

COMMUNITY SERVICE REPORT “OPTIMIZING EARLY DETECTION OF DEMENTIA THROUGH MINI-MENTAL STATE EXAMINATION (MMSE) IN THE ELDERLY IN BANJARMASIN”

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Abstract

Background Behind: Dementia is a cognitive disorder experienced by the elderly in general involving a decrease in the ability to remember, both short-term and long-term memory, which develops gradually in line with the ageing process with conditions characterized by a marked reduction in memory in the elderly. **Objective:** This community service activity aims to determine the results of cognitive function examinations in older people using MMSE at the Banjarmasin Elderly. **Method Study:** This community service activity is carried out by conducting MMSE screening on older people, providing explanations based on the examination results, and recording the recapitulation. **Results:** Based on the the results, it was found that participants were able to take the Mini-Mental Status Examination (MMSE) in the normal category with a total of 10 people (100). Evaluation of the implementation of the activity can be measured through the abilities of each participant so that the achievement of the assessment objectives focuses on the individual and this activity. **Conclusion:** This activity is carried out as a step to prevent dementia. Participants gain new knowledge and health benefits from the results of the examinations carried out. In this activity, the SPO MMSE instrument, which has been standardized and recognized by professionals, is used to assess the cognitive function of older people accurately.

Keyword: *Dementia, Mini-Mental Status Examination (MMSE), Elder People.*

Introduction

Dementia is a cognitive disorder experienced by the elderly in general involving a decrease in the ability to remember, both short-term and long-term memory, which develops gradually in line with the ageing process with conditions characterized by a marked reduction in memory in the elderly. The Ministry of Health of the Republic of Indonesia in 2005 added that dementia is not only a memory problem but also includes a decline in mental function in general. This is caused by damage to brain tissue that can no longer function perfectly. The aspect of intelligence, or the ability to think and understand, primarily occurs in older people (Muthmainnah, 2024).

According to the World Health Organization WHO and the Alzheimer's Disease International Organization 2020, worldwide an estimated 58 million people live with dementia. The number is estimated to increase to 97 million children in 2035 and 152 million sufferers in 2050. In Indonesia, it has been calculated according to data that there were 1.2 million people, especially the elderly,

who experienced dementia in 2016, and the number is likely to increase to 2 million people in 2030 and then to 4 million people in 2050, this number is expected to increase every year. (Pokhrel, 2024) According to (the Central Statistics Agency of South Kalimantan Province, 2021 in Rahman et al., 2023), the number of older adults in Banjarmasin City continues to grow. In 2018, the elderly population in Banjarmasin City was 6.69% or around 46,888 people; in 2019, it increased by 6.98% or around 49,460 people; and in 2020, it increased to 7.28% or 52,103 people. The number of elderly male residents living in Banjarmasin City in 2018 was 3.15% or around 22,100 people, rising in 2019 to around 3.30% or 23,401 people and increasing further in 2020 to 3.45% or around 24,723 people. Psychological changes in older people, one of which has an impact on their mental health. Signs of cognitive process disorders in the form of forgetfulness, dementia, confusion, and suspicion, as well as emotional disorders,

including fatigue, indifference, and irritability, are some examples of decreased mental health quality in the elderly (Okvitasari et al., 2024).

According to research conducted by Sopyanti et al. (2019), in the Guntur Health Center work area, there was severe cognitive dysfunction in older people over 70 years old, with a total of 15 respondents (13.4%) out of a total of 112. Of the 15 elderly, three people (7.3%) experienced severe cognitive dysfunction, while 12 people (29.3%) experienced moderate cognitive dysfunction. Azizah's research (2011) stated that age is one of the factors that can affect cognitive function in older people. As age increases, cognitive function declines because some brain cells begin to die, as well as decreased elasticity of blood vessels. Dead brain cells cannot regenerate, causing a decline in intellectual function in older people. The speed of processes in the central nervous system also decreases with age. This change is generally experienced by almost everyone who enters their 70s. At 65-75 years old, decreased abilities begin to appear with wide variations between individuals.

Meanwhile, at 75-80 years old, the decline in abilities is more visible. Life experiences greatly influence cognitive function, including a person's health status and lifestyle. A healthy lifestyle for older people includes fulfilling good nutrition, exercising regularly, getting enough rest and sleep, and not smoking. Therefore, memory examination in older people through early detection is critical (Widyaningsih et al., 2024).

