

## EDUCATION OF FILL MY PLATE COMIC ON OVERWEIGHT ELEMENTARY SCHOOL STUDENTS

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### ABSTRACT

**Background:** In the lifestyle shift in Indonesian society, consumption patterns are high in calories, high in simple sugars, and low in fiber and not balanced with sufficient physical activity. Nutrition education can prevent the increasing prevalence of obesity and overweight. An approach to the client is needed in solving problems to change the pattern of life to be healthier and better. Students in Elementary schools tend to prefer illustration books in realistic or cartoon form. Comics have an excellent visual media function in helping to increase knowledge of balanced nutrition, and it is hoped that this will influence the behavior of balanced nutrition. The purpose is to determine the effect of providing comic education Fill My Plate on the energy of elementary school children with excess nutritional status.

**Methods:** This quasi-experimental study involved 60 students who were divided into treatment groups by providing education on comics Fill My Plate and a control group giving education without comics Fill My Plate energy data analysis in both groups using paired t-test.

**Research Result:** The results showed an influence between the energy before and after giving education on comics Fill My Plate in the treatment group ( $P = 0.000$ ), while the control group had no effect ( $p = 0.897$ ).

**Conclusion:** Providing education using comics Fill My Plate affected reducing energy in elementary school students who have more nutritional status.

### BACKGROUND

Lifestyle changes that are not adapted to individual needs can cause an imbalance in intake and deficiencies so that in the long term, it can lead to overweight and obesity (Pakar Gizi Indonesia, 2019). Overweight and obesity as risk factors that lead to death globally. The prevalence of overweight and obesity in children is estimated at 35 million in developing countries compared to 8 million in developed countries (WHO, 2010). The problem of overnutrition in Indonesia in children aged 5-12 years based on the BMI/U index of 18.8% consists of 10.8% overweight and 8.0% obese (Kemenkes, 2014). A balanced diet in childhood is crucial for optimal growth and development in times of rapid growth. Therefore, an understanding of eating habits developed during childhood and adolescence will be informative at critical times as a form of intervention to prevent health problems in later life. High-energy foods show a strong relationship with increasing body fat between the ages of 7 and 9 years and between the ages of 9 and 13 years (Pauline M Emmett, 2015).

Since 2014 the Ministry of Health has introduced "My Eating Plate" as an example of a one-time meal. The visualization of "my plate" is further refined to "Fill my plate," which further explains the Guide to Balanced Nutrition. The contents of Fill My Plate were made to make it easier for everyone to practice balanced nutrition at every meal. Fill My Plate visually suggests filling half (50%) of the plate with vegetables and fruit and the other half (50%) with staples and side dishes. (PERSAGI ASDI, 2019). As a result, health and

education practitioners can promote physical activity and healthy eating in schools as part of obesity prevention or treatment programs that can benefit children with obesity or overweight (Anne Martin, 2018).

The government has implemented the Fill My Plate campaign as a substitute for the concept of healthy four perfect five, which has been known to the public. Fill My Plate is a guideline so that people understand about healthy eating with balanced nutrition. The Minister of Health hopes Indonesian people know the contents of Fill My Plate for the realization of a healthy, strong, and competitive Indonesian nation (Indriyani, 2018). The cognitive development of elementary school-age children is included in the concrete so that children can think logically and understand the concept of conversation. Reading is not just reciting written words but also translating written symbols into spoken words and a thought process to recognize and understand the word's meaning (Rahman, 2014). Cognitive learning outcomes using comic media increased from 60.54 to 81.08 points (Ambaryani, 2017). The results showed that comics media in the learning process had a positive and significant effect on the motivation to learn Indonesian and students' reading comprehension skills (Revelation, 2016). The research was conducted to know the effect of the comic Fill My Plate on energy in overweight elementary school children in the control group and the treatment group.

