

THE RELATIONSHIP BETWEEN COGNITIVE FUNCTION AND QUALITY OF LIFE IN THE ELDERLY

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ABSTRACT

Cognitive function is a person's ability to recognize and interpret things within a scope that consists of orientation, language, attention, memory, construction, calculation, and reasoning. Frequent forgetfulness is the mildest form of cognitive impairment and can cause changes in cognitive function. Cognitive function is measured using the Mini Mental State Examination (MMSE) instrument, with the results categorized as no impairment, mild impairment, and severe impairment. Quality of life is an individual's perception of their physical, psychological, social, and environmental well-being. Quality of life is measured using the WHOQOL-BREF instrument, which covers four main domains: physical health, psychological health, social relationships, and environment. This study aims to determine the relationship between cognitive function and the level of quality of life in the elderly at the Binjai Social Service Unit for the Elderly. The research method used in this study is quantitative. The population in this study was elderly individuals aged 60-74 who live at the Social Service Unit for the Elderly. Data analysis used univariate analysis to identify the distribution and frequency of demographic data (age, gender, religion, education, former occupation, marital status, and health problems). Bivariate analysis was performed using the chi-square test. The results of this study show that the cognitive function of 28 respondents (54.9%) was in the mild impairment category. The quality of life for 32 elderly individuals (62.8%) was in the moderate category. The results of the bivariate test showed a significant relationship between cognitive function and quality of life in the elderly at the Binjai Social Service Unit for the Elderly, North Sumatra Social Agency, with a p-value of 0.002. It is hoped that the Binjai Elderly Social Services UPTD can carry out activities to improve cognitive function and quality of life in the elderly, such as physical activity or brain gymnastics, increasing social interaction between the elderly and maintaining good eating and lifestyle patterns.

Keywords : *Cognitive Function; Quality of Life ; Elderly*

INTRODUCTION

Every person's life cycle is a natural cycle that leads to aging. This condition cannot be prevented or changed by anyone. This process continues throughout life and does not begin at a specific time, but rather begins early in life. Aging is part of a natural cycle that indicates a person has passed through three stages of life: childhood, adulthood, and old age. As we enter old age, we experience several problems, commonly referred to as geriatric syndromes. One such geriatric syndrome is related to cognitive issues. The early stages of cognitive impairment in the elderly may not show any obvious symptoms. Cognitive decline in the elderly can be caused by several factors, such as anatomical cell loss, exposure to free radicals, pollution, and decreased food intake and daily activities. These changes increase the potential for impaired brain function, which can lead to a progression from mild symptoms in the elderly to cognitive impairment. In 2019, the number of older adults worldwide reached 13.4%, and this figure will continue to increase annually. UN data indicates that by 2024, there will be approximately 830 million people worldwide aged 65 and over.

Cognitive function is a person's ability to recognize and interpret things within a range of areas, including orientation, language, attention, memory, construction, calculation, and reasoning. Frequent forgetfulness, the mildest form of cognitive impairment, can lead to changes in cognitive function. Forgetfulness can progress to mild cognitive impairment (MCI), or dementia, which is the most severe clinical form (Sari et al., 2023). According to the WHO, approximately 55 million people worldwide have dementia, and this number is expected to increase to 78 million by 2030 and 139 million by 2050.

The 2021 WHO prevalence rate indicates that 65.6 million older adults worldwide experience cognitive impairment. In Indonesia, the prevalence of cognitive impairment is 121 million, with 5.8% of men and 9.5% of women.. According to the WHO, the quality of life of older adults consists of four domains: physical health, psychological health, social relationships, and environmental aspects (WHO, 2004). Global Age Watch research shows that the quality of life of older adults in Indonesia ranks 71st out of 96 countries. Physical, cognitive, social, and psychosocial changes in older adults often lead to a decline in quality of life (Al Afif & Hidayati, 2021).

Based on research conducted by Ningrum et al., (2019), the quality of life of older adults was found in 106 respondents, with 60% experiencing a low quality of life and 40%

experiencing a high quality of life. Quality of life is influenced by psychological and social factors, as well as family support.

