

The Effect of The Modified Snakes and Ladders Game on the Knowledge of School-Age Children in Choosing Healthy Snacks in West Java Indonesia

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ARTICLE INFO

Keywords: Healthy Snacks, Modified Snakes and Ladders, Knowledge

Received : 12 Oktober

Revised : 12 November

Accepted: 17 December

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ABSTRACT

Healthy snacks are nutritious snacks and do not contain dangerous substances. Many children, especially those in elementary schools, don't know about it, so they often become victims of snack poisoning at school. One of the events to provide health education to elementary school children is through modified snakes and ladders. This research aims to determine the effect of the modified snakes and ladders game on children's knowledge in choosing healthy snacks. This research uses quantitative methods with a quasi-experimental research design using a one group pretest-posttest design approach. with a total sample of 79 school age children. Based on the results of the research and discussion, it can be concluded that there is an influence of the modified snakes and ladders game on school children's knowledge in choosing healthy snacks with a value of $p=0.000 < 0.05$. It is hoped that this research can provide knowledge to students and can also be used by teaching staff as a source of information that can help in improving healthy snacks. It is hoped that this research can add information and references for future researchers.

INTRODUCTION

Nutritious snacks devoid of harmful ingredients are considered healthy snacks. Fruit, drinks, snacks, and side dishes (rice and other food) are also sold at the school. As of right now, a lot of school snacks still have unproven health risks. Snacks that contain harmful chemicals are considered unhealthy and can be found at school canteens and from snack sellers near schools. Students may eat unhealthy snacks as a result of this (Kulsum, 2021). Thirty cases of food and drink poisoning occurred in Indonesia, with food accounting for 69.2% of the cases and drink for 7.69%. Meanwhile, in 2020, it was found that 42 times (14.4%) of food poisoning cases in Indonesia were caused by snacks; according to WHO 2021, there are about 20 million occurrences of food poisoning annually (Putri, Sari, 2023).

With 1,679 instances overall, West Java is the province with the most food poisoning cases in the country. Fitri Mairizki (2019) found that 34.72% of unusual poisoning cases were caused by cooking in the home. Then, with a percentage of cases of 31.94% and 23.61%, respectively, the causes of food poisoning from catering services and snacks were noted. Additionally, considering the case's location, Indonesia has the highest number of food poisoning incidents – up to 29 – in households.

Many schoolchildren suffer from unhealthy snack poisoning, which happens when kids don't know how to recognize nutritious foods, according to Ratnaningsih (2023). Children in elementary schools should be taught about health, and media-based health education is necessary to support the development of good lifestyle choices, claims. Fitri Mairizki (2019) Using therapeutic media is one technique to improve school-aged children's understanding through therapy. playing ladders and snakes. The instructional game Snakes and Ladders is an outreach tool that can raise schoolchildren's knowledge, claims Menurut Latifa (2012). This game is entertaining and simple enough for elementary school students to understand, which encourages learning while having fun.

A classic cooperative play game that is inexpensive, simple, and suitable for kids, snakes and ladders encourages pupils to be active, creative, and have fun while also serving as a great teaching tool. (Safriana, 2016).

One of the traders there unintentionally sold power candy, which resulted in poisoning in children. Additionally, a number of obese children were discovered because they loved snacks so much that they hardly ever ate at home because they were always full and found it difficult to run during sports classes. Therefore, whether or not all pupils are aware of nutritious snacks, experts are curious about how much knowledge kids have about them.

LITERATURE REVIEW

According to (Enjelina dkk 2023), snacks are foods and beverages that are made by culinary artisans at sales locations or offered to the general public as ready-to-eat meals. Given how frequently kids snack and how little parents and kids know about healthy snack options, snack information is crucial. Snacks that are free of artificial coloring, flavoring, and dust are considered

healthy snacks. Children can eat snacks as a major meal or as a side dish to help with their nutrition (Afghani dkk, 2023).

