

Analysis of Family Knowledge About Health Diet and Nutritional Status Among The Elderly

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Abstract

The increasing number of elderly people has an impact on the increase in specific problems that occur in the elderly, one of which is nutritional problems. An important aspect that families must have is adequate knowledge in preparing balance nutritional needs. If nutritional needs are not met in a balanced manner, health problems can occur in the elderly. Diseases or health problems among the elderly can lead them to limit their food intake, thereby worsening their condition. Restricting food due to dietary restrictions imposed by their condition will lead to a lack of nutrients the body needs. This study aims to determine families' knowledge about healthy diets and nutritional status in the elderly. This research method used a descriptive-analytic design with a cross-sectional approach. The study population consisted of families with elderly members aged ≥ 55 years who voluntarily participated. The sample included families who accompanied or lived with the elderly. The respondents' ages ranged from ≥ 26 years, and a total of 57 families with elderly members aged ≥ 55 years or older voluntarily participated in this study. The analysis in this study used univariate analysis to determine the frequency distribution and bivariate analysis using the Chi-Square test. The analysis was conducted for each family knowledge category and the Mini Nutritional Assessment (MNA). Based on the distribution of family knowledge about healthy diets, 39 respondents were in the good category, 33 respondents had a normal nutritional status. Family is also an important factor in the lives of the elderly. Statistical analysis results show that there is a relationship between family knowledge about healthy diets and nutritional status fulfillment in the elderly. The results of this study indicate that there is a correlation between the level of knowledge possessed by families and the nutritional status of elderly individuals. Families with sufficient knowledge are able to provide meals that take into account the types of food, frequency of meals, and daily menus for elderly individuals in order to maintain their nutritional status within the good or normal range.

Keywords: Family' Knowledge, Nutritional Status. Elderly

Introduction

The increasing number of elderly people has led to an increase in specific problems affecting the elderly, one of which is nutrition. Nutrition is one aspect that affects an individual's health. Nutritional status is considered good when the diet is balanced, meaning that the intake, frequency and type of food consumed must be in accordance with the body's needs. Poor nutritional status or excessive nutritional status will have a negative impact on physical health. Each stage of a person's life cycle has its own nutritional and health risks.

Changes in nutritional status in the elderly are influenced by several factors, namely changes in diet, physical activity, psychological changes/mental status and family economic factors. Changes in nutritional needs and intake among the elderly often lead to health problems, particularly when their nutritional status falls within the range of undernutrition or overnutrition. According to Abate et al. (2020), 13–78% of the elderly experience malnutrition. If this condition is not prevented or treated, morbidity and mortality rates will increase, ultimately impacting the health of individuals, families, and communities. The results of a Body Mass Index (BMI) survey of elderly people found that 10.1% of Indonesians over the age of 60 were overweight, with 3.8% of men and 6.2% of women falling into this category. while the percentage of men who are obese is 6.1% and women 13.7% (Wulandari and W, 2023).

The results of nutritional status measurements using MNA (Mini Nutritional Assessment) and BMI in several regions in Indonesia, namely in the Pampang Makassar sub-district, showed that 50.5% of elderly people were at risk of malnutrition and 11.8% were malnourished. In the Gowa region, using the same measurement tools, namely BMI and MNA, data showed that 42.5% were at risk of malnutrition (Setyowati et al., 2022).

Nutritional fulfilment in the elderly is influenced by several factors, one of which is the role of the family who accompanies or cares for the elderly at home in providing nutritional intake in accordance with the needs and conditions of the elderly.

An important aspect that families must have is adequate knowledge in preparing balanced nutritional needs. If nutritional needs are not met in a balanced manner, health problems can occur in the elderly, such as hypertension, heart disease, cognitive impairment, digestive disorders, gout, joint pain and other diseases (Moral-fernández et al., 2018).

Illnesses or health problems suffered by the elderly can cause them to restrict their food intake, thereby worsening their condition. Restricting food due to dietary restrictions imposed by their illness will result in a lack of nutrients needed by their bodies, such as carbohydrates, protein, fat and other nutrients (Putri, Kurniati, & Khariroh, 2023).

