



Eating Behavior and Nutritional Status Among Women Aged 18–55 years During Covid 19 Pandemic

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Abstract. Covid 19-Pandemic makes us have to social distancing with others. It could change emotional situation, eating behavior and food consumption. The aim of the study was to investigate the relationship between eating behavior and nutritional status (overweight and obesity). This study used a cross sectional design conducted during covid-19 pandemic on women aged 18–55 years. We used dutch eating behavior questionnaire (DEBQ) consisting of 33 questions to asses eating behavior (emotional, external dan restrained eating). Nutritional status was measured using Body Mass Index (BMI). A total of 74 women participated in this study. Based on chi square analysis, using STATA 12, eating behavior (restrained and external eating) showed association with overweight. These findings suggest that during covid 19 pandemic, there were a lot of supply and food availability in household level. On the other hand, restrained eating precisely made individu ate more to maintenaince their healthy although the results of emotional eating did not show positive relation with overweight in women. It as very necessary to increase knowledge in balanced nutrition for women 18–55 years of age.

Keywords: eating behavior · overweight · women · DEBQ

1 Introduction

Obesity is a complex diseases which has reached pandemic dimensions, called twin pandemic. The worldwide prevalence of obeisty has nearly triped since 1975, mainly due to the adoption of a progressively more sedentary lifestyle and the consumption of less healthy diets [1]. Covid 19 has brought to public attention the higher risk of ill health from infectious diseases associated with increased body weight [2]. COVID-19 confinement affected lifestyles. There is inconclusive evidence about changes in eating patterns, and there are few studies on the impact on body mass index (BMI), the occurrence of dysfunctional behaviors (binge eating, fat intake), and the predictive role of maladaptive eating styles (emotional, external, and restrained eating) [3].

World Health Organization (WHO) on March 11, 2020 has officially declared Coronavirus Disease or Covid-19 as a global pandemic. This is because the virus quickly

spread to areas far from the center of the outbreak in Wuhan, Hubei, China. Since it was first announced in December 2019, cases have spread very widely across continents.

The government has made prevention and promotion efforts, treatment to control. These efforts include washing hands, wearing masks when traveling, working from home (WFH), physical distancing, and so on. The existence of local transmission in several provinces in Indonesia also began to apply Large-Scale Social Restrictions (PSBB) in accordance with Article 2 of the Minister of Health Number 9 of 2020.

With the existence of the COVID-19 virus, people in Indonesia feel a considerable impact from various fields. One of them is the behavior of food consumption.

Research that analyzed how the COVID-19 confinement and the pandemic situation influenced eating behaviors in general population have produced mixed results.

Eating behavior is a complex association among many factors ie physiologic, psychological, social, and genetic factors and can influence meal timing. This also influenced by the quantity of food intake, food preference, and food choice.

The COVID-19 confinement had a positive impact on some eating behaviors.

Behavior is one of the etiology causes of obesity. Obesity is a complex interplay between genetic susceptibility and behavior; including eating behavior, dietary habit and physical activity. Obesity is also caused by a long term imbalance between energy intake from food consumption and energy consumption from food physical activity.

Based on the background, the aim of the study was to investigate the relationship between eating behavior and nutritional status.

2 Method

The research activity is a quantitative research with the type of observational research using a cross sectional design on women. This research was conducted during the COVID-19 pandemic so it was conducted online. The number of research respondents was 74 people who were conducted online by distributing questionnaires. The study was conducted on women aged 18–55 years from various economic aspects.

The inclusion criteria were female aged 18–55 years and having no pregnant. On the other hand, the exclusion criteria were getting acute infection diseases and non communicable diseases (NCD). The total sample size using Lameshow formula was 74 respondents taken purposively. The data was obtained from distributing questionnaire online.

The eating behavior score was assessed using Dutch Eating Behavior Questionnaire (DEBQ). The Dutch Eating Behavior Questionnaire (DEBQ) was developed to measure eating styles that may contribute to or attenuate the development of overweight [4]. It was developed by Van Strien et al. It consists of 33 items for evaluating three scales of eating behaviors in adults: (1) emotional eating (13 items), (2) external eating (10 items), and (3) restrained eating (10 items). The scales have a high internal consistency and factorial validity based on cronbach's alpha coefficients and the pearson correlation [4]. Responses are given through a 5-point Likert scale with details of 1 (never), 2 (rarely), 3 (sometimes), 4 (often), and 5 (very often). The questionnaire was translated into the Indonesian language.

In addition, nutritional status was performed from Body Mass Index (BMI). BMI is an important screening tool which is quick and easy to measure in many different things. It is also an important measure for monitoring obesity prevalence at a population level and for use in epidemiological studies. It was calculated as weight in kilogram divided by height in square meters, and classified into underweight $< 18,5 \text{ kg/m}^2$; normal $> 18,5 - < 23 \text{ kg/m}^2$; overweight $> 23 - < 24,9 \text{ kg/m}^2$ and obese $> 25 \text{ kg/m}^2$ (WHO, 2000).