## MATERIAL AND METHODS

Experimental research, *quasi-experimental design control group pretest-posttest*. The sampling technique used was *simple random sampling*. The number of samples was 60 students, which were divided into 30 treatment group students and 30 control group students. Inclusion criteria are 4th and 5th-grade students' overweight nutritional status. The research was conducted at SDN 44 Ampenan and SDN 2 Cakranegara Mataram City. The research subjects explained the research objectives. Subjects willing to be involved in the study will then fill out an *informed consent* form. They were conducting interviews to obtain characteristic data in the form of age and dietary data and anthropometric measurements to obtain weight and height data, and conducting 2x24 hour recall interviews to determine energy intake. The treatment group used a comic of Fill My Plate and the control group without a comic of Fill My Plate (using lecture counseling). The research was carried out for four weeks with four meetings. The duration of each meeting was 30-45 minutes statistical test using *paired sample t-test*.

## RESULTS AND DISCUSSION

Characteristics that include students' age and nutritional status are presented in Table 1.

**Table 1. Characteristics of Respondents**

Characteristics	Control		Treatment	
	n	%	n	%
<b>Age (years)</b>				
8 - 9	18	60	18	60
10 -11	12	40	12	40
Total	30	100	30	100
<b>Nutritional Status</b>				
Overweight	19	63,3	16	53,3
Obese	11	36,7	14	46,7
Jumlah	30	100	30	100

Table 1 shows that most respondents are children with more nutritional status in this study in 8-9 years, as much as 60%. Most of the respondents' nutritional status was fat, 63.3% in the control group and 53.3% in the treatment group.

**Table 2. Energy Before and After Giving Education Fill My Plate in The Treatment Group**

Variable	Mean	n	Std. Deviation	Std. Error Mean	Δ	p
Energy before	1.886	30	80.26	14.65		
Energy after	1.565	30	124.18	22.67	321	0.000

Table 2 shows that the average energy before giving comics education to the content of my plate in the treatment group was 1,886 calories. After giving comic education, it fell to 1,565 calories. The different tests showed a p-value of 0.000 that there was a significant difference before and after education with the comics media Fill My Plate. The difference in the decrease in energy in students with excess nutritional status after education with comics Fill My Plate was 321 calories.

**Table 3. Energy Before and After Giving Education Fill My Plate in The Control Group**

Variable	Mean	n	Std. Deviation	Std. Error Mean	$\Delta$	p
Energy before	1.728	30	216.64	39.55		
Energy after	1.722	30	161.90	29.56	6	0.897

Based on table 3, it is known that the average energy before giving education without comics (regular counseling) is 1,728 calories. After giving education without comics, energy becomes 1,722 calories. The results of the differential test showed that there was no significant difference in energy before and after giving education without the comics Fill My Plate ( $p = 0.897$ ).

*Diet* is the essential behavior affecting a person's nutritional status. Good nutritional conditions can improve individual and community health (Pakar Gizi Indonesia, 2019). The nutritional adequacy rate in 2019 shows that energy adequacy for ages 7-9 years is 1,650 calories, for women 10-12 years is 1,900 calories and for men is 2,000 calories (Kemenkes, 2019). Compared with the Nutrition Adequacy Rate, Energy after being given education with comics can be less than the Nutrition Adequacy Number. A low energy diet is given to control energy intake or lose weight in overweight or obese clients. Weight loss in overweight or obesity can reduce the risk of chronic disease (PERSAGI ASDI, 2019). Another Study on elementary school children also showed that energy intake with the incidence of obesity had a significant relationship (Yamin, 2013).

Communication always plays a vital role in discussing problems, exchanging ideas, making plans together, and helping each other change attitudes and behavior in life. Obesity that occurs in childhood and continues into adulthood can negatively influence health problems and medical care and become a burden on parents (Reilly JJ, 2014). Obesity in children remains a problem, and the LSU Health Shreveport faculty (LSUHS) has created a literacy project involving parents and children who use comics media. This literacy project encourages parents and children to live healthy and productive lives (Talia, 2016). The concept of learning in comics provides concrete examples in everyday life (Hamida, 2012). The purpose of modifying behavior is to help children recognize and remove barriers to controlling eating behavior. Regulation of eating, physical activity, and modifying behavior is integral in weight loss management (PERSAGI ASDI, 2019).

