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## Relationship Between Nutritional Status And Degenerative Diseases In The Elderly

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### Abstract

*The increasing number of elderly population has resulted in an epidemiological transition, namely the shift in disease patterns from infectious diseases and nutritional disorders to degenerative diseases. The health of the elderly basically lies in their nutritional status. Nutritional problems in the elderly are mostly a problem of excess nutritional status which triggers the emergence of various degenerative diseases. Some of the diseases that are often experienced by the elderly include hypertension, arthritis, stroke, chronic obstructive pulmonary disease (COPD), and diabetes mellitus. The purpose of this study was to determine the relationship between nutritional status and degenerative diseases experienced by the elderly. This study uses a literature review method with a reference study approach. The keywords used in the journal search were "nutritional status, degenerative diseases, elderly". The number of articles included in the inclusion criteria was nine articles. Based on the results of a literature study, it is stated that the nutritional status of the elderly has an effect on the emergence of degenerative diseases. From the nine articles reviewed, it can be concluded that there is a relationship between nutritional status and degenerative diseases experienced by the elderly.*

**Keywords:** *nutritional status, degenerative disease, elderly*

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## INTRODUCTION

Elderly is someone who has reached the age of 60 (sixty) years and over (Ministry of Health RI, 2016). The increase in the elderly is directly proportional to the increase in needs, including care which makes the productive age population an economic burden to finance the elderly population (RI Ministry of Health, 2017). It is predicted that by 2050 the elderly population will increase 3 times. An increase in the elderly population has been seen where in 2000 the number of elderly people was around 5.3 million people (7.4%) of the total population. In 2010 the world's elderly number was 24 million people (9.77%) of the total population, and in 2020 the world's number of elderly people reached 28.8 million (11.34%) of the total population (Chasanah and Asda, 2022). The projected aging population of people aged 60 years and over in Indonesia is projected to increase from 25.9 million people in 2019 to 63.3 million people in 2045 (RI Ministry of Health, 2017).

The elderly have a high risk of suffering from degenerative diseases (Andrieieva et al., 2019). The health of the elderly basically lies in their nutritional status. Research conducted by experts shows that nutritional problems in the elderly are mostly a problem of excess nutritional status which triggers the emergence of various degenerative diseases (Chasanah and Asda, 2022). The elderly body experiences a decrease in physiological functions naturally with age. This decrease in function will certainly reduce the ability of the elderly to respond to stimuli or responses. As a result of a decrease in physiological function, the elderly experience changes in physical terms, cognitive abilities, organ function abilities, psychology, and socio-economics. Less effective sleep time is also part of the degenerative process in the elderly (Gurning and Sari, 2020).

Increasing age causes a decrease in various physiological functions as a consequence of the aging process which causes non-communicable diseases (degenerative diseases) to appear at this time. Several non-communicable diseases that are often experienced by the elderly include

hypertension, arthritis, stroke, chronic obstructive pulmonary disease (COPD), and diabetes mellitus.(Ekawanti et al., 2020). This degenerative disease can affect the quality of life of sufferers. Prevention of this degenerative disease can be done before being diagnosed or after being diagnosed. Prevention can be done by increasing awareness of risk factors, staying away from risk factors and carrying out regular health checks. Raising awareness can be done with education either directly or using technology(Amila, Sembiring and Aryani, 2021). Based on this description, the researcher is interested in studying the health of the elderly related to nutrition entitled "The Relationship between Nutritional Status and Degenerative Diseases in the Elderly".

## RESEARCH METHODS

This study uses the literature review method. Data collection and sources were carried out in April 2023. The data search tools are assisted by search engines, namely Google Scholar and PubMed, which use national and international journals. The search used the keywords "nutritional status, degenerative diseases, elderly". The word elderly is changed to elderly, nutritional status is changed to nutritional status and the word degenerative disease is changed to degenerative disease in international journal searches.

## RESULTS AND DISCUSSION

Table 1. Results of analysis of the relationship between nutritional status and degenerative diseases in the elderly

| No | Year | Author Name/Title  | Method  | Results  | Databases      |
|----|------|--|---|--|----------------|
| 1. | 2023 | Pardede/Analysis of Factors Associated with Nutritional Status in the Elderly at the Wredha Rireksa Assisted Area of the Tugu Health Center, Depok City                      | Quantitative research with cross sectional design | In this study, a significant relationship was found between age, education level, income level, and energy intake with nutritional status.   | google scholar |
| 2. | 2022 | Amelia/ The Relationship between Nutritional Status and Environmental Quality of the Elderly at the Elderly Posyandu in the Work Area of the Lapai Padang Health Center 2022 | Analytical research with cross sectional design   | The results of this study showed that 50% had a poor quality of life for the elderly and 17.1% had a thin nutritional status and 37.1% were obese. There is a relationship between nutritional status and quality of life in the elderly at the elderly Posyandu in the working area of the Lapai Padang Health Center in 2022 | google scholar |

