



## Effectiveness of Counseling Using Motion Graphics Against Changes in Attitudes to Consuming Fast Food in Adolescents 2022

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### Abstract

Media is very useful in increasing knowledge, especially in adolescents. Animated media is one of the ways in which education and information can be conveyed properly to adolescents. Therefore, the researchers wanted to see the effectiveness of motion graphics on the knowledge and attitudes of adolescents regarding fast food. This study used a cross-sectional study design with a sample size of 120 samples. The instrument for this study used a questionnaire pre-test and post-test. The analysis used in this study is the Wilcoxon test. There is a change in the attitude of adolescents after being given counseling using motion graphics, namely a p-value of 0.000 and knowledge did not experience a significant change p-value 0.165. Based on these results, it is certain that there is a need for changes in healthy living behavior to avoid obesity which has an impact on degenerative diseases. In addition, there is a need for new ways to provide counseling to adolescents, namely using motion graphics which are quite effective in providing information.

**Keywords** Obesity; Adolescents; Attitudes; Knowledge

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### INTRODUCTION

Adolescence is a time when there are changes that can occur quickly, both in terms of growth, and cognitive and psychosocial factors. The transition period from childhood to adolescence has an impact on nutritional needs, which are influenced by changes in biology, society, psychology, and knowledge (Setyawati & Setyawati, 2015). Adolescents are also vulnerable to nutrition caused by high physical growth, changes in lifestyle and eating habits, and special nutritional needs such as the needs of athletes. Adolescents are at risk of experiencing excess nutrition, which is characterized by relatively excessive body weight compared to the age or height of their peers (Nurul Aini, 2013).

Factors that contribute to changes in energy balance that result in obesity include increased consumption of fast food (fast food), low physical activity, genetic factors, the influence of advertising, psychological factors, socioeconomic status, diet programs, age, and sex (Barasi, 2009).

Media is very useful in increasing knowledge, especially in adolescents. The material provided through the media is quite efficient in strengthening the information conveyed to provide the information itself (Suaebah et al., 2018). Good nutrition education media can provide explanations or health messages appropriate to the object's level of acceptance, so that the object is willing and able to change knowledge according to the messages conveyed. In this study, the provision of counseling using animated media and leaflet media was able to provide information that follows the characteristics of adolescents, and nutrition counseling is a strategic step in efforts to improve public health, especially in promoting healthy living behaviors (Notoatmodjo, 2012a).

Educational media adhere to the principle that everyone is existing knowledge is obtained through the five senses. The more the five senses are used, the more knowledge is obtained (Kapti

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et al., 2013). Agustina (2017) concluded that media is a tool or prop that makes it easier to deliver health information. In conveying health information in the form of nutrition messages to schoolchildren, media that are easy to accept and attract attention is needed so that the information is conveyed to the object. One of the counseling media with easy and interesting ideas for conveying information is animation media and leaflets (Harahap et al., 2021).

Nugraheni (2015) found that nutrition education in leaflet and animation media can change the eating behavior of adolescents in SMP Surakarta. The impact of consuming fast food can increase the risk of heart attack, addiction, weight gain, increase the risk of cancer, diabetes, and high blood pressure (Nugraheni, n.d.). In addition, the large number of teenagers who like to consume fast food with high levels of fat and cholesterol is one of the factors that can lead to the high prevalence of obesity (Anto et al., 2017). Other similar studies explain that there are changes in the knowledge and attitudes of adolescents after an intervention using videos (Syakir, 2018). According to other studies, videos are more effective in increasing knowledge (Kantohe et al., 2016).

The prevalence of obesity in adolescents aged 15-19 years has increased dramatically from 4% in 1975 to more than 18% in 2016 (Marcus, 2018). The prevalence of obesity (overweight or obese) in children and adolescents aged 5-19 years is 18% (Hernández Medina, 2020). The 2018 Basic Health Research (Riskesmas) states that the prevalence of obesity in all provinces has often increased annually (Health Research and Development Agency, 2018). National Basic Health Research (Riskesmas) in 2018 the prevalence of obesity in 16-18 years nationally (Indonesia) was 4.0% (Badan Penelitian dan Pengembangan Kesehatan RI, 2018). From the explanation above, it can be concluded that the researcher wanted to see the effectiveness of counseling using motion graphics on changes in the attitudes and behaviors of adolescents regarding the dangers of consuming fast food and the incidence of obesity.

