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Diet Pattern and Psychological Conditions in Adolescents During Covid-19 Isolation

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ABSTRACT
Social isolation has a negative impact on eating habits and mental health. especially in adolescents. Teenagers' daily lives have changed dramatically during the COVID-19 era due to the social restrictions that have been imposed, including the closure of schools, recreation centers and sports facilities. The purpose of this study was to assess the diet carried out during isolation with psychological adolescents. A total of 206 teenagers took the online survey. Participants showed negative psychological, and healthy diet at moderate limits. Hierarchical regression analysis shows that a healthy diet has a positive psychological effect. The results of the study found that adolescent psychology in this study was below the threshold recommended by the World Health Organization as an indication of possible depressive symptoms, measures to reduce wrong dietary behavior in adolescents a priority for the community and policy makers.

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1. INTRODUCTION

The COVID-19 epidemic, one of the worst in human history and one that has impacted practically all of the nations on world. It is of significant worry not only in China but also internationally that Wuhan, Hubei province, China, became the epicenter of an outbreak of pneumonia in December 2019 (Wang et al., 2020). Since the initial SARS-CoV-2 infection was discovered in 2019, it has spread around the world, resulting in more than 208,470,375 cases of COVID-19 and 4,377,979 mortality as of August 18, 2021. In Indonesia, the first COVID-19 positive cases are confirmed on March 2, 2020 (Setiawaty et al., 2020). All provinces reported cases of COVID-19 within 40 days (Aisyah et al., 2020). There were 120,013 deaths from COVID-19 in August 2021 in Indonesia, where there were 3,892,479 confirmed cases.

SARSCoV-2 can infect people of all ages. However, epidemiological studies indicate that older men (Setiadi et al., 2022), smokers, and patients with comorbid conditions such as diabetes mellitus, chronic obstructive lung disease, heart disease, and others have higher incidence and severity of the condition (Fu et al., 2020; Xiaofan Liu et al., 2020). Symptomatic or light instances make up 55% of cases in children and adolescent, moderate cases make up 40%, severe cases make up 5%, and very serious cases make up just 1% (CDC, 2020).

According to WHO recommendations, governments in several nations have started enforcing restricted and lockdown measures to stop the virus's spread. Schools, businesses, and other unnecessary services are closed under these restrictions, and residents are recommended to stay inside their houses (Mediarti et al., 2021). In extreme situations, public parks are also locked up and no one is permitted to leave unless there is an emergency (López-Bueno et al., 2020). People's life are significantly impacted by the lockdown restriction, particularly kids and adolescents. For several months, schools, where kids and teens spend a lot of time, were closed. They

experience a significant change in their everyday routine and experience more free time. However, because to lockdown limitations, which limit their possibilities to leave the house, and their dread of contracting the virus when outside, they are forced to spend the most of their time indoors. Keeping kids and adolescents inside during this active stage of development can have a negative effect on their conduct (Kharel et al., 2022).

There has been a considerable impact from the COVID-19 pandemic on dietary choices and way of life. Despite not being directly affected by the virus, children can still suffer from COVID-19's indirect effects, such as an unbalanced diet that increases the risk of being overweight and underweight, sedentary behavior, social isolation and its effects on mental health (Kusumawaty et al., 2022), gadget addiction, and restricted access to healthcare services and education (Andriati & Kusumawaty, 2021; Scapaticci et al., 2022).

Only the COVID-19 quarantine can stop the virus from spreading, especially among adolescent However, studies show that children all over the world have negative psychological impacts such anxiety, worry, irritability, depressive symptoms, and signs of post-traumatic stress disorder (Marques de Miranda et al., 2020; Sulistyorini et al., 2022). The pandemic's psychological effects on children and adolescents include prolonged quarantines, fear of infection, dissatisfaction and boredom, isolation from peers and teachers, and a lack of space in the house, to name a few (Eastin & Eastin, 2020). Adolescents experience mental health issues in 10–20% of countries worldwide (Bruining et al., 2021). ce mental health problems in 10–20% of countries worldwide. These data likely reflect the vulnerability of adolescents during the COVID-19 pandemic. The COVID-19 epidemic was shown to have a considerable prevalence of depressive symptoms (43%), anxiety (37%) and mixed anxiety and depression (31%) in a survey of 8079 Chinese adolescents between the ages of 12 and 18 (Zhou et al., 2020).

