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FOOD DIVERSIFICATION OF FEMALE ADOLESCENTS AT RIMAU ISLANDS, SUMUR VILLAGE: CASE STUDY

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ABSTRACT

Background: *The total nutritional needs during adolescence are higher than at any other time in the life cycle. Nutrition and physical growth are integrally related; Optimal nutrition is a condition for achieving optimal growth potential. This creates an increased need for energy and other nutrients. One of the appropriate policies to be implemented in achieving food independence and anticipating the food crisis is food diversification. Food diversification is a process of food diversity or efforts to increase the consumption of various foods with the principle of balanced nutrition.* ***Objective:*** *The purpose of this study was to determine the diversification of protein source food in young women in the Rimau islands of South Lampung Sumur village.* ***Method:*** *This study used a qualitative design (cases study) using in-depth interviews. The study was conducted within 6 months with 4 respondent* ***Results:*** *The results of the study explained that there limitations in obtaining animal protein sources, thus affecting the diversification of protein sources. Protein sources that are often consumed are eggs and tempeh which do not require a refrigerator in food storage while fish catch hail is sold for economic needs, and is rarely consumed alone.* ***Conclusion:*** *The diversity of protein sources and diet influences the nutritional status of young women at Rimau Islands, Sumur Village, South Lampung.*

Key words: Female Adolescents, Food Diversification, Nutritional Status

INTRODUCTION

Phenomenal growth occurs in adolescence, which is second only to the first year of life. This creates an increased need for energy and other nutrients. Based on the 2018 Riskesdas data, the number of protein energy deficiencies in young women is also quite high, namely 13.5% (The ministry of health of the Republic of Indonesia, 2018). The total nutritional needs during adolescence are higher than at any other time in the life cycle. Nutrition and physical growth are integrally related; Optimal nutrition is a condition for achieving optimal growth potential. Failure to eat an adequate diet after adolescence can result in delayed sexual maturation and may restrain or slow linear growth. Nutrition is also important to help prevent chronic diseases related to an adult diet, such as cardiovascular disease, cancer, and osteoporosis (Sireesha, 2017). The growth spurt in adolescence requires rapid tissue expansion with special nutrient requirements, including amino acids for growth of striated muscle, as well as calcium and vitamin D to accommodate bone growth. Energy and nutrition requirements must match the needs of the adolescents as they typically engage in physical work or recreational exercise (boys on average more than girls), which benefits striated muscle mass enlargement (Das, 2017).

One of the most important things that adolescents must do to always be healthy not only for now but also to support their lifelong health is to consume nutritious foods. In the period of growth, the juvenile body is in dire need of proteins, vitamins, and minerals. If the teenager is well-fed, then the teenager will not get sick. There are certain types of food that are very important for adolescents. When she started to get her period, every month there was a certain amount of blood coming out. These young women will face a high risk of anemia (Chandra, 2015). According to Riskesdas data for 2018, the number of cases of anemia in pregnant women occurs mostly in those aged 15 to 24 years, which is 84.6% (The ministry of health of the Republic of Indonesia, 2018). In young women, it is necessary to maintain a good nutritional status, by consuming a balanced diet because it is needed during menstruation, it is proven that during menstruation, especially in the luteal phase, there will be an increase in nutritional needs (Vilda, 2015).

The world food crisis is a threat to all countries, including Indonesia. In absolute terms, the number of poor people in Indonesia is still quite high, namely 25.95 million people, this case can directly affect food security in Indonesia (Bappenas, 2018). The food policy paradigm implemented in Indonesia must change from food security to food independence so that Indonesia does not depend on other countries, especially for food problems. One of the appropriate policies to be implemented in achieving food independence and anticipating the food crisis is food diversification. Food diversification is a process of food diversity or efforts to increase the consumption of various foods with the principle of balanced nutrition. One of the obstacles to the development of local food is that derivative products have not been developed that are easily accepted and reached by the community (Dewi and Ginting, 2012). To further accelerate the achievement and development of food diversification and independence, it is necessary: strategies for providing appropriate technology and information, adequate operational policy tools, and the functioning of various supporting institutions, such as research, counseling, and marketing. Another important thing that is needed is to establish coordination between relevant institutions because constitutionally it is not only the duty of the Ministry of Agriculture. This indicates that the implementation of operational strategies, achievement, and development of food diversification will concern deregulation related to other than agriculture, namely industry/ trade, investment in facilities/infrastructure, and others (Elizabeth, 2011).

One of the concepts of the principle of balanced nutrition is to explore food diversity. Based on the background above, researchers are interested in conducting research on the Relationship of Food Diversification of Protein Sources to Nutritional Status in Young Women in the Rimau Islands, Sumur Village, South Lampung. The purpose of this study was to The purpose of this study was to determine the diversification of protein source food in young women in the Rimau islands of South Lampung Sumur village.

