





# The Influence of Health Education on Knowledge and Attitudes About Diet for Obesity Prevention in Students of SMK Mahaputra Cerdas Utama, Bandung Regency

 Tasya Putriadiy<sup>1\*</sup>,  Roselina Tambunan<sup>2</sup>,  Berlyna Saragih<sup>3</sup>,  Tri Ardayani<sup>4</sup>

<sup>1,2,3,4</sup>Institut Kesehatan Immanuel Bandung  
Bandung, Indonesia

✉ tasyaputriadiy16@gmail.com\*



## Article Information:

Received June 14, 2023

Revised June 17, 2023

Accepted June 17, 2023

## Keywords:

Diet; Health Education; Obesity

## Abstract

Diet is a method or effort to control the type and quantity of food consumed for a certain goal. Obesity is characterized as an abnormal or excessive buildup of fat that is harmful to health. Health education involves changing behaviors in a dynamic way, going beyond merely imparting knowledge or concepts from one person to another. The goal of this study was to ascertain how health education affected students at SMK Mahaputra Cerdas Utama in Bandung Regency's knowledge and attitudes regarding obesity prevention diets. The one group pretest-post test is used in this research method's pre-experimental study design. With a total of 125 respondents, proportionate stratified random sampling was employed as the sampling strategy. Test analysis using Wilcoxon. The results of the study of the knowledge variable are the p-value of 0.000 or <0.05. For the attitude variable, the p-value is 0.000 or <0.05. The conclusion of this study shows that there is an influence of health education on knowledge and attitudes about obesity prevention diets for students at SMK Mahaputra Cerdas Utama, Bandung Regency. It is recommended that students continue to adopt a healthy diet and increase physical activity that involves optimal body movement to prevent obesity.

## A. Introduction

Obesity is a state of imbalance between incoming energy and outgoing energy over a long period of time (Fan et al., 2017; Gharbi et al., 2016; Michalakos & Ilias, 2020). The amount of energy consumption from digested food exceeds the energy used for metabolism and daily activities. This excess energy will be stored in the form of fat and adipose tissue so that it can result in weight gain. health quality. At this time there are still many nutritional problems that can affect the quality of health, one of which is the problem of being overweight/obese (Diana et al., 2013).

The results of the analysis according to (Diana et al., 2013) showed that education level was a protective factor against obesity because subjects with high school education and above had a 20% lower risk of being overweight than subjects with junior high school education and below. Results (Diana et al., 2013) in line with research (Cohen et al., 2014) which shows that college graduates have a lower risk of obesity than primary school graduates (RR=0.96). Someone with a higher level of education will be better at receiving, processing, interpreting, and using information, especially nutritional knowledge. Subjects with higher education will have higher nutritional knowledge because they have more experience and access to information so they can have better nutritional attitudes and practices, especially in terms of food consumption behavior and physical activity which are closely related to obesity.

How to Cite : Putriadiy, T., Tambunan, R., & Saragih, B. (2023). The Influence of Health Education on Knowledge and Attitudes About Diet for Obesity Prevention in Students of SMK Mahaputra Cerdas Utama, Bandung Regency. Indonesian Journal of Health Research and Development, 1(1), 14–19.  
<https://doi.org/10.58723/ijhrd.v1i1.36>

ISSN : 2987-9671

Published By : CV Media Inti Teknologi

According to the World Health Organization (WHO), in 2016 obesity in children and adolescents aged 5-19 years was more than 340 million obese. From 1975 to 2016, the prevalence of overweight or obese children and adolescents aged 5-19 more than quadrupled, from 4% to 18% in a manne global (West Java Health Office, 2020). The increase was similar for boys and girls: in 2016 18% of girls and 19% of boys were overweight (Mokolensang et al., 2016).

Based on Basic Health Research data (RI Ministry of Health, 2018), the prevention of central obesity at the age of  $\geq 15$  years is around 30.0%. The highest prevalence was in the provinces of North Sulawesi (42.5%), DKI Jakarta (41%). This data tends to increase from 2007, namely as much as 18.8% to 26.6% in 2013 and increased to 31.0% in 2018.