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|----|------|--|--|---|----------------|
|    |      |  |  | (pvalue = 0.033).   |                |
| 3. | 2022 | Sihite et al./Education on Balanced Nutrition and its Relationship with Degenerative Diseases in the Elderly   | Lecture and discussion methods               | Education and counseling is very important for the elderly because it can increase the knowledge of the elderly about balanced nutrition guidelines that can be used to prevent and overcome the problem of degenerative diseases in old age.   | google scholar |
| 4. | 2022 | Anak Agung Mirah Adi/ Efforts to Improve the Nutritional Status of the Elderly Through Assistance of Posyandu Cadres in Oesapa Barat Village, Kupang City  | Lecture method and practice demo             | The result of this activity was knowing the nutritional status of the elderly, all participants experienced an increase in knowledge about balanced nutrition for the elderly and understand how to make healthy snacks based on local food. This activity is expected to make the elderly able to maintain their health by consuming nutritious food and having a variety of healthy snack menus that can be informed to their families. | google scholar |
| 5. | 2022 | Siti Uswatun Khasanah, et al/ Nutritional Status Associated with the Incidence of Hypertension in the Elderly in the Working Area of the Panggang II Community Health Center, Gunung Kidul Regency | Analytical survey with cross sectional study | Underweight nutritional status had hypertension level 1 with a total of 23 people (23.9%), normal nutritional status had hypertension level 1 with a total of 35 people (36.5%) and obese nutritional status 38 people (39.6%) had grade 1 hypertension. Spearman Rank Test showed that the value of $p = 0.001$ , which means there is a relationship  | google scholar |

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|----|------|--|--|---|----------------|
|    |      |  |  | between nutritional status and the incidence of hypertension in the elderly in Girisekar Village, the working area of the Panggang II Health Center, Gunungkidul Regency.   |                |
| 6. | 2022 | Sukatemin,/The Relationship of Nutritional Status to the Incidence of Degenerative Diseases in the Elderly in the Wanggar District, Nabire Regency | Cross sectional method with case control approach                    | There is a relationship between the nutritional status of the elderly as measured by antropometric measurements and the incidence of degenerative diseases in Wanggar district, Nabire district in 2020. There is a significant relationship between nutritional status and the incidence of degenerative diseases in the elderly, where the p-value <0.005. Thus the nutritional status of the elderly is related to the incidence of NCDs in the elderly in the Wanggar sub-district. | google scholar |
| 7. | 2022 | Nafi'ah/Characteristics of Osteoarthritis Patients in the Outpatient Unit at Ibnu Sina Hospital Makassar in 2018-2021                              | Descriptive retrospective study design with cross sectional approach | Osteoarthritis patient most commonly found in the elderly age group (> 65 years), women, overweight and obesity nutritional status I, location of joints at the genu, grade II conventional radiographic photos, last high school education / equivalent. working as an IRT, and with non-surgical management.  | google scholar |
| 8. | 2021 | Di Renzo, Gualtieri and De Lorenzo /Diet, Nutrition and Chronic Degenerative Diseases  | Systematic review  | Some nutritional transitions In the last decade, marked by the transition from  | PubMed         |

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| 9. | 2021 | Kato et al/Association of low back pain with muscle weakness, decreased mobility function, and malnutrition in older women: A cross-sectional study | Cross-sectional | consumption of cereal-based foods, fruit and vegetables to foods rich in saturated fat (especially meat and dairy products), sugar, associated with a diet characterized by higher energy intake, is a major risk factor in degenerative disease.<br>Abdominal muscle weakness and decreased functional mobility are associated with LBP among older women. | PubMed |
|----|------|---|-----------------|---|--------|

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Nutritional status is a measure of success in fulfilling nutrition resulting from a balance between nutritional needs and inputs (RI Ministry of Health, 2017). Nutritional problems that occur in the elderly besides occurring due to decreased physiological function are also nutritional problems that occur from a young age whose manifestations occur in the elderly. (Halim and Suzan, 2018). Health factors that play a role in changes in nutritional status include the increased incidence of degenerative and non-degenerative diseases which result in changes in food intake, changes in the absorption of nutrients at the tissue level, and some cases can be caused by certain medications that must be administered. drunk by the elderly because of the illness they are suffering from. Two-thirds or more diseases in the elderly are closely related to nutrition. Nutritional problems in the elderly are not only over nutrition but the prevalence of under nutrition is also relatively increasing. As is the case with other age groups, the elderly are part of the population as a whole who need serious attention. Apart from having extensive experience, Wisdom and knowledge that can be used for development also have quite complex health problems such as getting sick easily, being sick for longer, chronic and progressive diseases (Pardede, 2023). Nutritional problems in the elderly are mostly problems of excess nutrition which is a risk factor for degenerative diseases such as coronary heart disease, diabetes mellitus (DM), hypertension, rheumatic gout, kidney disease, fatty liver, and others. (Halim and Suzan, 2018).

