Relationship between family support with cognitive function and quality of life in the elderly

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Abstract

Background: Elderly people often experience problems related to their cognitive function that will interfere with their quality of life; therefore, family support is needed for the elderly. The purpose of this study was to analyze the relationship between family support and cognitive function and quality of life of the elderly in RW 02, Bangsal Village, Kediri City.

Method: Research Design correlation with cross-sectional. Independent variables with family support and dependent variables are cognitive function and quality of life. The elderly population in RW 2 Bangsal Village was taken using a purposive sampling technique by producing a sample of 62 respondents. The measuring instrument used a questionnaire, namely family support, cognitive function using the MMSE questionnaire, and the quality of life of the elderly using the OPQOL Brief questionnaire. Data analysis using the Spearman rho statistical test and the ANOVA test.

Results: The results of the study showed that most elderly people had good family support, as many as 49 (79%). Elderly people experienced cognitive dysfunction with a percentage of moderate cognitive impairment as many as 18 (33.9%) and severe cognitive impairment as many as 22 (30.6%). Most elderly people had a good quality of life, which was as many as 53 (85.1%). The results of statistical tests for the relationship between family support and cognitive function showed p = 0.019 with a correlation coefficient of 0.298, and the results of statistical tests for the relationship between family support and quality of life showed p = 0.001 with a correlation coefficient of 0.402. In the ANOVA test, p = 0.042 was obtained for cognitive function; in quality of life, the data was not homogeneous.

Conclusion: There is a relationship between family support and cognitive function and also quality of life in the elderly at the Elderly Posyandu RW 02, Bangsal Village, Pesantren District, Kediri City. When the family provides support, there will be a difference in cognitive function and quality of life in the elderly. The better the family support, the less likely the elderly will enter cognitive disorders and the better quality of life they will have.

kualitashidup yang baik.

Keywords: Elderly; Family Support; Cognitive Function; Quality of Life.

INTRODUCTION

Elderly is an individual who is in the final adult stage where the age of elderly starts from 60 years. Every elderly person will definitely experience an aging process that can be seen from the gradual decline in body function, and all of them cannot be avoided; all elderly people experience a decline in function (1). The decline in function will be faster if influenced by certain conditions such as disease, stress, and the physical environment (2). There are other conditions that can affect the decline in function, namely a decline in cognitive function (3). The aging process that occurs in the elderly can be in the form of weakness due to a decline in various body organ functions, functional limitations related to daily life activities, inability to carry out various life functions, and obstacles due to chronic diseases experienced along with the decline process (4). Cognitive function is one of the factors that affect the quality of life in the elderly. This occurs because there is a decline in brain function so that the elderly have difficulty in remembering or forgetting easily, which will have an impact on the poor quality of life in the elderly. Quality of life describes the phase of life that the elderly

enter. A high quality of life describes that individuals enter a phase of integrity in the final stages of their lives, as well as a low quality of life has an impact on the despair experienced by the elderly. The elderly are said to have the characteristics of the elderly with good quality of life: they are the elderly with optimal organ function conditions in carrying out their daily activities independently, and their cognitive function is still good. Family support is a support system provided by family members to individuals consisting of four types, namely emotional support, informational support, instrumental support, and assessment support (5). The role of the family in the problem of cognitive decline is in maintaining family health and minimizing mental (cognitive) problems (6). Family support can prevent the elderly from experiencing cognitive decline so that when the elderly do not experience cognitive decline, it can improve the quality of life of the elderly.

Based on data from the World Aging Population (United Nations, 2023), the world's elderly population in 2021 was 761 million people and is expected to increase to 1.6 billion people in 2050. Indonesia has been in an aging population structure since 2021 with a percentage of elderly people of 11.75% of the Indonesian population (7). East Java became the second province with the highest elderly population in 2023, with a percentage of elderly people of 15.75% of the total population in East Java (7). The number of elderly people in Bangsal Village is 888 people (Kediri City Health Office, 2024). WHO 2021 stated that there are 65.6 million elderly people worldwide experiencing cognitive impairment (World Health Organization, 2022 in (8). Bappenas, through mini-cognitive measurements reported in SILANI (Elderly Information System) data in 2019, also found that 65.6% of elderly people were detected as having symptoms of dementia, which means that elderly people experience cognitive impairment (Bappenas, 2021 in (9). Based on the results of pre-research conducted by researchers on March 22, 2024, on the elderly in Bangsal Village, Pesantren District, Kediri City, from 10 respondents, 6 elderly people experienced mild intellectual impairment

(60%), and 1 elderly person experienced moderate intellectual impairment (10%). Pre-research data conducted on April 8, 2024, regarding the quality of life in the elderly, from 10 respondents, 10 elderly people had a moderate quality of life (100%).

