KOMUNITAS
International Journal of Indonesian Society And Culture

The Relationship between Socioeconomic Status and the Patterns of Food and Nutrition Consumption in Rural Areas of Muaro Jambi

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Abstract

The objective of this research is to analyze the relationship between family socioeconomic status and nutritional adequacy rate in rural areas of Muaro Jambi, Jambi Province. The study design was cross-sectional. The study was conducted in rural areas of Muaro Jambi, Jambi province by selecting three districts, namely: district of Sekernan, Kumpeh Ulu, and Mestong. The research was conducted from July to December 2014. The sample was 180 families and were taken by purposive and simple random sampling. Data were tested by descriptive and Product Moment Correlation. The results showed that consumption of food and nutrition in the study area is almost close to the recommended nutrition adequacy standard. Results of the analysis showed that the variables of household head age, family size and income are positively and significantly correlated to energy and protein consumption adequacy of the family, while the factor of household head education was unrelated.

Keywords: *nutrition adequacy figures; family income; food and nutrition consumption pattern; socioeconomic status*

INTRODUCTION

The purpose of national development is to realize healthy and independent Indonesian society. The indicator is citizen who is able to live longer, enjoys a healthy life, has a chance to improve their knowledge and live well. They are people who have basic needs (food) adequacy.

Nevertheless, food development in Indonesia has many factors and issues especially the number of population distribution. Population problem is not only in terms of demographics that are more focused on quantitative aspects of growth influenced by factors such as births and migration but also taking into account aspects of human rights and the need to accommodate the population itself. Some population problems that are still the focus of attention today is

high population growth, the number and distribution of the population in some areas of the province of Jambi included in Muaro regency (Central Statistics Agency of Jambi Province, 2010). Population growth is an important variable in development to achieve the ultimate goal of improving the quality of life of present and future generations. The most important thing is to facilitate demographic transition through a pattern of low birth and mortality rates and relatively- low population growth rates accompanied by a stable economic growth (Aggarwal et al. 2011). This study aims to examine the relationship between family socioeconomic status and nutritional consumption in rural areas of Muaro Jambi. While the existing studies on family consumption and economic status largely focus on urban area (Bey-

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doun and Wang 2008; Dammann and Smith 2009; Mead, Gittelsohn, Roache and Sharma 2010; Wilson and Butt 2009), this study takes the background research in rural Jambi.

Muaro Jambi is one of the regencies in Jambi Province which has the highest population number and growth rates among other regencies/cities throughout Jambi Province. The latest data says that population growth in Muaro Jambi district is high enough during the last ten years. Data showed that the population of this regency in 2000 was 233,993 people, then in 2010 increased significantly to 342,954 people or there is a growth of 3.86 per cent per annum. Population growth rates of Muaro Jambi is much higher than population growth rates of Jambi province (2.56% / annum) (Central Bureau of Statistics Jambi Province 2010).

The high population growth rates will have a negative impact on food security and population consumption. Food security is not only influenced by the availability of food but also influenced by access to and utilization of food that is reflected from household food consumption patterns (Dubowitz 2008; Kim and Lee 2012; Raffensperger 2010). Food consumption patterns or eating habits is the arrangement of the number, type and frequency of food consumed by a person or group of people at a specific time to meet their eating needs which also become the characteristic of a particular group of people on the pattern of food and nutrition consumption (Mead et al 2010; Puri et al. 2008; Schefske et al. 2010; Wilson, Adolph and Butte 2009). Based on the existing problems, it is necessary to assess food and nutrition consumption patterns of households, and analyze the relationship between socioeconomic factors and family nutritional adequacy rate in rural areas of Muaro Jambi.

RESEARCH METHOD

The study design was cross-sectional. The study was conducted in rural areas of Muaro Jambi, Jambi province by selecting three districts, namely: Sekernan, Kumpeh Ulu, and Mestong District. Time for research data collection and report writing was six (6) calendar months. Research variables are: (1) the socio-economy of family (age groups, educational level of Family Head, Number of Family Members, and the level of family income), and (2) the pattern of food and nutrition consumption (energy and protein consumption). Data were collected from primary and secondary source taken by observation and direct interview. The sample for this research are 180 families and were taken by purposive and simple random sampling.

