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MODIFICATION OF THE BEST DIET (REGULARLY LOW ENERGY BALANCED) FOR OBESITY YOUTH

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ABSTRACT

Background: *Obesity is a teenage health problem that needs to be addressed. One of the handling efforts in overcoming excess weight is proper eating/diet settings.*

Research Methods: *This type of research is a quasi-experimental design with a randomized pre-post test control group design. The research subjects used in this study were female adolescents aged 18-20 years with overweight nutritional status. The variables measured were body weight before and after treatment. The data obtained were tested statistically univariate to get an overview of the distribution of research variables and bivariate test to determine the effect of the REST diet on changes in body weight.*

Research Result: *The results showed that the average weight loss in the treatment group was 0.92 kg, and the control group was 0.67 kg. From the results of the Paired-samples T-Test, a significant value of 0.000 (p <0.05) was obtained, which means that there was a substantial difference in the mean weight before and after treatment.*

Conclusion: *The conclusion is that there is a difference in body weight before and after the study, but there is no effect of giving the REST diet on weight loss in obese adolescents.*

BACKGROUND

Obesity is currently a health problem that is increasing in children and adolescents. Basic Health Research Data (Riskesdas) 2013 shows that 26.6% of adolescents aged 15 years have central obesity, and there was an increase in 2018 to 31% (Riskesdas, 2018). Obesity that occurs during adolescence, 30%, will continue into adulthood and is a risk factor for cardiovascular disease, diabetes mellitus, arthritis, gallbladder disease, various types of cancer, respiratory function disorders, and various skin disorders (Simbolon et al., 2018). Therefore, in addition to being a health problem, a physical condition in adolescence is essential. The physical condition of adolescents with excess weight dramatically affects their psychological development and hurts their body image/appearance.

The causes of multifactor obesity involve complex interactions between genetic and environmental factors, such as lack of physical activity, food intake, and social aspects (Rolfes SR, 2013). Food intake is an environmental factor that has a strong influence on the occurrence of obesity in adolescents. A study by Widyastuti 2016 showed that obese adolescents had saturated fat intake exceeding 7% of the total daily energy and fiber intake that did not meet the nutritional adequacy rate (RDA) (Widyastuti, Dieny, and Fitranti, 2017). A study by Liliana stated that the average amount of energy, carbohydrate, and fat intake in obese adolescents showed more significant results than in non-obese adolescents (Loliana and Nadhiroh, 2015). Most of the obese group also had more frequency of food consumption, fast food, and snacks than the non-obese group (Kartika, 2012).

Prevention of obesity in adolescence is considered easier to do than tackling obesity in adulthood because changing life habits and losing excess weight is more problematic when it is settled. One of the handling efforts in overcoming excess weight is by eating/diet settings. The weight-loss diets offered in Indonesia are pretty diverse:

- The OCD diet
- The Mayo diet
- The blood type diet
- The food combination diet
- The general motors (GM) diet

Various kinds of diets offer weight loss in a short period. However, there are differences in dietary patterns between the different diets, including the time to eat, the kind of food consumed, and the amount consumed. Some people state that when they go on a diet, they have to endure hunger, cannot enjoy eating, are not excited, their concentration decreases and even become unproductive. Hence, the REST Diet (regularly balanced low energy) follows the principles of balanced nutrition, which is not burdensome and enjoyable (Rita, 2014).

MATERIAL AND METHODS

This type of research is a quasi-experimental design with a randomized pre-post test control group design. The research subjects used in this study were female adolescents aged 18-20 years with overweight nutritional status. In this study, a sample of 20 students in the Department of Nutrition at the Mataram Health Polytechnic was used with the criteria of not following other diets. The stages of the study were carried out by screening nutritional status to get adolescents with excess weight. After getting respondents with the criteria that met the criteria, the subjects were divided into two, namely the group that was given the REST diet (treatment) and the group that was not given the REST diet (control). At the beginning of the study, a 24-hour recall of food consumption was carried out to determine the adolescent's daily food consumption, eating patterns, and eating habits.

Furthermore, body weight measurements were taken before being given the REST Diet intervention. The next stage is that the respondent is given a REST Diet for 14 days with a different menu variation daily. After providing the REST diet intervention, the respondents' body weight was re-measured to determine changes in weight loss before and after the intervention. Finally, the data obtained were tested statistically univariate to get an overview of the distribution of research variables and bivariate test to determine the effect of the REST diet on changes in body weight of obese adolescents.

RESULT

Characteristics of Respondents

The respondents used in this study were 20 people who met the research criteria. In contrast, the respondents have divided into two groups: the treatment group gave the REST diet to as many as ten respondents, and the control group without providing the REST diet to as many as ten respondents. The characteristics of the respondents are presented in Table 1.

