

Stress Levels, Emotional Eating, Snacking Habits, and Nutrient Intake among College Students during the COVID-19 Pandemic

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ABSTRACT

This study analyzed the correlation between stress levels and emotional eating, snacking habits, and nutrient intake among college students. This cross-sectional study involved 98 students as subjects who were selected by convenience sampling through an online questionnaire. The result showed 70.4% of the subjects experienced moderate stress, 52% were emotional eaters, 64.3% consumed snacks more than 3 times a day, 39.7% had a protein deficit, 36.7% had an excessive fat intake, and 49% had an energy and carbohydrate intake classified as severely deficit. This study found a positive correlation ($p=0.04$; $r=0.21$) between stress levels and emotional eating. Among college students, a high prevalence of moderate stress level was associated with emotional eating.

Keywords: college students, emotional eating, nutrients intake, snacking habit, stress level

INTRODUCTION

Distance learning, which was prevalent during the COVID-19 pandemic, can disrupt physical health and affect mental health (Huang & Zhao 2020). A common way to cope with stress is to eat. It is done in response to negative emotions, so it is also known as emotional eating. Furthermore, stress causes individuals to change their food preferences to more savory and energy-dense foods, which can be addictive and lead to obesity. Stress has been shown to increase the risk of obesity. Therefore, the researchers were interested in analyzing stress levels emotional eating, snacking habits, and nutritional intake of students during the COVID-19 pandemic.

METHODS

This cross-sectional study was conducted in Jakarta, Bogor, Depok, Tangerang, and Bekasi. The subjects were 98 people selected by convenience sampling from January to February 2021. Data on subjects and family characteristics were collected using an online questionnaire. Stress levels were measured using the Perceived Stress Scale (PSS), while emotional eating was measured using the Emotional Eating subscale of the Dutch Eating Behavior Questionnaire (DEBQ-E). Data on snacking habits were collected with the Food Frequency Questionnaire (FFQ),

and food intake data were obtained with a 24-hour recall. Macronutrient adequacy levels were based on the Pudjiastuti (2012) with categories of severe deficit (<70%), moderate deficit (70–79%), mild deficit (80–89%), normal (90–119%), and excess ($\geq 120\%$). Data were analyzed using SPSS. The correlation between stress levels and emotional eating was analyzed using Spearman's correlation test. Meanwhile, Pearson correlation test was used to analyze the correlation between stress level and snacking habits and between stress level and nutrient intake.

RESULTS AND DISCUSSION

Half of the subjects were 21 years old and 80.6% of the subjects were female. The negative emotions have a tendency to increase the desire to eat when there is no activity, loneliness, and boredom. As many as 80.6% of the subjects have never had the desire to eat when they were feeling scared (Table 1).

There was a significant positive correlation between stress levels and emotional eating ($p=0.04$; $r=0.21$). The higher the level of stress was, the more emotional the eating behavior became. Based on the theory of nutritional psychology, emotional eating behavior is triggered by negative emotions that affect the hormone cortisol (Trimawati & Wakhid 2018). There is a significant negative correlation

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Table 1. Distribution of subjects based on the stress level, snacking, emotional eating and nutrient adequacy

Variable	n	%
Stress level		
Low	15	15.3
Moderate	69	70.4
High	14	14.3
Snacking habit		
<2 times/day	6	6.1
2–3 times/day	29	29.6
>3 times/day	63	64.3
Emotional eating		
Yes	51	52.0
No	47	48.0
Energy adequacy level		
Deficit	76	77.6
Adequate	20	20.4
Excess	2	2.0
Protein adequacy level		
Deficit	39	39.8
Adequate	32	32.7
Excess	27	27.6
Fat adequacy level		
Deficit	35	35.7
Adequate	27	27.6
Excess	36	36.7
Carbohydrate adequacy level		
Deficit	93	94.9
Adequate	3	3.1
Excess	2	2.0

between emotional eating and the frequency of consumption of healthy snacks such as fruit ($p=0.014$; $r=-0.217$), fruit juice ($p=0.001$; $r=-0.328$), and nuts ($p=0.034$; $r=-0.214$). Emotional eating behavior decreases the consumption of healthy snacks. Stress decreases the consumption

of healthy foods; such as, fruits and vegetables (Errisuriz *et al.* 2016). On the other hand, there was no correlation between stress levels and nutrient intake and adequacy levels.

CONCLUSION

There is no significant correlation between stress levels and snacking habits, nutrient intake and adequacy levels. There is a significant correlation between stress levels and emotional eating ($p=0.04$; $r=0.21$), which means that the higher the stress level, the more emotional the eating behavior becomes.

DECLARATION OF CONFLICT OF INTERESTS

The authors declare no conflicts of interest in the preparation of this manuscript.

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