Family awareness and knowledge in managing diets to meet the nutritional needs of the elderly is very important, because with the knowledge possessed by the family, they are expected to be able to help manage the nutrition of the elderly to prevent and reduce the risk of recurrence of diseases in the elderly. Good knowledge from the family also helps in managing good nutritional status for the elderly. Based on this description, this study was conducted to determine the relationship between family knowledge about healthy diets and the fulfilment of nutritional needs in the elderly.

Research Method

The research method used in this study was descriptive research with a cross-sectional approach. A total of 57 families with elderly members aged ≥ 55 years voluntarily participated in this study. The sample included families who accompanied or lived with the elderly. The respondents' ages ranged from ≥ 26 years and above. They provided written consent before data collection and were guaranteed confidentiality and the right to withdraw at any time without consequences. Data collection was conducted to measure the level of knowledge and nutritional status fulfilment through interviews using a questionnaire on family knowledge about healthy diets and the MNA (Mini Nutritional Assessment).

Knowledge level was measured using a questionnaire on family knowledge

about healthy diets, a clinical assessment tool consisting of 10 items assessed on the Gutman scale with a score of 0 for incorrect answers and a score of 1 for correct answers. The assessment categories were good: score $\geq 90\%$ and poor: score $< 90\%$. Nutritional status in the elderly was measured using the MNA (Mini Nutritional Assessment) questionnaire from the Indonesian Ministry of Health, 2017, which consists of 7 questions. Nutritional status assessment categories: good: score 12-14, at risk of malnutrition: score 8-11, and malnourished: score 0-7.

Data was collected over a period of one month. Data collection was carried out by: (1) explaining the purpose of the study to respondents, ensuring their voluntary participation, and providing written consent forms to all prospective respondents; (2)

having respondents fill out the questionnaire individually according to the number of questions; (3) converting each respondent's answers into categorical variables according to the predetermined categories; (4) All data was anonymised using unique identification codes, whereby participants' responses were stored and could only be accessed by authorised research personnel. Statistical analysis was performed using Statistical programming software. The analysis was conducted for each category of Knowledge and Mini Nutritional Assessment (MNA). The Chi-Square correlation test analysed the relationship between knowledge level and nutritional fulfilment among older people, with a p-value < 0.05 set for all significance tests.