Nutritious snacks devoid of harmful ingredients are considered healthy snacks. Fruit, beverages, and side snacks (rice with side dishes) are among the refreshments offered in schools (Amira & Setyaningtyas, 2021). As of right now, a lot of school snacks still have unproven health risks. Snacks that contain harmful chemicals are considered unhealthy and can be found at school canteens and from snack sellers near schools. Students may eat unhealthy snacks as a result of this (Nalendra, 2021).

As stated in Eni (2023), professional research indicates that "food additives are materials added to food processing to improve quality, including colorings, flavor and aroma enhancers, preservatives, and antioxidants." Three instances of harmful and illegal food additives that are nevertheless frequently present in a variety of foods are as follows: Borax , Formalin, and food Coloring.

One 3D media that needs room is Snakes and Ladders. Children's board game Snakes and Ladders is played by two or more players. A number of "ladders" and "snakes" that connect to other boxes are found in several of the little boxes that make up the snakes and ladders game board. This game does not have a predefined game board; instead, players are able to design their own board with varying numbers of boxes, snakes, and ladders. (Sumarni dkk,2020):

The following are some of the advantages of the snake and ladder game media:

- a. Educating kids by allowing them to play as they learn.
- b. Encourages the growth of language, creativity, and thinking skills in order to promote morality, positive attitudes, and a positive mindset.
- c. Establishing an enjoyable and safe play space that is visually appealing.
- d. Acknowledge your victory and defeat.
- e. Develop teamwork skills and wait your turn.

METHODOLOGY

This research uses quantitative methods with a quasi-experimental research design using a one group pretest-posttest design approach. with a total sample of 79 school age children. data analysis using the t test.

RESEARCH RESULT

A. Univariate Analysis

- 1) Description of children's knowledge in choosing healthy snacks before being given the modified snakes and ladders game intervention

Table 1. Description of the average knowledge of children before and after the intervention

Variable	Intervention	Mean	Median	Standar Deviasi	Min	Max
Children's knowledge	Pretest	3,78	4,00	1,39	1	7
	Posttest	8,34	8,00	8,14	7	10

Based on Table 1, the value of the child's knowledge level before and after the intervention was obtained with a mean value of 3.78 to 8.34. Median value before the intervention was 4.00 to 8.00. The standard deviation before and after was 8.14 with a minimum value before the intervention. 1 becomes 7 and the maximum value before intervention is 7 and after 10.

Based on Table 1, there was an increase in children's knowledge before and after the modified snakes and ladders game affected children's knowledge.

- 2) Description of children's knowledge in choosing healthy snacks after being given intervention in the modified snakes and ladders game

Table 2 Description of children's knowledge in choosing healthy snacks after being given intervention

Variabel		
Children's knowledge	N	Persentase%
Pretest		
Kategori		
Good	0	0
Average	25	31,6
Poor	54	68,4
PostTest		
Kategori		
Good	65	82,3
Average	14	17,7
Poor	0	0

Based on table 2, out of 79 respondents during the pre-test were categorized as good, 0 respondents (0%) were sufficient, 25 respondents (31.6%) were poor, 54 respondents (68.4%) and during the post-test were categorized as good, 65 respondents (82.3%) were sufficient. 14 respondents (17.7%) and less than 0 respondents (0%).

B. Bivariate Analysis

Table 3 Results of paired simple t-test

	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Pre-Test	24,119	79	,000	3,797	3,48	4,11

Post	91,006	79	,000	8,342	8,16	8,52
Test						

Based on table 3, the Sig (2-tailed) value obtained from the results of the paired simple t-test is 0.000. So it can be said that the data has an influence because the significance value is <0.05 . So it can be concluded that there is an influence of the modified snakes and ladders game on children's knowledge in choosing healthy snacks in West Java, Indonesia in 2024.

