Results: Mean value of the pretest was 52.83 and the

posttest value was 69.40. The results of the Wilcoxon Test to see the difference between the pretest and posttest values showed significant results ($p = 0.000$).

Conclusion: Dental health education with printed media was effective in increasing the knowledge of dental healthcare for parents of early childhood during the Covid-19 pandemic.

Keywords: Education, dental health, print media, Covid 19 pandemic.

INTRODUCTION

Deciduous teeth in early childhood are replaced by permanent teeth, and many parents pay less attention to their care.¹ It's important to keep deciduous teeth in good health and to function properly. Poor oral conditions interfere with the function of teeth, affect the quality of life and development of children.^{2,3} The average Indonesian child aged 5 years has experienced cavities of 8 – 9 teeth and rate of tooth decay is very high.⁴ Early childhood needs the help of adults to cultivate good habits in maintaining dental health. However, to provide optimal assistance, parental awareness and knowledge about dental health needs to be increased.^{5,6}

The rate of spread of the Covid-19 disease in mid-2021 was very high, leading to the imposition of restrictions on community activities by the government and the prohibition of holding gatherings involving large numbers of people. Dental health education directly to the public could not be done. In this digital era, the internet makes it easier to find information about dental health, but the impact of the Covid-19 pandemic has caused a decline in the economic capacity of the Indonesian people, so that not all people are able to access digital information.

Print media is a static media and prioritizes visual messages. Dental health information sourced from print media does not require a fee to access it.^{7,8} The purpose of this study was to determine whether dental health education using printed media was still effective in increasing dental health knowledge for parents of early childhood during the Covid-19 pandemic. The

hypothesis of this study was that dental health education with printed media was effective improve dental health knowledge in parents.

METHODOLOGY

This pre-experimental study had a one-group pretest-post-test design. It was conducted in August-September 2021. The study included parents of early childhood children at PAUD ILMI school and Kindergarten of Harapan III, Gandul Village, Cinere District, Depok City, West Java. The sampling technique used is total sampling, namely sampling technique when all members of the population are used as samples.⁹ Determination of sampling is based on the characteristics of early childhood education in Depok City on average each school is 30 – 40 students, so the number of samples in this study was 67 students.

The research instrument was a questionnaire, with a total of 10 questions regarding dental caries and dental health maintenance in early childhood. Printed educational media used are booklets given to parents. The pretest activity was carried out before the booklet containing information about dental health maintenance in early childhood was given. After the respondents filled out the pretest questions, they were then given a booklet and 3 weeks later the posttest was conducted.

Statistical Analysis: The analysis was performed through SPSS 21. The normality test of the data used the Kolmogorov-Smirnov test and the analysis of the difference test used the Wilcoxon test. $p < 0.05$ was considered significant.

RESULTS

The mean value of the posttest was higher than that of the pretest. The lowest score in the posttest was lower than the pretest and the highest score increased in the posttest (Table 1).

The results of the normality test, using the Kolmogorov-Smirnov, obtained a pretest value of $p = 0.000$ and a posttest $p = 0.001$. The test of the difference between two paired samples was carried out using a non-parametric statistical test, namely the Wilcoxon test (Table 2).

The Wilcoxon test results show that the posttests core was lower than the pretest. Respondents with a posttests core higher than the pretest were 46 and there were 6 respondents with the same score between pretest and posttest, with a significancevalueof $p = 0.000$ (Tabel 3).

Table 1: Knowledgeof dental health for parents of early childhood during the Covid-19 pandemic.

Knowledge	N	Mean	Min	Max
Pretest	67	52.8	20	90
Posttest	67	69.4	10	100

Table 2: Normality test data with Kolmogorov-Smirnov.

Knowledge	Absolute	Positive	Negative	p-value
Pretest	0.209	0.209	-0.149	0.000
Posttest	0.151	0.078	-0.151	0.001

Table 3: Wilcoxon Signed Rank Test difference test results.

Variable		N	Positive Rank	Sum of Rank	Z±p-value
Knowledge	Pretest	67	33,79	22,43	4.406 ± 0.000
	Posttest	67			

DISCUSSION

Health promotion programs are efforts to improve health through behavior change. Health promoters need to recognize and understand the role that must be done in health promotion and be more vocal in advocating for group needs prone to.^{10,11} The results of our study showed that there were significant differences between the pretest and posttest. This shows that print media is still effectively used to provide dental health education. This situation is in accordance with what is stated by Sharma and Gupta that print media plays an important role in providing information and educating the public about health.¹² After 12 months of observation, patients who received dental health education showed significant changes in the general condition of patients in the intervention group compared to the control group.¹³

During the Covid-19 pandemic, meeting activities were limited by the government, so many activities switched online. The use of digital media is increasingly intensive and the use of print media is getting less and less. The development of print media lately is no longer encouraging the price of print is expensive with a limited target audience. Print media must transform themselves following the development of digital technology. The results of this study are similar to previous research, that e-paper is cheaper than print media, is more accessible to the public and reaches users from various platforms.¹⁴ This led to a significant decline in sales of print media as users switched to using

online media.¹⁵

Currently, the interest in using print media has decreased, but it is still used in education with a lower level of effectiveness compared to digital media. This level of effectiveness is in accordancethatthere are significant differences between the two groups that were given different treatment in literacy learning. Digital media is more effective for learning media than print media.¹⁶ A similar study was also conducted in Japan using print media and tablet computers to perform the Reading Span Task (RST). Brain activity was measured while performing the task using Near-Infrared Spectroscopy (NIRS). The average value of RST performance scores is almost the same for tablets and print media. However, the results of the NIRS measurement showed that when the subject performed a task on the tablet, the activity in the frontal lobe of the brain appeared to be higher than that of the printed media.¹⁷ Different research results which state that print media are preferred over electronic media in the learning process, because it helps in academic performance, covers many educational and informative issues.^{16,17,18}

Based on the results of this study, the distribution of the data obtained is not normally distributed, this is due to the extreme data on the pretest and posttest results. Based on the results of the pretest and posttest there is a difference in the mean value. There was an increase in the mean value in the posttest results after being given

treatment. This shows that there is an increase in knowledge of parents after being given a booklet containing information about maintaining dental health in early childhood. This is in accordance with a study conducted in Iran for 6 months to parents of early childhood. The experimental results show that dental health education through lectures and discussions has a positive effect on threat perceptions, health literacy, behavior and decreases the incidence of tooth decay cases in early childhood compared to the control group without treatment.¹⁹

Printed educational media should be designed to be more attractive to attract users of all ages and make it easier to deliver messages. The use of text can be varied with color, typeface, bold print and visual additions in the form of images, paintings or photos. Research conducted in Abu Dhabi showed that interest in using online media, especially the internet, has no relationship with user characteristics such as gender, nationality, age, education and income, except that users over 50 years of age prefer to use print media compared to online media.^{20,21}

The Covid-19 pandemic has made many dental health promotion activities whose form of gathering large numbers of people have been postponed, even canceled or shifted from offline to online. Not all people have the same ability economically to access online media, so various other alternatives are sought so that dental health promotion activities can still be carried out. Dental health education with printed media is still effectively used to provide dental health education although with a lower level of effectiveness compared to digital media, but can be used as an alternative as an educational medium during the Covid-19 pandemic to prevent meeting and contact with the target.

The weakness of this study is that the sample was not taken at random and there was no control group. The implication of this research is that print media is still effective as a medium for dental health education, it needs to be designed more attractively to attract attention. Can be used as an alternative educational media for targets who have difficulty accessing online information media.

CONCLUSION

Dental health education using print media is effective in increasing dental health knowledge for parents of early childhood.

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