Table 1. Characteristics of Respondents

Variabel	Pemberian Diet (Perlakuan)				Tanpa Diet (Kontrol)			
	Nilai Minimal	Nilai Maksimal	Rerata	Standar Deviasi	Nilai Minimal	Nilai Maksimal	Rerata	Standar Deviasi
Umur	19	21	19,8	0,789	18	21	19,8	1,033
Height (cm)	150,5	164,8	154, 18	4,05	150	167	156	4,89
Weight before (kg)	53,1	77,2	65,39	8,38	54	71,6	63,71	4,65
Weight after (kg)	52	76	64,47	8,34	53	71	63	4,66
Body mass index (kg/m^2)	23,30	33,64	27,55	3,79	23,31	28,84	26,21	2,00

Table 1 shows that the average age of the treatment and control respondents is 19.8 years. The average height of the treatment respondents was 154.18 cm, and the average size of the control respondents was 156 cm. The initial body weight of the treatment respondents was 65.39 kg, and the control was 63.71 kg. The final body weight of the treatment respondents was 64, 47 kg, and the power was 63 kg. Body Mass Index (BMI) of treatment respondents was an average of 27.55 kg/m2, which means that the average respondent was in the

category of Obesity nutritional status I, while the control BMI was at an average of 26.21 kg/m2, which means the average respondent was in the category nutritional status Obesity I.

Test The Difference In Body Weight Before And After Giving the REST Diet
To determine whether or not there was a difference in body weight before and after the REST diet in the treatment and control groups, a paired-samples t-test was performed. The weight difference test before and after in the two groups is presented in Table 2.

Table 2. Results of the Difference in Body Weight Before and After in the Two Groups

Group	Variable	n	Mean ± SD	Average Difference ± SD	IK 95%	p
Treatment	Weight before	10	65,39 ± 8,38	0,92 ± 0,786	0,36-1,48	0,000
	Weight After	10	64, 47 ± 8,34			
Control	Weight before	10	63,71 ± 4,65	0, 67 ± 0,625	0,2-1,1	0,008
	Weight After	10	63,04± 4,66			

Paired-samples T Test

The results in Table 2 show the average weight loss after the REST Diet was 0.92kg. The test results obtained a significant value of 0.000 ($p < 0.05$), which means that there is a substantial difference in the mean weight before and after the administration of the REST Diet. This study also provides a 95% confidence level when the measurement is carried out on the population. The difference between body weight before giving the REST diet and body weight after giving the REST diet is 0.36 kg to 1.48 kg. Meanwhile, in the control group, it is known that the average weight loss is 0.67 kg and the test results obtained a significant value of 0.008 ($p < 0.05$), which means that there is a difference in the average weight before and after the study.

Test the Effect of Treatment on Weight Loss
To determine the effect of the treatment group on weight loss, the Mann-Whitney test was performed. The following is presented in Table 3 regarding the impact of treatment on weight loss.

Table 3. Test Results of the Effect of Treatment on Weight Loss

Group	Difference (kg) (mean±SD)	p-value
Treatment	0,92 ± 0,786	0.383
Control	0,67 ± 0,625	

The test results in Table 3 show no significant difference in weight loss ($p > 0.05$), so it can be concluded that the two treatments did not affect weight loss.

DISCUSSION
The REST diet in this study was given one time at lunchtime for 14 days, with an average energy content of 438.3 cal (30% of the total daily energy requirement). Before this REST Diet treatment, of course, respondents were provided with information about the REST Diet itself, so that although the REST Diet treatment was only given once a day, it was hoped that the respondents would also adhere to the principles of the REST diet when consuming food outside the therapy.

The principle of the diet given to the respondents is to pay attention to the calculation of energy density as outlined in the REST diet menu during the day. Energy density is calculated by calculating the energy content of food and comparing it with the weight of the food. Food intake for women is stated to have average energy density if the food consumed in a day has an energy density of 1.45-1.98 kcal/g and is declared high if the thickness is 1.99 kcal/g. Food intake for men is stated to have average energy density if the energy density is 1.53-2.08 kcal/g and is declared high if the thickness is 2.09 kcal/g (Rita, 2014). The average energy density calculation given to respondents on the first to the fourteenth-day menu is 1.16 kcal/g, so it is still in the intermediate energy density category. The principal thing in the REST Diet, apart from the requirement for low energy density, is that the food menu must contain high fiber, even though a low energy density (DER) means that it has prioritized the use of foods containing fiber. Foods that contain high fiber are rice and brown rice, whole wheat bread, rice mixed with agar, vegetables, and whole fruits.