According to Tuerem (2024), the number of elderly people is expected to increase to 1.7 billion by 2054. The number of elderly people in Indonesia increased to 27.5 million in 2019 and is expected to increase to 57 million by 2045. The elderly population of Medan City in 2023 reached 117,942 people, a drastic increase from the previous year (Central Statistics Agency, 2023). Based on data from the Jambi Provincial Health Office in 2021, there were 65,206 elderly people with 45,644 elderly people experiencing cognitive dysfunction. From the results of a previous research survey, approximately 61.8% of elderly patients experienced cognitive dysfunction and as many as 35.3% of them were elderly people who had difficulty walking and carrying out daily activities (Parahita Supraba & Rezky Permata, 2021). In line with what was explained by Abidinsah (2023), which stated that almost 93.6% of elderly people in Manado experienced cognitive dysfunction.

When cognitive function is impaired, it can severely impact a person's ability to perform daily activities. Daily activities such as walking/mobility, sitting, and eating/drinking become limited. This impairment can lead to various life challenges, such as not recognizing people around them, depression, sensitivity to environmental factors, and a decreased quality of life. This cognitive decline can lead to deterioration in self-esteem, such as inadequate thinking, feelings of worthlessness, and frequent guilt. Furthermore, older adults with cognitive decline may experience difficulty walking, requiring assistive devices.

In general, older adults experience limitations, resulting in a decline in their quality of life. Quality of life is a broad concept influenced by an individual's physical and psychological condition, level of independence, and their relationship with their environment. A declining quality of life, or low quality of life, prevents them from enjoying their old age meaningfully, happily, and usefully. The quality of life of older adults in Indonesia is considered low. This is due to a shift in social values caused by the busy workload of many families, leaving the elderly neglected (Oktarina & Agustiani, 2024).

Based on research results (Tumanggor et al., 2024) with a total sample of 129 respondents regarding the Overview of Cognitive Function in the Elderly at the Binjai Elderly Social Services Unit (UPTD) in 2024, it can be concluded that the cognitive function of the elderly at the UPTD for Elderly Social Services in Binjai in 2024 showed

that many elderly experienced severe cognitive impairment (62 individuals (48.1%), those with moderate cognitive impairment (37 individuals (28.7%), those with mild cognitive impairment (22 individuals (17.1%), and those with intact cognitive function (8 individuals (6.2%). Major contributing risk factors include older age, lifestyle, and health conditions. In Indonesia, more than 20% of elderly people show symptoms of memory impairment, including dementia. (Widyaningsih et al., 2024)

Optimal organ function, the ability to perform daily activities independently, and good cognitive function are indicators of a good quality of life for older adults. Furthermore, seniors with good cognitive function will experience life satisfaction, a sense of well-being in relationships with others, and a sense of comfort in their surroundings. Meanwhile, seniors with cognitive impairment will experience the opposite, affecting their quality of life. A study by Pragholapati (2021) showed that cognitive impairment in seniors leads to continued isolation, leading to increased depression, which ultimately impacts their quality of life. Furthermore, seniors with cognitive impairment will experience greater loss of relationships with those around them, even with their own families. The quality of life of seniors with cognitive impairment is generally characterized by fatigue, dizziness, sweating, difficulty sleeping (insomnia), irritability, feelings of inferiority, and a reluctance to socialize with others.

The results of the initial survey conducted at the Binjai Elderly Social Services Uptd included 200 elderly people, of which around 51 elderly people were aged 60-74 years old, once a week the elderly do gymnastics and there are worship activities, there are some elderly people who are visited by their families and there are also some elderly people who feel left by their families. During the interview, it was found that elderly people said that their memory was starting to decline, especially in remembering recent events, elderly people said they had difficulty remembering treatment schedules at the polyclinic, said they were useless, did not want to interact with others and often experienced loneliness and lack of self-confidence.

METHODS

The type of research used in this study is quantitative. Quantitative research is a method in which data are synthesized into numbers that are analyzed to determine the relationship or influence of the variables being studied, thus proving the validity of a phenomenon (Santoso & Madiistriyatno, 2021).

The research design used was a quantitative correlation with a cross-sectional design.

A cross-sectional design is a method in which the subjects of this study undergo only one observation or one additional measurement to determine whether or not there is a relationship between the two variables (Wada et al., 2024). This research will be conducted at the Binjai Social Services Unit for the Elderly, North Sumatra, from December 2024 to June 2025. The population at the Binjai Social Services Unit for the Elderly is 200 elderly people. The respondents in this study were elderly people aged 60-74 years who live at the Uptd for the Elderly.

