

The Nutritional Education Effect Of Healthy Snacks With Quartet Card Media Toward Elementary School Students' Nutritional Knowledge

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ABSTRACT

Background: The students at school age are categorized into a risky period toward health problems. The health condition of students at elementary school affects the student's achievements. The education on nutrition given to them effectively shifts toward healthy eating behavior. Some efforts were made to provide nutrition education for elementary school-aged children through attractive media to support accessible materials conveyed. One engaging medium that is "attractive" to children as a medium of instruction is the quartet card.

Objective: To analyze the effect of nutritional education on healthy snacks using a quartet card as the media to improve elementary students' nutrition knowledge.

Research Methods: The research method used in this study is a literature study by finding the supporting theoretical references relevant to the study. The data used in this study were secondary data obtained from journals, documentation books, and the internet in the last five years with the keywords healthy snacks, elementary school children, and quartet cards. The collected data were then analyzed according to a descriptive qualitative research method

Research Result: The results of the study found a significant effect on the student's knowledge of nutrition using quartet cards in which the elementary school students, in fact, significantly achieve the goals of conducting nutritional education efforts.

Conclusion: The quartet card media is quite effective in increasing the knowledge of elementary school children because it can increase children's attention, concentration, and imagination. Then the child is expected to start learning to apply what is known so that, in the end, it can form good knowledge. In addition, the quartet card media also has a role as a learning medium designed to convey messages through the images presented in it.

BACKGROUND

Healthy food is called "healthy" when it is nutritional health, full of nutrition, and safe to consume. Healthy food can help the growth of children. As well as body development and health. Therefore, nutritional content is one aspect that needs to be considered in fulfilling healthy food for consumption. Among those aspects of fulfilling healthy foods, the school children's snack food (PJAS) is the primary concern on food priorities. This is because the habit of eating snacks is worse than the "addicted" level among school children.

According to the Food and Agricultural Organization (FAO), Snack food is food and drink prepared and sold by street vendors on the streets and in other crowded public places that are directly eaten or

consumed without further processing or preparation. Consumption of inappropriate snacks can hurt children. The negative impacts include diarrhea, nutritional deficiencies, and growth disorders such as stunting.

According to Riskesdas 2018, in west nusa tenggara, children at ten were the riskiest for worst food consumption behavior. The children's daily average consumption is around 33.3% of sweet food, 51.73% of sweet drinks, 10% of salty foods, fatty 32.4%, burned 5%, animal preservatives 4.7%, flavoring 87%, carbonated drinks 2.9%, energy drinks 2.4% and instant noodles around 8.5% of daily needs.

The Directorate of Food Safety Surveillance and Extension stated that school snacks contributed 20% to 31.1% of children's daily energy needs. However, almost half (45%) of snacks available in schools do not meet health requirements due to the content of hazardous materials in snacks. Data on an extraordinary case of food poisoning show that 19% of poisoning cases occur in schools, and about 78.57% afflict elementary school children.

Wahyuningsih et al. (2015) stated that there is a significant effect on better nutrition knowledge in respondents who are given nutrition education using certain media compared to respondents who are not given any nutrition education and no press used.

Giving nutritional education using engaging media and following the characteristics of children is one of the efforts that can be made to increase children's knowledge, especially about healthy snacks. Health education with educational games is more fun than counseling with classroom teaching methods. The quartet card media, as an alternative media in conveying nutrition messages, is a media that prioritizes the game element. Nutrient quartet media can clarify a problem by looking at pictures and, according to the subject matter, raising students' creativity in discussing it.

The importance of nutritional education for elementary school children is why researchers conduct this research. A literature-based study examines the effect of nutrition education on healthy snacks using quartet card media to increase the knowledge of elementary school children about healthy food.

METHODS

The research method used in this research is a literature study. Literature study means that the researcher found some supporting theoretical references related and relevant to the case being investigated. The data used in this study is secondary data which indicates the researcher uses the data from journals, documentation books, and internet sources published around the last five years with the keywords healthy snacks, elementary school children, and quartet cards. The data collected was then analyzed using the descriptive qualitative analysis method.