A high quality of life illustrates that individuals enter a phase of integrity in the final stages of their lives, as well as low quality of life has an impact on the despair experienced by the elderly. Quality of life in the elderly is a complex component that includes life expectancy, satisfaction with life, psychological and mental health, cognitive function, physical health and function, income, living conditions, social support, and housing. Quality of life is an individual's perception of their physical, social, and emotional health. This is related to the physical and emotional state of the individual in their ability to carry out daily activities supported by the facilities and infrastructure in the surrounding environment (4). Cognitive function is one of the factors that affect the quality of life of the elderly. Changes in cognitive function that occur in the elderly due to decreased brain function so that the elderly become forgetful, have decreased learning abilities, have difficulty solving problems, slow decision-making, and decreased understanding abilities. The changes that occur will affect daily activities, limited physical mobility, which will affect the level of independence and ADL (Activity Daily Living), and decreased interaction and social relationships so that the quality of life in the elderly decreases (4). Cognitive processes in the elderly that indicate poor quality of life: First, individuals experience poor quality of life; they think they are inadequate, incapable, feel worthless, feel inferior, and feel guilty about the failures they face. Second, the elderly are always pessimistic in facing problems, and everything they do becomes bad and self-confident. Third, have less motivation and always see everything as a failure and in vain so that there is no point in trying. Fourth, exaggerate problems and always be pessimistic in facing problems. Fifth, the thought process becomes slow. Sixth, lack of motivation from the family (10).

Family support is very much needed by the elderly so that the quality of life and health of the elderly can be maintained as optimally as possible. The impact of lack of family support can cause a decrease in the quality of life; if family support is lacking, the quality of life in the elderly will decrease. The quality of life in the elderly can be improved by stimulating brain function to anticipate weakening brain function and also prevent severe cognitive decline such as dementia. Families can provide activities such as memory-boosting exercises, namely by inviting the elderly to tell stories about their youth, taking the elderly to take part in brain gymnastics at posyandu activities, communication therapy between the elderly, playing games (chess, filling in crosswords, arranging puzzles, etc.), and so on (11). Based on the phenomena and results of the analysis of the conditions described above, the researcher is interested in reviewing further the "Relationship between Family Support and Cognitive Function and Quality of Life in the Elderly at the Posyandu Lansia RW 02, Bangsal Village, Pesantren District, Kediri City.

METHOD

The research design used correlation with a cross-sectional approach. The population was all elderly people at the Posyandu for the elderly RW 02, Bangsal Village, Pesantren District, Kediri City. The sample size was 62 respondents with a purposive sampling technique that met the inclusion criteria, namely elderly people aged ≥ 60 years, cooperative elderly people, elderly people who were willing to be studied, and elderly people who came to the Posyandu. The independent variable was family support, and the dependent variables were cognitive function using the MMSE questionnaire and quality of life using the OPQOL-Brief questionnaire. The research instrument used was data analysis using the Spearman Rho and ANOVA statistical tests.

The research design used was correlational with a cross-sectional approach. The population in this study were all elderly people at the Posyandu Lansia RW 02, Bangsal Village, Pesantren District, Kediri City. The sampling technique used was purposive sampling with inclusion criteria being elderly people aged ≥ 60 years, there were no restrictions on elderly people having certain diseases, elderly people who were willing to be studied who were cooperative and came to the Posyandu during data collection. The respondent approval process used informed consent that had been signed by the respondent. The elderly who became respondents were elderly people in RW 2 who were members of the Mawar Posyandu, Bangsal Village, Pesantren District, Kediri City. The independent variable was family support and the dependent variable was cognitive function using the MMSE questionnaire and quality of life using the OPQOL-Brief questionnaire. The research instrument used was data analysis using the Spearman Rho and ANOVA statistical tests.