RESULT

The results of the study on the relationship between cognitive function and quality of life in the elderly at the UPTD for Elderly Social Services in Binjai, North Sumatra Social Services in 2025. Collecting data through questionnaires to 51 respondents and the data that became respondents were elderly aged 60-74 years with the following results:

1. Univariate Analysis

The following Frequency Distribution contains data on respondent characteristics based on Age, Gender, Religion, Ethnicity, Education, Previous Occupation with a sample of 51 elderly people. The demographic characteristics are as follows:

Table 4.1 Frequency distribution based on respondent characteristics based on age, gender, religion, education, previous employment, marital status, health problems.

characteristics	Frequency (F)	Percentage (%)
Age		
60-64 years	15	29,4
65-70 years	26	51,0
71-74 years	10	19,6
Total	51	100
Gender		
Male	24	47,1
Female	27	52,9
Total	51	100
Religion		
Islam	23	45,1
Catholic	11	21,6
Protestant	17	33,3

Total	51	100
Education		
Elementary School	21	41,2
Middle School	8	15,7
High School	15	29,4
Diploma 3	5	9,8
Bachelor's Degree	2	3,9
Total	51	100
Occupation		
Previously Employed	24	47,1
Not Working	27	52,9
Total	51	100
Marital Status		
Married	5	9,8
Unmarried	7	13,7
Widowed	21	41,2
Widower	18	35,3
Total	51	100
Health Problems		
Hypertension	15	29,4
DM	3	5,9
Stroke	5	9,8
None	28	54,9
Total	51	100

Of the 51 respondents, the majority were 65-70 years old (26 people) (51%). 27 were female (52.9%). 23 were Muslim (45.1%), 21 had an elementary school education (41.2%), and 27 (52.9%) were unemployed. 21 were widows (41.2%), and 28 (54.9%) did not have health problems.

Table 4.1 Frequency Distribution based on Cognitive Function in adolescents at the Binjai Elderly Social Services UPTD.

Cognitive Function	Frekuensi (F)	Persentase (%)
No Impairment	15	29,4
Mild Impairment	28	54,9
Severe Impairment	8	15,7
Total	51	100

Table 4.2 above shows that 54.9% of elderly people have mild cognitive function, 15.7% have severe cognitive function.

Table 4.3 Frequency Distribution Based on Quality of Life in the Elderly at the UPTD for Elderly Social Services in Binjai.

Quality of Life	Frekuensi (F)	Persentase (%)
High	7	13,7
Medium	32	62,8
Low	12	23,5
Total	51	100

In Table 4.3 above, it was found that the percentage of 51 respondents, the majority of elderly people, 62.8%, had a moderate quality of life, and 13.7% had a high quality of life.

2. Bivariate Analysis

Bivariate analysis was conducted to determine whether there is a relationship between cognitive function and quality of life in the elderly. A relationship can be confirmed if the p-value is <0.005 (as shown in Table 4.4).

Table 4.4 Frequency Distribution of Cognitive Function with Quality of Life of the Elderly at the UPTD for Elderly Social Services in Binjai

Cognitive Function	Quality of Life						Total	P-value	
	High		Medium		Low				
	f	%	f	%	f	%			
No Impairment	4	26,7	1	6,6	1	6,6	5	100	0,02
Mild Impairment	3	10,3	2	7,1	5	17,5	10	100	

t							
		,7	0	4		9	8
Severe	0	0,	2	25,	6	75,	8 100
Impairment							
		0		0		0	
Total	7	13	3	62,	1	23,	5 100
		,7	2	7	2	5	1 %
		%		%		%	

The table above shows that 28 elderly people with mild cognitive impairment had a high quality of life (10.7%), with a moderate quality of life (71.4%), and with a low quality of life (17.9%). The bivariate analysis showed a significant value of 0.002 (p-value <0.005), indicating that there is a relationship between Cognitive function and quality of life in the elderly at the UPTD for Elderly Social Services in Binjai Social, North Sumatra.

DISCUSSION

1. Respondent Characteristics

Several factors can influence an elderly person's quality of life, including age, gender, religion, ethnicity, education level, previous employment, marital status, and health problems. Table 4.1 shows that of the 51 respondents, the majority were aged 65-70 (51%). Twenty-seven (52.9%) were female. Twenty-three (45.1%) were Muslim. Twenty-one (41.2%) had a primary school education, and 27 (52.9%) were unemployed. Twenty-one (41.2%) were widowed, and 28 (54.9%) had no health problems.