METHOD

Study design and participants: This research used the qualitative phenomonology method (case study) by vieweing and hearing closer and more detailed explanations and individual understanding of their experiences. The research duration was 6 months, that is, from April to October 2021. This research was conducted in Sumur Village, Rimau Island, South Lampung. The research location was also taken by sea (Sunda Strait) and not far from the port of Bakauheni Lampung. The case population in this study was all female adolescents on Rimau Island which amounts to 25 people. The subjects of this study were adolescents, namely those aged 12-24 years (4 respondent). The respondent's inclusion technique by taking into account the length of residence of the respondent, namely never leaving the island for more than three months. The number of samples used was with sample collection until the data was saturated.

Measurements: The variables in this study were the diversification of food sources of protein. The questionnaire on in-depth interview covering eating problems, eating habits, and protein consumption (animal and protein sources) in female adolescents. Questionnaire validation was carried out using source triangulation techniques (village midwife) until the data was saturated. Measuring nutritional status used body mass index, so it takes measurements of the height and weight of the respondent.

Data mining by informants was carried out using the *in-depth interview* method with several question items related to *Protein Intake*, namely about the meaning of diet carried out, diet, and protein consumption.

Data analysis: Data analysis was carried out in several stages, namely collecting all data from documents, both interviews and recordings. The next stage after obtaining the data was selected according to the data requirements and discarded data that was not needed. After that, determine the theme, category, sub-category, and coding. Before conducting interviews, respondents filled out an informed concern regarding their willingness to participate in this study.

RESULTS AND DISCUSSION

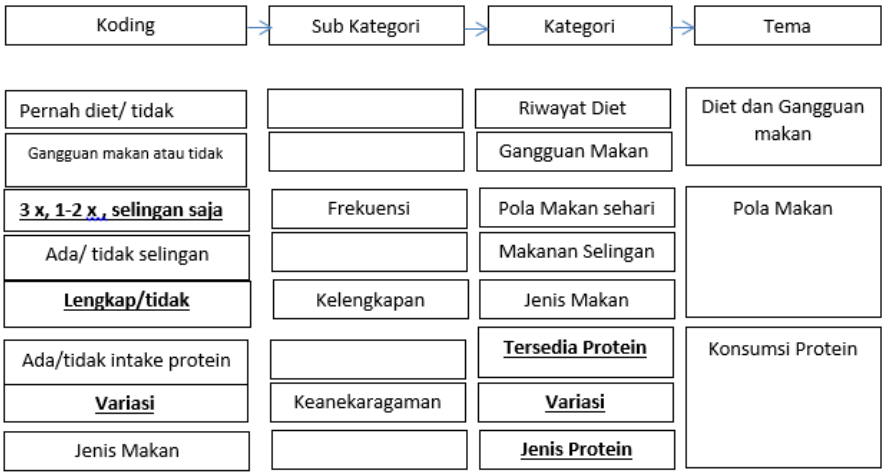
The first respondent had the initials SD at the age of 14 with the status of a student at one of the junior high schools. The first responder weighed 33 kg and had a height of 155 cm. The second respondent, initialed U.S., aged 15, was a counterpart to the first respondent. The choice of colleagues from the first respondent is to clarify the answer of the first respondent. Activities as a student at the same school as the first respondent. Have a height of 110 cm and a body weight of 40 kg. The third respondent was LN a 24-year-old, an activity as a housewife. AM have a body weight of 60 kg and a height of 159 cm. Respondents are active in cadet reef activities in the Rimau Islands. Based on these basic data, it can be known the nutritional status of adolescents using the Body Mass Index (BMI with The ministry of health of the Republic of Indonesia Standard), with the following results

Table 1. Nutritional Status of Respondents

No	Name	Age	Weight (kg)	Height (cm)	Nutritional Status (BMI)
1	SD	14 years old	33	155	Underweight
2	AS	15 years old	40	160	Underweight
3	LN	24 years old	60	159	Normal
4	AM	24 years old	60	158	Normal

Source: Primary Data, 202

From Table 1,it can be seen that two respondents fall into the category of normal nutritional status, and two respondents are underweight. This explains that even the same activity or the same environment does not affect the nutritional status of each of the respondents. This study took data on dietary patterns and eating disorders, diet, and protein consumption. Here is the scheme of the interview results.



The section on dietary patterns and eating disorders, it was intended to find out things about the history of eating that can affect protein intake. Of the 4 respondents interviewed, there was one respondent who had run a diet program. The diet program that is carried out is not.

Respondent AM

"..... sebelumnya iya pak, buat nurunin berat badan pak, jadi dulu gak makan nasi....."

The respondent AM explained that the respondent wanted to lose weight by not consuming the type of carbohydrate source food, namely rice. There are many types of diets for losing weight, one of which is not to consume carbohydrates. An example of this type of diet is not consuming or reducing the consumption of carbohydrates with the aim of increasing the use of protein and fat to be used as energy, otherwise called *gluconeogenesis*. The ketogenic diet is unique compared to other low-carb diets in which followers of this diet are encouraged to abandon almost all carbohydrates, avoid excess protein, and consume high levels of fat (generally exceeding 70% of the calories consumed), stimulating ketone production, naming the ketogenic diet (Joshi, 2019). However, this diet did not last long, because it was accustomed to the previous diet.

All respondents never had an eating disorder. One of the eating disorders can be caused by problems with digestibility. Indigestion is divided into two, namely upper digestion such as mouth and throat, and lower digestion such as the small intestine and large intestine.