These required restrictions also compel dietary adjustments that prevent the preservation of a wholesome, balanced diet. As a result, An association between the COVID-19 epidemic and incidence obesity and malnutrition is higher. Changing our eating habits and way of life can be harmful to our health. It's crucial to keep up a healthy diet, especially when a robust immune system is needed. In actuality, one of the categories with a higher risk of COVID-19 problems is those with significant obesity (BMI 40 kg/m2). Adipose tissue, which is expanded with obesity and produces the cytokines that contribute to an inflammatory environment, expands. Additionally, expiratory reserve volume, functional ability, and respiratory system compliance in obese patients were decreased in terms of lung physiology. Lowered diaphragmatic travel and worsened lung function in the supine posture make breathing more challenging in patients with excessive belly obesity (Dietz & Santos-Burgoa, 2020).

Isolation affects the quantity and composition of adolescent diets as they increase their intake, especially of simple carbohydrate-rich foods. This is especially concerning given that eating these foods raises the risk of obesity, type 2 diabetes, cardiovascular disease, and other detrimental health effects (Fidler Mis et al., 2017). However, this study's findings also demonstrated that isolation might cause teenagers to overeat often out of boredom and stress, which can result in disordered eating behavior. Burgers, pizza, snacks, and sugary drinks are consumed more frequently (Crockett et al., 2015; Di Renzo et al., 2020). Increased food consumption is also linked to the emotional states of anxiety, grief, and anger that characterize the stress brought on by the pandemic. This is due to the fact that stress can lead to overeating or hyperphagia, both of which can significantly alter weight.

Additionally, stress can cause overeating, particularly when "comfort foods" high in sugar are consumed. These foods can lower stress levels because they increase serotonin synthesis, which improves mood (Ma et al., 2017). Excess sugar consumption is linked to chronic inflammatory states, which are triggering factors that raise the chance of significant COVID-19 consequences in addition to an increased risk of acquiring obesity and cardiovascular disease (Muscogiuri et al., 2020).

According to a thorough analysis by (Arab et al., 2019), diet and mood are related. Food intake may have a role in controlling emotions and mood, and this may have an impact on food preferences, demonstrating a two-way relationship (Leigh Gibson, 2006). In fact, there is a relationship between poor nutrition and depressed mood and the two effect one another (Firth, 2020). For instance, there have been reports of alterations in food preferences, which were not always healthy, as a result of certain psychological states or stressful situations. For instance, depressed people typically prefer to eat foods high in fat and carbohydrates (Tomiyama et al., 2012). On the other hand, good eating habits (such the Mediterranean diet) are linked to a lower risk of depression and greater mental health (Lassale et al., 2019). For instance, it has been discovered that eating fruits and vegetables has an adverse effect on depression symptoms (Xiaoqin Liu et al., 2016). Furthermore, consumption of nuts may protect against mood and cognitive issues since they contain unsaturated fatty acids, flavonoids, and vitamins. Lassale et al. concluded that eating a healthy diet, especially the traditional Mediterranean diet, or avoiding pro-inflammatory diets, appears to offer some protection against depression in observational studies after synthesizing the relationship between dietary quality, measured using various predefined indices, and depression outcomes. This offers a solid evidence base for

evaluating the contribution of dietary treatments to depression prevention (Lassale et al., 2019). Negative moods and an unhealthy diet can also result from poor mental health (Amatori et al., 2020).