According to Budiono & Rivai (2021), elderly patients are more susceptible to experiencing issues related to their quality of life. Someone who has entered the elderly phase, or aged over 65, has gone through all the stages of life change. Even when they are sick, they tend to dwell on these issues and feel they don't have much time left to live their lives. Therefore, the older a person gets, the more susceptible they are to a decline in their quality of life. Researchers assume that as a person ages, the risk of cognitive impairment and a decline in quality of life increases. This is in line with the biological aging process, which naturally results in changes in the function of organs, including the central nervous system. Older adults tend to experience physical limitations, memory impairment, and

increased dependence on others, all of which negatively impact quality of life.

According to (Sako et al., 2024), gender is one factor that can influence a person's life. This is due to differences in quality of life between men and women, with men generally considered to have a better quality of life than women. Researchers assume that elderly women are at a higher risk of experiencing cognitive decline than men. Hormonal factors, due to the decline in estrogen post-menopause, also play a role in the decline in brain function in women. Furthermore, women tend to be more susceptible to stress and psychological disorders, which can affect their quality of life.

Religion can play a significant role in improving the quality of life of older adults by providing meaning to life, improving mental health, and supporting psychological well-being. However, it is important to remember that the influence of religion can vary depending on the individual and the context. Researchers assume that religion plays a significant role in shaping perceptions of the meaning of life, inner peace, and as a source of psychosocial support. Elderly people who are active in religious activities tend to have higher levels of life satisfaction and are able to face the aging process more positively.

Education level is one of the factors that subjectively influences quality of life. Quality of life tends to improve with each individual's education level. A person's education level will influence cognitive function. The higher the education level, the lower the risk of cognitive impairment. This is evidenced by (Fidiana et al., 2022) in their study, which stated that respondents with a low level of education had greater cognitive impairment. Meanwhile, individuals with a high level of education have protective factors against the risk of developing cognitive impairments such as dementia. Researchers assume that low education levels are associated with decreased cognitive function and quality of life. Education influences thinking skills, problem-solving skills, and adaptation to environmental changes. Elderly individuals with higher education typically have more sustained cognitive activity and broader insight into maintaining physical and mental health.

Research by (Laili, 2022) shows that employment status is associated with quality of life. These findings indicate that individuals who were previously employed have a different quality of life compared to those who were unemployed or unable to work. This difference reflects the impact of employment status on an individual's overall well-being. Researchers assume that the employment status of older adults during their productive

years (working or not) influences their level of participation in various social and physical activities in old age. Older adults who have worked tend to have broader social networks, better communication skills, and higher self-confidence, resulting in more active participation in activities such as senior gymnastics and other activities. Furthermore, work experience is also assumed to provide structured living habits and a spirit of activity that persists into retirement. Conversely, older adults who lack

work experience may tend to have less exposure to social environments outside the home, resulting in lower participation in senior activities.

According to (Budiono & Rivai, 2021), marital status can also influence quality of life in older adults, including aspects of emotional support, where a partner can provide emotional support and reduce feelings of loneliness. Every individual would be delighted to spend time with their partner, as this creates a balanced rhythm in life and significantly impacts health. Researchers suggest that losing a life partner can lead to feelings of loneliness, emotional stress, and limited social support. These conditions directly impact cognitive function and quality of life in older adults. Conversely, older adults who still have a life partner tend to feel more secure and emotionally supported.

Health problems experienced by the elderly can affect their quality of life, such as physical limitations. The most common health problem is hypertension. High blood pressure causes structural changes in brain tissue, which is crucial for memory and concentration. This damage can lead to memory loss, difficulty concentrating, and even dementia. Therefore, uncontrolled hypertension is a major risk factor for cognitive impairment, both mild forms such as short-term forgetfulness and more severe forms such as dementia. Existing health problems can make the elderly more dependent on others, which can impact quality of life (Budiono & Rivai, 2021). Researchers assume that hypertension has a significant influence on the development of cognitive impairment, particularly in older adults. Long-term hypertension is assumed to cause damage to blood vessels in the brain, disrupting the supply of oxygen and nutrients to brain cells that play a role in memory, attention, and concentration. Furthermore, researchers also assume that individuals with a history of hypertension have a higher risk of cognitive decline compared to individuals with normal blood pressure. According to (Zainurridha et al., 2021), several factors can influence cognitive function. Cognitive impairment is caused by many factors, including age, gender, religion, ethnicity, education, occupation, and so on. The older a

person gets, the more changes occur in the organ systems within the body.