## LITERATURE REVIEW

Unhealthy eating patterns are a major risk factor for several non-communicable diseases including heart disease, stroke, obesity, diabetes, and certain types of cancer ((Afshin et al., 2019). (Willett W et al., 2019). The shift towards healthy eating patterns in developing countries has been linked to several drivers, including the increasing availability of fast-food outlets. Rising incomes and reduced time available for food preparation at home can increase reliance on fast-food (Popkin, 2019). Many individuals and families now routinely consume food taken away from home, with 25% of all food spending on takeaway food (D.A. & R., 2012). The popularity of fast foods has also increased. In 2001, the US had approximately 220,000 fast-food outlets, with sales revenue exceeding \$125 billion USD (Paeratakul et al., 2003). Globally, the fast-food market share was around \$447.1 billion USD in 2013 and increased by 4.4% between 2013 and 2019 to reach \$617.6 billion USD (Hossain & Chang, 2020). Furthermore, urban areas are generally considered to have experienced a more rapid shift than rural areas, where the increasing population in urban areas is highly threatened (Colozza, 2021). Each individual plays an important role in promoting dietary behavior is widely recognized (Swinburn et al., 2011).

In providing education to teenagers, there are several factors that can influence knowledge and attitudes, including the use of media. One of the media that can be heard is a tool that can help stimulate the visual and auditory senses during the process of delivering material. This tool is known as an audio visual aid (Fitriani and Fitri 2020). An example of an audiovisual medium is a motion graphics video. Motion graphics are time-based pieces of visual media that combine film and graphic design by incorporating several elements, such as 2D animation, video, film, typography, illustration, photography, and music (Reno et al., 2018). The advantages of video media include ease of access, simple and enjoyable learning media, and ability to help students and teachers understand lessons in the learning process (Johari et al., 2016). Video can be used as a nutrition education medium to increase knowledge and shape positive attitudes among teenagers.

### Adolescent Nutrition

The term "Gizi remaja" originates from the Arabic word "Ghidza," which refers to food. Nutrition refers to the organic substances necessary for the survival, growth, and maintenance of

bodily functions as well as the overall health and activity of living beings (Wardhani and Retno, 2018). Adolescence is a critical transitional period between childhood and adulthood. According to Erickson's stages of individual development, adolescence comprises three stages: early, middle, and late. Early adolescence is defined by age criteria of 13-15 years for females and 15-17 years for males (Thalib, 2010). Adolescents engage in numerous activities to develop their personalities and form habits that ultimately shape their activity patterns. This period is characterized by physical, mental, and activity-based growth and development, with a significant need for nutrient-rich food (Sumanto, 2009). Adolescents face several negative health and nutritional issues. Some of the nutritional problems experienced during adolescence are similar to those affecting children, such as iron deficiency anemia and weight gain or loss (Arisman, 2010).

The following factors contribute to nutritional problems in adolescents:

#### *Poor Eating Habits*

Poor eating habits, resulting from family eating habits and improper dietary practices since childhood, persist into adolescence. Adolescents tend to eat as they please, without considering the nutritional requirements for their health (Moehji, 2003).

#### *Misunderstanding of Nutrition*

Slim bodies are often idealized by teenagers, especially girls. This desire can lead to problems, because they follow improper dietary restrictions to maintain their body shape, leading to malnourishment. Eating only once a day, eating random food, or skipping rice is a faulty nutritional principle that encourages nutritional disorders (Moehji, 2003).

#### *Excessive Liking for Certain Foods*

Excessive liking for certain foods leads to unmet nutritional needs. This condition is often related to popular trends among teenagers. For example, during the 1960s, American teenagers became obsessed with hot dogs and Coca-Cola. This trend then spread to teenagers in other countries, including Indonesia (Moehji 2003).

#### *Excessive Promotion via Mass Media*

Teenagers are easily attracted to new things at their age. This condition is exploited by food entrepreneurs who promote their food products, significantly affecting teenagers, especially when promotions are carried out using a celebrity idolized by teenagers (Moehji, 2003).