RESULTS

Research Subjects

The samples in this study were elementary school students in grades IV–VI. The model in the study averaged between 10-12 years old. Children at that age have experienced development, especially in intelligence, so children can reason, which can be used in choosing snacks to be consumed (Ardyanto, 2006). means including when determining snacks. At this stage, children have started to build groups with peers and show the influence of peers in the group in changing attitudes and norms (Fernaliza Rizona, 2019). The research found that male and female respondents gave no significantly different responses. There were also no significant differences between the male and female cognitive abilities for the same treatment the researcher gave.

The study of some relevant literature found that several journals reported that the studies majorly used males as the respondents. The male respondents tend to be active and openly respond to the questions addressed by the researcher. However, the nutrition status did not show significant differences.

The research results reported an increase in nutrition status before and after treatments given by the researcher. The treatments were given through intensive care, training, and lectures using video playing, poster shows, and quartet nutrition games. The nutrition status enhancement needed to be more significant. However, it did on a few respondents initially suppering inadequate nutrition intake. Conversely, the treatment does not impact those with good nutrition intake. (Aminudin dkk, 2018).

Knowledge Before and After Giving Nutrition Education About Healthy Snacks to Elementary School Children

Knowledge of snacks is the ability to choose which snacks are good and not good according to their nutrients and the ability to choose which one is categorized into healthy snacks or not healthy snacks. In obtaining the truth of knowledge, humans used so-called "thinking" to know the unknown. This aligns with the theory that knowledge results from thinking and knowing. Those thinking and knowing are formed by sensing, identifying, and observing objects. The process of "Sensing" occurs through the five human senses, namely: the senses of sight, hearing, smell, taste, and touch. Most of human knowledge is obtained through the eyes and ears. Knowledge or cognition is a binding domain for forming one's actions (overt behavior). From experience and research, it turns out that behavior based on knowledge will be more lasting than behavior not based on knowledge (Notoatmodjo, 2010).

Snack foods that do not meet health and nutritional requirements will threaten the health of school-age children. Snack food has a negative impact if the food consumed does not contain sufficient nutritional value and its cleanliness and safety are not guaranteed. Furthermore, the impact of consuming unhealthy snacks will interfere with children's health, such as gastrointestinal disease and other diseases caused by chemical pollution. Thus, this impacts decreasing students' learning concentration, and increasing absenteeism can affect children's learning achievement. In addition, poor nutritional intake will affect the growth and development of children at school who need much nutritional intake for their growth and development period. Indeed, knowledge cannot be separated from education. Education means all planned efforts to influence other people, whether individuals, groups, or society that they do what education actors expect.

Based on a literature study on nutrition education about healthy snacks that affect the level of knowledge of elementary school students, the research showed an increasing effect on the knowledge of school children before and after treatments given in nutrition education. The education was about healthy snacks. There was an increasing level of knowledge from those who did not know about healthy snacks towards a knowledge where the research subjects became aware of the nutrition intake from specific snacks. The treatments on nutrition were given using media and quartet games. The use of this media could give positive responses from the research subjects. Therefore, the media used in nutrition education methods was selected to be interesting for students and gain their attention. It was found that the more the five senses used in receiving the material, the more attractive and exciting the students were. Therefore, the media helped grasp students' attention and conveyed the messages more easily.

The use of media in health education aims to raise attention to a problem and remind the information conveyed to cause changes in knowledge. The change in knowledge in the sample was due to the treatment given through nutrition education, questions and answers, and discussions. The images on the quartet cards involve children becoming more fantasized about playing, making it easier to remember and think (Handayani, 2019).

The increasing knowledge of the students on healthy snacks can also be caused by knowledge about nutrition and food that the teacher has conveyed at the elementary school, and also the influence of parents who are currently accessible to get extensive knowledge about street food by accessing the mass media (Fitriani, 2015)

Analyzing nutrition education impacts using quartet cards toward students' nutrition knowledge

The use of educational media is beneficial in the learning process and increases students' motivation. Educational media can also improve students' understanding of the material presented. Further, media use can also raise attention to a problem and remind the information submitted to cause changes in knowledge. Increased knowledge using the media is related to the effectiveness and acceptability of the interventions that have been carried out to respondents who are the research samples, besides that it is also suspected to be related to various factors such as the concentration power of research samples when filling out nutritional knowledge questionnaires, time, place, delivery method, media. Used and so on. The media used in this study were audio-visual media in the form of video playback and printed image media in the form of posters and nutritional quartet game cards (Fatimah, 2015).

