

HEALTH PROMOTION USING MOZZLE HEALTH (MONOPOLY PUZZLE HEALTH) TOWARDS INCREASE KNOWLEDGE AND ATTITUDES ABOUT DIABETES MELLITUS PREVENTION ON ELEMENTARY SCHOOL STUDENTS IN JAMBI CITY

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ABSTRACT

Background: Diabetes mellitus (DM) is a chronic metabolic disease caused when the body is unable to produce insulin or has too little insulin, resulting in ineffective energy metabolism and dangerously high blood sugar levels. The purpose of the study was to determine the effect of health promotion using MOZZLE HEALTH (Monopoly Puzzle Health) media on increasing knowledge and attitudes about diabetes mellitus prevention in grade V students of SDN 42/IV Jambi City.

Method: Pre-Experimental with One Group Pre-Test Post-Test Design research design. The sample of this study is grade V students of SDN 42/IV Jambi City with a total population of 73 students. The sampling method is the Simple Random Sampling Technique. The analysis used in this study is the Willcoxon Test. The focus of this study is to examine the effect of health promotion using mozzle health media on increasing knowledge and attitudes about diabetes mellitus prevention in students of SDN 42/IV Jambi City. The variables studied were knowledge and attitude.

Result: The results of the study obtained data that health promotion using Mozzle Health media was effective in increasing knowledge and attitudes about diabetes mellitus prevention in grade V students of SDN 42/IV Jambi City.

Conclusion: The conclusions obtained are health promotion using Mozzle Health media is effective in increasing knowledge and attitudes about diabetes mellitus prevention in students.

Keywords: Knowledge, Attitude, Diabetes Mellitus, Mozzle Health

INTRODUCTION

Diabetes Mellitus (DM) is a chronic metabolic disease caused by the body's inability to produce insulin or a small amount of insulin so that the energy metabolism process is ineffective, causing blood sugar levels to increase and be dangerous (Ramdanila, 2023). IDAI (Indonesian Pediatrician Association) noted that there are 1,645 children with diabetes mellitus spread across 13 cities in Indonesia, namely Jakarta, Bandung, Surabaya, Malang, Semarang, Yogyakarta, Solo, Denpasar, Palembang, Padang, Medan, Makassar and Manado. Nearly 60% of sufferers are girls. Meanwhile, based on age, 46 were aged 10-14 years, and 31 aged 14 years and over (Putra et al., 2021). If this condition is left unchecked, the nation's

future generations will experience high rates of morbidity which will have an impact on the level of productivity of the Indonesian state and nation in the future. The prevalence of Diabetes Mellitus in Indonesia has increased due to a shift from non-communicable diseases to non-communicable diseases due to changes in disease patterns related to lifestyle (IDAI, 2017: Putra et al., 2022).

The results of the Jambi Province Riskesdas (Balitbangkes RI, 2018) showed that the prevalence of diabetes mellitus based on a doctor's diagnosis at the age of ≥ 15 years according to the Regency / City of Jambi Province was 2,674 patients (2.02%). In this case, of the 2 cities and 9 districts in Jambi Province, Jambi City has the highest prevalence of diabetes mellitus. Diabetes mellitus cases in Jambi City are still high.

Based on data from the Jambi City Health Service, it is known that diabetes mellitus data shows that the number of sufferers in 2018 was 5,245 people, then increased in 2019 to 8,202 people and in 2020 as many as 7,179 people (Meylani, 2023). Based on data on the 10 most common diseases at the Rawasari Community Health Center, Rawasari Village, Jambi City, in 2023, there were 2,596 Diabetes Mellitus sufferers. Part of the reason for the increase in the number of diabetes mellitus sufferers is due to a lack of knowledge about preventing diabetes mellitus. (Notoatmodjo Soekijo, 2014) states that knowledge will raises awareness and will cause people to behave in accordance with the knowledge they have. Thus, the level of children's knowledge regarding diabetes mellitus is an important point in children's behavior in knowing how to prevent diabetes mellitus.

Nasriyah et al., (2021) said that food consumption in the form of snacks often occurs in the school environment. Street food according to the Food and Agricultural Organisation (FAO) is food and beverages sold by street vendors on the streets or in crowds that are eaten directly without further processing or preparation. The Food and Drug Supervisory Agency stated that (78%) school children consume snacks in the school environment. This is reinforced by the finding that most schools have school canteens and some schools still allow mobile food vendors to sell in the school environment. Snacks sold in schools do not necessarily guarantee their nutritional content and safety. Children's food intake greatly influences children's health, especially children's nutritional status. The health of school children is a priority at this time. Good nutrition is needed for optimal growth and development of children with diabetes mellitus, and to prevent acute & chronic complications (IDAI, 2017). According to (Ismayati et al., 2021) children spend most of their time at school, therefore the development of a healthy environment

and the adoption of health-promoting behaviours need to be provided in schools. School student interventions are carried out with the aim that learning about diabetes mellitus prevention can be implemented as early as possible to increase students' knowledge about the importance of maintaining health, especially diabetes mellitus prevention and behaviour in choosing healthy snacks.