Research data was taken from primary and secondary source of data. The primary data was obtained directly from the family and the selected respondents, while secondary data was obtained from relevant agencies and institutions as well from research reports, journals and magazines that talk about socio-demography and consumption patterns of food and nutrition. To answer the research objectives, data was analyzed in a descriptive way, and Product Moment Correlation.

RESULTS AND DISCUSSION

Consumption Pattern

The consumption pattern is the intake or consumption of food and nutrients needed by humans. Consumption is defined as the nature, quality, quantity and proportion of different food and drink in every human being. Consumption pattern describe food consumption patterns of the population, community, or family (WRCF: Abdalla, Samar; and Ingrit-Ute Leonhauser 2013). In other words, the pattern of human consumption is determined by the nature of ecology, traditions and religions, so that the consumption patterns describe the main characteristics of the culture of the local community.

Food consumption is the amount of food (single or multiple) eaten by a person or group for a specific purpose in the nutritional aspects. Food consumption is to obtain the nutrients needed by the body (Hardinsyah 2007). The type and amount of food consumed greatly affect people's nutritional status. In the process of consumption, there is a minimal amount of nutrients that must be met, called nutritional needs. Food con-

sumption defined in this study is the food consumption of energy and protein sources.

Food and Nutrition Consumption Patterns of The Households

Food consumption is a number of foods and beverages eaten or drunk by people / person in order to meet biological needs. Diversification of food consumption is a great variety of types of food consumed by the population including food as the sources of energy , protein and other nutrients in the form of raw materials and processed food so that it can meet the food needs of the population both quantity and quality. However, diversification of food of the population is largely determined by the area food availability, while the availability of food is influenced by capital or allocation of costs incurred by the government (Suyuti, Sultan and Nur Alam 2015).

Based on field observation, it is showed that the portion of food consumption for the type of rice and side dishes has the highest percentage of both energy and protein consumption, respectively 43.27 and 39.05 per cent comes from rice, and as much as 41.39 and 42, 42 percent comes from side-dishes. While the portion of food sourced from vegetables and fruits is very low at only 3 servings or about 240 grams / capita / day. This figure is much lower than the recommended consumption of fruits and vegetables for Indonesia (250 g / cap / day), and the WHO recommendation (5 servings or 400 g / cap / day) (Muharram, Zaini; and Hardinsyah 2013). According to respondents, the majority of the population nutrient intake is taken from food sources in the forms of tubers, nuts and food both fresh and processed. The results of this study are consistent with the findings of Abdalla, Samar; and Ingrit-Ute Leonhauser, (2013) stating that Sudan food consumption especially protein sources such as meat, poultry, milk, and eggs is very low even though the research area is the source of the largest fresh milk in Sudan (Africa).

According Baliwati (Suandi 2010), factors that influence food consumption patterns are the economic and price factor and the socio-cultural and religious factor. Family economic factors are closely linked to purchasing power and consumption of food. In other words, the change in income will change food consumption. Socio-cultural and religious factors in a society have the power that influence the selection of groceries. The socio-culture of food is the developing function of food in a society according to the circumstances, religion, customs, habits, and public education (Suandi, 2014). Research on food consumption should consider a major supporting factor affecting consumption patterns, namely (1) availability; (2) social and economic conditions; (3) geographical location and (4) characteristics of the household. The field data showed that household food consumption of the respondents in the study area is enough. It means that the level of household food consumption is relatively resistant and very resistant because the percentage of respondents who can consume the food at the level of resistant and extremely resistant, reaching 70 percent, even as very resistant, reaching 18 percent.

The Consumption of Energy Source Food and Nutrition

The adequacy of energy consumption is the adequacy of the amount of energy consumption used to see if the consumer has met the needs for a healthy life in accordance with the recommended standards that follow the Expected Dietary Pattern of Muaro Jambi in 2020 that is equal to 2200 calories / capita / day. Field data showed that consumption of food and nutrition in the area of research still can not meet national standards. The amount of energy consumption is calculated by multiplying the quantity of each type of food consumed by the energy content of each type of food then the scores are added. The research results showed that the average household energy consumption in the research area reached 1980.47 kcal / capita / day. This indicates that the energy consumption of households in the study area has not reached the consumption standard yet, that is 2,150 kcal / capita / day. It reveals that overall, the average number of house-

hold energy consumption in the district of Muaro Jambi has not been standard and is lower than the Expected Dietary Pattern (Table 1).