Changes in dietary patterns in the last decade have been marked by the transition from consumption of foods made from cereals, fruit and vegetables to foods rich in saturated fat (especially meat and dairy products), and sugar which is characterized by higher energy intake which is a major risk factor in diabetes. degenerative diseases, especially obesity (Di Renzo, Gualtieri and De Lorenzo, 2021). Obesity in the elderly has an impact on increasing the risk of cardiovascular disease, diabetes mellitus, hypertension, and decreased body function (Halim and Suzan, 2018). Until now, degenerative diseases are the most common cause of disability and death worldwide (Di Renzo, Gualtieri and De Lorenzo, 2021).

One of the degenerative diseases that often occurs in the elderly is hypertension. One of the factors that trigger hypertension is an unbalanced nutritional status. Overnutrition is associated with

affluence and lifestyle. Unhealthy eating patterns, smoking habits, alcohol consumption, stress and lack of physical activity by the elderly trigger hypertension (Prasetianingrum, 2014). The risk of developing hypertension in individuals with excess body weight is 2.3 times more likely than individuals with normal and thin weight. Individuals who are overweight have a buildup of body fat tissue, which in turn can cause an increase in vascular resistance in increasing the work of the heart to be able to pump blood throughout the body (Pradono, 2007). This is in line with research conducted at the Panggang II Gunung Kidul Health Center where the results of the Spearman Rank statistical test obtained a p-value  $< \alpha$  (0.01), which means that  $H_a$  is accepted. This shows that there is a correlation between the nutritional status of the community and the incidence of hypertension, with a correlation coefficient of 0.242 (positive correlation direction with a value range of 0.2 – <0.4), thus it can be assumed that the higher the nutritional status or fat, the more The higher the risk of experiencing hypertension, conversely the lower the nutritional status, the lower the risk of experiencing hypertension(Chasanah and Asda, 2022)

The emergence of degenerative diseases is also caused by changes in physiological function in the elderly, one of which is a decrease in mobility function. Decreased mobility is an inevitable process of aging, and an increasing proportion of older individuals need treatment for this mobility disorder. Similar to reduced mobility, malnutrition is a very common condition among the elderly and is associated with higher morbidity, higher mortality and lower quality of life. Malnutrition can also contribute to musculoskeletal health and is associated with chronic musculoskeletal pain in the elderly. Decreased function of mobility and malnutrition are two conditions that are common in the elderly.(Kato et al., 2021). One of the most common musculoskeletal disorders in the elderly is osteoarthritis. Osteoarthritis is multifactorial(Cui et al., 2020). Osteoarthritis is a degenerative inflammatory arthritis disease that is most often found in the world compared to other types of arthritis. Most osteoarthritis patients suffer at the age of >65 years, with female sex and with overweight and obesity nutritional status(Nafi'ah, 2022).

The aging process also involves a decline in cognitive function. Cognitive function and quality of life often occur in the elderly, poor quality of life is experienced by the elderly who experience decreased or weak cognitive function compared to the elderly whose cognitive function is still good(Dian., 2021). Spirituality can be used as a source of strength in the elderly when suffering from chronic illnesses, so that the higher the spiritual needs are met, the more the elderly are able to achieve their potential and quality of life.(Heni Purnama, Nyayu Nina Putri Calisani, 2021). In addition, assistance with elderly posyandu cadres has an important role related to public health, including the nutritional status of the elderly. Cadres are expected to be able to bridge between health workers and the community and help the community identify and deal with/respond to their own health needs(Adi and Loaloka, 2022). Other activities such as counseling can also increase the knowledge and awareness of the elderly regarding degenerative diseases(Mighra and Djaali, 2020).

## CONCLUSION

The elderly have a high risk of suffering from degenerative diseases. The health of the elderly basically lies in their nutritional status. Nutritional problems that occur in the elderly besides occurring due to decreased physiological function are also nutritional problems that occur from a young age whose manifestations occur in the elderly. Nutritional problems in the elderly are mostly problems of excess nutrition which is a risk factor for degenerative diseases such as coronary heart disease, diabetes mellitus (DM), hypertension, rheumatic gout, kidney, fatty liver, and others.

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