For elementary school age children, learning while playing is an effective method that can be used to increase knowledge. A game is an activity that is fun and is done of one's own free will, without coercion, with the aim of getting pleasure while playing. There is a need for easy and fun educational media using game-based educational media, such as puzzle and monopoly where health messages or knowledge can be expressed in the game so that children are more enthusiastic in receiving health education material (Dwi Permata, 2020). Alternative educational media in the form of media Mozzle Health (Monopoly Puzzle Health) or called monopoly puzzle health is designed to improve children's understanding, especially elementary school students, in elementary school research.

It is hoped that with this research student can be motivated and increase students' knowledge and attitudes towards preventing diabetes mellitus and can apply it in everyday life. Based on the background of the problem, there is still a lack of knowledge and attitudes of students towards preventing diabetes mellitus, the questions in this research are: Is there an influence on health promotion using the media? mozzle health towards increasing knowledge and attitudes about preventing diabetes mellitus in fifth grade students at SDN 42/IV Jambi City in 2024. The purpose of this study was to determine the effect of health promotion using mozzle health media on increasing knowledge and attitudes about the prevention of diabetes mellitus in class V students of SDN 42 / IV Jambi City in 2024

with the following description to determine the average value of knowledge and attitudes about the prevention of diabetes mellitus in children before and after being given a puzzle health monopoly game (MOZZLE HEALTH) in elementary school students and to determine the effect of puzzle health monopoly media (MOZZLE HEALTH) on the knowledge and attitudes of elementary school children.

METHODS

This research is a quantitative study with a pre-experimental method and a one group pre-test and post-test design. Univariate and bivariate analyses were conducted to study the relationship between 2 variables, namely the independent variable and the dependent variable. This test is also used to test the average difference of each variable between before being given an intervention using Mozzle Health media and after being given an intervention using Mozzle Health media. To determine the effect of health promotion with Mozzle Health media on knowledge and attitudes towards diabetes mellitus prevention, it was tested using the Shapiro Wilk statistical test using the SPSS programme, using the condition that the data was normally distributed. The significance value of the Shapiro Wilk statistical test, if the significance value is > 0.05 ($p > 0.05$) then the data is in normal distribution and if the data is not normally distributed then the test used with the Wilcoxon test. The results of the analysis show that there is an effect of health promotion with Mozzle Health media on knowledge and attitudes, if the p value < 0.05 and is not effective if the p value > 0.05 (Notoatmodjo, 2018).

RESULTS AND DISCUSSION

Differences in knowledge of diabetes mellitus prevention before and after intervention

Table 1. Average value of knowledge about diabetes mellitus pre-test and post-test by using media mozzle health

Variable		Intervention	Mean	Std. Deviation	Min-Max
Knowledge of Diabetes Mellitus	Media Mozzle Health	Pre-test	4.84	1.381	1-7
		Post-test	9.80	.457	8-10

Source: Primary Data (2024)

Knowledge before being given health promotion using the media Mozzle Health regarding the prevention of Diabetes Mellitus (Pre Test) mean value 4.84 and after being given health promotion using the media Mozzle Health on the prevention of diabetes mellitus (Post-Test) the mean value increased to 9.80.

In line with research entitled MOLEGI conducted by (Hutami et al., 2019) There was an increase in the average score of knowledge of grade IV students after being given the MOLEGI game media with a pre-test score (64.11) after the post-test to (82.94). The results of this study are supported by research (Hutami et al., 2019) which states that there is an increase in the average score of knowledge of grade IV students about oral health after being given the application of MOLEGI (Monopoly Puzzle Gigi) media as an educational media with an increase in student scores of 29.4% at SD Negeri 1 Bumi.

Table 2. Normality Test Results for Diabetes Mellitus Knowledge Pre-test and Post-test Class V Students of SDN 42/IV Jambi City

Knowledge of Diabetes Mellitus	Shapiro Wilk		
	Statistic	Df	Sig.
Pre-Test	.933	45	.012
Post-Test	.402	45	.000

Source: Primary Data (2024)

This research uses a data normality test Shapiro Wilk because the number of respondents was less than 100 respondents. Then the researcher used a test Willcoxon

because the data is not normally distributed with signed rank-test earned value $p = 0,000 \leq 0,05$ with a confidence level of 95%, then H_0 is rejected, which means there is an influence of health promotion using the media Mozzle Health towards increasing knowledge about preventing diabetes mellitus in class V students of SDN 42/IV Jambi City in 2024.

Table 3. Results willcoxon Knowledge of Diabetes Mellitus (n=100)

Variable	Median (min-max)	p
Knowledge of Diabetes Mellitus before the Mozzle Health promotion	5(1-7)	0.000
Knowledge of Diabetes Mellitus after the Mozzle Health promotion	10(8-10)	

Source: Primary data (2024)

From the Wilcoxon test, it is known that the amount of increase between the pre-test and post-test in students is 4.96. From the results of the Willcoxon test, it shows that 45 subjects have increased knowledge about the prevention of diabetes mellitus, there is a difference of 0.016 and p 0.000, it can be concluded that there are differences in the results of knowledge about the prevention of diabetes mellitus before and after treatment using Mozzle Health media.