If differentiated based on the classification of consumption, there are as many as 58 percent of household consuming energy below the recommended average, and only 42 percent of the population in Muaro Jambi consume energy above the recommendation. The low percentage of the energy consumption of the Muaro Jambi residents is due to educational factors, food and nutrition consumption patterns or food and nutrition consumption behavior, as well as people's higher purchasing power for non-food items.

Table 1. Distribution of Respondent Based on Per Capita Energy Consumption in Rural Areas in Muaro Jambi Regency, 2014

| No | Energy Consumption (kcal/cap) | The Number of Respondent (person) | |
		Absolute	Percentage
1	< 1.800	26	14,44
2	1.800 – 1.999	89	49,44
3	2.000 – 2.199	38	21,11
4	2.200 – 2.299	11	6,11
5	2.300 – 2.499	13	7,22
6	≥ 2.500	3	1,67
	Total	180	100.00
	Average	1.980,47 kcal/capita	

The Consumption of Energy Source Food and Nutrition

Adequacy of protein intake which encompasses adequate amounts of protein consumption is used to see if the consumer has fulfilled the need for healthy living according to the standards prescribed in the National Food and Nutrition Widyakarya IX in 2012 that is equal to 57 grams / capita / day. The amount of protein consumption is calculated by multiplying the quantity of each type of food consumed by the protein content in each type of food then the scores are added.

Research results showed that the average household consumption of protein in the study area is nearing the adequacy of the recommended standard which reached 56.757 g / capita / day. This means that the average number of protein consumption of households in the study area nearly reach the adequate levels of protein that is recommended and this condition is on the contrary to the energy consumption. The fulfillment of protein consumption of households in the study area is because most of the respondents are already aware of the need for adequate and various nutrition intake for the health of the body. People in the research area has also been consuming a variety of foods. If differentiated based on the classification of consumption, there are more than 59 per cent of households consume protein above the recommended average, while the population that consume below the recommended average is 41 percent. The detailed distribution of respondents by consumption of protein can be seen in Table 2.

Table 2. Distribution of Respondents Based on Per Capita Protein Consumption in Rural Areas of Muaro Jambi Resident, 2004

| No | Protein Consumption (gram/cap) | The Number of Respondents (person) | |
		Absolute	Percentage
1	< 40,00	12	6,67
2	40,00 – 49,99	39	21,67
3	50,00 – 59,99	64	35,56
4	60,00 – 69,99	44	24,44
5	70,00 – 79,99	9	5,00
6	≥ 80,00	12	6,67
	Total	180	100.00
	Average	56,75 gram/capita	

From the table, it is shown that respondents who consume protein exceeds the recommended standard is mainly found in the group of respondents with relatively higher income levels than the average income of other respondents, while households with medium and low income are still not able to fulfill their recommended protein consumption. This may indicate a difference in the consumption of protein due to the differences in income. Households with higher incomes tend to be able to consume food with a better quality and quantity and

in a variety compared to the lower income households.

The Relationship between Socio-economic Factors and The Consumption of Energy and Protein

Food consumption pattern is the composition of the type and amount of food consumed by a person or group of people at a certain time in order to obtain the nutrients needed by the body. This pattern can indicate the community food diversity level and the consumption habits of a particular group of people. The food consumption pattern meant here is the food consumption pattern of energy and protein sources.

According to Baliwati (Suandi 2010), factors that influence food consumption patterns are economic and price factors and socio-cultural and religious factors. Family economic factor is closely linked to purchasing power and food consumption. In other words, the change in income will change food consumption. The socio-cultural and religious factors of a society have the power to influence the selection of food consumed.

The results of the analysis of family head age associated with household consumption of food and nutrition (adequate energy and protein) which was done using statistical analysis through correlation test showed a significant and positive correlation with the value of r is respectively = 0.554, and 0.513. It means, the older the age of the family head (age limit of 64 years), the higher the adequacy rate of food and nutrition consumption (energy and protein sources). The age of the respondents belong to the productive age group, which economically can work to meet family needs.