According to (Zainurridha et al., 2021), cognitive decline is closely related to gender. Research shows that female patients have a higher risk of experiencing cognitive decline compared to male patients. This is due to decreased hormone production in the body. The hormone associated with cognitive decline is estrogen, which plays a role in regulating endogenous sex hormone levels. Women who have gone through menopause will experience decreased estrogen production, which will impact cognitive decline.

According to (Putri, 2021), health conditions by gender are also associated with the risk of cognitive decline, with a higher incidence and prevalence in women than men. Women are at higher risk of cognitive decline due to the role of endogenous sex hormone levels in changes in cognitive function. Commonly encountered disorders include depression and anxiety.

Research (Munawwarah, 2021) found that of 151 respondents, the majority were elderly (116) aged 66-70 years (76.8%). 86 were female (57%). The majority of respondents were uneducated (65%). A total of 83 respondents are still actively working, earning less than the minimum wage. Most respondents work as farm laborers, garment workers, traders, self-employed, and construction workers. The majority of respondents (90%) live with extended family members, with 126 respondents still actively involved in community social activities.

Riset (Ramli,2020) menunjukkan bahwa distribusi sampel menurut umur, jenis kelamin, tingkat pendidikan, pekerjaan, dan status perkawinan, di Puskesmas Jumpandang Baru Kota Makassar didapatkan distribusi sampel lanjut usia tengah sebagian besar yang berumur 60- 74 tahun (81,6%). Berdasarkan jenis kelamin di dapatkan sebanding laki-laki dan perempuan 38 sampel (50,0%). Berdasarkan tingkat pendidikan terakhir hampir setengah (44,7%) tingkat SD. Berdasarkan pekerjaan di dapatkan hasil distribusi hampir sebanding bekerja dan tidak bekerja (53,9%). Berdasarkan status perkawinan lebih dari setengah (56,6%) menikah.

The results align with research (Wahyuningsih, 2020), which showed that 35 respondents (37.2%) were aged 60-64. As a person ages, this will affect the quality of life of the elderly due to emerging issues such as physical decline and cognitive impairment. Age significantly impacts a person's quality of life. Older age groups tend to have a lower quality of life. The majority of elderly people are women, at 73 (77.7%). This may be due to the prevalence of elderly people in the Sangkrah area being women, and women being at

greater risk of cognitive decline than men. Findings indicate that women are at greater risk of cognitive impairment due to postmenopausal hormonal factors. The majority of elderly people have a primary education, at 60.7%.

According to the researchers' assumptions, factors influencing the quality of life of the elderly include age, gender, ethnicity, religion, education level, previous employment, marital status, and current health problems. These factors have a direct impact on both physical and psychological well-being.

2. Cognitive Functions of the Elderly at the UPTD for Elderly Social Services in

Binjai

Based on Table 4.2, the frequency of 51 respondents was found, the majority of cognitive functions experienced by respondents, as many as 28 people (54.9%) were categorized as mild disorders. According to (Yusmaida & Zulkarnaini, 2024), a person's cognitive status is defined as a broad concept because it refers to a person's mental in identifying, grouping, and interpreting information. In the aging process, there will be a reduction in volume in the frontal and temporal lobes. Cognitive dimensions that can experience a decline in function with aging are the speed and accuracy of thought processes related to the use of the five senses, attention, motor and visual memory, the function of differentiation, comparison, and categorization. Things that need to be done to overcome this can be doing cognitive activities such as reading newspapers, reading books, watching the news, doing art activities or activities, as well as activities that are conceptual, analytical, and planning. When cognitive function disorders occur for a long period and do not receive maximum treatment, this will affect a person's daily activities and reduce the quality of life of the elderly.