Quartet card media, as an alternative media in conveying nutritional messages, is a media that prioritizes the elements of the game. Nutrient quartet media can clarify a problem by looking at pictures of the subject matter and generate student creativity in discussing it (Rahmah, Farida, et al. 2019). Print media as a nutritional quartet is part of the tools used in the nutrition quartet game. Games are one of the leading learning tools for children. According to NAEYC (National Association for The Education of Young Children, 1997), playing is an activity that is important for the physical, social, emotional, intellectual, and spiritual growth and development of elementary school children, by playing children can recognize the environment, interact and develop emotions and imagination. well (Fatima, 2015)

From many selected journals which have been collected dealing with the quartet card media, the quartet card media is very effectively used for the learning process. It was because most research journals say there is a change or improvement after using the quartet card media. Nutrition education using engaging media and the characteristics of children is one of the efforts that can be done to increase children's knowledge, especially regarding the safety of snacks. Nutrition education about healthy snacks through counseling using the quartet card media proves that there is an influence on school children's knowledge. Knowledge is mainly obtained through the sense of sight (30%) and the sense of hearing (10%). This healthy snack quartet card game can increase children's attention, concentration, and imagination. Then the child is expected to start learning to apply what is learned so that, eventually, it can form knowledge. The quartet card can be an alternative game to increase the knowledge of snacks for elementary school students (Hikmawati et al., 2016).

Furthermore, the quartet card media also has a role as a learning medium designed to convey messages through the images presented in it. Quartet card media has advantages over other media, such as booklets, leaflets, puzzles, snakes, and ladders. Not only is it easy to understand, but the quartet card media is also exciting for schoolchildren for its practical and easy to carry anywhere.

CONCLUSIONS

Based on findings from literature studies, there is an effect of nutrition education about healthy snacks with quartet card media on the knowledge of elementary school children. These research findings strengthen the fact that quartet card media is effective in increasing the knowledge of elementary school children; the result shows that using quartered card games can increase children's attention, concentration, and imagination. Furthermore, the students are expected to learn to apply what they have learned to understand nutrition better.

SUGGESTION

Elementary school students are advised to avoid consuming worse snacks containing lousy nutrition. Instead, the students are suggested to consume healthy snacks according to balanced nutrition guidelines rich in nutrients for further researchers when conducting research during the unresolved COVID-19 pandemic. For the next researcher, it is suggested that they should conduct research online or by designing a nutritional quartet card application online. This is for the sake of fulfilling health protocol conduct.

REFERENCES

- Adrian dan Wirjatmadji. 2012. Introduction to Community Nutrition. Jakarta: Kencana.
- Ardyanto, D. H. (2018). The effect of healthy food leaflet media on knowledge of snack foods for elementary school students 6 Malangjiwan, Malangjiwan Village, Colomadu District, Karanganyar Regency.
- Arief Sadiman. 2002. Learning Media and Teaching and Learning Process, Definition of Development and Utilization, Jakarta: Raja Grafindo Persada.
- A Wawan & M, D.,2011. Theory and Measurement of Knowledge, Attitudes, and Human Behavior. Yogyakarta: Nuha Medika.
- Republic of Indonesia Drug and Food Control Agency. Care for Snacks for School Children. (Dokumen di Internet). Jakarta: Information Center for Drugs and Food of the Republic of Indonesia. Vol. 12 No. 1; 2011. Tersedia dalam :
<http://perpustakaan.pom.go.id/KoleksiLainnya/Buletin%20Info%20POM/01111.pdf> .