Another socio-economic factor that is quite important in improving food and nutrition consumption of energy and protein source is household income. Based on the findings in the field, it is shown that the average income of respondents is Rp. 22,394,412 per family per year or a total Rp.1.866.201 per family per month, and Rp. 5,598,603 per capita per year (the average of family member is 4.09), or Rp. 466,550 per capita per month. When linked with the UMP of Jambi Province, the respondents' income is high. This indicates that the average income level of the respondents in the study area is high.

If family income factors are associated with food and nutrition consumption of energy and protein source, statistical analysis results through a correlation test showed a significant and positive correlation with r values respectively is 0.551 and 0.663. This figure shows a very strong positive relationship. This indicates that the greater the level of family income, the greater the degree of food and nutrition consumption. In other words, the greater the level of family income, the greater the ability to meet family food consumption including energy and protein consumption. The results are consistent with a research conducted by Indah Cahyani, Gayatri (2008), Chakraborty R, Bose K, and Ulijaszek SJ, (2009), Prabhat, Archana; and Khyrunnisa Begum (2012), and Nguyen, et al. (2013) which state that there is a relationship between income levels and household food consumption. The higher the level of income, the higer the ability to fulfill household food consumption including the consumption of energy and protein. The results of the study of Prabhat, Archana; and Khyrunnisa Begum, (2012), concluded that household's choice of food and nutrition is affected by multifactors, one of which is family income. The research results showed that family income is positively correlated to the frequency and quantity of food consumption. Then, the research of Abdollahi, Morteza; at. al (2014) adds that factor of socio-economic status (SES) affects the quality of consumed- nutrition level. The better the level of SES, the better the quality of food consumed, and vice versa.

Based on human resources condition in the research area, it can be concluded that another socio-economic factors that is equally important with respect to food and nutrition consumption is the number of family members or dependents load. Based on the findings in the field, the average family size is 4.09 or 4 (four) people in each respondent. It means that the number of family members of the respondents in the study area has followed the government's recom-

mendation that two children are enough (*BKKBN* program). This is in line with the Family Planning Program (KB), that is, a small, happy, and prosperous family. When grouped, the largest percentage are in groups of 3-4 people, reaching 56.67 percent, while the lowest percentage are those of > 7, that is only 1.67 percent.

If the factor of the number of family members is associated with the consumption of food and nutrition, source of energy and protein, the statistical analysis through correlation test showed a significant negative correlation with the value of r is respectively -0.579, and -0.564. This figure shows a very strong negative relationship. This proves that the greater the number of family members or dependents burden, the lower the level of compliance with food and nutrition consumption. In other words, the greater the level of family burden, the less the fulfillment of food and nutrition intake.

Another characteristic factor associated with the consumption of food and nutrition is the education factor. Based on the field data, it was concluded that the largest percentage (36.11%) of household heads (husband) has a high school education or equivalent. It means that the majority of respondents already reached the level of basic education required by the government, namely the 9 years education. The high level of education of respondents is expected to increase household income given the level of education can play a role in finding jobs. However, the analysis shows that family education factor did not show a significant positive relationship with the consumption of food and nutrition. This is proved by the results of statistical analysis through correlation test showing that the value of r is respectively 0,085 and 0,039. In other words, educational level of the family did not show a relationship with the fulfillment of the consumption of food and nutrition. The low correlation of formal education with consumption patterns in the research areas is supported by the respondents' statements that the understanding of the variety of foods, nutritious and balanced diet is not necessarily gained from formal schooling.

Family consumption pattern is determined by the role of wife, and the habits of the people. As revealed by Suandi (2014) that the lives of everyday people in Jambi Province is hereditary so it is interwoven into the culture, then this pattern become a power in the various activities included in the diet of people.

CONCLUSION

Food consumption of families in the study area is almost enough. Based on the results of the 24-hour recall, it can be concluded that food consumption of families in the study area is almost reach the standard of variety since it contains carbohydrate, animal protein and vegetable protein and vegetables. If differentiated based on the classification of consumption, there are as many as 42 per cent of households that consume energy as recommended, and there are as many as 52 per cent of households whose energy consumption has not been as recommended, while the protein consumption of households in the study area is almost close enough to the standard, that is equal to 56.76 grams / capita / day. Results of the analysis showed that the variables of household head age, family size and income are positively correlated and have significant impact on energy and protein adequacy of families, while the household head educational factor is proven to be unrelated to it.

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