

Family Based Overweight Intervention Overweight Knowledge (f-book) on Nutritional Status in the Adolescent Age Group

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ABSTRACT

Introduction : The number of overweight and obesity among Indonesian teenagers continues to increase. *Overweight* and obesity are often long-term problems and are commonly experienced by teenagers. Excessive weight gain can lead to obesity and the emergence of Non-Communicable Diseases (NCDs) which are one of the causes of death worldwide.

Objective : This study aims to determine the phenomenon. Based on this phenomenon, this study aims to examine the Knowledge-Based Family Intervention and Overweight (F-Book) in the Adolescent Group.

Method: This research uses *the Pre-Experimental method. Design with One Group Initial Test Final Test Design Approach* .

Results: Based on the results of the study, because the value of 0.020 is smaller than <0.05, it can be concluded that "Ha is accepted". This means that there is a difference in nutritional status in adolescents before and after the intervention.

Conclusion: Family- Based *Overweight Intervention Knowledge about overweight (f-book)* influences nutritional status

Introduction

Overweight is a disruption of a person's health condition due to experiencing body weight exceeding the normal number. *Overweight* can trigger obesity and Non-Communicable Diseases (NCDs), where NCDs are the cause of death in the world with a prevalence of 36 million deaths per year (Ministry of Health of the Republic of Indonesia, 2019). *Overweight* is caused by the accumulation of excessive or very high fat in the body, this is due to an imbalance between calorie intake and physical activity that can burn calories, as a result calories will accumulate in the form of fat, so that if left continuously and for a relatively long time, it will increase body weight which eventually triggers obesity. Obesity is a supporting factor for the emergence of degenerative diseases and NCDs, so that *overweight* is considered an early sign of the possibility of these diseases. This *overweight condition* has the potential to occur in all levels of society, but in the age groups of adolescence and adulthood, the most are recorded *overweight* (Dewi, 2021).

Data from the World Health Organization (WHO) noted that the prevalence of *overweight* or obesity in adolescents aged 13 to 19 years has increased more than fourfold from 1975 to 2021, from 4% to 18%. Worryingly, the rate of overweight and obesity in Indonesian adolescents continues to increase. Survey data on the number of adolescents who are obese in 2018 increased to 31.0%. This proportion will increase to 4.4% in 2023 and 12.2 years thereafter (WHO, 2021). The prevalence of *overweight* in East Java Province is in the top 10 countries with a ranking of 9th (Hasan, 2023). Based on the National Medium-Term Development Plan (RPJMN 2020-2024) From previous research that conducted preliminary studies in several junior high schools in urban areas, the highest results were obtained, namely in SMP 3 Jember with a prevalence percentage of mild obesity (*overweight*) and severe obesity (obesity) of 33% (Rohmah, 2023).



In adolescence, people generally start to busy themselves with their physical appearance and want to change their appearance according to their self-image, many teenagers want an ideal body shape such as a slim body which is often the ideal for teenagers, this is the main problem. Teenagers who have a negative body image consider their bodies unattractive, embarrassed, and not confident about their body shape, if left unchecked it will have an impact on their psychology (Pramesti, 2022). *The Centers for Disease Control and Prevention* (CDC) stated in 2020 that one of the impacts of obesity is mental disorders such as depression, anxiety, and psychosis (Avrialdo, 2023). Lack of self-confidence can be the main influence experienced by people who are overweight and adhere to *body shaming*. Many of them are willing to go to great lengths to idealize their bodies so as not to experience *body shaming*. *It is not uncommon for people to consider committing suicide or even attempt suicide by using various methods to idealize their bodies while allowing bullying behavior* (Rachman, 2018). In addition, the condition *Overweight* too can affect the physical and cognitive development of adolescents and weaken the immune system (G. R. H. Ardiansyah, 2018).