According to (Syafira & Yulianti, 2021), one of the factors that causes obesity in adolescents is eating patterns or excessive food intake originating from instant processed foods, soft drinks, snack foods such as fast food (burgers, pizza, hot dogs) available at food outlets. Obesity can occur in children with the habit of consuming unhealthy snacks with high calorie content without sufficient consumption of vegetables and fruit as a source of fiber. Based on data on the frequency of fast food consumption for 1 week in adolescents, it is known that obese adolescents (69.4%) consume fast food with a frequency of more than 2 times a week, while normal children have a frequency of 1-2 times a week at most. Fast food contains high calories so that excessive consumption will cause obesity problems (Septiani, 2017) in (Dewita, 2021). Diet is a way or effort in regulating the amount and type of food with a specific purpose, such as maintaining health, nutritional status, preventing or helping to cure food diseases is a basic need for every human being, but to maintain the body to be healthier food must meet several conditions, namely . Help the maintenance of the body, can provide material for the growth of the body (Sudargo et al., 2014).

One of the things that can affect eating patterns is nutritional knowledge. Knowledge of nutrition is a person's understanding of balanced nutrition needed by the body so that it can maintain optimal health (Ahmad et al., 2023). In addition to knowledge, an important component that influences adolescent behavior in food selection is attitude. Attitude is a reaction or response of someone who is still closed to a stimulus or object. A positive attitude towards health in adolescents may not have a direct impact on the behavior of adolescents to be positive, but a negative attitude towards health will almost certainly have an impact on their behavior, because attitude is a readiness to act.

Healthy eating behavior is the behavior of daily food consumption in accordance with the nutritional needs of each individual for a healthy and productive life. While the definition of unhealthy eating behavior is the habit of consuming food that does not provide all the essential nutrients such as carbohydrates, fats and proteins needed in the body's metabolism. Health education is a dynamic process of behavior change, where the change is not just a process of transferring material or theory from one person to another and not a set of procedures, but this change is due to awareness from within the individual, group or community itself.

According to (Hartono et al., 2015), one of the efforts to shape healthy behavior is by providing health education. Provision of health education to adolescents with overweight can reduce adolescent BMI through increased knowledge through increased knowledge about nutrition (Fatmawaty, 2017). Increasing adolescent nutrition knowledge so that it can influence positive behavior changes such as reducing energy adequacy levels, protein adequacy levels, percentage of fat intake and increasing fiber intake. The average daily intake of energy, carbohydrates, protein and fat in obese adolescents is higher than that of non-obese adolescents.

Knowledge and attitude of adolescent nutrition is one of the factors that can influence the occurrence of obesity. One of the lack of nutritional knowledge and attitudes in adolescents is the lack of ability to choose nutritious foods. The incidence of obesity in adolescents can be avoided and prevented if adolescents have adequate knowledge of nutrition (Meidiana, Simbolon and Wahyudi, 2018) in (Ramadhanti et al., 2022).

## **B. Research Methods**

This research design uses a quantitative research design with the type of pre-experiment research (Sugiyono, 2013). The population in this study were students of the SMK Mahaputra Cerdas Utama, Bandung Regency and were listed as students in class X and XI with a total population of 180 people. The sampling technique used Proportionate Stratified Random Sampling with a total of 125 respondents. Data collection used a knowledge questionnaire in the form of 20 closed questions, and an attitude questionnaire using a Likert scale of 10 statements. All data obtained was tested for analysis using Wilcoxon SPSS 25.

### C. Result and Discussion

#### Univariate analysis

**Table 1.** Knowledge

Category	Before (Pretest)		After (Posttest)	
	Frequency	Percentage	Frequency	Percentage
Good	37	29.6%	123	98.4%
Enough	74	59.2%	2	1.6%
Not good	14	11.2%	0	0.0%
Total	125	100%	125	100%

Knowledge before and after Interpretation of Table 1 above, it is known that after receiving health education almost all respondents (98.4%) have good knowledge about eating patterns to prevent obesity.

**Table 2.** Attitude

Category	Before (Pretest)		After (Posttest)	
	Frequency	Percentage	Frequency	Percentage
Positive	64	51.2%	54	43.2%
Negative	61	48.8%	71	56.8%
Total	125	100%	125	100%

Attitudes before and after being given health education about eating patterns to prevent obesity for students at SMK Mahaputra Cerdas Utama, Bandung Regency. Interpretation of Table 2 above, after receiving health education most of the respondents (56.8%) had a negative attitude about the obesity prevention diet.