In modifying the menu with DER, we need to understand that fruits and vegetables are the main foods in the modification. Reducing the portion of carbohydrates and animal protein, then adding vegetables and fruit can increase the volume of food to give a feeling of fullness.

The results showed that the administration of the REST Diet for 14 days had a statistically significant effect on weight loss with an average of 0.92 kg. In this study, we used weight measurement parameters because weight is an anthropometric measurement parameter that changes quickly in a short time due to changes in food consumption and health (Supariasa, 2012).

Teenagers who go on a diet to control their weight use healthy and unhealthy ways. In a layman's sense, teenagers often interpret it as reducing food portions to lose weight to achieve the ideal body shape. But unfortunately, the ways that teenagers do are often inappropriate (Dieny, 2014). Adolescent girls apply diets to lose weight in various ways that they think are more effective. Sometimes the diet they do endangers their health (Aflah, Indiasari & Yustini, 2014). An inappropriate diet will undoubtedly interfere with the fulfillment of nutrition in adolescents, where nutrients are still needed for body growth in the adolescent phase. So the selection of the REST Diet can be recommended for weight loss solutions because the REST Diet given to obese adolescents is proven to be able to lose weight. Implementing the REST Diet is that it is not too torturous for someone who is going on a diet. This is because the following dietary principles guide the REST Diet; reduce total energy intake while remaining full, continue to eat food with the appropriate volume, contain complete and balanced nutrition, and eat a minimum frequency of 3 (three) times a day, in addition to regular eating distances and the type and amount of food according to needs (Ramayulis, 2014).

CONCLUSION

There is a difference in body weight before and after the study, but there is no effect of giving the REST diet on weight loss in obese adolescents.

RECOMMENDATION

Suggestions to increase the frequency of giving the REST Diet from 1 to 3 times according to meal times so that the effect of the treatment will be more visible, namely on the variable weight change.

REFERENCES

Aflah, R. R., Indiasari, R., & Yustini. (2014). Hubungan Pola Makan dengan Kejadian Obesitas pada Remaja di SMA Katolik Cendrawasih. Makassar: Program Studi Ilmu GIzi Fakultas Kesehatan Masyarakat Universitas Hasanuddin.

Dieny, Fillah Fitra. Permasalahan Gizi pada Remaja Putri. Yogjakarta : Penerbit Graha Ilmu; 2014.

Kartika, Nadhiroh, 2012). Perbedaan Pola Makan dan Aktivitas Fisik Antara Remaja Obesitas dengan Non Obesitas. Makara, Kesehatan, Vol. 16, no. 1, Juni 2012: 45-50.

Loliana, Nadhiroh, 2015. Asupan Dan Kecukupan Gizi Antara Remaja Obesitas Dengan Non Obesitas. Media Gizi Indonesia. Vol 10 No 2. https://e-journal.unair.ac.id/MGI/article/view/3319.

Ramayulis, Rita. Slim is Easy, Cara Ajaib Menurunkan BB dengan Diet REST (Rendah Energi Seimbang Teratur). Jakarta : Penebar Swadaya; 2014.

Ramayulis, Rita. 101 Tips Berhasil Diet REST ala Rita Ramayulis. Jakarta : Gramedia Pustaka Utama; 2014.
Wahyuningsih, Retno. Buku Saku Diet Rendah Seimbang Teratur (REST) untuk Penurunan Berat Badan ; Ponorogo ; Forum Ilmiah Kesehatan (Forikes) ; 2019.

Riset Kesehatan Dasar (Riskesdas). Jakarta : Kementerian Kesehatan Republik Indonesia; 2013.

Riset Kesehatan Dasar (Riskesdas). Jakarta: Kementerian Kesehatan Republik Indonesia; 2018.

Rolfes SR. Understanding Normal and Clinical Nutrition (8th Ed)(gnv64).pdf. Eight Edit. Edited by Sarah Farrant. USA: Yolanda Cossio; 2006

Simbolon et al., Edukasi Gizi dan Perubahan Berat Badan Remaja Overweight dan Obesitas. 2018. Jurnal Kesehatan Volume 9, Nomor 2, Agustus 2018 ISSN 2086-7751 (Print), ISSN 2548-5695 (Online) http://ejurnal.poltekkes-tjk.ac.id/index.php/JK

Supariasa, IDN., Penilaian Status Gizi. Jakarta : Penerbit Buku Kedokteran EGC; 2012.

Widyastuti, Dieny and Fitranti, 2017, Asupan Lemak Jenuh Dan Serat Pada Remaja Obesitas Kaitannya Dengan Sindrom Metabolik. Jurnal Gizi Klinik Indonesia. Vol 12 No 4 - April 2016 (131-137). ISSN 1693-900X (Print), ISSN 2502-4140 (Online). https://jurnal.ugm.ac.id/jgki