Numerous studies currently indicate that, in comparison to the general population, people with mental problems generally consume excessive amounts of high-fat and high-sugar foods as well as insufficient amounts of foods that are packed in nutrients (Jia et al., 2021).When other factors that could explain the link are taken into account, such as social deprivation or obesity, the association between poor diet and mental illness still appears to exist and is not explained by reverse causation (Giannini et al., 2021). Due to the obvious connection between dietary risk factors and cancer, heart disease, and early mortality, the significance of food for sustaining physical health is generally acknowledged (Deschasaux-Tanguy et al., 2021; Hertog et al., 1993). Additionally, there may be a connection between food and mental health (Firth, 2020; Giannini et al., 2021).

2. RESEARCH METHOD

This research was conducted with ethical approval from the ethics committee of the Poltekkes Kemenkes Palembang No……Date….. The survey was conducted online using the Kahoot application, which allows information collection throughout the COVID-19 lockdown. The inclusion criteria were set, namely adolescents aged 12-17 years, junior high and high school students as many as 206 students who gave responses, then permission to take part in research on parents through online by searching for information (schools, institutions, groups or communities). Parents were contacted by telephone and explained about the purpose of the survey, procedures, and benefits of the study. It was made clear to them that participation in the study was entirely voluntary, and that they were under no obligation to finish it if they changed their minds in the middle of the process.

Data collection was carried out for three weeks on June 1-20 2021. Before starting to fill out the questionnaire, participants were asked to fill in some data, namely height and weight, activities during isolation at home such as being with family, friends or activities alone. Participants were also asked to write down new sports activities due to isolation at home. If data is obtained on the existence of certain dietary therapy due to illness or disorder (for example, prescribed by a nutritionist), chronic disease, infection with COVID-19 before or during that period, and experiencing flu during the data collection period, then this sample is excluded from the sample..

Dietary Habits

Dietary habits were measured using the modified short dietary behavior questionnaire (SDBQ-L), modified from [35,36] was applied to address the study population's individual eating habits. Following a brief explanation of healthy nutrition, participants were asked whether they (a) followed a healthy diet, (b) ate more than normal, (c) kept a regular eating schedule, and (d) ate out of control. Responses were scored on a Likert scale of 1 to 7, with higher scores suggesting healthier eating habits (1 = absolutely no, 7 = possibly yes).

Psychological Condition

Psychological conditions were assessed using the World Health Organization Wellbeing Index -5 [33]. The five ratings in this questionnaire show a comparison scale that focuses on psychological moods based on a good mood (calm and relaxed), vitality (alive and alert), and general interest The participants' level of psychological health over the past seven days was requested of them. Lower scores denoted less wellbeing. Responses were graded on a 6-point Likert scale (0 = never, 5 = often).

Statistic Analysis

The statistics described in this study are in the form of correlations between diet, psychological and confounding factors, descriptive of each variable, and the value of the Cronbachs alpha coefficient. The reliability of the instruments were all satisfactory, ranging from 0.80 to 0.87. Especially for the participants' mean score on the Poor psychology is indicated by a psychological index that is near to the scale's median and below the WHO cutoff point (<13) (Vallejo-Slocker et al., 2020). Scores for moderate positive mood and for moderate to low negative mood, scores on healthy eating habits in the middle. A significantly favorable association between healthy eating habits and psychology as represented by a happy mood was found, whereas a low negative correlation was seen with a negative mood. Finally, sedentary behavior demonstrated a positive link with negative mood and a negative correlation with psychological and pleasant mood. All scales' dependability scores, which ranged from 0.80 to 0.87, were satisfactory. First and foremost, participants' mean psychological index scores were below the WHO cutoff, near to the median point of the scale, indicating poor psychological well-being. scores for moderately pleasant and mildly negative moods. Psychologically is positively related to mood, There is a disturbing factor that is very influential, namely physical activity.

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3. RESULTS AND ANALYSIS

The major goal of this study was to determine how diet and psychology among adolescents throughout the isolation time related to one another. The participants' high level of negative psychological outcomes is the identified result. It was necessary to be checked for depressed symptoms because the average psychological score (49.5%) fell below the borderline point (total score 13) (Kring & Johnson, 2018). The same issue was discovered in an Australian research of teenagers, when 48.3% of them displayed mental stress during Covid-19 isolation (Biolcati et al., 2017; Challen et al., 2019; Guo, 2020). According to research conducted in the Philippines, teenagers between the ages of 12 and 21 had poor psychological components, which were manifested by elevated levels of anxiety and/or depressed symptoms (Potter et al., 2016).

