



Influence Factors Nutritional Needs in the Elderly in Marginalized Communities

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Abstract: Nutritional problems are caused by rapid degradation which causes changes in nutritional status. This study aims to determine the factors that affect the nutritional needs of the elderly on Kodingareng Island in 2023. The research design was carried out in a descriptive-correlative way with a cross-sectional study approach with 49 respondents. The data collection tool is in the form of a questionnaire in the form of a dichotomy. The sample collection technique used is total sampling. The research results show that there is a relationship that influences nutritional needs on the nutritional status of the elderly, namely physical activity, mental condition, depression, disease treatment, and biological decline with a p-value <0.05. The conclusion is obtained that the nutritional status of the elderly is in the normal category, so it is recommended for the community to optimize attention to the food consumed so that they remain at normal nutritional status as well as in administering drugs so that absorption is more optimal.

Keywords: Elderly; Nutritional needs; Nutritional status

Introduction

Looking at the growth rate of the elderly globally, data from the UN for 2022 states that there will already be 727 million people aged 65 years or over in 2020. This number is projected to double to 1.5 billion elderly people in 2050 worldwide. The Central Bureau of Statistics released data on the number of elderly people based on the results of the 2016 Inter-Census Population Survey, an estimated number of elderly (age 60 years and over) in Indonesia as many as 22,630,882 people. This figure is expected to increase to 31,320,066 in 2022

According to Basic Health Research (Risikesdas) in 2010, it was found that people who consumed food below 70% of the recommended Nutrition Adequacy Rate (RDA) were 40.6%. This situation is often found in school age children (41.2%), teenagers (54.5%) and

pregnant women (44.2%) (Risikesdas, 2010). Risikesdas data from 2010 to 2013 showed an increase in the prevalence of nutritional status (BMI/U) in the thin category, namely 7.6%, while in 2013 it increased to 11.2% (Risikesdas, 2013). (Nindrea, 2017). Research conducted on hypertensive patients obtained the highest hypertension rate in the age range of 60-74 years and the highest sex in this study was female and grade I hypertension with a body mass index value of overweight (35%), normal body mass index (62%). (Platini et al., 2019)

The elderly population continues to grow, both in Europe and around the world. The most common medical problems faced by the elderly are reduced functional ability and morbidity. Since the beginning of the twenty-first century, international geriatric studies have described debilitating syndromes (Walston et al.,

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2006; Leng et al., 2014). Clinical studies show that 30% of cases of malnutrition are related to depression (Haboubi, 2010). Statistically, 9.5% of older adults living in the United States of North America have been diagnosed with the debilitating syndrome. The results showed that weakness occurs in 7% of older adults aged 65+ and 30% aged 80+. The incidence of frailty in the European population is between 5.8% and 27.3%, whereas pre-frail conditions occur in 34.6% to 50.9% of the older adult population (Romero-Ortuno et al., 2010)

In Indonesia, there are still elderly who experience malnutrition (malnutrition), even though a balanced nutritional intake is very important to help the elderly to stay healthy. loss of muscle mass. The number of elderly people or 60 years and over in Indonesia continues to increase. The Central Statistics Agency (BPS) predicts that by 2035 the number of elderly people will reach 48 million people or 15% of the total population of Indonesia.

Research from Thailand found the prevalence of carbohydrate, protein, fat, calories, calcium, phosphorus, iron, thiamine, riboflavin, retinol, niacin, vitamin C, folic acid and iodine inadequacy was 86.8%, 59.2%, 78.0%, 83.5%, 55.0%, 29.5%, 45.2%, 85.0%, 19.2%, 3.8%, 43.2%, 0.8%, 0.0% and 0.8%, respectively. Maternal age, education level, gestational age at enrolment and pre-pregnancy body mass index and level of violence in the district were significantly associated with inadequacy of carbohydrate, protein, phosphorus, iron, thiamine and niacin intake (Sukchan et al., 2010)

The research conducted by Lorantina found a relationship between tooth loss and nutritional status at BPLU Senja Cerah Manado. Spearman correlation rho (r) of 0.849 indicates a very strong correlation. a significant value (P) = 0.000 is obtained which is smaller than $\alpha = 0.05$.