overweight conditions consists of 3 things, namely primary, secondary and tertiary prevention. Primary prevention focuses on promoting a healthy lifestyle to prevent overweight from an early age. Secondary prevention aims to reduce the number of overweight people while tertiary prevention aims to minimize the increase in overweight and the abnormalities that will arise. Research that provides intervention in the form of secondary prevention has been conducted by (Rosalianti, 2024) using traditional games, namely jumping rope as a medium to reduce BMI in adolescents. Similar research was also conducted by (Pramesti, 2022) providing intervention in the form of *hypnotherapy* to reduce BMI in adolescents. In his research, he argued that *hypnotherapy* is effective in reducing body mass index because *hypnotherapy* can change behavior through positive suggestions given which are received by the subconscious and will be changed in the cerebral cortex. Hypnotherapy as a method to change behavior through words or whispers tends to involve psychological theories and clinical concepts into the therapy. Based on previous research that has been carried out, intervention in the form of secondary prevention of *overweight* involving the family is still rarely found. Prevention can be done with a *support system* from the family with a *family based overweight and knowledge approach*. Interventions using this approach have advantages, including that adolescents receive direct support from parents and family members, which can increase their motivation and consistency in undergoing a weight loss program. The home environment has a major influence on eating behavior and physical activity. By involving the family, the home environment can be changed to be more supportive of healthy behavior. Parents can play a role in monitoring their children's eating habits, sleep time, and physical activity, as well as being *role models* in implementing a healthy lifestyle. Based on the results of a preliminary study conducted at SMK Ibu Jember in class XI E with 50 students, it was found that 10 people (20%) were *underweight*, 27 students (54%) were in the normal category, 9 people (18%) were *overweight* while 4 people (8%) were obese. Based on the description and background above, the researcher is interested in researching the provision of *Overweight* interventions based on Family Based Overweight Knowledge (f-book) on Nutritional Status in the Adolescent Age Group. The purpose of this study was to determine the effect of providing *Overweight* interventions based on Family Based Overweight Knowledge (f-book) on Nutritional Status in the Adolescent Age Group.

Method

The research design that will be used in this study is *Pre Experiment Design* with *One Group Pre-test Post-test Design* approach namely a study conducted on a group that was given health



education treatment/intervention for overweight and using a family-based overweight approach. and knowledge (F-Book) with intervention books on overweight children using methods assessed before and after intervention, then compared the results of the pre and posttest for 3 months. The population used in this study were adolescents aged 17-18 years with BMI in the normal, overweight, and obesity categories with sampling using purposive sampling. While adolescents with underweight BMI categories are exclusion criteria in this study. The types of variables in this study are classified into two, namely the family-based overweight family approach as an independent variable and Body Mass Index (BMI) as a dependent variable. Data analysis used is univariate and bivariate analysis using the dependent T test statistical test.

Results

Table 1.1 Frequency Distribution of Socio-Demographic Characteristics at SMK IBU Jember.

| Characteristics | N | % |
|---------------------------------|-----------|------------|
| Father's Education | | |
| Not Graduated Elementary School | 0 | 0 |
| Elementary School | 0 | 0 |
| Junior High School | 5 | 12 |
| Senior High School | 28 | 71 |
| Bachelor Degree | 7 | 17 |
| Total | 39 | 100 |
| Mother's Education | | |
| Not Graduated Elementary School | 0 | 0 |
| Elementary School | 0 | 0 |
| Junior High School | 4 | 10 |
| Senior High School | 33 | 84 |
| Bachelor Degree | 2 | 6 |
| Total | 39 | 100 |
| Income Every Month | | |
| >Rp 2,800,000 | 29 | 75 |
| < Rp. 2,800,000 | 10 | 25 |
| Total | 39 | 100 |
| Father's occupation | | |
| Self-employed | 39 | 100 |
| government employees | 0 | 0 |
| Total | 39 | 100 |
| Mother's Job | | |
| Doesn't work | 12 | 31 |
| Self-employed | 27 | 69 |
| government employees | 0 | 0 |
| Total | 39 | 100 |

Based on research data from 39 respondents, father's education was 5 (12%) junior high school, 28 (71%) senior high school and 7 (17%) Bachelor Degree, while all were none, namely Not Graduated Elementary School and elementary school 0 (0%). While for mother's education was 4 (10%) junior high school, 33 (84%) senior high school and 2 (6%) Bachelor Degree, while all were



none, namely Not Graduated Elementary School and elementary school 0 (0%). The income of all parents of respondents earned more than Rp. 2,800,000. Father's work was mostly self-employed 42 (72%). While the mother's work was mostly self-employed 27 (69%), not working 12 (31%) and as a civil servant or PNS, namely 0 (0%). Before the statistical test was carried out, a data normality test was first carried out, based on the results of the normality test that had been carried out using the Kolmogorov-Smirnov test using the SPSS application, the results of Asymp.Sig. (2-tailed) $0.000 > 0.05$ which means the data is normally distributed.