One effort to prevent cognitive decline requires the role of nurses and families in helping the elderly by cultivating and fostering relationships of mutual trust, socializing with each other, and regularly holding group activities. Therefore, cognitive activities that can maintain cognitive function in the elderly are cognitive activities that are carried out routinely, not only during free time. Maintaining cognitive function in the elderly is very important for the well-being of the elderly. (Djajasaputra & Halim, 2019) Changes in cognitive function can occur progressively and according to research (Astuti, 2023), Changes in cognitive function in humans can double every five years of age. Cognitive dysfunction that can occur includes intellectual capacity impairment, memory loss in both the short and long term, and decreased ability to receive information. This is supported by

(Astuti, 2023), who stated that as a person ages, organ function and cognitive abilities will decline..

When cognitive function is impaired, it can severely limit a person's ability to perform normal daily activities. Daily activities such as walking/mobility, sitting, and eating/drinking become limited. This disability can lead to various life challenges, such as not recognizing people around them, depression, sensitivity to their surroundings, and a decreased quality of life. This cognitive decline can lead to deterioration in self-esteem, such as inadequate thinking, feelings of worthlessness, and frequent guilt. Furthermore, older adults with cognitive decline experience difficulty walking, requiring assistive devices.

Research (Ramli, 2020) found that among those with cognitive impairment, a small proportion (32.9%) had normal cognitive function, a large proportion (52.6%) had moderate cognitive function, and a small proportion (14.5%) had severe cognitive impairment. Poor cognitive function is also a predictor of mortality and can be seen as a marker of overall health status in older adults. Physical activity has a beneficial effect on cognitive function in older adults and is also a preventative measure against cognitive impairment and dementia.

According to research (Mardiana, 2020), 69 people (46%) experienced mild cognitive impairment. Cognitive function is the ability used in thinking, remembering, learning, considering, and problem-solving. In the elderly, cognitive decline is caused by aging, which causes changes in the central nervous system. This can result in an inability to remember one's identity and perform activities independently, leading to dependence on others.

According to the researcher's assumption, cognitive function affects the respondents' quality of life. Respondents' cognitive function was obtained from elderly people who experience cognitive impairment, who will experience a decline in thought patterns and memory impairment. The category of moderate cognitive impairment is said to be because some elderly people are able to answer all questions, while others only partially answer questions or need to do it repeatedly due to a lack of understanding. The social environment and lack of family support are also believed to accelerate the decline in cognitive function. Some elderly people are visited by their families, while others receive support from friends. Indirectly, these problems will affect social life and decrease the quality of life of the elderly.

3. Quality of Life Experienced by the Elderly at the Binjai Elderly Social Services Unit

Based on Table 4.3, the frequency of 51 respondents indicates that the majority of elderly respondents (32 individuals or 62.8%) experienced moderate quality of life.

According to Oktarina & Agustiani (2024), elderly people generally experience limitations, resulting in a decline in their quality of life. Quality of life is a broad concept influenced by an individual's physical and psychological condition, level of independence, and their relationship with their environment. A declining quality of life, or low quality of life, prevents them from enjoying their old age meaningfully, happily, and usefully. The quality of life of elderly people in Indonesia is considered low. This is due to a shift in social values caused by the busy workload of many families, leaving the elderly neglected.

To address this issue, the WHO has developed a concept called Active Aging, which aims to maximize the potential of older adults by actively participating in society, across the economic, physical, social, cultural, and political sectors. The Active Aging concept, with its three main pillars: participation, health, and safety, aims to achieve a good quality of life for older adults. A good quality of life is closely related to the well-being of the elderly, where achieving a state of well-being in the elderly can have a positive impact on their lives. Aspects of participation, health, and safety can be efforts undertaken by families, communities, and governments to support the achievement of elderly well-being. The role of families, communities, and governments is needed to facilitate the activities of the elderly, including providing a friendly physical and social environment for the elderly, developing policies to support the rights and well-being of the elderly, and providing emotional and physical support. With the active role of families, communities, and governments, a supportive environment will be created to improve the well-being of the elderly. (Wulandari & Irfan, 2023).