Results

Table 1. Distribution of Respondents Based on Respondent Age Characteristics

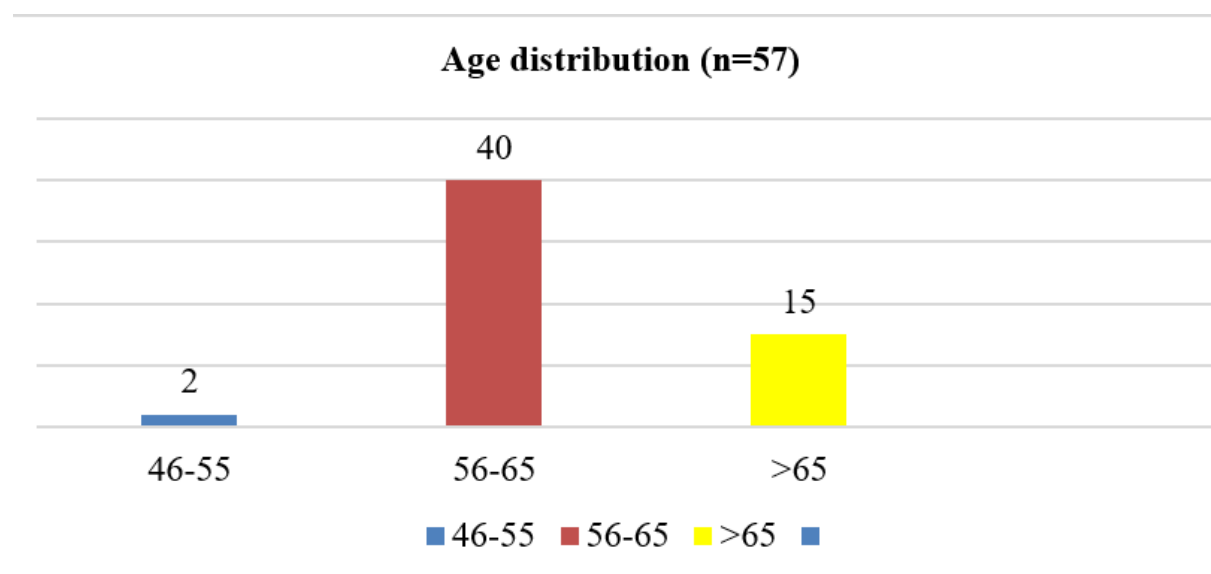


Table 1 shows that most of the elderly were aged 56-65 years, numbering 40 people (70.20%), and more than 65 years old, numbering 15 people (26.30%), and aged 46-55 years, numbering 2 people (3.50%).

Table 2. Distribution of Respondents Based on Respondent Sex Characteristics

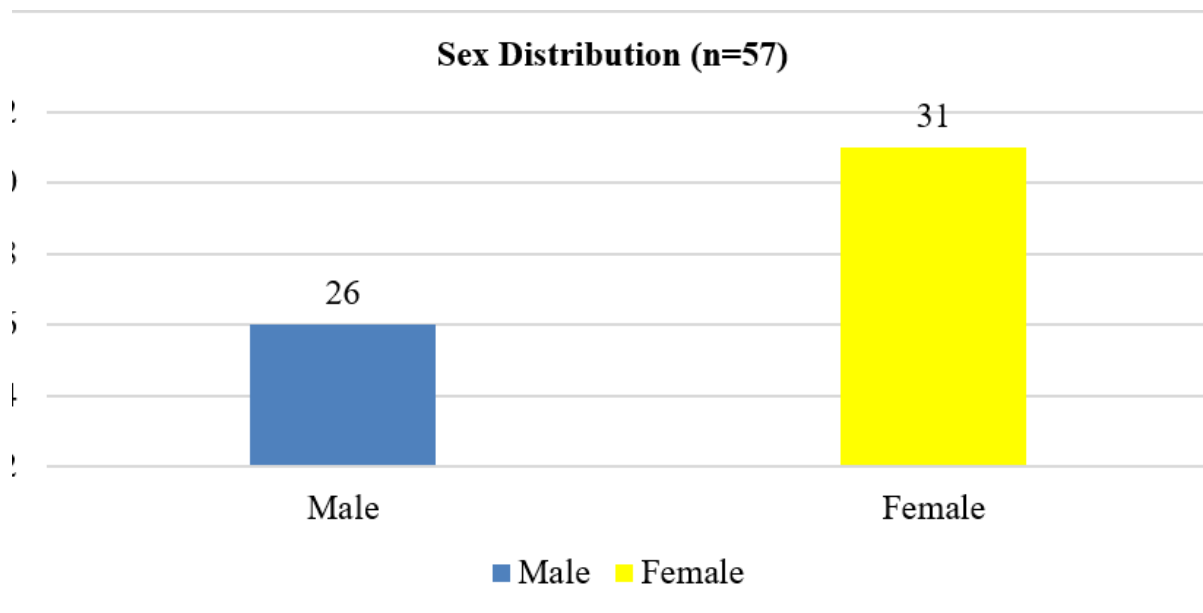


Table 2 shows that there are 31 female elderly people (54.40%) and 26 male elderly people (45.60%).

Table 3. Distribution of Respondents Based on Respondent Level of Education Characteristics