RESULTS

Table 1 Characteristics of Respondents at the Elderly Posyandu RW 02, Bangsal Village, Pesantren District, Kediri City on July 11, 2024 (N=62).

Characteristics	Total	(%)
Age		
60-69	32	51,6
70-79	23	37,1
80-89	7	11,3
Total	**62**	**100**
Gender		
Male	22	35,5
Fimale	40	64,5
Total	**62**	**100**
Education		
Not School	6	9,7
Elementary School	30	48,3
Junior High School	12	19,4
High School	10	16,1
College	4	6,5
Total	**62**	**100**
Work		
Doesn't work, Housewife	38	61,2
Self-employed	12	19,4
Retirement	7	11,3
Worker	5	8,1
Total	**62**	**100**
Medical History		
No history of disease	29	46,8
There is 1 medical history	26	41,9
There is >1 history of disease	7	11,3
Total	**62**	**100**

Based on table 1, the age of the elderly over 50% is 60-69 years old, amounting to 32

respondents (51.6%). Most of the elderly are female, amounting to 40 respondents (64.5%). The highest level of education is elementary school, which is 30 respondents (48.3%). The occupation of more than 50% of the elderly is unemployed or housewives, amounting to 38 respondents (61.2%). While in terms of medical history, the most elderly have a history of 1 and more than 1 disease, namely 33 respondents (53.2%).

Table 2 Frequency Distribution of Family Support for the Elderly at the Elderly Posyandu RW 02, Bangsal Village, Pesantren District, Kediri City on July 11, 2024 (N=62).

Family Support	Total	(%)
Good	49	79,0
Enough	6	9,7
Less	7	11,3
Total	62	100

Based on table 2, it was found that the majority of elderly people have good family support, namely 49 respondents (79%). Based on table 3, it shows that more than 50% of elderly people have cognitive dysfunction in the category of moderate and severe cognitive dysfunction, namely 40 respondents (64.5%) and there are 22 elderly people who have normal cognitive function (35.5%).

Table 3 Frequency Distribution of Cognitive Function in the Elderly at the Elderly Posyandu RW 02, Bangsal Village, Pesantren District, Kediri City on July 11, 2024 (N=62).

Cognitive function	Total	(%)
Normal	22	35,5
Moderate Cognitive Impairment	18	29,0
Severe Cognitive Impairment	22	35,5
Total	62	100

Table 4 Frequency Distribution of Quality of Life in the Elderly at the Elderly Posyandu RW 02, Bangsal Village, Pesantren District, Kediri City on July 11, 2024 (N=62).

Quality of life	Total	(%)
Good	53	85,5
Enough	9	14,5
Less	0	0
Total	62	100

Based on table 4, it shows that the majority of respondents have a good quality of life, namely 53 (85.5%) respondents. Based on table 5, it shows that the p value = 0.019 means p < 0.05, it can be concluded that there is a relationship between family support and cognitive function. Based on table 6, it shows that the p value = 0.001 means p < 0.05, it can be concluded that there is a relationship between family support and quality of life.

Table 5. Cross Tabulation of Family Support with Cognitive Function in the Elderly at Posyandu RW 02, Bangsal Village, Pesantren District, Kediri City on July 11, 2024 (N=62).

Family Support	Fungsi Kognitif						Total
	Normal	%	Moderate Cognitive Impairment	%	Moderate Cognitive Impairment	%	
Good	20	90,9	15	83,3	14	63,7	49
Enough	2	9,1	1	5,6	3	13,6	6
Less	0	0	2	11,1	5	22,7	7
Total	22	100	18	100	22	100	62
P Value = 0,019, Correlation Coefficient: 0,298							

Table 6 Cross Tabulation of Family Support with Quality of Life in the Elderly at Posyandu RW 02, Bangsal Village, Pesantren District, Kediri City on July 11, 2024 (N=62)..

Family Support	Quality of Life						Total
	Good	%	Enough	%	Less	%	
Good	45	84,9	4	44,4	0	0	49
Enough	6	11,3	0	0	0	0	6
Less	2	3,8	5	55,6	0	0	7
Total	53	100	9	100	0	100	62
P Value = 0,001, Correlation Coefficient: 0,402							

Tabel 7. The Anova Test of Family Support with Cognitive Function in the Elderly at Posyandu RW 02, Bangsal Village, Pesantren District, Kediri City on July 11, 2024 (N=62).