Table 1.2 Frequency distribution of nutritional status before intervention

| Nutritional status | frequency | Percentage % |
|--------------------|-----------|--------------|
| <i>Underweight</i> | 0 | 0 |
| Normal | 15 | 38.5 |
| <i>Overweight</i> | 23 | 59.0 |
| Obesity | 1 | 2.6 |
| Total | 39 | 100% |

Based on research data from 39 respondents, the majority were overweight 23 (59%), normal 15 (38.5%) and the remainder were obese 1 (2.6%).

Table 1.3 Frequency distribution of nutritional status before intervention

| Nutritional status | frequency | Percentage % |
|--------------------|-----------|--------------|
| <i>Underweight</i> | 0 | 0 |
| Normal | 23 | 59.0 |
| <i>Overweight</i> | 16 | 41.0 |
| Obesity | 0 | 0 |
| Total | 39 | 100% |

Based on research data from 39 respondents, the majority were normal (23 (59.0%)), overweight (16 (41.0%)) and obese (0%).

Table 1.4 dependent statistical test T test and Wilcoxon test

| | Nutritional Status After-Nutritional Status Before |
|-----------------------------|--|
| Z | -2.324 |
| Asymp.Sig.(2-tailed) | .020 |

Table 1.2 Based on the statistical test shows Asymp.Sig. (2-tailed) is worth 0.020. Because the value of 0.020 is smaller than <0.05 , it can be concluded that "Ha is accepted".

Discussion

Before Family Based Overweight Intervention Overweight Knowledge (f-book) on Nutritional Status in the Adolescent Age Group

Based on research data from 39 respondents, most of them were *overweight*, namely 23 respondents (59%), normal, namely 15 respondents (38.5%) and the rest were obese, namely 1 respondent (2.6%). In previous studies, it was assumed that this could be influenced by many factors, one of which was diet (Damayanti, 2017). This is in line with Damayanti's theory, 2017 that excessive body mass index can be influenced by several factors, namely heredity, food consumption, socio-economics, gender, and physical activity. This is in line with previous research that nutritional status is a display of nutritional balance caused by consumption, absorption, and use of nutrients from food over a long period of time. Food consumption greatly affects a person's BMI and its development will be optimal if the body gets enough nutrients. According to Vistabunda, 2017 Body Mass Index (BMI) is an indicator of a person's relative body fat content which is used to determine body weight status whether a person has a thin, ideal, or too fat body and helps assess a person's weight status against the risk of health problems (Vistabunda, 2017).

Researchers argue that the increase in body mass index in adolescents is a common factor that occurs due to irregular eating patterns and lack of physical activity in adolescents. This is in line with Patimah's theory in 2017 that several factors that affect a person's nutrition include lack of food supply, eating patterns, or poor diet.

After Family Based Overweight Intervention Overweight Knowledge (f-book) on Nutritional Status in the Adolescent Age Group

Based on the research data from 39 respondents, it was found that the *overweight category* before the intervention was given was 23 respondents, there was a decrease to 16 respondents (18%), while in the normal category there was an increase from 15 respondents to 23 respondents (20%). Based on the research results because the value of 0.020 is smaller than <0.05 , it can be concluded that "Ha is accepted". This means that there is a difference in nutritional status in adolescents before and after the intervention is given, namely:

Overweight family based overweight knowledge (F-Book) is a guidebook created to provide education to students about the importance of maintaining food consumption that has an impact on body weight. After the intervention of *overweight family based overweight knowledge (F-Book)* on nutritional status in adolescent groups for 8 weeks, at the initial meeting, BMI (body mass index) measurements were taken, then *the F-Book was given* to students and parents of students in the implementation in the following weeks as an effort to obtain a normal BMI. *The F-Book* contains definitions, symptoms, causes, and types of food that can be consumed by students.

