
Relationship of Knowledge, Energy Intake and Family Income with Nutritional Status of the Elderly in Lambara Village, Tawaeli District, Palu City

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ABSTRACT

The nutritional problem that can arise after the disaster is the worsening nutritional status of community groups, especially for the elderly group. Energy intake that is not in accordance with the needs of the elderly caused by food assistance that is often delayed, unsustainable and limited local food availability can worsen the existing condition. The problem is even more complex with the lack of family income and lack of knowledge in food preparation. The purpose of this study was to determine the relationship between knowledge, energy intake and family income with the nutritional status of the elderly after the disaster in Lambara Village, Tawaeli District, Palu City. This type of research is analytic with a cross sectional approach which aims to determine the relationship between the independent variables (knowledge, energy intake and family income) with the dependent variable of the nutritional status of the elderly being studied at the same time. The population in this study were all advanced residents in Lambara Village totaling 117 people. A sample of 32 respondents was calculated using the Slovin formula using the proportional random sampling technique. The results showed that there was no significant relationship between knowledge and nutritional status of the elderly (H_0 accepted, $P = 0.273 > 0.05$), there was a significant relationship between energy intake and nutritional status of the elderly (H_0 rejected, $P = 0.007 < 0.05$). and there was a significant relationship between family income and the nutritional status of the elderly (H_0 rejected, $P = 0.009 > 0.05$). It is hoped that elderly family members will continue to provide support and attention to the health conditions of the elderly and supervise when serving food that is in accordance with the physiological conditions and nutritional needs of the elderly.

INTRODUCTION

Indonesia has geographical, geological, hydrological and demographic conditions that allow disasters to occur, whether caused by natural factors, non-natural factors or human factors that can lead to emergencies in all fields which under certain circumstances can hinder national development. In addition, the socio-cultural diversity of Indonesian society also has the potential to cause social friction which can result in social conflict (1).

Knowledge is the result of knowing that occurs after people sense certain objects. Knowledge is a very important domain in shaping one's actions. From experience and research results, it turns out that behavior based on knowledge will be more lasting than behavior that is not based on knowledge (2).

Nutrient intake is the amount of nutrients that enter through daily food consumption to obtain energy to carry out daily physical activities (3). Lack of nutrients in the food consumed will have bad effects on the body, including decreased body defense against disease, lack of physical ability, decreased body weight, thin body, pale face, lack of enthusiasm, lack of motivation, reacting slowly and so on (4).

Basically the purpose of working people is to generate income. Income is remuneration for work after completing the work. The amount of income received by workers by working hours used to complete their work (5). Income is the amount of income received by community members for a certain period of time as compensation for the factors of production that they contribute in participating in forming a product (6).

Nutritional status is a reflection of the size of the fulfillment of nutritional needs. Partial nutritional status can be measured by anthropometry (measurement of certain parts of the body) or biochemistry or clinically (Sandjaya, 2016). In addition, nutritional status can be interpreted as an expression of a state of balance in the form of certain variables, or the embodiment of nutrition in the form of certain variables (7).

METHODOLOGY

This type of research is analytical with a cross sectional approach which aims to determine the relationship between knowledge, energy intake and family income with the nutritional status of the elderly in Lambara Village, Tawaeli District, Palu City. Cross sectional approach is a research to study the dynamics of correlation between risk factors and effects, the approach is in the form of observation or data collection at the same time (8).

The sampling technique used in this research is proportional random sampling. Samples were taken at random (random) by first doing stratification or calculating the sample proportion for elderly residents living in each hamlet in Lambara Village, Tawaeli District, Palu City.

The formula for calculating the sample proportion for each hamlet is as follows:

$n/N \times \text{number of samples obtained (32)}$

Description:

N = Number of elderly people in each hamlet

n = Total Population (117)

RW I (Anja)	=	$31/117 \times 32$	=	9
RW II (Lambara Induk)	=	$29/117 \times 32$	=	8
RW III (Bosa)	=	$27/117 \times 32$	=	7
RW IV (Liku)	=	$30/117 \times 32$	=	8

Thus, the number of samples was randomly selected in each kelurahan according to the predetermined proportions.