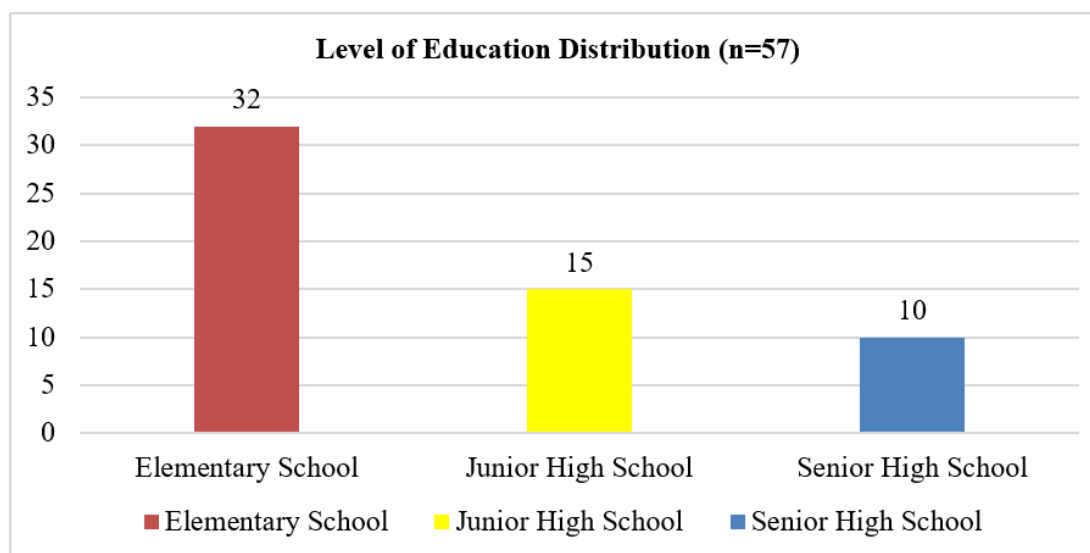


Table 3 showed that the educational level of the elderly is mostly elementary school (32 people, 56.14%), junior high school (15 people, 26.32%), and senior high school (10 people, 17.54%)

Table 4. Distribution of Respondents Based on Respondent Occupation Characteristics

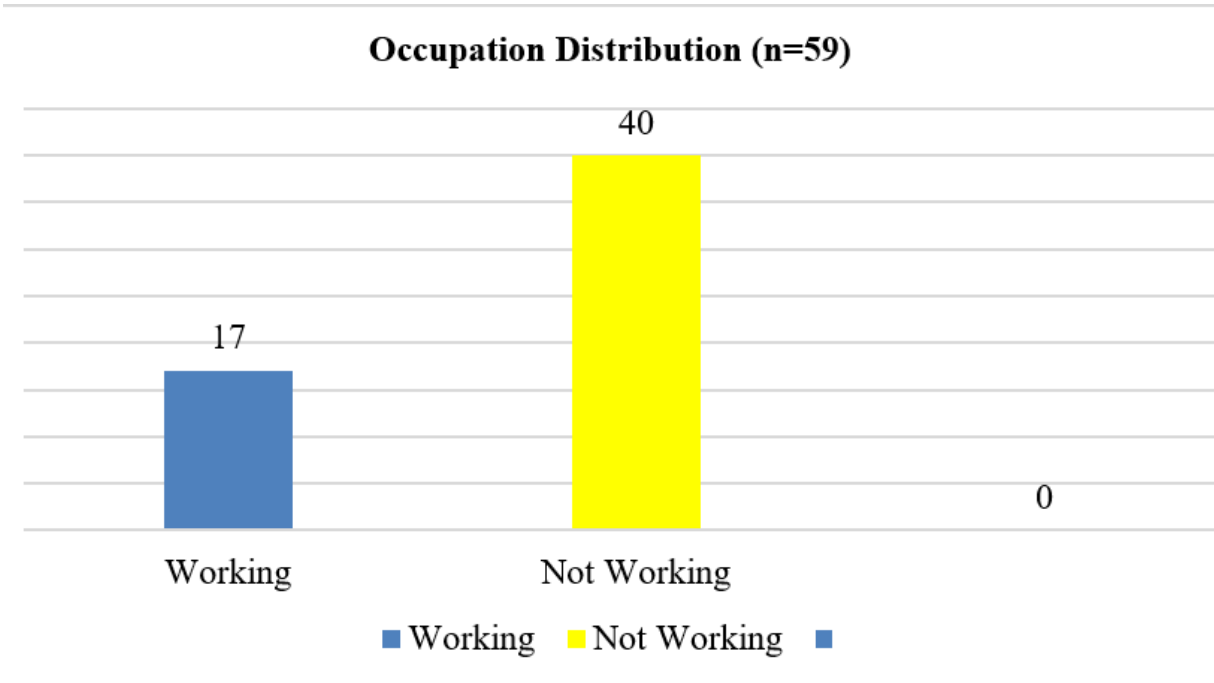


Table 4 showed that most of the elderly were no longer working, numbering 40 people (70.20%), while 17 people (29.80%) were still working or self-employed.