3 Result and Discussion

The study investigated the association of overweight and eating behavior among women. Eating behavior can influence food intake and diet quality and impact of imbalance energy intake (Table 1).

Based on chi square analysis using STATA 12, eating behavior especially restrained and external eating showed significant association with overweight. These findings suggest during covid 19 pandemic, there were a lot of supply and food availability in house hold level. On the other hand, restrained eating precisely made individu ate more to maintenance their health although the results of emotional eating did not show positive relation with overweicht in women.

The previous research also stated that obesity was prevalent in female adults. There was also realtionship between obesity and restraint eating among adults. Overweight and obesity are correlated with excess of food intake. It was also related to quantity, quality and eating behavior. Eating behavior can influence food intake and diet quality and impact of energy imbalance by food intake [5].

A relationship between changes in food intake associated with preventive measures of restricting physical contact. External eating also associated with food intake. It can be thought that the confinement at home and easy access to food has created a favorable environment for people eating more, especially those who previously were stigmatized for their body weight [6].

The other findings provided information about a shift towards modified eating behaviours, characterized by an increased snack frequency and a preference for sweets and ultra-processed food rather than fruits, vegetables, and fresh food [7].

Restrained eating was overeating after a period of slimming when the cognitive resolve to diet is abandoned. Restrained eating is an individual's attempt to manage body weight by cognitively controlling food intake.

The COVID-19 confinement had a positive impact on some eating behaviors. External eating positively and marginally predicted fat intake during COVID-19 confinement, although it did not predict binge eating and BMI [3].

During covid 19 Pandemic, eating behavior could impact on increase of nutritional status. The Covid 19 confinement and the pandemic situation influenced eating behaviors in general population. This also influenced by the quantity of food intake, food preference, and food choice [5].

Other findings reported that there was any change in eating behavior that characterized by an increased snack frequency and a preference for sweets and ultra-processed food rather than fruits, vegetables, and fresh food [7].

Table 1. Sociodemographic

Karakteristik	Jumlah	prosentase	
Usia	11	14,86	
>30 tahun	63	85.14	
<30 tahun			
Pekerjaan	50	67.57	
Mahasiswa	6	8.11	
Ibu rumah tangga	18	24.32	
karyawan			
Pendapatan	37	50.00	
<1.9 juta	17	22.97	
1.9 juta -< 3.5 juta	9	12.16	
3.5 juta – 5 juta	11	14.86	
>5 juta			
restrained eating	40	54.05	
Rendah	34	45.95	
Tinggi			
emotional eating	36	48.65	
Rendah	38	51.35	
Tinggi			
external eating	37	50.00	
Rendah	37	50.00	
Tinggi			
Status Gizi	35	47.30	
Normal	17	22.97	
Kurus	22	29.73	
Lebih dan obes			
Karakteristik	Status Gizi		P*
	<23.5	≥23.5	
Usia	49	14	0.00
<30 tahun	3	8	
>30 tahun			
Pekerjaan	38	12	0.12
Mahasiswa	14	10	
Non mahasiswa			
Pendapatan	30	7	0.04
<1.9 juta	22	15	
≥1.9 juta			
Restrained Eating	34	6	0.00
Rendah	18	16	
Tinggi			
Emotional Eating	25	11	0.88
Rendah	27	11	
Tinggi			
External Eating	22	15	0.04
Rendah	30	7	
Tinggi			

In addition, it has been shown that emotional, external, and restrained eating can directly influence binge eating, fat intake, and BMI during the COVID-19 confinement.

External eating also correlated with eating behavior in this study. Previous results also indicated that external eating positively and marginally predicted fat intake during COVID-19 confinement, although it did not predict binge eating and BMI [7].

Emotional and psychological responses to the Covid 19 could lead to dysfunctional eating behaviors. The negative emotions increase the risk of emotional eating behavior. Emotional eating is defined as overeating after stress and negative emotions. People tend to eat as a mechanism to cope with mood changes.

4 Limitations

The study had some limitations. The data was collected through an online questionnaire. The conventional face to face interviews could not be applied because of pandemic precautions (travel restriction etc.), therefore online survey was chosen. Body weight and height informations were obtained according to the statements of the participants. The study did not include all the possible confounder factors such as sociodemographic, sex, physical activity, food consumption, etc.

5 Conclusion and Recommendation

The Covid 19 Pandemic, lifestyle changes and psychological conditions affected eating habits. During this emergency, it assesses the changes of weight and eating habits.

It is very necessary to increase knowledge in balanced nutrition for women aged 18–55 years during covid 19. Future study should assess the causal effect of eating behaviors and the development of obesity in men and women.

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