- Budiarti, R. S., & Sadikin, A. (2015). The Effect of the Animalia Quartet Card with the TGT Model on the Understanding of Animal Taxonomy Material for Students of SMAN 8 Jambi City. *Jurnal BIODIK*, 1(September), 1–9. <https://online-journal.unja.ac.id/index.php/biodik/article/download/3354/2550>
- Dan, E., Sarapan, P., Pengetahuan, D. A. N., Tentang, G., Di, S., Pedurangan, S. D. N., & Whitney, M. (n.d.). THE EFFECT OF NUTRITIONAL EDUCATION WITH THE QUARTET CARD MEDIA ON BREAKFAST HABIT , ENERGY. 48–56.
- Directorate of Food Safety Surveillance and Counseling. Food watch. Jakarta: Food and Drug Supervisory Agency of the Republic of Indonesia; 2009.
- Directorate General of Nutrition and Maternal and Child Health, Ministry of Health of the Republic of Indonesia. 2011. (Downloaded, March 5, 2020). Available in : <http://gizi.depkes.go.id/download/Pedoman%20Gizi/Panduan%20keamanan%20pangan%2025%20Januari%202012.pdf>
- Fatimah, I. N., Idriansari, A., Natosba, J., & Healthy, D. (2019). THE DIFFERENCES OF EDUCATION MEDIA BETWEEN COMIC AND DREALL HEALTHY TO HEALTHY SNACK KNOWLEDGE
- Hartono, Nur Pratiwi. Nutrition Education About How to Choose Healthy Snacks Between the Lecture Method and the Comic Method; 2015.
- Iklima Nurul. Description of Selection of Snack Foods in Elementary School-Age Children. 2017
- Judarwanto, W, 2006, Anticipating Children's Eating Behavior at School, accessed 5 March 2020, (<http://www.pdpersi.co.id>)
- Kemendes RI. (2006). Decree of the Minister of Health of the Republic of Indonesia Number 1429/MENKES/SK/XII/2006 Guidelines for Implementing School Environmental Health (p. 13). https://peraturan.bkpm.go.id/jdih/userfiles/batang/KEPMENKES_1429_2006.pdf
- Khusna, N., Setiaji, H. B., & Sahli, Z. (2014). Effect of Counseling on Healthy Snacks on Knowledge and Attitudes of Primary School Children. *Health*, V, 40–49. <https://ejurnal.poltekkes-tjk.ac.id/index.php/JK/article/view/64>
- Notoatmodjo, S. 2014. Health Behavioral Science. Jakarta: Rineka Cipta.
- Notoatmodjo, Soekidjo. (2010). Basic Principles of Public Health Sciences. Jakarta: Rineka Cipta Health Research Methodology. Jakarta : Rineka Cipta
- Pakhri, A., Chaerunnimah, C., & R, R. (2018). Nutrition Education on Knowledge and Habits of Snacking in SMP Negeri 35 Makassar Students. *Food Nutrition Media*, 25(1), 77. <https://doi.org/10.32382/mgp.v25i1.65>
- Health Research and Development Ministry of Health RI. (2018). Riskesdas 2018 report. *Journal of Chemical Information and Modeling*, 53(9), 181–222. <https://doi.org/10.1017/CBO9781107415324.004>
- Permata. 2015. “Playing Card Quartet”, <https://www.scribd.com/document/398048146/Cara-Bermain-Kartu-Quartet> diakses pada 10 Mei 2020 pukul 12.55 WITA.
- Pradani, L., Lestari, S., Wibowo, W. A., & Pendahuluan, I. (1945). The Snakes and Ladders Game Method. 4(September), 162–166
- Pratiwi Hartono, N., Saptaning Wilujeng, C., & Andarini, S. (2015). Nutrition Education on Knowledge of Healthy Snack Selection between the Lecture Method and the Comic Method. *Indonesian Journal of Human Nutrition*, 2(2), 76–84. <https://doi.org/10.21776/ub.ijhn.2015.002.02.2>

Retnaningsih Ika. 2017. Development of Quartet Card Media to Develop Vocabulary in Group B Children of Pertiwi Kindergarten 51 Tulus Mulypdadi Bambanglipuro Bantul. Published Thesis. Early Childhood Education Teacher Education Study Program, Department of Early Childhood Education, Yogyakarta State Faculty of Education.