Table 5. Distribution of Respondents Based on Respondent Disease History Characteristics

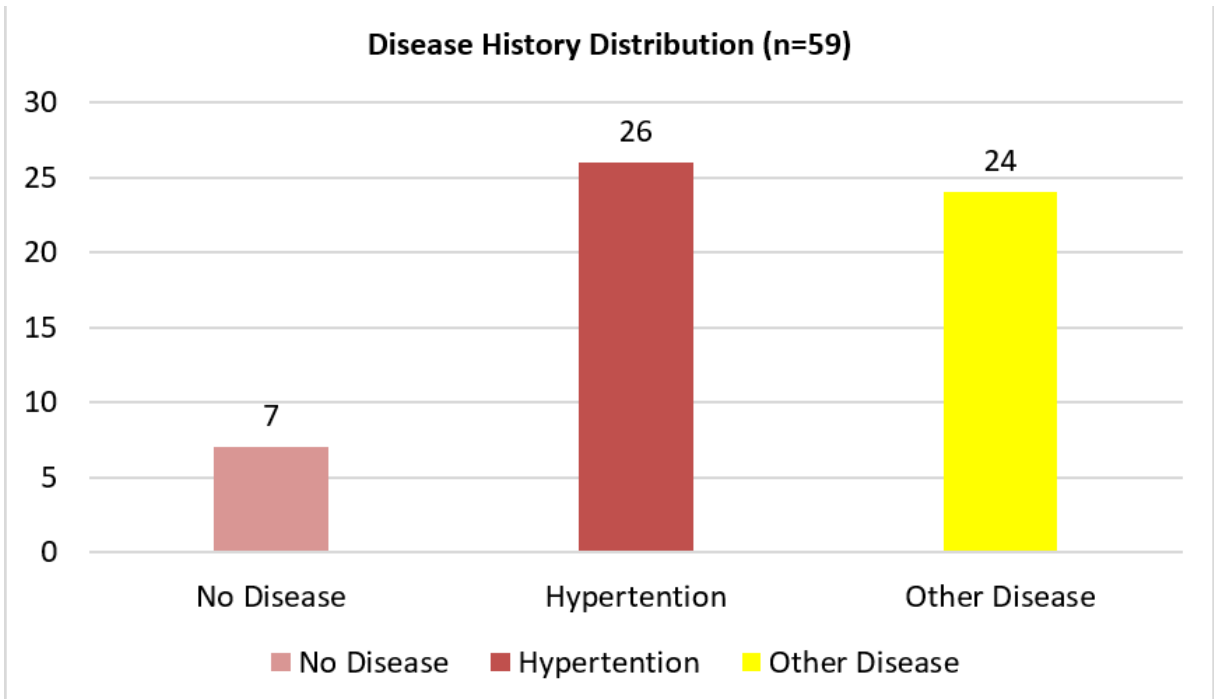


Table 5 showed that most of the elderly had a history of hypertension (26 people, 45.6%), while 24 elderly people (42.10%) had other diseases such as diabetes, gout, stomach ulcers, and joint pain, and 7 elderly people (12.30%) had no diseases.

Table 6. Distribution of Respondents Based on Family Knowledge and Nutritional Status of Elderly People

Variable	Frequencies (f)	Percentage (%)
Knowledge		
Well	39	68.40
Not Enough	18	31.60
Nutritional Status		
Normal	33	57.90
At risk of malnutrition	24	42.10

Table 6 shows that most elderly families had good knowledge, with 39 people (68.40%), and poor knowledge, with 18 people (31.60%). Based on nutritional status, most elderly people have normal nutritional status (33 people, or 57.90%), while 24 (42.10%) are at risk of malnutrition.