The results of statistical tests prove that *F-Book* has an effect on reducing students' BMI supported by a guidebook that is packaged as attractively as possible with a small size whose language can be easily understood by students and parents. Educational media can stimulate the thinking power, emotions, concentration, and interests of the recipient of the material. In the learning process, the use of media contributes around 75% to the impression captured through the sense of touch and touch. Therefore, this must be considered so that the material can be conveyed properly and there is an increase in knowledge (M. Andriani, 2019). This study is in line with research conducted by. Related to health promotion to overcome overweight and obesity, this study shows a decrease in obesity status to overweight ($p = 0.04$) in the group that received treatment when compared to before and after testing. Furthermore, the study said that health education using booklets combined with other media can reduce the weight of overweight adolescents. This may be because the media can increase adolescents' understanding of obesity,



so that it indirectly influences their attitudes and behavior in choosing food, and has a positive impact on weight loss (Lihong Wang, 2022).

Structured and long-term nutritional counseling is expected to change food selection behavior according to needs. Changing behavior to have a good impact is not easy, changes can be influenced by the surrounding environment but can also be changed with deliberate and systematic actions. (Dewi, 2021). Nutritional status in adolescents describes the state of the body resulting from food consumption and nutrient use. Nutritional status refers to the state of the body resulting from food consumption and nutrient use. There is a very strong relationship between nutritional status and eating habits. Nutritional status can be achieved if nutritional needs are met ideally. Good or optimal nutrition is ensuring that the body receives sufficient nutrition that does not sacrifice effectiveness, permeability in prime physical condition, brain development, work capacity, and overall health and increases the level of health to a higher level (Febriani, 2019). The habit of consuming non-nutritious foods, such as junk food, is closely related to increased Body Mass Index (BMI) in adolescents. Environmental factors including social and cultural conditions, peers, and lifestyle play an important role in influencing individual behavior. Poor lifestyles can have an impact on the consumption of unhealthy foods, such as various media shows that present various fast foods (junk food) that can arouse the desire to try them. Adolescents who spend a lot of time in front of gadgets tend to live a sedentary life, which can reduce physical activity and affect their nutritional status (A. Awaliah, 2019).

Various studies have shown that nutritional conditions in adolescents are more often associated with overnutrition or obesity, which are risk factors for degenerative diseases such as coronary heart disease, diabetes mellitus, hypertension, gout, kidney disease, and others. One way to avoid obesity is to maintain a good nutritional balance, namely by knowing education about how to overcome obesity (T. Y. Fatmawati, 2024). Media needs to be used to provide education to students in teaching and learning activities, because it has the benefit of making complex and complicated events easier to understand for students. (Prameswari, 2017).

According to research (E. Abadi, 2022) It is stated that there is an influence of the overweight guidebook on reducing fat intake and weight loss in adolescents with a p value of $0.000 < \alpha (0.05)$. This is supported by the socialization carried out before the delivery of the guidebook for overweight adolescents and the coordination regarding the steps needed to lose weight. Respondents' weight loss was also driven by the attractively designed guidebook media, seen from the contrasting colors and language that is easy for adolescents to understand. The guidebook is small, pocket-sized, so it is very practical to carry anywhere and read whenever needed. With this small guidebook, students can gain a greater understanding of nutrition which is expected to influence their actions in reducing calorie intake, especially fat (M. Andriani, 2019). This is in accordance with the theory that excessive consumption can cause obesity. Delicious and delicious food, savory and delicious, can increase appetite along with excessive food consumption. In addition, the food served in energy stocks is not an organism that is large in number, usually 50% is around the internal organs, 45% abdominal cavity, and 5% in the intramuscular tissue (T. Y. Fatmawati, 2024). The role of media in education, media is used as a tool to convey information or messages related to health. Print media is the type of media that is closest to students. Printed materials also have an important role in health education because they convey clear messages that can be taken home (E. Abadi, 2022).

Conclusion

Based on the results of the research that has been conducted, the following conclusions can be drawn: Family- Based *Overweight* Intervention *Overweight Knowledge* (f-book) has an effect on nutritional status.



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