		Sum	df	Mean	F	Sig.
Cognitive Function	Between Groups	4.473	2	2.236		
	Within Groups	39.527	59	0.670	3.338	0.042
	Total	44.000	61			
Quality of Life	Between Groups	2.592	2	1.296		
	Within Groups	5.102	59	0.086	14.984	0.000
	Total	7.694	61			
Robust Test of Equality of Means						
		Statistik	Df1	Df2		Sig.
Cognitive Function	Brown-forsythe	3.637	2	9.430		0,067
Quality of life	Brown-forsythe	-	-	-		-

Based on the results of the Anova test, it was found that with family support, there was a difference in the cognitive function of the elderly and also the quality of life of the elderly. However, the data on the quality of life had non-homogeneous data so that the ANOVA test could not be carried out. The ANOVA test can only be carried out on cognitive functions that show differences in cognitive function in the elderly who receive family support.

DISCUSSION

1. Analysis of the Relationship between Family Support and Cognitive Function

The results of statistical tests show that there is a relationship between family support and cognitive function in the elderly with a p value = 0.019 with a Correlation Coefficient: 0.298, which means there is a fairly strong positive relationship.

Family support is a support system provided by family members to individuals consisting of four types, namely emotional support, informational support, instrumental support, and assessment support. Cognitive impairment is a disorder in which a person experiences a decrease in memory function (memory), which is a place to store various information that can beremembered. Cognitive function can experience mild (mild cognitive impairment) or severe (dementia) disorders. Cognitive impairment is characterized by reduced memory, which is divided into severe cognitive impairment and mild cognitive impairment (MCI) (12).

Decreased cognitive function in the elderly causes the elderly to need help from others in their activities. So in this case the family has a very important role in caring for the elderly with cognitive impairment who live at home. Cognitive impairment in the elderly is a condition of general and progressive cognitive impairment related to the physical health of the elderly. The task of family health as a support system is very important for the elderly with cognitive impairment so that they can carry out daily activities (13). The role of the family in the problem of cognitive decline is to maintain family health and minimize mental (cognitive) problems in elderly family members by providing support or motivation, maintaining social and economic changes, and caring for elderly family members and training their physical and mental resilience. Elderly people with cognitive decline need family support to care for the elderly more intensively (14).

The results of the study showed that as age increases, the elderly will experience cognitive dysfunction. The elderly aged 60-69 years, at most 14 respondents have normal cognitive function, but at this age there are also elderly who experience cognitive dysfunction, namely 18 respondents. For the elderly aged 70-80 years and above, the elderly experience cognitive dysfunction in the moderate and severe categories, namely 22 respondents. This is in line with research conducted by (15),function begins to decline when someone enters the age of 60, including cognitive function. Which states that the age range of 60-79 years is an elderly age group

that is vulnerable to cognitive decline. Brain function begins to decline when someone enters the age of 60, including cognitive function. Age 65 years amassove is a risk factor for dementia. Cognitive levelmass,cline along with decreased brain mass, due to changes in brain structure, reduced brain mass and reduced blood flow to the brain.

Based on the results of the study from 62 respondents, the majority of elderly people were female, namely 40 (66.6%). This study is in line with the study conducted by (14), which stated that the majority of elderly respondents were female. The results of this study are also in line with the study of (16), which stated that women experience more cognitive decline due to an increase in the population of elderly women compared to elderly men, accompanied by a decrease in psychomotor speed. Because of the high life expectancy of women, the number of elderly women is greater, and the higher the age of the elderly, the greater the risk of the elderly experiencing cognitive disorders (Ministry of Health of the Republic of Indonesia, 2017).

Based on this study, there were 40 respondents of elderly people who experienced cognitive dysfunction, and of the 40 elderly people, 27 of them experienced cognitive dysfunction with an education level of no school and elementary school. The level of education of the elderly is still relatively low. This is because in Indonesia the education of the elderly population is still relatively low (7). Research conducted by (17) states that the amount of life experience of a person is influenced by a high level of education. Elderly people with low education will cause less intellectual stimulation due to the influence of bad mental and environmental experiences. So this causes a person's cognition to be bad. Elderly people with a fairly good education will be able to accept changes and problems when entering old age.