The COVID-19 social isolation conditions in Indonesia have had an effect since the beginning of 2020, which is a few months since the government closed schools, public places and recreational areas. The psychological health of children under 18 years of age is strongly influenced by the condition of the family in Indonesia by 35%, which has changed as a result of the pandemic, especially because of the many layoffs and very drastic economic difficulties (Chairani, 2020; Karpman et al., 2020). This result is comparable to those from Canada, where 35.7% of parents were reported to have high levels of anxiety as a result of Covid-19 (Mastorci et al., 2021; OECD, 2020; R Nair et al., 2020; Reizer et al., 2020; Vazquez-Vazquez et al., 2021). The sad discovery is that adolescents suffer from a sizable number of mental health illnesses, including elevated anxiety and depressed symptoms, have been diagnosed clinically (Hessami et al., 2020; Marques de Miranda et al., 2020; Sun et al., 2020; Torales et al., 2020)

Healthy eating diet is a significant precipitating factor for positive psychological conditions. There is an analysis that shows a decrease in depression and anxiety in someone who adopts a healthy diet during the isolation of the COVID-19 pandemic (Deschasaux-Tanguy et al., 2021; Dragun et al., 2021). However, the facts obtained are that there has been a decline in eating behavior patterns in the COVID-19 pandemic with the discovery of eating patterns that increase in the number of foods, especially snacks between meals and there are data on the presence of out-of-control eating and types of junk food (Deschasaux-Tanguy et al., 2021; Giannini et al., 2021). Data on the consumption of foods containing sugar has increased significantly since the social isolation and lockdown policies in the age range of 5-14 years) (Fidler Mis et al., 2017; Firth, 2020; Giannini et al., 2021).

Promotion of healthier eating behavior at home is very important by including mentoring so that this behavior becomes a habit, and must be carried out consistently by relevant parties such as Puskesmas by involving cadres and related parties such as schools, course venues. Diet programs that have the potential to psychologically affect teenagers must be intensively launched with various media. In this study, it was also found that physical activity greatly influences healthy dietary habits and in the end also affects psychology. It was also found that adolescents who experienced COVID-19 isolation had poor dietary behavior and were psychologically low, there is a decrease in activity (Ammar et al., 2020; Brancaccio et al., 2021; Chi et al., 2021; Deschasaux-Tanguy et al., 2021; Di Renzo et al., 2020) and this has a psychological effect which is described by irregular sleep patterns and symptoms of depression and anxiety (Amatori et al., 2020; Bridgland et al., 2021; Giannini et al., 2021; Zhang et al., 2020). Policies regarding time management and home activities for adolescents during the isolation of the COVID-19 pandemic must be prioritized to reduce contamination by watching or playing cellphones. It is important to consider the online learning's potential negative consequences on physical activity and diet, so that schools can make important policies, such as having small classes that facilitate young people to stay active and meet conditions that can be controlled.

4. CONCLUSION

Researchers and decision-makers must take action to promote the wellbeing of Greek adolescents by offering advice and chances to increase physical activity, cut back on inactive time, and adopt healthier eating habits. Due to the fact that 50% of our sample exhibits a degree of well-being below the average for the population, such metrics are of utmost importance. According to WHO, these levels indicate the need for additional research into the possibility of depression; hence, quick investigation is required for the significant health hazards that emerge during a pandemic. Given the data indicating that Greek adolescents' levels of physical activity and wellbeing were among the lowest in Europe even before the pandemic (Giannini et al., 2021; Kharel et al., 2022; López-Bueno et al., 2020; Ruíz-Roso et al., 2020), activities aimed at promoting healthy behaviors should be consistently supported going forward.

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