In the intake question, there were 2 respondents who answered 3 times a day, and 2 other respondents who mentioned 1-2 times a day. In addition, all respondents did not understand the meaning of interludes in a daily diet. As well as in diet, all respondents usually consume unbalance types of eating. The type of food that is rarely consumed in one serving plate is a source of animal protein or animal side dishes.

Respondent SD

"....biasanya sehari makan Cuma 2 kali, biasanya ga sarapan....."

Based on the interview, it is known that these teenagers omit one meal and most of them omit breakfast

Respondent AS

"....kurang lengkap pak, biasanya yang ga ada lauk pauknya pak....."

Based on the respondents' answers, it can be known that the meal time that is often left behind is breakfast. Breakfast has an important role in meeting specific nutritional needs from morning to noon, with the missed breakfast time, the body will respond by doing *gluconeogenesis* and if it lasts for a long time, it can cause changes in its nutritional status. Of the two respondents who answered 1-2 times a day, they had a lack of nutritional status when looking at their body mass index. Breakfast has a concern for nutritional status. (Wicherski, 2019) The importance of also considering contextual factors during mid-adolescence that may also further shape the influence of emotion regulation on individuals' reliance on food consumption as a coping mechanism when faced with stress and/or negative feelings during late adolescence (Shriver, 2021).

On the diet, what the interviewer asked was the consumption of a complete dish. A type of food that often does not exist in the kind of animal side dish. As it is known that the most abundant source of protein is from the type of food source protein. This is because there is very little availability of foodstuffs on the island and electricity has not yet come in.

Respondent AS

"*….hasil tangkapan nelayan kaya ikan , kita jual lagi pak buat kebutuhan sehari-hari…"*

The majority of residents on Rimau Island are fishermen, but the fish products obtained are then sold and not for their own consumption. In addition, the electricity that has not yet entered affects the shelf life of types of protein-source food such as the use of refrigerators in the cultivation of food ingredients. Food insecurity in households significantly affects the increased risk of stunting and malnutrition in children and adolescents (Moradi, 2018). Young adulthood may be an important time to screen for and address food security given the development of many of these chronic health conditions during this time period (Nagata, 2018).

On protein consumption, all respondents replied that there was no variation in the type of protein consumed, because they only eat eggs and tempeh. There is a lot of availability of fish caught by fishermen, but the fish is resold at fish market. The most frequent eating habits of protein include tempeh and eggs. In addition, the consumption of protein types is rare because there are also sellers who only exist 3 times a day on the island.

Respondent SD

"*.... biasanya pak penjual sayur keliling datang di pulau 2 kali seminggu atau 3 hari sekali, jadi bisa beli pada waktu itu (untuk membeli telur dan tempe)...."*

The availability of eating ingredients, one of which is a protein source, greatly affects the risk of energy protein risk in young women. In addition, when viewed from the diversity of protein sources that are lacking, it illustrates the lack of food

diversification among young women in Rimau Island. Respondents who had poor nutritional status also had problems with the diversity of their protein source intakes. Nithya (2018) explained in her research that there is a linear relationship between food diversity and nutritional status using the *24-hour food recall* method. The consumption of a variety of foods is expected to fulfill all the nutrients needed in everyday life and is an important factor to determine nutritional status as underweight (Ardianti, 2021).

Research on diversification conducted by Umainalo (2018) explains many factors that affect the conditions of food diversification and are related to others. In essence, social, cultural, economic, and knowledge factors are the causes that influence the diversification of food consumption and these causes are identical to the causes that affect the food consumption of local people, such as answers to interviews with respondents named AS . The diversity of food that is lacking in society can cause problems in food security. This is in accordance with research by Houseinpour (2019) which explains that food diversity is less in groups that have good food security compared to those with poor food security. The main problems faced in the diversity of food consumption are (1) the lack of achieving the quality score of diversity and balance of nutrition consumption as expected and so far the achievement has been very slow and volatile, (2) the high gap in the quality of food consumption nutrition between rural and urban communities, (3) there is a tendency to decrease the proportion of food consumption based on local resources, (4) slow development, dissemination, absorption of local food processing technology to improve practicality in processing, nutritional value, economic value, social value, image, and acceptability, (5) still lack synergy to encourage and provide incentives for the business world and the community in developing various local processed food products, (6) still lack facilitation of economic empowerment and knowledge to increase accessibility to diverse foods, nutritious, balanced and safe. (Suryana, 2005) Interventions are needed to increase the intake of both the amount and type of protein. This is in accordance with the results of research from Zaki that there are differences in knowledge, intake before and after nutrition education based on social media in both villages and urban areas (Zaki I, 2019).

CONCLUSION AND SUGGESTIONS

In this study, the diet that one respondent had done was a diet of reducing carbohydrate sources such as rice, not reducing the type of protein. The availability of protein sources from animals is limited due to the availability and access to food such as sellers that are not daily present and the absence of electricity affects the preparation of foodstuffs. There needs to be accessibility to the fulfillment of nutritional needs, especially protein for young women.

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