The results of this study indicate that the cognitive function of the majority of respondents is in the normal category, with a total of 22 people (35.5%). However, when viewed from the total respondents, more experienced cognitive dysfunction, including moderate cognitive impairment as many as 18

people (29%) and severe cognitive impairment 22 people (35.5%). The family support received by the elderly was mostly good, namely 49 respondents (79%). Elderly people who receive family support tend to have normal cognitive function. Decreased cognitive function in the elderly causes the elderly to need help from others in their activities. So in this case the family has a very important role in caring for the elderly with cognitive impairment. The results of this study are supported by the theory put forward by (13), who states that cognitive impairment in the elderly is a condition of general and progressive cognitive impairment related to the physical health of the elderly. The task of family health as a support system is very important for the elderly with cognitive impairment so that they can carry out daily activities. According to (18), family support is also a strong protective factor for cognitive function in the elderly. Close family support will benefit the elderly psychologically more than the elderly who do not have close family support. Elderly people with cognitive impairment have high family care needs, which can burden family members. Therefore, family support relationships can affect cognitive health in the elderly.

2. Analysis of the Relationship between Family Support and Quality of Life

The results of statistical tests show that there is a relationship between family support and quality of life in the elderly with a p value = 0.001 with a Correlation Coefficient: 0.402, which means there is a fairly strong positive relationship.

Optimal Family Support will affect the health of the elderly. Health is part of a person's well-being to improve their quality of life. The family has a role in providing care, attention, affection, and physical assistance for the survival of the elderly. Family support is important for the elderly because it can increase self-confidence and make the elderly more enthusiastic in living life. According to Friedman, there are four forms of family support that can be given to the elderly, namely information support, assessment support, additional support, and emotional support. The family support questionnaire

used by the researcher does not distinguish in detail how many scores and categories of each family support. However, from the four family supports, three categories are made and the 20 questions available already cover the four family supports. The need for support and the amount of support received by the elderly is a major concern for gerontologists, because in the past, families have always played an important role in determining the welfare and security status of the elderly (19). The form of family support received and greatly needed by individuals depends on the situation that causes stress in the individual. Normally, people who are still productive will easily cope with the changes that the elderly experience. However, the mismatch between the elderly condition and their expectations cancause the elderly to experience depression (20). This happens because of the lack of adaptation mechanisms in the elderly in dealing with changes that will bring the quality of life of the elderly in a different direction (21). Quality of life is the perception of individuals in their lives as a terminology that indicates the health conditions of both physical and social mental individuals and the ability to carry out daily tasks (22). The elements that influence quality of life are very broad and complex. According to WHO, the Quality of Life indicator consists of 4 aspects, namely physical health, psychological health, social relationships, and the environment (23). Generally, the elderly need someone to understand the conditions they are experiencing; the family can be a good listener to listen to them tell their stories and meet their needs (24). Support from the family is an important element to increase self-confidence and motivate the elderly. The family can involve the elderly to make decisions and solve problems together, provide freedom in physical and mental changes, and provide space and time for each family member (25).

Based on the results of the study, the elderly have a quality of life in the good category, namely 53 respondents (85.5%) and sufficient as many as 9 respondents (14.5%). The elderly who have the highest quality of life are female because the respondents in this study were more female.

Elderly people who have good family support will also have a good quality of life, as evidenced by the results of this study: 45 respondents who have good quality have good support. This is in line with the research of (26). In their study of family support for the elderly in Tampak Siring Village, Gianyar, there were 59 respondents, and it was found that 27 people (45.8%) received good family support from their families. According to the theory, individuals who receive strong family support tend to have a high quality of life (5). All forms of support provided by the family are expected to be able to improve the health status and welfare of the elderly so that the quality of life of the elderly will also increase. It is not easy for the elderly to face the various changes that occur in the last phase of their lives. The presence of the family plays an important role in the various changes experienced by the elderly, including developmental changes, physiological changes, and psychosocial changes.

CONCLUSIONS

There is a relationship between family support and cognitive function and also quality of life in the elderly at the Elderly Posyandu RW 02, Bangsal Village, Pesantren District, Kediri City. When the family provides support, there will be a difference in cognitive function and quality of life in the elderly. The better the family support, the elderly will not enter cognitive disorders and have a good quality of life.

ACKNOWLEDGEMENTS

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