Today, Indonesia is facing multiple nutritional problems, namely undernutrition and overnutrition. On the one hand, the problem of undernutrition is generally caused by poverty, lack of food supplies, poor environmental quality, and lack of public knowledge about nutrition. Indicators of nutritional problems from a socio-cultural perspective include family stability with a measure of the frequency of marriage-divorce-reconciliation, children born in an unstable family environment will be very vulnerable to malnutrition. Clinical examination is a very important method for assessing the nutritional status of people. This method is based on the changes that occur associated with nutritional insufficiency. The lack of empowerment of women and families and the lack of utilization of community resources is related to the increase in unemployment, inflation and poverty caused by the economic, political and social unrest that has hit Indonesia since 1997 (Anisa et al., 2019; Hasanuddin et

al., 2020). Clinical and epidemiological studies also identified that many non-essential dietary components referred to as phytochemicals are capable of modulating health and wellness (Liu, 2003)

The results of research conducted on 40 elderly respondents at the Antang Health Center Perumnas discuss the level of independence of the elderly in meeting their needs and daily activities. From the results of data processing, it can be seen that most are levels independent in meeting the needs of daily activities, namely 37 respondents (92.5), semi-independent 3 respondents (7.5%), and the level of dependence does not exist. The results of the 2010 population census showed that Indonesia is one of the top 5 countries with the most elderly population in the world, reaching 18.1 million people in 2010 or 9.6% of the total population (Jakarta, March 26). Therefore, the Ministry of Health will increase the number of polite health centers for the elderly because of the increasing number of elderly population due to increasing age life expectancy leading to service group-friendly healthcare is increasingly needed (Samsi, n.d.).

The prevalence of malnutrition across the world, even in well-developed countries including the US, shows an increasing trend from time to time (Chern & Lee, 2015). In Asia however, it was found that a range of 16%-78% of hospitalized elderly are malnourished (including those at risk of malnutrition) between 2005 to 2012 (Chern & Lee, 2015). This percentage range is similar to that in the UK, where a study showed that 29%-61% of hospitalized elderly are malnourished (Corish & Kennedy, 2000), while another study stated that the UK has 58% of malnourished hospitalized elderly (Abd Aziz et al., 2017).

Based on the results of data collection, it was found that there were 49 elderly people consisting of 32 elderly women and 17 elderly men and from the results of interviews, the food menu for the elderly was all the same, moreover there was no special fulfillment menu for elderly men who had certain diseases.. Based on this background, this research can be an input for nursing care.

Method

This research uses a descriptive correlative with a sampling technique using total sampling with a research data collection tool using an instrument in the form of a dichotomy. Test the validity using construct validity on 30 respondents. If the results of the questionnaire test obtained a value greater than 0.361 then the questionnaire was declared valid.

Result and Discussion

Demographic data in this study include age, gender and last education, from table 1 it can be seen that most of the respondents' ages are between 60-74 years with a frequency of 33 people (67.35%) and female sex 32 people (65.3%) and elementary school education as many as 29 people (59.2%). In Table 2 it is found that physical activity has a high relationship to the nutritional status of the elderly as many as 20 respondents (40.8%), (59.2%) the relationship is low. From the statistical test results, it was obtained that the p-value was $0.005 < 0.05$, which means that there is a relationship between physical activity and the nutritional status of the elderly on Kodingareng Island. This is due to a decrease in appetite if the physical activity is low, the nutritional status is normal (Gebretatyos et al., 2020) This shows that there are some elderly people who, if they do a lot of activities, will experience a decrease in their appetite due to fatigue. Decreased physical activity in the elderly must be accompanied by a decrease in calorie intake to prevent obesity. As stated in research Kennedy et al., (2004) that obesity is a common problem in the elderly, although its prevalence decreases in extreme old age. Decreased physical activity and decreased energy expenditure with ageing predispose to fat accumulation and fat redistribution. Reduction in muscle mass (sarcopenic obesity) is an important determinant of physical function and metabolic rate (Malina, 2022).

Table 1. Distribution of Nutritional Status Based on Respondents' Characteristics in Kodingareng Island

Characteristic	Frek.	%
Age (Years)		
45- 59	0	0
60-74	33	67.35
75-90	16	32.65
> 90	0	0
Gender		
Men	17	34.7
Women	32	65.3
Education		
No school	8	16.3
Elementary High School	29	59.2
Yunior High School	10	20.4
Senior High School	2	4.1
Total	49	100

The biggest problem for the elderly (elderly) is degenerative disease. It is because around 75% of elderly people with degenerative diseases can't do activities (stay at home) (1). The most common diseases in the elderly based on Basic Health Research in 2018 were heart disease (1.5%), hypertension (34.1%), and diabetes mellitus (3.4%) (Syahrial et al., 2022)

Gender is an internal factor that determines nutritional status so there is a relationship between gender and nutritional status where men need more nutrition than women to help with metabolic processes because men have high physical activity and are also affected by body weight. Food insecurity-overweight and -obesity paradox appears not to be present in older men. However, food insecurity and obesity coexist among low-income, older women (Hernandez et al., 2017)

From the results of statistical tests related to the relationship between depression and mental condition and the nutritional status of the elderly, a p-value of $0.032 < 0.05$ was obtained, which means that there is a relationship between depression and mental condition in the nutritional status of the elderly in Kodingareng Island. This is due to increasing age making the physical condition begin to weaken, moods change which causes the elderly to experience changes in appetite when experiencing problems (Sadamori et al., 2008; Salama, 2000; Kim et al., 2020).