Table 7. Characteristic Data of Mini Nutritional Assessment (MNA)

Questions	Frequencies (f)	Percentage (%)
Has your food intake decreased in the last 3 months?		
Significant decrease	2	3.5
Slight Decrease	26	45.6
No Decrease	29	50.9
Have you lost weight in the last 3 month?		
Don't know	14	24.6
Weight loss between 1 – 3 Kg	6	10.5
No weight loss	37	64.9
Mobility?		
Able to get out of bed/wheelchair, but unable to walk long distances	2	3.5
Able to walk short distance	55	96.5
Have you suffered from psychological stress or serious illness in the last 3 months?		
Yes	2	3.50
No	55	96.50
Do you experience neuropsychological disorders?		
Mild senility	3	5.30
No psychological disorders	54	94.70
Body Mass Index (BMI) (kg/m ²)		
BMI: 21 hingga 23	23	40.40
BMI: > 23	34	59.60

Table 7 shows that most elderly people stated that their food intake had not decreased in the last 3 months, with 29 people (50.90%) stating this, 26 (45.60%) stating that it had decreased slightly, and 2 people (3.50%) stating that their food intake had decreased significantly. There were 37 people (64.90%) who did not experience weight loss, 14 people (24.60%) who said they did not know, and 6 people who said they had lost 1-3 kg of weight in the last 3 months. Most of the elderly were able to leave their homes, 55 people (96.50%), and there were 2 elderly people (3.50%) who were able to get out of bed but could not walk far. Most of the elderly did not experience psychological stress, 55 people (96.5%), and 2 people (3.50%) experienced psychological stress. A total of 54 people (94.70%) had no psychological disorders, and 3 people (5.30%) experienced mild dementia. The Body Mass Index of the elderly was mostly in the range of BMI>23 for 23 people (40.40%) and 21-23 for 34 people (59.60%).

Table 8. Frequency Distribution of the Relationship between Family Knowledge and Nutritional Status Fulfilment in the Elderly

Knowledge	Nutritional Status Fulfilment		Total	P Value
	Normal Nutrition	At Risk of Malnutrition		
Well	18 (46.2%)	21 (53.8%)	39 (100 %)	0.008
Not Enough	15 (83.3%)	3 (16.7%)	18 (100 %)	

Table 8 shows that there is a significant relationship between the level of family knowledge about healthy diets and the nutritional status of elderly people, with $p = 0.008$ ($p < 0.05$). In other words, the better the family's knowledge of nutrition, the better the nutritional status of elderly people.

Discussion

The results of this study indicate that there is a significant relationship between the level of family knowledge and the fulfilment of nutritional status in the elderly. This is evidenced by a p-value of 0.008, which is less than the statistical significance threshold of 0.05. These findings confirm that the better the family's knowledge of healthy diets, the more likely the elderly are to have good nutritional status.

This is in line with the theory that nutritional knowledge is one of the main determinants in meeting individual nutritional needs, especially in vulnerable groups such as the elderly. This study is in line with the results of a study conducted by Nurhayati, et al (2019), which shows that the higher the level of family knowledge about nutrition for the elderly, the better the nutritional status of the elderly.

In their study, Nurhayati et al. (2019)

explained that family is an important factor in maintaining a good quality of life for the elderly. Family knowledge includes understanding the types of food that are suitable for the elderly, the frequency of meals, and how to manage a healthy diet.

Families with adequate knowledge tend to be better able to manage the daily menu for the elderly, avoid the risk of malnutrition, and support the healthy ageing process. Conversely, a lack of knowledge can lead to inappropriate food provision, both in terms of quality and quantity, which has the potential to cause health problems.

Previous research conducted by Hidayat & Usman (2020) states that the role of the family has a direct impact on improving the health status of the elderly. The family is an important support system in providing care for the elderly. The knowledge possessed by families also plays an important role in ensuring adequate and optimal nutritional intake for the elderly, helping to prepare and organise nutritious meals and ensuring sufficient food ingredients to meet the nutritional needs of the elderly. This reinforces that family knowledge is one of the strategic approaches in managing nutritional status for the elderly.