#### *Introduction of New Food Products*

New food products from foreign countries can significantly affect adolescents' eating habits. Fast food products, such as hot dogs, pizza, hamburgers, fried chicken, French fries, and various snacks, are often regarded as modern life treats by teenagers. The objection to fast food is mainly due to its high levels of saturated fat and cholesterol as well as high salt content (Moehji, 2003).

#### *Screen Time*

Technological advancements have also contributed to the development of obesity. Watching television and using electronic devices limit physical activity, leading to an unhealthy lifestyle that ultimately leads to obesity (Moehji, 2003).

#### *Media Literacy*

In the era of the fourth or 4.0 revolution, also known as the digital revolution, all information can be obtained in real time and quickly, anywhere, and anytime. The existence of search engines helps individuals quickly search for desired reference materials. This is because of the digitization of information and media interaction activities through technological advancements. Friedman, as cited by Afandi et al. (2016), illustrates this change as "the world is flat, referring to a state where the world is not limited by country boundaries and time zones due to technological advancements (Friedman, 2007). The development of information technology has created a new artificial and virtual "space called cyberspace (Pilliang 2012). The development of information technology is

responded to by the penetration and behavior of Internet usage in Indonesia, which has been growing annually. The results of a survey by the Indonesia Internet Service Providers Association (APJII) show an increase in Internet users in Indonesia since 2016. This has led to the rapid development of information technology and the beginning of the digital revolution in Indonesia.

The rapid development of information technology has had a significant influence and has dominated all sectors of society, including the education sector. Academic demands differ at each level of education in Indonesia (Akbar & Anggraeni, 2017). The digital age in education, particularly higher education, has consequences in the form of learning design by utilizing digital media as a means of enhancing students' knowledge. Digital media can present contextual, audio, visually attractive, and interactive learning materials (Umam et al., 2013). Universities, as part of higher education institutions, should adjust themselves to implement digital-based learning processes. Advancements in information technology and the Internet today have resulted in an abundance of digital information resources (Kurnianingsih et al., 2017). On the other hand, the development of information technology is likened to two sides of a coin that has positive and negative effects on society. Digital literacy cannot be avoided.

According to UNESCO, literacy is the ability to identify, understand, interpret, create, communicate, count, and use print and written materials in relation to various goals in developing their knowledge and potential and to participate fully in their community and society (Pantiwati, 2017). Gilster's opinion simplifies digital media, which actually consists of various forms of information simultaneously, such as sound, writing, and images. Therefore, Eshet emphasized that digital literacy should be more than just the ability to use various digital sources effectively. Digital literacy is also a form of specific thinking (Eshet-Alkalai 2012). Bawden offers a new understanding of digital literacy rooted in computer and information literacy (Bawden, 2008). Computer literacy developed in the 1980s, when microcomputers were increasingly used not only in the business environment but also in society. Meanwhile, information literacy spread in the 1990s, when information was increasingly easy to compile, retrieve, and disseminate.

Meanwhile, according to Martin, digital literacy is a combination of several forms of literacy, such as information, computers, vision, and communication (Martin, 2008). According to Gilster (by A'yuni, digital literacy is expected to become the ability to understand and use information from various formats (Pantiwati, 2017). Gilster explains that the concept of literacy is not just about the ability to read, but to read with meaning and understanding. Digital literacy involves mastery of ideas, not just pressing buttons. Therefore, Gilster emphasized the critical thinking process when dealing with digital media rather than technical competence as the core skill in digital literacy, as well as emphasizing the critical evaluation of what is found through digital media rather than the technical skills needed to access that digital media. Gilster defined that, in addition to critical thinking skills, the necessary competencies are the ability to learn how to organize knowledge as well as to build a reliable set of information from different sources (Pantiwati, 2017). A digitally literate person needs to develop the ability to search and build a strategy using search engines to find information and how to find information that is relevant to their needs. In addition, the ability to use technology and information from digital devices, such as academic, career, and daily life, helps to be effective and efficient in various life contexts.