#### Bivariate Analysis

**Table 3.** Knowledge

Knowledge level	N	Means	Mean difference	SD	Zcount	Pvalue
Pretest	125	14.31	4.99	2,20	-9,674	0.000
Posttest	125	19.30		1.09		

The effect of health education on knowledge about obesity prevention diets in SMK Mahaputra Cerdas Utama students. Based on Table 3, the p-value obtained is 0.000. When compared with  $\alpha = 5\%$  or 0.05, the p-value  $< \alpha$  or  $0.000 < 0.05$  so that  $H_0$  is rejected, meaning that there is a significant difference between the level of pre-test and post-test knowledge.

**Table 4.** Attitude

Attitude Level	N	Means	Mean difference	SD	Zcount	Pvalue
Pretest	125	34,24	4.93	2.95	-9,550	0.000
Posttest	125	39,17		0.88		

The effect of health education on attitudes about obesity prevention eating patterns of students at SMK Mahaputra Cerdas Utama, Bandung Regency. Based on Table 4, the p-value is obtained. Based on Table 4, the p-value obtained is 0.000. When compared with  $\alpha = 5\%$  or 0.05, the p-value  $< \alpha$  or  $0.000 < 0.05$  so that  $H_0$  is rejected, meaning that there is a significant difference between pretest and posttest attitudes.

This research was conducted at SMK Mahaputra Cerdas Utama, Bandung Regency, this research took place from August 19 to August 21, 2022. The respondents in this study were students of class X and XI. The purpose of this study was to determine the effect of health education on knowledge and attitudes about eating patterns to prevent obesity in students of SMK Mahaputra Smart Utama, Bandung Regency. The discussion of the results of the data analysis that has been carried out is as follows:

#### ***Identify knowledge before and after being given health education about eating patterns to prevent obesity for students at SMK Mahaputra Cerdas Utama, Bandung Regency***

Results of the study Before receiving health education, most of the respondents (59.2%) had sufficient knowledge about eating patterns to prevent obesity. Meanwhile, after receiving health education, almost all respondents (98.4%) had good knowledge about eating patterns to prevent obesity.

The results showed that knowledge increased after being given health education, seen from the value of the frequency of knowledge after being given health education about eating patterns to prevent obesity was greater than before being given health education to students.

Bloom (1980) asserted that human sensing, or knowing someone about objects through their senses (eyes, nose, hearing, etc.), is the source of knowledge. The intensity of attention and perception of the object on its own at the time of sensing to develop this information has a significant impact. A person learns the majority of what they know through their senses of sight and hearing.

Knowledge can be influenced by a number of variables, but education is one that can increase one's understanding or knowledge. In general, someone with a higher level of education will have a broader knowledge base than someone with a lower level of education. Knowledge can also be acquired through informal learning. The second is mass media/information, which includes radio, television, newspapers, magazines, and books. Information from both formal and informal education can have an immediate impact that changes or increases understanding. The third is that knowledge may be expanded by experience, which can be learned through one's own experiences or those of others. The fourth factor is age. As people become older, their cognition and mindset change more, improving the quality of the knowledge they are able to learn.

Health education is a dynamic process of behavior change, where the change is due to awareness from inside the individual, group, or community itself and is not just a method of transmitting information or theory from one person to another or a set of processes. Provision of health education to overweight adolescents can reduce adolescent BMI through increasing knowledge about nutrition. Increasing adolescent nutrition knowledge so that it can influence positive behavior changes such as reducing energy adequacy levels, protein adequacy levels, percentage of fat intake and increasing fiber intake. The average daily intake of energy, carbohydrates, protein and fat in obese adolescents is higher than that of non-obese adolescents.

#### ***Identify attitudes before and after being given health education about eating patterns to prevent obesity for students at SMK Mahaputra Cerdas Utama, Bandung Regency***

Before receiving health education, most of the respondents (51.2%) had a positive attitude about the obesity prevention diet. And after getting health education most of the respondents (56.8%) had a negative attitude about the obesity prevention diet.

The results showed that attitudes increased after being given health education, seen from the value of the frequency of attitudes after being given health education about eating patterns to prevent obesity was greater than before given health education to students.