RESULTS

Characteristics of Respondents

Based on the data that has been collected on 32 respondents who meet the research criteria in Lambara Village using a questionnaire, the characteristics of the respondents can be explained as follows:

Gender

The gender of the respondents in this study were divided into male and female. The distribution of respondents by gender.

Age

The distribution of respondents based on age groups in this study varied, starting from research respondents aged 60 to 78 years. The distribution of respondents by age group.

Last education

The last formal education of respondents in this study consisted of graduating from elementary school (SD), junior high school (SMP) and high school (SMA). The distribution of respondents is based on the last education.

Work

The occupations of the respondents in this study are quite varied, including those who work as laborers, traders, retired Civil Servants (PNS), entrepreneurs, farmers and housewives (IRT). The distribution of respondents based on occupation, marital status.

Marital status is an inner and outer bond between a man and a woman as husband and wife with the aim of forming a household (family). Older people who still have a life partner will be more different in their lives because they have someone who supports each other. In this study, there are respondents who still have a life partner (married), but there are also respondents who are widows or widowers. The distribution of respondents based on work Univariate analysis

Univariate analysis was carried out to obtain an overview of the frequency distribution of each independent variable t (knowledge, energy intake and family income) and the dependent variable (nutritional status of the elderly after the disaster) in the study which is described in full as follows:

Distribution of Respondents Based on Knowledge

Referring to the theory proposed by Arikunto (2010), the measurement of the level of knowledge is categorized into three, namely poor knowledge if the respondent's answer score is < 56%, sufficient knowledge if the respondent's answer score is 56-75% and good knowledge if the respondent's answer score is 76- 100%. For more details, the distribution of respondents based on knowledge Distribution of respondents based on energy intake.

Referring to the provisions on energy intake needed by the elderly, it is stated that the respondent's total energy intake is <2250 calories (55-64 years) and <2050 calories (\geq 65 years) for Male Elderly and < 1750 calories (55-64 years) and <1600 calories (\geq 65 years) for Elderly Women; Sufficient, if the respondent's total energy intake reaches 2250 calories (55-64 years) and 2050 calories (\geq 65 years) for elderly men and 1750 calories (55-64 years) and 1600 calories (\geq 65 years) for elderly women and over , if the respondent's total energy intake is >2250 calories (55-64 years) and >2050 calories (\geq 65 years) for elderly men and >1750 calories (55-64 years) and >1600 calories (\geq 65 years) for the elderly Women. For more details, distribution of respondents is based on energy intake. Distribution of respondents is based on family income.

Referring to the provisions of the Regional Minimum Wage (UMR) of Central Sulawesi Province in 2019, the category of family income is divided into below the UMR, if the average family income is < Rp. 2,415,442,- per month and according to or above the Regional Minimum Wage, if the average family income is Rp. 2,415,442, - per month (Disnakertrans Palu City, 2019). For more details, the distribution of respondents is based on family income. Distribution of respondents based on nutritional status.

Referring to the classification of nutritional status based on Body Mass Index (BMI) according to the Indonesian Ministry of Health (2013), it is explained that the thin category, if BMI < 18.5 kg/m²; fat, if BMI >25-29.9 kg/m²; normal, if the respondent's BMI is 18.5-25kg/m² and very fat if the BMI is > 30. The objective criteria in this study are divided into normal nutritional status and abnormal nutritional status (thin, fat and very fat). For more details, the distribution of respondents based on nutritional status.

Relationship between Knowledge and Nutritional Status of Elderly Post-Disaster

To determine the relationship between knowledge and nutritional status of the elderly after the disaster. The results of the Chi-Square test between the knowledge variable and the nutritional status of the elderly post-disaster obtained a value of $P = 0.273$ ($p > 0.05$) then (H_0 is accepted) which means that there is no significant relationship between knowledge and nutritional status of the elderly after the disaster.

Relationship between Energy Intake and Nutritional Status of Elderly Post-Disaster

This study aims to determine the relationship between energy intake and the nutritional status of the elderly after the disaster. The results of the Chi-Square test between the energy intake variable and the nutritional status of the elderly post-disaster obtained a value of $P = 0.007$ ($p < 0.05$) then (H_0 is rejected), which means that there is a significant relationship between energy intake and the nutritional status of the elderly after the disaster.