According to Martin, digital literacy is an individual's ability to use digital tools appropriately so that they can access, manage, integrate, evaluate, and analyze digital resources to build new knowledge, create expressive media, and communicate with others in certain life situations to realize social development from several forms of literacy, namely, computer, information technology, visual, media, and communication (Mueller, 2008). Similarly, Bawden (2008) defines digital literacy as the ability to use information from various digital sources presented through a computer ((Bawden, 2008)). Digital literacy can be defined as an individual's ability to apply functional skills to digital devices so that they can find and choose information, think critically, be creative, collaborate with others, communicate effectively, and still pay attention to electronic security and the evolving sociocultural context (Chatzipetrou & Nicolaidou, 2015). From the above understanding, it can be concluded that digital literacy is not just about using digital devices, but digital literacy is expected to be able to find and choose information, think critically, be creative, collaborate with others, communicate effectively, and still pay attention to electronic security and the evolving sociocultural context.

## RESEARCH METHOD

This study used a cross-sectional design with a descriptive analysis. Measurements were taken before counseling and after counseling using motion graphics. The type of research data used was primary data collected using a questionnaire. The variables measured were changes in the knowledge and attitudes of adolescents regarding the dangers of fast-food consumption and the incidence of obesity. The number of subjects in this study was 120, and simple random sampling was used. The data analysis used in this study was the Wilcoxon test, with a significance level of  $p < 0.05$ .

The sample selection must also meet inclusion and exclusion criteria, where the inclusion criteria for this study were teenagers aged 15-17 years who were willing to participate in this research and who also owned a smartphone in order to fill out the questionnaire in the form of a Google form. This study did not have any exclusion criteria; therefore, teenage respondents met the inclusion criteria.

The data collection technique used in this study involved providing education in the form of media literacy (motion graphics). Media was provided after completing the pre-test questionnaire. After collecting the pre-test data, this education was provided to the adolescents. After the education and Q&A session, a post-test was conducted with several questions related to evaluating education and changes in the knowledge and behavior of adolescents in consuming fast food regarding the occurrence of obesity.

## FINDINGS AND DISCUSSION

Based on the research that has been done, an overview of the characteristics of the subjects from this study can be seen in Table 1.

**Table 1.** Characteristics of Adolescent Subjects

Characteristics	Frequency
Sex, (N;%)	
Male	68 (56.7)
Female	52 (43.3)
Age, (median;Q25-Q75)	15 (14-16)

The participants in this study were predominantly male, accounting for 56.7% of the sample, with an average age of 15 years old. The prevalence of obesity in Indonesia remains high. Based on these results, the respondents in this study were predominantly male. It can be seen that the habits of boys and girls are different, especially in terms of food, so we can see in the further analysis of changes in adolescent knowledge and behavior before and after being given education using motion graphic.

**Table 2.** Changes in Knowledge and Attitudes of Adolescents After Counseling on the Dangers of Fast Food Consumption on the Incidence of Obesity in Adolescents

Variable	Pre	Post	p-value
Knowledge, (Median; q25-q75)	6 (5-6)	6(5-6)	0.165
Attitude, (Median; q25-q75)	6 (6-7)	8 (7-8)	0.000*

\*Significant  $P < 0.05$

Source: Primary Data

Based on table 2 it can be concluded that there is a change in the attitude of adolescents after being given counseling using motion graphics as evidenced by the p-value of 0.000 with a value the previous score was 6 (6-7) to 8 (7-8). These results illustrate that counseling using motion graphics is effective in changing adolescent behavior, especially in relation to fast food consumption. Other studies also explain that there is a significant relationship between attitude and the frequency of fast food consumption, with the majority of respondents consuming fast food to 4-27 times per

month (Nusa & Adi, 2013). In addition, the attitudes of adolescents will usually imitate the people around them, especially their families. If the attitude of the family is selective or disciplined in choosing snacks and is concerned with health, then the child will imitate the attitude of the family. This attitude can influence children's choice of food, which has an impact on health, especially nutritional status (Sukma & Margawati, 2014).

Adolescents' decision to consume fast food is different from that of adults, in which teenagers have knowledge of the dangers of fast food but still decide to buy fast food. The difference in behavior between adolescents and adults today is more due to differences in the development of cognitive science than to social pressure. (Frank, 2012) Other studies also explain that providing education using audio-visual media can increase the knowledge and attitudes of adolescents (Meidiana et al., 2018b).