Nutrition-conscious families will: know the types of food that are suitable for the

elderly (such as low salt for hypertension, low sugar for diabetes, and high fibre for digestion), know that a balance of macro nutrients (carbohydrates, protein, and fat) and micro nutrients (vitamins, minerals) is very important. Be able to adjust portion sizes and meal frequency according to the energy needs of the elderly. This enables the elderly to obtain a balanced nutrient intake, helping them maintain normal nutritional status.

Good knowledge will help with proper meal planning to prevent malnutrition. If families do not understand the principles of elderly diets, they may provide the wrong foods (e.g., too much fat or simple carbohydrates), which can lead to obesity or worsen chronic diseases. Conversely, good understanding encourages families to avoid excessive restrictions, so that nutritional intake remains adequate even if the elderly have certain diseases.

Based on the data, most elderly people had a body mass index (BMI) > 23 (59.6%) and were categorised as at risk of malnutrition. The rest (40.4%) had a BMI of 21–23 and were categorised as normal. A normal BMI (21–23) was more commonly observed in elderly people whose families had good knowledge and were able to maintain a balanced intake, so the elderly's nutritional status remained normal. BMI > 23 was mostly found in elderly people with a history of hypertension/chronic disease. This could be because the family focused only on certain dietary restrictions and did not balance the nutritional composition, leaving the elderly at risk of obesity. The risk of malnutrition (low BMI/weight loss) tended to occur in families with less knowledge because the food was not varied, and often the amount of intake was not according to their needs.

The results of this study show that family knowledge plays a very important role in maintaining the nutritional status of the elderly. Good knowledge can serve as a buffer, preventing the elderly from falling into two extreme conditions: malnutrition (thin/malnourished) and overnutrition (fat/obese).

Families who understand healthy diets are able to regulate food intake according to the needs of the elderly, both in terms of quality and quantity. Thus, the Body Mass Index

(BMI) of the elderly can be controlled so that it remains in the normal range. Conversely, families with less knowledge tend to provide inappropriate food, which can lead to nutritional problems.

The distribution result of nutritional status among the elderly based on MNA, where 57.9% of the elderly are normal, but 42.1% are at risk of malnutrition. Chi-square analysis shows a significant relationship between family knowledge and nutritional status fulfilment ($p = 0.008$). This means that family knowledge plays an important role in determining whether the BMI of the elderly remains normal or deviates (underweight/overweight).

This study aligns with the results of a study conducted by Ambrosia Barek et al. (2021), which show that family knowledge, attitudes, and support are important predictors of the nutritional status of the elderly. In this case, good family knowledge is a protective factor; the greater the knowledge, the greater the likelihood that the elderly will maintain a normal nutritional status. Conversely, low knowledge increases the risk of malnutrition, as families may choose the wrong foods or be unable to adjust the diet to the elderly's health conditions.

Families who are aware of the importance of nutrition not only prepare meals, but also encourage the elderly to eat well. This is important because many elderly people lose their appetite due to depression, loneliness, or medical conditions. Emotional support from family helps the elderly maintain a healthy diet.

The practical implication of these findings is the need for intervention in the form of ongoing nutrition education for families. This education should not only emphasise theory, but also practical skills in preparing daily menus that are appropriate for the health conditions of the elderly, including those with chronic diseases. With this approach, families can become the main agents in maintaining the nutritional balance of the elderly, reducing the risk of malnutrition and obesity, and supporting a healthy and quality ageing process.

Conclusion

Based on the distribution of knowledge among elderly families, 39 people (68.40%) were in the good category, and 33 people (57.90%) were in the normal nutritional status category. The results of this study indicate that there is a relationship between the level of family knowledge and the nutritional status of the elderly. Good knowledge possessed by families in providing food by paying attention to the type of food, frequency of meals and arranging the daily menu for the elderly is done to maintain the nutritional status of the elderly in the good or normal range, as well as helping to improve the nutritional status of the elderly so that malnutrition can be avoided/prevented.

Recommendations

1. Families and communities should increase their awareness in providing support so that the nutritional needs of the elderly can be anticipated and they can be given appropriate nutrition to improve their health.
2. Qualitative research is needed to explore the experiences, perceptions, and obstacles of families in caring for the elderly in relation to dietary arrangements. This is important to understand the socio-cultural factors that influence nutritional practices.

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