Indicators of health status, low nutritional status are still problems that are considered important to pay attention to when cases of malnutrition are discovered. (Hasanuddin, 2019). The relationship between disease and the nutritional status of the elderly found that the p-value < 0.05 means that there is a relationship between the disease and the nutritional status of the elderly on Kodingareng Island. This is due to decreased endurance due to diseases suffered by the elderly requiring adequate nutrition in the recovery process such as protein, carbohydrates and vitamins.(Ollenschläger, 1993) Increasing age causes a person to be susceptible to disease. Certain diseases cause poor nutritional status, for example elderly people with diabetes have a body weight below normal limit.

Line with research conducted by Korkut et al (1970) about 68.5% of the 111 patients were females. While 64.9% were primary school graduates, 58.6% were housewives and 82.9% were low-income level. Body Mass Index (BMI) was found to be significantly higher in women ($p=0.041$). It has been found that the awareness of the patients about themselves and their illnesses are 37.8% for HbA1c, 64.8% for fasting blood sugar level, 78.3% for their height and body weight. While males had a higher score than females in the diabetes survey, females scored higher than males in the medical nutrition therapy and physical activity questionnaires. On the other hand, 46.8% of patients showed additional health problems as a cause of non-compliance to physical activity (Korkut et al., 1970)

Biological decline and nutritional status obtained a p-value of $0.004 < 0.05$, meaning that there is a relationship between biological decline and the nutritional status of the elderly because it will hinder the

fulfillment of nutrients for the elderly, such as the elderly who have problems with their mouths (Teruya et al., 2021) they will feel the food eaten is not tasty or difficult to chew. Someone who is experiencing the aging process will be followed by various biological setbacks. Entering old age, a person will experience several changes both physically and biologically, for example tooth loss, wrinkled skin, reduced vision, bone loss, gray hair, senile dementia, depression, reduced sensitivity, metabolism reduced basalt (Mabiamba et al., 2021). Work practices (such as employment status and the types of tasks workers perform) follow the biological decline in physical activity that occurs with aging in humans (Levine et al., 2006).

Table 2. Analysis of factors affecting the nutritional needs of the elderly on Kodingareng Island 2023 (n=49)

Nutritional needs elderly	Nutrition Status		Total	%	p-value
	Normal	Thin			
High	10	14	49.0	0.002	
Low	22	3	51.0		
Total	32	17	100		
Aktifitas Fisik					
High	8	12	40.8	0.005	
Low	24	5	59.2		
Total	32	17	100		
Kondisi mental					
High	17	15	65.3	0.032	
Low	15	2	34.7		
Total	32	17	100		
Penyakit					
High	8	12	40.8	0.005	
Low	24	5	59.2		
Total	32	17	100		
Kemunduran Biologis					
High	6	11	34.7	0.004	
Low	26	6	65.3		
Total	32	17	100		

The nutritional needs of the elderly with nutritional status have significance (p-value <0.05) this causes the elderly to be heading towards degenerative where the elderly will experience a decline in cell capabilities so that every organ of the human body experiences limited abilities and functions. In general, the nutritional needs of the elderly are slightly lower than those of adults (Wadhwa et al., 1997). Despite progress in overall health status, the gap between the highest and lowest performing provinces has widened since 1990, with unequal distribution of resources and low levels of health service utilization.(Oktaria & Mahendradhata, 2022)

Conclusion

The Factors that can affect the nutritional needs and nutritional status of the elderly are physical activity, medication, biological decline which are in the low category while depression and mental condition are in the high category, so it is recommended to optimize attention to the food consumed by the elderly in order to achieve normal nutritional status.

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Author Contributions

This article was written by MKA in scientific provided critical feedback of the manuscript. AM= Andi Maryam, AH = Asni Hasanuddin, MKA = Muh Khidri Alwi; AE = Andi Elis. AS = Ahmad Syaekhu.RDN=Ricvan Dana Nindrea.

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Conflicts of Interest

The is no conflict of interest in this research

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