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ARTIKEL PENELITIAN

The Effectiveness Of E-Counseling toward Weight Loss Program Among Obesity Students

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Abstract: A pandemic of obesity has caused many people to gain weight during the COVID pandemic.This pandemic has also caused people to minimize seeking treatment at health facilities. Therefore, the e-counseling method in the weight loss program is considered capable of being a treatment for obesity during a pandemic. This study aims to determine the effectiveness of e-counseling on the weight loss management program among obesity students. **Methods:** This study is a retrospective cohort analytic study involving obese patients. Sixty subjects was taken by the consecutive sampling method. The E-counseling method that the patient undergoes is in the form of face-to-face virtual counseling at the beginning of the program about 15 minutes per person, then a meal plan is given by reducing 500-700 kcal from the daily intake. This is followed by providing education on healthy lifestyles and periodic consultations through the WhatsApp group while undergoing the weight loss program. **Results:**. After undergoing the intervention for 1 month, the effects of losing as much weight as 3,39 – 4,21 kg ($p<0.001$) used T- dependent test. Body mass index of research subjects also decreased as much as 1,72 kg/m2 to 1,88 kg/m2 ($p<0.001$) used T dependent test. Waist circumference measurements also showed a decrease as much as 4,4 cm to 5,8 cm ($p<0.001$) used Wilcoxon test. **Conclusion:** The weight loss program through the e-counseling method was clinically and statistically proven effective in reducing body weight, body mass index and waist circumference in research subjects after 1 month of intervention.

Keywords: e-counseling, obesity, body mass index, waist circumference

INTRODUCTION

The obesity pandemic has long plagued the world, where the prevalence of obesity is increasing doubled from 1980 to 2019. Increasing rates of obesity and its comorbidities have an adverse effect on health status. In 2019, the Agency for Health Research and Development reported that 35.4% of

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Indonesians over the age of 18 were obese. The age group that suffers the most from obesity ranges from 40-49 years. In addition, 31% of Indonesians have central obesity, which is defined as an abdominal circumference of more than 90 cm in men and more than 80 cm in women.[1–4]

The incidence of obesity had a significant relationship with a high-fat, high sugar sweetened beverages and low-fiber diet and low physical activity.[5] An unhealthy lifestyle and the COVID-19 pandemic which requires people to do more activities at home also increase the risk of obesity, so a weight loss program is needed.[6,7]

The weight loss program is a nutritional therapy given to obese patients with an emphasis on motivational interviewing, namely non-judgmental communication and two-way collaborative discussions that aim to increase the patient's own motivation and stimulate his involvement towards behavior change. The target of behavior change is the implementation of a healthy lifestyle.[8–10]

With restrictions on activities outside the home accompanied by a decrease in people's willingness to seek treatment at health care facilities, the weight loss program carried out by e-counseling is considered capable of replacing face-to-face two-way collaborative communication. However, it is still not known yet the effectiveness of e-counseling program and whether this could be a better alternative to replace face-to-face counseling particularly in pandemic era. Thus, this study aims to determine the effectiveness of e-counseling on the success of the weight loss program in students suffering from obesity. One benefit of this e-counselling is that it initiates with face-to-face counselling, and then offers WhatsApp group discusses for monitoring and counselling later.[11,12]

METHODS

This study is a retrospective cohort analytic study involving obese patients who have undergone an e-Counseling weight loss program. The E-counseling method that the patient undergoes is in the form of face-to-

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face virtual counseling at the beginning of the program, then a meal plan is given by reducing 500-700 kcal from the daily intake and aerobic exercise (walking / static bicycle / aerobic exercise) 30-45 minutes / day. This was continued by providing education on healthy lifestyles, days and periodic consultations through the WhatsApp group for 1 month undergoing the weight loss program.

Exclusion criteria in this study were obese patients who had comorbidities. The research subjects were taken by consecutive sampling method. The dependent variables included were weight, height, body mass index and abdominal circumference. Measurements of all these parameters were carried out before and after the intervention. The e-counseling program lasts for 1 month.

The number of subjects in this study were 60 people. This research has been approved by the ethics committee of the Faculty of Medicine, University of Muhammadiyah North Sumatra. Statistical analysis was performed using the paired T test and the Wilcoxon test using SPSS software. This study has been granted letter number ethical clearance is No.555/KEPK/FKUMSU/2021.

RESULTS

A total of 60 subjects were involved in this study. Initial measurements of data on demographic characteristics and clinical characteristics of research subjects were carried out with the results as listed in table 1.