Based on the results of this study, it can be seen that lifestyle theme So now in providing education or outreach it is best to use something interesting, seeing the current rise of using gadgets, YouTube, and other social media, followed by many teenagers. In addition, the lifestyle of teenagers who often skip breakfast and prefer to consume fast food, which tends to be a sedentary lifestyle, can put adolescents at risk of obesity (Kusoy, 2013).

Changes in knowledge, attitudes, behavior, lifestyle, eating patterns, and income can affect the choice of type and amount of food consumed. Intake of risky foods such as high intake of protein, fat, and sodium, and low intake of potassium and fiber can cause central obesity (Vera & Tando, 2012). Other studies also explain that there are changes in attitudes before and after being given education using audio-visual evidence with an average pre-post attitude of 28.9 to 32.3, with a value of 0,000 (Putri et al., 2017).

The provision of education through illustrated media is significantly related to increased knowledge among adolescents. Therefore, providing education using illustrated media, particularly motion graphics, can be recommended as a way to provide educational counseling to teenagers. With the development of technology, teenagers have become more dominant in using gadgets to seek information. In addition, they access YouTube and other social media platforms more frequently to obtain the latest information, apart from the learning they receive from school with their teachers (Johari et al., 2016).

The change in adolescents' behavior in selecting food intake is a positive development. Educating adolescents about the hazards of consuming fast food through motion graphics, as demonstrated in this study, can have a positive impact on altering adolescent behavior. This change was also influenced by support from the surrounding environment. Although adolescents have knowledge of the dangers of consuming fast food, this knowledge does not result in behavior changes since they are already aware that fast food is unhealthy. Thus, behavioral improvement is necessary for the next generation to create a healthier and smarter population. This can also decrease the risk of stunting in children if healthy eating habits are instilled, including avoiding fast food, from an early age.

**Table 3.** Extension Evaluation Using the Motion Graphic

Variable	N(%)
The material delivered is easy to understand	
No	6 (5.0)
Yes	114 (95.0)
The material presented was interesting	
No	10 (8.3)
Yes	110 (91.7)

Counseling using motion graphics is more effective	
No	8 (6.7)
Yes	112 (93.3)

Source: Primary Data

Based on table 3 it can be seen that most of the teenagers answered that motion graphic counseling was more effective in providing material (93.3%). The results of this study are in line with Oktira (2013), who found that providing counseling or education using audio-visual media can arouse students' interest in studying cultural arts. This sense of interest can awaken students' sense of independence so that they can actively participate in the learning process (Oktira et al., 2013).

Knowledge, attitudes, and actions are the stages of behavior formation. Before someone changes his behavior, he must know the benefits for him. The way to make this happen must be provided knowledge by stimulating health education. After learning the next process, he assesses it. Therefore, the indicators of health attitudes must be consistent with health knowledge. It can be concluded that the provision of counseling or education using the media can affect the attitude of respondents in acting. (Notoatmodjo, 2012a)

Audiovisual use can improve learning outcomes because it involves increased imagination and student learning motivation. Audio-visual media are useful in learning and encouraging the desire to know more (Firdaus et al., 2016a). In addition, audio-visual media can not only improve a good way of learning but also be effective in time, and knowledge received through audio-visual media stays longer in memory. Audio-visual media also make it easier for someone to convey and receive information and avoid misunderstandings from the information obtained (Firdaus et al., 2016a).

## CONCLUSIONS

Motion graphics are effective in providing counseling or education to adolescents. Changes in the attitude of adolescents in consuming fast food towards the incidence of obesity in this study prove that the counseling provided was successful. In addition, the results obtained explain that teenagers know that fast food is fast food, but attitudes affect whether they consume it or not, so the next target is how to change the attitude of teenagers so that they can pay attention to lifestyle and good eating patterns.

## LIMITATION & FURTHER RESEARCH

This research is only a cross-sectional study that was carried out at the same time, so it is necessary to conduct further cohort research related to changes in adolescent behavior in consuming fast food, which has an impact on obesity in the future.

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