Based on the results of research (Hutami et al., 2019) on the application of the MOLEGI (Monopoly Puzzle Gigi) game as a medium for dental and oral health education for students of SDN 1 Bumi, after being given health education using MOLEGI, the results of students pre-test and post-test scores were obtained which showed an increase in student scores before and after the game was played.

So that the results of data analysis show a value ($p < 0.05$) which shows that MOLEGI is able to increase students' knowledge about oral health. So, monopoly and puzzle media are effective and can be used as an alternative educational media based on existing data, student knowledge increases after playing.

Based on these results, it can be seen that there was an increase in the knowledge of class V students at SDN 42/IV Jambi City

after being given health promotion treatment using media. Mozzle Health (Monopoly Puzzle Health). So, monopoly and puzzle media are effective and can be used as alternative educational media based on existing data, students' knowledge increases after playing.

Differences in diabetes mellitus prevention attitudes before and after the intervention

Table 4. Average value of pre-test and post-test Diabetes Mellitus prevention attitudes using Mozzle Health media for fifth grade students of SD Negeri 42/IV Jambi City

Variable	Intervention	Mean	Std. Deviation	Min-Max
Diabetes Mellitus prevention attitudes	Media Mozzle Health	Pre-test 26.56 Post-test 48.67	2.149 1.446	21-31 46-50

Source: Primary Data (2024)

Based on table 4, it shows that the total pre-test value is 26.56 and the post-test value is 48.67. This means that systematically indicates that there is an increase in attitudes about preventing diabetes mellitus before and after being given health treatment using Mozzle Health media for fifth grade students of SD Negeri 42/IV Jambi City.

It can be seen that after being given health promotion using Mozzle Health media about preventing diabetes mellitus, the respondent's attitude has increased by 22.11. In a similar study, there was a change in the number of knowledge scores, attitudes and actions of fifth grade students after being given a nutrition puzzle promotion towards increasing knowledge, attitudes and actions about balanced nutrition. In research entitled the effect of counseling using nutritional puzzle promotional media on balanced nutritional behavior in class V students at SDN 6 Poasia, Kendari City (Hikmawati et al., 2016).

Table 5. Results of the normality test for diabetes mellitus prevention attitudes pre-test and post-test in class V students SDN 42/IV Jambi City

Diabetes Mellitus prevention attitudes	Shapiro Wilk		
	Statistic	Df	Sig.
Pre-test	.943	45	.027
Post-Test	.805	45	.000

Source: Primary Data (2024)

When carrying out a bivariate test, normality is first carried out and statistical tests are used Shapiro Wilk, shows that the statistical test results Shapiro Wilk, obtained a significant value of attitude regarding the prevention of diabetes mellitus at that time pre-test and post-test, each < 0.05 . This means that attitude data regarding the prevention of diabetes mellitus at the time pre-test and post-test not normally distributed. Therefore, statistical difference tests are used Willcoxon (table 6).

Based on the table above the test results Willcoxon showed that 45 subjects experienced an increase in attitudes about preventing diabetes mellitus, there was a difference of 0.041 and a p 0.000, so it can be concluded that there was a difference in the results of attitudes about preventing diabetes mellitus before and after treatment was given using media. Mozzle Health.

Table 6. Results willcoxon Diabetes Mellitus prevention attitude

	mean (Min-Max)	p
Attitude of Diabetes Mellitus before the Mozzle Health promotion	26(21-31)	0.000
Attitude of Diabetes Mellitus before the Mozzle Health promotion	49(46-50)	

Source: Primary Data (2024)

The increase in attitudes that occurred in the subjects was probably caused by the knowledge gained which was able to give rise to understanding and confidence in their needs as subjects who must have knowledge and attitudes about preventing diabetes mellitus. Apart from that, changes in the subject's attitude after treatment were due to the media Mozzle Health (Monopoly Puzzle Health) which is used is easy to understand and fun, not only increases knowledge but also has an effect on the subject's attitude and will motivate them to take steps to prevent diabetes mellitus. Therefore, it can be concluded that there is an influence of health promotion using the media Mozzle Health

(Monopoly Puzzle Health) on the knowledge and attitudes of fifth grade students at SDN 42/IV Jambi City regarding the prevention of Diabetes mellitus.

CONCLUSION

Based on the research results, it can be concluded that health promotion is provided using the media Mozzle Health (Monopoly Puzzle Health) has a significant effect on increasing knowledge and attitudes towards preventing diabetes mellitus in students. Thus, the Mozzle Health (Monopoly Puzzle Health) media can be used as a health promotion tool to increase knowledge and attitudes among students at SDN 42/IV Jambi City.

Suggestion, Mozzle Health (Monopoly Puzzle Health) media has been able to improve students' knowledge and attitudes. Thus, it is necessary to disseminate information related to Diabetes Mellitus through interesting and creative Mozzle Health media in schools to support the success of efforts to prevent diabetes mellitus and improve the health status of school children.

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CONFLICT OF INTEREST

This research, there are no conflicts of interest regarding funding, including names in published articles, and the data collection process.

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