Table 1. Demographic and clinical characteristis of subjects

Characteristic		n	%
Gender	Male	10	16.7
	Female	50	83.3
Age (years old)	<=30	19	31.7
	31-40	30	50.0

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	41-50	7	11.7
	>50	4	6.7
Marital status	Married	42	70.0
	Not Married	18	30.0
Education	S2/S3/Sp1	9	15.0
	S1/Profesi	43	71.7
	SMA/Students	8	13.3
BMI status (kg/m2)	Obese 1	24	40.0
	Obese 2	36	60.0
Waist circumference (cm)	<=90	11	18.3
	91-100	28	46.7
	101-110	8	13.3
	>110	13	21.7

The weight loss program using the e-counseling method was carried out for one month. After that, the measurement of the parameters of body weight, body mass index and waist circumference of all research subjects was carried out, then tested statistically with the results as shown in table 2

Table 2. The effectiveness of the e-counseling method on weight loss, BMI and waist circumference

	Pre-test	Post-test	p-value
Body Weight (kg)	80.1 ± 14.82	76.3 ± 14.41	<0.001[a]
BMI (kg/m2)	31.5 ± 4.48	29.7 ± 4.40	<0.001[a]
Waist circumference (cm)	99.8 ± 12.6	94.7 ± 11.9	<0.001[b]

[a]significant with T-dependent
[b]signifikan t with Wilcoxon test

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Table 2 shows that there was a significant reduction in body weight, body mass index and abdominal circumference before and after the e-counseling weight loss program for 1 month. The average body weight of the study subjects was reduced by 3.8 kg during the 1 month intervention. Likewise, there was a decrease in body mass index from 31.5 to 29.7 after the intervention for 1 month. The patient's abdominal circumference was reduced from 99.8 cm to 94.7 cm. Thus, the weight loss program using the e-counseling method has been proven to be clinically and statistically effective.

DISCUSSION

Obesity is a disease that requires therapy to overcome. The threat of obesity during a pandemic is particularly increasing. The Research showed that 44% percent of obese women showed weight gain with an average weight gain of around 2.8 kg in 2 months during the COVID-19 pandemic lockdown period. Therefore, efforts are needed to prevent obesity by doing a weight loss program.[13]

The weight loss program is carried out in the form of providing education by means of gradual counseling accompanied by nutritional therapy interventions. The goal of nutritional and medical therapy in obese patients is to lose weight in order to reduce the risk of comorbid diseases.[8]

The weight loss program consists of two stages. The first one is the initial assessment, includes communication and interviews, anthropometric assessment, assessment of risk factors for obesity, cardiovascular and diabetes mellitus, and identification of lifestyle. This second one is education on nutrition, food and exercise. Education is carried out by two-way communication. The results of this education can be in the form of prescription meal plans and recommendations for exercise and sleep patterns.[14,15]

During the Covid-19 pandemic, the two-way counseling program through face-to-face contact is a risk factor that has the potential to increase the spread of Covid-19, and therefore face-to-face communication

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should be avoided. This causes face-to-face education programs should be modified in such a way that virtually without reducing the content of counseling and transfer of desired knowledge. Electronic counseling which is defined as the process of providing counseling carried out by electronic tools. Media assistance that has technology is the key to this method. The media used in this method include websites, telephone or mobile phones, email, instant messaging and social networking and video conferencing.[16]

The e-counseling process in this program is carried out 2 times in video conferencing, at the beginning and at the end of the program. Patients are included in the whatsapp group as a support group media and a platoform to get education about healthy lifestyles and evaluation of diet and physical activity that has been prescribed.

This program was conducted for 1 month only. The short-term duration chosen in this study was intended to evaluate whether the e-counseling program could result in weight loss in subjects, and thereby providing evidence that e-counseling is as effective as face-to-face program. Neverthless, short-term counseling programs such as those carried out in this study have not been able to emphasize the formation of habits and lifestyles that are maintained after the counseling program ended. Some studies stated that the ideal weight loss counseling program lasts long term, approximately 3-6 months. This aims to reinforce the educational content, dealing with mental barriers, such as food cravings, depression and stress, that may appear in during weight loss process. More importantly, long-term counseling is intended to form habits so that patients do not return to their former unhealthy lifestyle.[17]

This study shows that the weight loss program through the e-counseling method has proven to be effective in reducing body weight, body mass index and abdominal circumference in research subjects after 1 month of intervention. According to the study's findings, body weight reduced between 3,39 and 4,21 kg following the intervention. BMI reduced between

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1,72 and 1,88 kg/m2 following the intervention. However there was a 4,4–5,8 cm throw in waist circumference. Although subjects are still categorized as obese, weight loss of 0.5-1 kg/week is one of the markers of the success of this program based on weight loss targets according to obesity therapy guidelines. [18,19] A meta-analysis reveals that individuals who adhere to a diet and exercise programme can achieve clinically relevant weight loss: −6.29 kg after 12 to 18 months (50). Achieving significant weight loss within the first two months of an intervention is a sign of long-term success. [10,20]

In addition, the e-counseling process which is also carried out in virtual groups keeps patients receiving continuous direction on the motivation for a healthy lifestyle and behavior. The National Institute for Health and Care Excellence, 2014 states that obesity management does not only include dietary interventions, but also interventions on lifestyle, behavior and physical activity.[21]

However, this study has several limitations, including the relatively small number of research subjects and the duration of the intervention which only lasted for 1 month. In the future, it is hoped that further research can be carried out involving a larger number of subjects and with a longer duration of intervention.

CONCLUSION

The weight loss program through the e-counseling method has been shown to be clinically and statistically effective in reducing body weight, body mass index and waist circumference in research subjects after 1 month of intervention.

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