DISCUSSION

This study has limitations that cannot be avoided and affect the results of the research. As a study designed through a cross-sectional study approach, besides the advantages of being cheap and easy to do, there are also disadvantages, namely it is difficult to determine cause and effect because data collection, risks and effects are carried out at the same time (unclear temporal relationship).

To determine energy intake, the researcher used the food recall method 3x24 hours which allows for recall bias because it depends on the respondent's memory, so to minimize the recall bias, the researcher used a food model at the time of the recall interview, to reduce the food consumed or increase the food consumed so that the individual consumption pattern data may not reflect the actual condition. Furthermore, food consumption recall data processing has a weakness where not all types of food ingredients consumed by respondents can be analyzed. What is done to minimize bias is to estimate the nutritional content of which is almost the same as similar foods, so that the results obtained are less or more than the actual nutritional value.

The results of data processing are adjusted to the existing research objectives, namely knowing the relationship of knowledge, energy intake and family income with the nutritional status of the elderly after the disaster, as described in the following discussion:

Relationship between Knowledge and Nutritional Status of Elderly Post-Disaster in Lambara Village, Tawaeli District, Palu City

Knowledge is the result of sensing, especially the senses of sight and hearing of something that gives rise to an understanding of a particular subject or object. Behavior that is based on knowledge will be more permanently adopted by someone compared to behavior that is not based on knowledge (8).

The results of the univariate analysis showed that there were 3 respondents (9.4%) who had poor knowledge, 12 respondents (37.5%) had sufficient knowledge and 17 respondents (53.41%) had good knowledge.

The tabulation results show that of the 3 respondents with poor knowledge levels, there are no respondents who have normal nutritional status, all respondents (100.0%) have abnormal nutritional status, from 20 respondents with sufficient knowledge level, each of 6 respondents had a nutritional status in the normal and abnormal categories (50.0%), while out of 17 respondents with a good level of knowledge, there were 8 respondents (47.1%) who had a nutritional status in the normal category and there are 9 respondents (52.2%) who have a nutritional status with an abnormal category.

Based on the data above, it can be seen that most of the respondents in this study have sufficient and good knowledge about the problem of healthy and nutritious food for the elderly, but some of them have nutritional status with abnormal categories (thin and fat). This is seen based on the calculation of the Body Mass Index) that has been carried out by researchers.

The results of the Chi-Square test between the knowledge variable and the nutritional status of the elderly post-disaster obtained a value of $P = 0.273$ ($p > 0.05$) then (H_0 is accepted) which means that there is no significant relationship between knowledge and nutritional status of the elderly after the disaster.

According to the researcher's assumption, there is no significant relationship between knowledge and nutritional status of the elderly after the disaster, it is possible because knowledge with sufficient or good categories cannot necessarily be applied by consuming good and nutritional food. Factors of eating habits, tastes and preferences for food that can affect the nutritional status of the elderly. In addition, knowledge of nutrition in the elderly can also be influenced by the environment in which they live, beliefs (abstinences) towards certain foods which are believed if consumed can cause disease. Meanwhile, good knowledge about the needs and nutritional status of respondents is only information that does not encourage them to have an ideal body weight.

Khomsan (2011) explains that the knowledge of nutritional knowledge that a person has does not mean that they can change their eating habits, they may understand the intake of nutrients (carbohydrates, protein, vitamins, minerals and other nutrients) needed for body balance in the elderly, but do not apply nutritional knowledge possessed in the practice of daily life (9).

Kusharto (2014) also explains that food information obtained by a person is selected based on a basic value determined by four factors, namely taste, social value of food, health and nutritional benefits and prices of

food and other similar foods. It was also added that personal factors that influence the amount and type of food consumed are the number of sources of information that a person gets about the body's need for nutrition and a person's ability to apply their nutritional knowledge into food selection and the development of appropriate food use (10).

CONCLUSION

This study concluded that there was a significant relationship between family income and the nutritional status of the elderly in Lambara Village, Tawaeli District, Palu City (H_0 rejected, $P = 0.009 > 0.05$).

SUGGESTION

It is hoped that the Puskesmas can play an active role in improving the health quality of the elderly through the provision of counseling programs related to the types of healthy food and healthy eating behavior for the elderly as well as advocating for health workers and posyandu cadres to measure and record nutritional status based on BMI on a regular basis to find out and monitoring the nutritional status of the elderly.

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