Research findings (Manungkalit, 2021) found that out of 145 respondents, the majority of elderly people (112 individuals (77.2%)) had a moderate quality of life. This research was conducted in a nursing home, a home for the care of elderly and the elderly. A "senior" is defined as someone who is very old, physically weak, decrepit, or infirm. Researchers assume that elderly people are generally still capable of carrying out daily activities quite well, despite some physical, psychological, and social limitations. Elderly people in this category typically still have sufficient functional ability, but experience complaints such as mild to moderate physical pain, sleep disturbances, decreased energy, or

mild anxiety that can interfere with their comfort. Researchers also assume that family and community support play a role in maintaining the quality of life of elderly people, although it may not be optimal. Other factors that may influence this include economic constraints, access to healthcare, and lack of opportunities to participate in social activities. 4. The Relationship between Cognitive Function and Quality of Life in the Elderly at the Binjai Social Services Unit (UPTD) for Elderly Social Services, North Sumatra Social Services

Based on the research results obtained, as shown in Table 4.2, the majority of cognitive functions were categorized as mild impairment in 28 respondents (54.9%). Table 4.3 shows that the majority of elderly respondents (32 respondents (62.8%)) had moderate quality of life. The bivariate analysis yielded a significance value of 0.002 (p-value <0.005), indicating a relationship between cognitive function and quality of life in the elderly at the Binjai Social Services Unit (UPTD) for Elderly Social Services, North Sumatra.

According to Budiono (2021), cognitive function is a person's belief about something obtained through the process of thinking. The process of thinking begins with acquiring knowledge and processing that knowledge through remembering, analyzing, understanding, assessing, imagining, and using language. Cognitive capacity or ability is often referred to as intelligence. Cognitive function is a human mental process that includes attention, perception, thought processes, knowledge, and memory. Quality of life is defined as an individual's perception of being male or female in life, viewed from the cultural context and value system in which they live, and related to their standard of living, expectations, pleasures, and concerns.

In line with the research results (Putri, 2021), it was found that the majority of respondents, namely 35 people (70%), had Severe Cognitive Function. There was a frequency of 33 people (66%) with Poor quality of life. From the results of the bivariate analysis, of the 35 people (70%) respondents who had severe cognitive function, the majority, namely 29 people (58%), had poor quality of life and a small portion, namely 6 people (12%), had good quality of life. And the obtained significance value was 0.000 (p-value <0.005) indicating that there is a relationship between cognitive function and quality of life in the elderly in the Sitiung I Community Health Center Working Area. This study also used the Mini-Mental State Examination (MMSE), which is the most frequently used examination to determine cognitive function. MMSE is used to screen patients with cognitive disorders, track changes in cognitive function over time, and often to assess the

effects of therapeutic agents on cognitive function. The quality of life of the elderly referred to in this study is the elderly's feelings regarding the degree of satisfaction regarding physical, psychological abilities, social relationships, and the environment.

According to Budiono (2021), quality of life refers to a person's perception within the context of the culture and norms appropriate to their place of residence, as well as their goals, expectations, standards, and concerns throughout their life. Quality of life is a multidimensional phenomenon. The importance of these various dimensions makes it difficult to determine which dimensions are most important without conducting an evaluation.

According to researchers, cognitive function plays a crucial role in determining the quality of life of older adults because it is directly related to their ability to live their daily lives independently and meaningfully. Cognitive function encompasses the ability to remember, think, solve problems, and make decisions. Older adults with good cognitive function tend to be better able to manage daily activities such as eating, bathing, administering medications, and managing their finances without relying on others. This independence fosters self-confidence and high self-esteem, which are essential components of quality of life. Furthermore, good cognitive function allows older adults to remain active in communication and social interactions, which are essential for maintaining emotional connections with family and the surrounding community. Conversely, cognitive decline can lead to difficulties communicating and participating in social activities, increasing the risk of social isolation and depression. Impaired cognitive function can also impact physical health, as older adults may have difficulty following medications or maintaining a healthy lifestyle. Therefore, maintaining and monitoring older adults' cognitive function is crucial to supporting their overall well-being.

CONCLUSION

Based on the results of the study on the relationship between cognitive function and quality of life in the elderly at the Binjai Social Services Unit for the Elderly, the North Sumatra Social Service in 2025, the following conclusions can be drawn:

1. 28 individuals (54.9%) were found to have mild cognitive impairment, 15 (29.4%) had no cognitive impairment, and 8 (15.7%) had severe impairment.
2. 32 individuals (62.8%) had moderate quality of life, 12 (23.5%) had low quality of

life, and 7 (13.7%) had high quality of life.

3. There was a significant relationship between cognitive function and quality of life in the elderly at the Binjai Social Services Unit for the Elderly, North Sumatra, with a p-value of 0.002.

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