Bloom (1980) defined attitude as an individual's closed reaction to a specific stimulus or item that already incorporates the relevant opinion and emotion variables (glad or unhappy, agree-disagree, good-not good, etc.). Numerous elements, including personal experience, the influence of other individuals who are viewed as influential, cultural influences, mass media, educational and religious institutions, and emotional considerations, can have an impact on attitudes.

#### ***Analyzing the effect of health education on knowledge of obesity prevention diets for students at SMK Mahaputra Cerdas Utama, Bandung Regency***

The results of the study obtained the results of a comparison of the level of knowledge of the pre-test and post-test, namely the p-value obtained was 0.000. If compared to  $\alpha = 5\%$  or 0.05, the  $p\text{-value} < \alpha$  or  $0.000 < 0.05$  so that  $H_0$  is rejected, meaning that there is an influence of health education on the level of knowledge of pre-test and post-test students.

According to Kriswanto (2012) "Health Education is the process of helping a person, by acting individually or collectively, to make decisions based on knowledge about matters that affect their personal health and that of others to increase the ability of the community to maintain their health and not only bind themselves in increasing knowledge, attitudes and practices, but also improving or improving the environment (both physical and non-physical) in order to maintain and improve health with full awareness". The factors that can influence knowledge are mass media/information. Information obtained from both formal and non-formal education can have a short-term impact (Immediate Impact) resulting in a change or increase in knowledge.

#### ***Analyzing the effect of health education on attitudes about obesity prevention eating patterns of students at SMK Mahaputra Cerdas Utama, Bandung Regency***

The results of the study obtained the results of a comparison of pre-test and post-test attitudes, namely the p-value obtained was 0.000. When compared with  $\alpha = 5\%$  or 0.05, the  $p\text{-value} < \alpha$  or  $0.000 < 0.05$  so that  $H_0$  is rejected, meaning that there is a significant effect of health education on pretest and posttest attitudes.

Education refers to all deliberate actions taken to persuade people—individuals, groups, and communities—to act in ways that are consistent with what is expected of educators. A healthy society is largely the result of health education. Health can be covered in sports and health physical education classes or other pertinent courses in the educational setting of a school. Additionally, the school health business program allows for this. In order to complement other health programs, health education is crucial.

Bloom (1980) defined attitude as an individual's closed reaction to a specific stimulus or item that already incorporates the relevant opinion and emotion variables (glad or unhappy, agree or disagree, okay, etc.). Personal experience, the impact of other individuals who are seen as important, cultural influences, mass media, educational institutions, religious organizations, and societal variables are all factors that affect views.

#### D. Conclusion

Based on the results of data analysis and discussion that was carried out in the previous chapter, it can be concluded 1) After receiving health education, almost all of the respondents (98.4%) had good knowledge about eating patterns to prevent obesity, 2) After receiving health education, most of them respondents (56.8%) had a negative attitude about the obesity prevention diet, 3) There is an influence of health education on knowledge about the obesity prevention diet of students at SMK Mahaputra Cerdas Utama, Bandung Regency, 4) There is an effect of health education on attitudes about the obesity prevention diet for students at SMK Mahaputra Cerdas Utama, Bandung Regency

The researcher suggests that this research be further refined by future researchers 1) For educational institutions the results of this research can be used as input material to enrich students' understanding of health education and this research is expected to be one of the lessons so that students at the Immanuel Health Institute apply more courses on counseling so that students can provide proper counseling and students can apply it when in the field., 2) For schools, the school is expected to be able to make programs related to health such as UKS and the school can work with local health centers to continue providing health education about healthy eating patterns or prevention obesity in students regularly and evenly every year.3) Students who receive health education are expected to continue to adopt a healthy diet to prevent obesity, and 4) For future researchers, the results of this study are expected to serve as basic data information for similar researchers and this research is expected to provide input for future researchers. in loading other studies and it is hoped that future researchers can develop research variables in addition to the existing variables.

#### E. Acknowledgement

Acknowledgments are addressed to all parties involved in this research activity, especially the extended family of SMK Mahaputra Cerdas Utama, Bandung Regency.