## CONCLUSION

The comic Fill My Plate affects lowering energy in elementary school students with excess nutritional status.

## SUGGESTION

Researchers can continue research with comic nutrition education series with other themes.

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## REFERENCES

Ambaryani, Gamaliel Septian Airlanda. 2017. Pengembangan media komik untuk efektifitas dan meningkatkan hasil belajar kognitif materi perubahan lingkungan fisik. Jurnal Pendidikan Surya Edukasi (JPSE) Volume 3, Nomor 1; 19-28.

[Anne Martin](#), [Josephine N Booth](#), [Yvonne Laird](#), [John Sproule](#), [John J Reilly](#), [David H Saunders](#). 2018. Physical activity, diet, and other behavioral interventions improve cognition and school achievement in children and adolescents with obesity or overweight. Cochrane Database Syst Rev.

Hamida, K. 2012. Penyuluhan Gizi dengan Media Komik untuk Meningkatkan Pengetahuan tentang Keamanan Makanan Jajanan. *Jurnal Kesehatan Masyarakat* ; 67-73.

Indriyani Astuti. 2018. Isi piringku modal hidup sehat. <https://mediaindonesia.com/humaniora/198741/isi-piringku-modal-hidup-sehat>. Diakses pada 11 Januari 2021

Kementerian Kesehatan [Kemenkes] RI. 2014. Riset Kesehatan Dasar 2013. Jakarta: Kemenkes RI.

Kemenkes. 2019. Peraturan Menteri Kesehatan Republik Indonesia Nomor 28 Tahun 2019 Tentang Angka Kecukupan Gizi Yang Dianjurkan Untuk Masyarakat Indonesia.

[Pauline M Emmett](#) , [Louise R Jones](#) . Diet, growth, and obesity development throughout childhood in the Avon Longitudinal Study of Parents and Children. *Nutr Rev* 2015 Oct;73 Suppl 3(Suppl 3):175-206.

PERSAGI ASDI.2019. Penuntun diet dan terapi gizi. Edisi 4. Jakarta; EGC.

Rahman, B., & Haryanto, H. 2014. Peningkatan keterampilan membaca permulaan melalui media flashcard pada siswa kelas I SDN Bajayau Tengah 2. *Jurnal Prima Edukasia*, 2 (2), 127 – 137

Reilly JJ, Kelly J. 2011. The long-term impact of overweight and obesity in childhood and adolescence on morbidity and premature mortality in adulthood: a systematic review. *Int J Obes*; 35(7): 891–898.

[Taliaia Tarver](#), [Deidra Woodson](#), [Nick Fechter](#), [John Vanchiere](#), [Willam Olmstadt](#), [Charlie Tudor](#). 2016. A Novel tool for Health Literacy: Using Comic Books to Combat Childhood Obesity. *J Hosp Librarianship* 16(2):152-159

Wahyu Nuning Budiarti, Haryanto. 2016. Pengembangan Media Komik Untuk Meningkatkan Motivasi Belajar Dan Keterampilan Membaca Pemahaman Siswa Kelas IV. *Jurnal Prima Edukasia*; Volume 4 – Nomor 2; 233-242.

World Health Organization (WHO). 2010. Population-based prevention strategies for childhood obesity: report of a WHO forum and technical meeting. Geneva: Department of Child and Adolescent Health and Development.

Yamin, B., Mayulu, N. & Rottie, J. 2013. Hubungan Asupan Energi dengan Kejadian Obesitas pada Siswa Sekolah Dasar di Kota Manado. *Ejournal Keperawatan* 1; 1–7.