DISCUSSION

Most responders didn't know enough about the modified snakes and ladders game before they were given it. Regarding the concept of healthy snacks, snack types, safe and healthy snack characteristics, the positive and negative effects of snacks, sanitation, snack safety, and foodborne illnesses, respondents provided false answers to the pre-test questionnaire.

Nutritious snacks devoid of harmful ingredients are considered healthy snacks. Fruit, drinks, and snacks (rice and side dishes) are among the snacks that are sold at school. As of right now, a lot of school snacks still have unproven health risks. Snacks that contain harmful chemicals are considered unhealthy and can be found at school canteens and from snack sellers near schools. Students may eat unhealthy snacks as a result of this (Viera Valencia & Garcia Giraldo, 2020).

Health education through a modified snakes and ladders game is really needed to increase children's knowledge in choosing healthy snacks, especially as elementary school children often become victims of snack poisoning (Aini, 2019).

The respondents' understanding of healthy snacks was inadequate prior to receiving an intervention using modified snakes and ladders. The qualities of nutritious snacks were not better understood by the respondents. The respondents' knowledge then improved after receiving the intervention; they were aware of the concept of healthy snacks, varieties of snacks, safe and healthy snack characteristics, the benefits and drawbacks of snacking, sanitation, snack safety, and congenital disorders. food. According to the respondents' pre-test scores, which were classified as good, 0 respondents (0%) were sufficient, 25 respondents (31.6%) were poor, 54 respondents (68.4%) were sufficient, and 65 respondents (82.3%) were sufficient during the post-test. Less than 0 respondents (0%), and 14 respondents (17.7%).

Based on this research, the modified snakes and ladders game on children's knowledge in choosing healthy snacks has an influence as proven by the value of the paired simple t-test, which is 0.000, it is said that this data has an influence because of the significance value < 0.05 .

A person will have a perception of what he or she will experience, giving rise to a perception related to the level of knowledge obtained from the information, so that if the information received is not clear, the learning results obtained will also not be optimal. The information obtained by the respondent

influences the respondent's knowledge which was previously poor and will automatically change to become good (Notoatmodjo, 2007).

This research was also strengthened by Menurut Winarti (2023) with the title "Children's Knowledge and Attitudes About Healthy Snacks Through the Snakes and Ladders Game" there is an influence of the snakes and ladders game about healthy snacks on the knowledge and attitudes of school children because this snakes and ladders media is very interesting so that children can be interested.

Research by Juztika, et al (2020) with the title "The Effect of Education Using Snakes and Ladders Media on Choosing Healthy Snacks in Students at SD Inpres Tamanlanrea 5 Makassar City" also has an influence on the way students choose healthy snacks after being given intervention in the form of snakes and ladders media.

So this research also has an influence on children's knowledge in choosing healthy snacks using the modified snakes and ladders game method because this snakes and ladders has been modified to contain information and descriptions about healthy snacks so that children are interested and also easily accept the information provided.

CONCLUSIONS AND RECOMMENDATIONS

The influence of the modified snakes and ladders game on children's knowledge in choosing healthy snacks in West Java in 2024. Based on the research results, it shows that there is an influence as evidenced by the value of the paired simple t-test, which is 0.000. It is said that the data has an influence because the significance value is <0.05 .

It is hoped that this research can provide knowledge to students and can also be used by teaching staff as a source of information that can help in improving healthy snacks. It is hoped that this research can add information and references for future researchers

ADVANCED RESEARCH

This research has many limitations, one of which is the use of only 1 group of samples and taking samples in one place, for future researchers it would be better to use 2 groups to compare the effectiveness of this treatment.

ACKNOWLEDGMENT

The researchers are grateful to Universitas YPIB Majalengka west java Indonesia for their help and support.

REFERENCES

- Afghani, A., Wisanti, E., Anggreny, Y., & Rukmini, E. D. (2023). Analisis Asuhan Keperawatan Pada Agregat Anak Usia Sekolah Dasar Dengan Pendidikan Kesehatan Permainan Ular Tangga Untuk Meningkatkan Pengetahuan Jajanan Sehat. *Jurnal Ners*, 7(2), 1505–1511. <https://doi.org/10.31004/jn.v7i2.16433>
- Aini, S. Q. (2019). *Jurnal Litbang* : XV(2).
- Amira, K. A., & Setyaningtyas, S. W. (2021). Pengaruh Edukasi Gizi Terhadap Pengetahuan Dan Sikap Anak Sekolah Dasar Dalam Pemilihan Jajanan Sehat: Literature Review. *Media Gizi Indonesia (National Nutrition Journal)*, 16(2), 130–138.
- Eni. (2023). Faktor Tingkat Pengetahuan Notoadmodo (2018). *Angewandte Chemie International Edition*, 6(11), 951–952., Mi, 5–24.
- Enjelina, W., Ningrum, A. F., Erda, Z., Kesehatan, J., Poltekkes, L., Tanjungpinang, K., Arief, J., Hakim, R., Bukit, N. K., & Kunci, K. (2023). 5534-40259-2-Pb. *Pengaruh Modifikasi Permainan Monopoli Terhadap Pengetahuan Dan Sikap Siswa Mengenai Keamanan Makanan Jajanan*, 18(September), 27–32.
- Fitri Mairizki, R. M. (2019). 317873-Pendidikan-Gizi-Melalui-Peningkatan-Peng-80D108D8 (1). *Jurnal Pengabdian Masyarakat Multidisiplin*, 3(2), 101–110.
- Kulsum, U. (2021). *PERILAKU KONSUMSI JAJANAN SEKOLAH DENGAN STATUS GIZI ANAK SEKOLAH DASAR DIDESA TUMPANGKRASAK KECAMATAN*. 12(1), 123–129.
- Latifa, R. D. (2012). Gambaran Perilaku Jajan Murid SD Inpres Bertingkat Kelapa Tiga Kelurahan Ballaparang Kecamatan Rappocini Kota Makassar Tahun 2012. *FAKULTAS ILMU KESEHATAN UNIVERSITAS ISLAM NEGERI ALAUDDIN MAKASSAR*, 66, 37–39.
- Nalendra, A. R. A. (2021). Stastitika Seri Dasar Dengan SPSS. In *Media Sains Indonesia : Bandung*.
- Putri, Sari, et al. (2023). *Peningkatan pengetahuan tentang jajanan sehat pada siswa sekolah dasar*. 2, 1–7.
- Ratnaningsih, T. (2023). *Jurnal Pengabdian Kesehatan Masyarakat. Health Education Tentang Jajanan Sehat Pada Anak Pra Sekolah Di RA AL-MA'UNAH Desa Mojojejer Mojowarno Kabupaten Jombang*, 4(1), 10–19.
- Safriana. (2016). *PERILAKUMEMILIH JAJANAN PADA SISWA SEKOLAH DASAR DI SDN. GAROT KECAMATAN DARUL IMARAH KABUPATEN ACEH BESAR*.
- Sumarni, N., Rosidin, U., & Sumarna, U. (2020). Penguatan Kapasitas Siswa Sd Jati Iii Tarogong Dalam Upaya Meningkatkan Kewaspadaan Pada Jajanan Tidak Sehat. *Kumawula: Jurnal Pengabdian Kepada Masyarakat*, 3(2), 289.

<https://doi.org/10.24198/kumawula.v3i2.28026>

Viera Valencia, L. F., & Garcia Giraldo, D. (2020). Pengaruh Konformitas terhadap Perilaku Seks Pranikah pada Remaja Perempuan di Jakarta Barat. *Angewandte Chemie International Edition*, 6(11), 951-952., 2, 6-30.

Winarti, D. R. (2023). Bab II Landasan Teori. *Journal of Chemical Information and Modeling*, 53(9), 8-24.