#### References

- Ahmad, H., Antoni, A., & Muhamad, Z. (2023). Edukasi Gizi Seimbang Pada Anak di SD Negeri Pijorkoling Kota Padangsidimpuan. *ABDIGERMAS: Jurnal Ilmiah Pengabdian Kepada Masyarakat Bidang Kesehatan*, 1(1), 1–6. <https://doi.org/10.58723/abdigermas.v1i1.2>
- Cohen, A. K., Rehkopf, D. H., Deardorff, J., & Abrams, B. (2014). Education and obesity at age 40 among American adults. *Soc Sci Med*, 23(February), 34–41. <https://doi.org/10.1016/j.socscimed.2012.11.025>
- Dewita, E. (2021). Hubungan Pola Makan Dengan Kejadian Obesitas Pada Remaja Di Sma Negeri 2 Tambang. *Jurnal Kesehatan Tambusai*, 2(1), 7–14. <https://doi.org/10.31004/jkt.v2i1.1554>
- Diana, R., Yuliana, I., Yasmin, G., & Hardinsyah. (2013). Faktor Risiko Kegemukan Pada Wanita Dewasa Indonesia. *Jurnal Gizi Dan Pangan*, 8(1), 1–8. <https://doi.org/10.25182/jgp.2013.8.1.1-8>
- Dinas Kesehatan Jabar. (2020). Profil Kesehatan Jabar. *Dinas Kesehatan*, 5(3), 248–253.
- Fan, J. G., Kim, S. U., & Wong, V. W. S. (2017). New trends on obesity and NAFLD in Asia. *Journal of Hepatology*, 67(4), 862–873. <https://doi.org/10.1016/j.jhep.2017.06.003>
- Fatmawaty, R. (2017). Memahami Psikologi Remaja. *Jurnal Reforma*, 2(1), 55–65.

<https://doi.org/10.30736/rfma.v6i2.33>

- Gharbi, M. B., Elseviers, M., Zamda, M., Alaoui, A. B., Benahadi, N., Trabelssi, E. H., Bayahia, R., Ramdani, B., & Broe, M. E. De. (2016). Chronic kidney disease, hypertension, diabetes, and obesity in the adult population of Morocco: how to avoid “over”- and “under”-diagnosis of CKD. *Kidney International*, 89(6), 1363–1371. <https://doi.org/10.1016/j.kint.2016.02.019>
- Hartono, N. P., Wilujeng, C. S., & Andarini, S. (2015). Pendidikan Gizi tentang Pengetahuan Pemilihan Jajanan Sehat antara Metode Ceramah dan Metode Komik. *Indonesian Journal of Human Nutrition*, 2(2), 76–84. <https://doi.org/10.21776/ub.ijhn.2015.002.02.2>
- Kemkes RI. (2018). Hasil Riset Kesehatan Dasar Tahun 2018. *Kementrian Kesehatan RI*, 53(9), 1689–1699.
- Michalakakis, K., & Ilias, I. (2020). SARS-CoV-2 infection and obesity: Common inflammatory and metabolic aspects. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(4), 469–471. <https://doi.org/10.1016/j.dsx.2020.04.033>
- Mokolensang, O. G., Manampiring, A. E., & . F. (2016). Hubungan Pola Makan Dan Obesitas Pada Remaja Di Kota Bitung. *Jurnal E-Biomedik*, 4(1). <https://doi.org/10.35790/ebm.4.1.2016.10848>
- Ramadhanti, F. M., Sulistyowati, E., & Jaelani, M. (2022). Pengaruh Edukasi Gizi dengan Media Video Motion Graphics Terhadap Pengetahuan dan Sikap Tentang Obesitas Remaja. *Jurnal Gizi*, 11(1), 22–31. [Google Scholar](#)
- Sudargo, T., LM Fraitag, H., Rosiyani, F., & Kusmayanti, A. N. (2014). *Pola Makan dan Obesitas*. Gadja Mada University Press.
- Sugiyono. (2013). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* (19th ed.). Bandung: Alfabeta.
- Syafira, D. D., & Yulianti, F. (2021). Pengaruh Edukasi Video Pencegahan Obesitas Terhadap Pengetahuan Dan Sikap Remaja Putri. *Jurnal Kesehatan Siliwangi*, 2(1), 65–70. [Google Scholar](#)

**Copyright Holders**

© Putriliady, T., Tambunan, R., & Saragih, B.

**First publication right :**

Indonesian Journal of Health Research and Development

This article is licensed under:

