

Body Image Perception and Its Relationship with Adolescents Nutritional Status in Pekanbaru City during the Covid-19 Pandemic

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Abstract

Offline learning during the Covid-19 pandemic can change adolescents' lifestyles, including dietary patterns that have an effect on increasing body weight so that it can have an impact on negative body image perceptions. This study aimed to determine the relationship between body image perception and adolescents nutritional status in Pekanbaru City during the Covid-19 pandemic. The research design was a cross sectional study. The research sample was adolescents in Pekanbaru City with an age range of 12-25 years old, totaling 194 people. The data was obtained from the results of filling out the questionnaire independently which was distributed to sample via Google Form. Data analysis used the spearman correlation test with p value $< 0,05$. Total samples who were satisfied with their bodies were 33,0% and dissatisfied were 67,0%. The nutritional status of sample were 4,6% very thin, 13,4% thin, 68,0% normal, 9,8% overweight, and 4,2% obesity. The results showed that there was a significant relationship between body image perception and adolescents nutritional status in Pekanbaru City during the Covid-19 pandemic ($p=0,000$; $r=0,609$). The problem of dissatisfaction with body image can make a adolescent have negative thoughts and have an impact on abnormal nutritional status. The need for a psychological approach to adolescents in increasing their confidence in their own body image.

Keywords: *adolescents, body image, covid-19, nutritional status*

Introduction

Adolescence is a transitional period from childhood to adulthood which is marked by development in all aspects or functions of the body to enter adulthood. During adolescence, there are changes in attitude, changes in thinking, and changes in body size and shape that lead to a negative body image¹. A negative body image is a person's perception of being dissatisfied with his/her body image.

The results of research conducted on Riau University students in 2013 showed that there were 51,7% of students (late adolescent) who were

dissatisfied with their body image². The results of research on junior and senior high school students in several Indonesian schools also showed that adolescents dissatisfied with their body image. The results of research in one of junior high school in Surabaya showed that 55,6% of adolescents had a negative body image. Similar results were also found in Aceh, namely 57,8% students in SMAN 4 Banda Aceh had a negative body image³. Research on students in SMPN 8 Pekanbaru showed that 37,5% students dissatisfied with their body image⁴. As a result of the a negative body image perception, it can cause adolescents to do an excessive diet in order to

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get the desired body image⁵ without paying attention to health impacts. Some examples of excessive diets are skipping meals, replacing main meals with snacks, vomiting their food, and smoking⁴. Deviant eating behavior like this will have an impact on adolescent health problems.

During the Covid-19 pandemic, the government in several regions in Indonesia imposed large-scale social restrictions to reduce the spread of the virus. This has an impact on the learning system in Indonesia which must be done online. Adolescents who do online learning from their home will experience changes in eating pattern and physical activity. These changes include a decrease of physical activity (38,0%) and an increase of sitting frequency (28,6%), as well as an increase frequency of consumption meals and snacks⁶. The same results were also shown in the other research⁷, namely students who did online learning during the Covid-19 pandemic experienced dietary patterns that was not in accordance with the recommended balanced nutrition guidelines, namely 44,9% of students had a main meal frequency of 2 times a day and snacks 3 times a day. This type of eating pattern can increase adolescent body weight so that it will have an impact on negative body image perceptions.

Riskesdas report in 2018 showed that the prevalence of nutritional status according to BMI for Age in adolescents aged 13-15 years old in Pekanbaru city was 3,69% very thin, 7,46% thin, 73,09% normal, 8,96% overweight, and 6,8% obesity. This number exceeds the prevalence of Riau Province (2,68% very thin, 7,15% thin) and exceeds the national prevalence (1,9% very thin, 6,8% thin, and 4,8% obesity)⁸. If online learning continues and the eating behavior of adolescents does not comply with the recommended balanced nutrition guidelines, it will increase the incidence of overweight or obesity. This will increase the negative body image perception in adolescents during the covid-19 pandemic. Research on body image perception in adolescents associated with nutritional status during the Covid-19 pandemic has not been widely carried out. Therefore, the purpose of this study was to determine the relationship between body image perception and adolescents nutritional status in Pekanbaru City during the Covid-19 pandemic.

Method

The type of this research was descriptive analytic with a cross sectional design. Data collection from November until December 2021. The research sample was adolescents in Pekanbaru City with an age range of 12-25 years old⁹ totaling 194 people. The data was obtained from the results of filling out the questionnaire independently which was distributed to sample via Google Form. The questionnaire contains questions about sample's characteristics (age, weight, height, gender, occupation), body image perception, dietary changes during the Covid-19 pandemic, frequency of snacks, fruits, and vegetables consumption during the Covid-19 pandemic. Data analysis used was univariate analysis which was displayed in the form of a frequency distribution table and bivariate analysis using the Spearman correlation test with p value <0.05.

Results

The research sample was adolescents in Pekanbaru City with an age range of 12-25 years old. The results of the univariate analysis including gender, age, occupation, nutritional status, body image perception, level of body image satisfaction, dietary changes during the Covid-19 pandemic, and frequency of snacks, fruits and vegetables consumption during the Covid-19 pandemic are shown in Table 1.

Table 1: Characteristics of Research Sample

Characteristics	Total (n)	Percentage (%)
Gender		
Male	38	19,5
Female	156	80,5
Age		
13-15 years old	10	5,2
16-18 years old	39	20,1
19-25 years old	145	74,7
Occupation		
Senior High School student	13	6,7
College student	162	83,5
Entrepreneur	5	2,6
Other	14	7,2

Conti.. Table 1: Characteristics of Research Sample

Characteristics	Total (n)	Percentage (%)
Nutritional Status		
BMI for Age		
Very thin	0	0,0
Thin	4	2,1
Normal	34	17,5
Overweight	8	4,1
Obesity	3	1,6
BMI		
Very thin	9	4,6
Thin	22	11,3
Normal	98	50,5
Overweight	11	5,7
Obesity	5	2,6
Body Image Perception		
Thin	55	28,3
Normal	102	52,6
Overweight	36	18,6
Obesity	1	0,5
Level of body image satisfaction		
Satisfied	64	33,0
Dissatisfied	130	67,0
Dietary changes during the Covid-19 pandemic		
Increase	89	45,9
No changes	87	44,8
Decrease	18	9,3
Frequency of snacks consumption during the Covid-19 pandemic		
Frequently (>1 time/day)	176	90,7
Infrequently (<1 time/day)	18	9,3
Frequency of fruits consumption during the Covid-19 pandemic		
Frequently (>1 time/day)	64	33,0
Infrequently (<1 time/day)	130	67,0
Frequency of vegetables consumption during the Covid-19 pandemic		
Frequently (>1 time/day)	117	60,3
Infrequently (<1 time/day)	77	39,7

Based on gender, most of the research samples were female (80,5%) and other were male (19,5%). The nutritional status of the sample was categorized into nutritional status for early adolescents (12-16 years old) using BMI for Age and nutritional status for late adolescents (17-25 years old) using BMI. Based on the nutritional status of early adolescents (12-16 years old) 17,5% of the sample had normal nutritional status with an average of z-score of BMI for Age was $0,2 \pm 2,5$. In late adolescents (17-25 years old), most of the nutritional status of sample was normal (50,5%) with an average BMI of $21,3 \pm 3,8$. Most of the samples had a negative their body image perception (67,0%). During the Covid-19 pandemic, most of the samples had increase in dietary (45,9%) compared to before the Covid-19 pandemic.

Bivariate analysis used the Spearman test to see the relationship between the characteristics sample (gender, age), body image perception, frequency of snack consumption, frequency of fruit consumption, frequency of vegetable consumption, and dietary patterns during the Covid-19 pandemic with the adolescents nutritional status in Pekanbaru City. The results of the bivariate analysis are shown in Table 2.

Table 2: Relationship between the characteristics sample (gender, age), body image perception, frequency of snack consumption, frequency of fruit consumption, frequency of vegetable consumption, and dietary patterns during the Covid-19 pandemic with adolescents nutritional status

Characteristics	Body Image		Total		p value
	Positive	Negative	n	%	
Gender					0,960
Male	14 (7,2%)	24 (12,3%)	38	19,5	
Female	50 (25,8%)	106 (54,7%)	156	80,5	
Age					0,102
13-15 years old	3 (1,5%)	7 (3,6%)	10	5,2	
16-18 years old	11 (5,7%)	28 (14,4%)	39	20,1	
19-25 years old	50 (25,8%)	95 (49,0%)	145	74,7	
Body Image Perception					0,000*
Thin	16 (8,2%)	39 (20,1%)	55	28,3	
Normal	48 (24,8%)	54 (27,8%)	102	52,6	
Overweight	0 (0,0%)	36 (18,6%)	36	18,6	
Obesity	0 (0,0%)	1 (0,5%)	1	0,5	

Conti.. Table 2: Relationship between the characteristics sample (gender, age), body image perception, frequency of snack consumption, frequency of fruit consumption, frequency of vegetable consumption, and dietary patterns during the Covid-19 pandemic with adolescents nutritional status

Characteristics	Body Image		Total		P value
	Positive	Negative	n	%	
Dietary changes during the Covid-19 pandemic					0,192
Increase	35 (18,0%)	54 (27,9%)	89	45,9	
No changes	22 (11,3%)	65 (33,5%)	87	44,8	
Decrease	7 (3,6%)	11 (5,7%)	18	9,3	
Frequency of snacks consumption during the Covid-19 pandemic					0,013*
Frequently (>1 time/day)	62 (32,0%)	114 (58,8%)	176	90,7	
Infrequently (<1 time/day)	2 (1,0%)	16 (8,2%)	18	9,3	
Frequency of fruits consumption during the Covid-19 pandemic					0,423
Frequently (>1 time/day)	24 (12,4%)	40 (20,6%)	64	33,0	
Infrequently (<1 time/day)	40 (20,6%)	90 (46,4%)	130	67,0	
Frequency of vegetables consumption					0,910
Frequently (>1 time/day)	39 (20,1%)	78 (40,2%)	117	60,3	
Infrequently (<1 time/day)	25 (12,9%)	52 (26,8%)	77	39,7	

Based on the results in Table 2, it can be concluded that there was a significant relationship between body

image perception and nutritional status ($p=0,000$). Body image perception and nutritional status had positive correlation with a correlation coefficient value was 0,609 which means it had a strong relationship ($r=0,70-0,90$)¹⁰. The frequency of snacks consumption during the Covid-19 pandemic also had a significant relationship with nutritional status ($p=0,013$) but had a very weak relationship as indicated by the correlation coefficient value was 0,194.

Discussion

Early adolescent begins at the age of 12-16 years old and ends around the age of 17-25 years old⁹. The most of adolescents pay attention and attach importance to their physical appearance so that they try to do something to make their physical appearance look better¹¹. Female adolescents have a higher dissatisfied of their body image than male¹² causing a negative body image. This is in line with the results of this study, namely 67,0% of adolescents who had a negative body image where dissatisfaction with body shape tends to be more experienced by female adolescents (54,7%) than male adolescents (12,3%). Changes in the form of increased body fat during puberty cause female adolescent to often feel dissatisfied with their body image¹³.

Overweight and obesity adolescents tend to have a negative body image, especially in female adolescent¹⁴. This study also showed that 19,1% of overweight and obesity adolescent had a negative body image. In addition, there was a significant relationship between body image perception and adolescents nutritional status. The same results were also shown in the several studies^{4,15}. This showed that the problem of body image dissatisfaction can make a female adolescent have negative thoughts and have an impact on abnormal nutritional status¹⁵.

Body image dissatisfaction was also found in adolescents with normal nutritional status (27,8%). This showed that sample with an ideal body weight tend to judge their body size to be larger than their actual body size and perceive the addition of body fat as something embarrassing¹⁶. Negative body image is influenced by many factors such as mass media, friends¹⁶, and is influenced by the trend of women with young, tall, long legs, and very thin⁴.

The online learning process during the Covid-19 pandemic can change the adolescents lifestyle, including dietary patterns¹⁷. This research showed

that most sample (45,9%) had an increase in their diet during the covid-19 pandemic. The same results were also shown in the several study¹⁸, namely, during the Covid-19 pandemic, dietary patterns such as breakfast, food variety, protein consumption, vegetables consumption, fruits consumption, fluids consumption, supplements, and spices was increased significantly compared to before the pandemic. During the pandemic, people are encouraged to stay at home, causing modified sample eating behavior and tends to consume more food. Dietary changing, such as eating food without hunger and overeating, may contribute to long-term intake-related health effects. Long stays at home during this time of the pandemic allow unrestricted access to food, thus causing individuals to consume food outside of mealtimes. This causes disruption of the metabolic cycle which can lead to dysmetabolism and obesity¹⁹.

Dietary changes adolescent in this study was the increase in the frequency of snack consumption, which was 90,7% of sample consuming snacks more often than before the Covid-19 pandemic. The results of this study also showed that there was a significant relationship between the frequency of snack consumption during the Covid-19 pandemic and the adolescents nutritional status. Snacks that are usually consumed by adolescents was contain high fat, high calory, high sugar, and low fiber. These snacks give a big contribution to the intake of calory and cholesterol in a day. This is can give an impact risk of obesity in adolescents if adolescents do not do physical activity regularly²⁰. Offline learning in pandemic period give impact in change of lifestyle adolescents, namely low physical activity but high energy consumption. This is can give impact in adolescents nutritional status such as increasing body weight.

Consumption of vegetables and fruits is recommended during the Covid-19 pandemic because vegetables and fruits has high antioxidants and vitamins that can improve the body's immune system²¹. The results of this study showed that 67,0% of adolescents are in the infrequent category (<1 time/day) in consuming fruits and 60,3% of adolescents are in the frequent category (>1 time/day) in consuming vegetables during the Covid-19 pandemic. Low fruit consumption is positively correlated with weight gain which can lead to obesity, so it is necessary to improve fruit consumption during the Covid-19 pandemic²².

Dietary that are not in accordance with the Guidelines for Balanced Nutrition during the Covid-19

pandemic can affect the adolescents nutritional status and give impact in a negative body image. Negative body image can also cause adolescents, especially female adolescents, to make various efforts to achieve the ideal body weight according to their perception. If it is not balanced with right knowledge, these efforts can have an impact on their nutritional status⁴.

Conclusion

There was a relationship between body image perception and adolescents nutritional status in Pekanbaru City during the Covid-19 pandemic. The problem of dissatisfaction with body image can make a adolescent have negative thoughts and have an impact on abnormal nutritional status. The need for a psychological approach to adolescents in increasing their confidence in their own body image.

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Ethical Clearance : No Ethical Issue

Conflict of Interests : Nil

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