Assessment of cognitive function in the elderly can be done by neuropsychological examination, one of which is the Mini-Mental State Examination (MMSE), which is used to detect mental disorders early. This early detection has significant benefits, namely to increase public awareness, especially among those at risk, so that they can make healthier lifestyle changes and routinely check themselves at health facilities.

Method

The method of community service activities will be carried out with the theme "Optimizing Early Detection of Dementia through Mini-Mental State Examination (MMSE) in the Elderly in Banjarmasin" with a target of 10 elderly people located on Jalan Hksn Komplek Amd Permai. This activity was carried out on Tuesday, December 3, 2024, at 15.00-18.00 WITA with a health examination method and conducting MMSE

screening. This activity aims to determine the characteristics of older people at Hksn Komplek Amd Permai Banjarmasin and to determine the results of cognitive function examinations in older people using the MMSE measuring instrument in Banjarmasin. Some media used in this activity include mini-mental state examination (MMSE) sheets, camera recordings, bottles, rulers, books, tensiometers, pens, paper, and leaflets.

1. Stage 1: Pre-Preparation

The service team collects data and discusses the location of the study. Takes care of the permit letter to the Nursing S1 Administration Section of the Muhammadiyah University of Banjarmasin with letter number 1169.12/UM-BJM/FKIK/A.1/X/2023 and then submits it to the Hksn Amd Permai Banjarmasin study management section.

2. Stage 2: Preparation

The service team discussed and has agreed that the service theme to be given is "Optimizing Early Detection Through Mini-Mental State Examination (MMSE) at Hksn Amd Permai Banjarmasin Complex". Then, the service team looks for literature reviews from various scientific sources and prepares each service team. After that, the service team creates activity materials by preparing tools and materials, readiness of the place and readiness of the target.

3. Stage 3: Implementation

- a. Fill in the participant attendance list.
- b. The activity will be carried out by checking the blood pressure of the elderly
- c. Conducting MMSE screening on older people.
- d. Providing an explanation based on the examination results and recording in the recapitulation of the examination results.

4. Stage 4: Closing

- The activity will end with a group photo.
- Giving gifts through prayer beads to increase worship by reciting dhikr.
- Distribution of brain gymnastics leaflets.

Results And Discussion

Pre-Preparation

Dementia is a chronic or progressive syndrome that causes a decline in cognitive function, affecting memory, thinking, orientation, understanding, calculation, learning capacity, language, and judgment (Afconneri et al., 2024)

Dementia is a process that is considered normal by some people when someone reaches old age. The main symptoms of dementia include impaired memory function and mental disorders. Dementia is a type of mental disorder that is often suffered by the elderly (Ivanalie et al., 2022).

HKSN St., komp. AMD Permai Block 1.3, Alalak Selatan village/sub-district, North Banjarmasin district/city is a place where an elderly assessment will be carried out which is attended by elderly mothers. The assessor conducts the assessment by visiting one/one the homes of elderly mothers who have made an appointment to be willing to be assessed. The assessment was conducted on Tuesday, December 3, 2024.

Preparation

The elderly are individuals who are entering old age. In the elderly, there are several functional declines in physical, psychological, and cognitive functions. When cognitive decline occurs in the elderly, it means that the elderly will experience decreased memory function, decreased awareness, and decreased language. One way to measure cognitive function in the elderly can be measured using the Mini Mental State Examination (MMSE) Score (Id et al., 2024). The tools and materials used to support the implementation process of the Mini Mental Status Examination (MMSE) this time are the Mini sheets *Mental State Examination* (MMSE), camera recording, bottles, rulers, books, tensiometers, pens, and paper.

Implementation

The implementation stage of the assessment activity is divided into five activities, namely filling in the participant attendance list as proof of participant attendance and contribution, then opening with a brief explanation of the activities to be carried out, followed by a blood pressure check to be carried out by the service team, and after that the MMSE screening was carried out.

After the screening was carried out, the students explained the screening results to the elderly who had been studied, namely the following results obtained from the participants. According to (WHO 2013), the classification of the elderly is as follows:

- Middle age, namely the age group 45-54 years.
- Elderly, namely the age group 55-65 years.
- Young elderly (young old), namely the age group 66-74 years.
- Old elderly (old), namely the age group 75-90 years.

Elderly Age Category	Number (n)	Percentage (%)
Adults (<45 years)	0	0
Middle Age (45-54 years)	4	33,33
Elderly (55-65 years)	5	40
Young Elderly (66-74 years)	1	26,67
Old Elderly (75-90 years)	0	0
	10	100

Table 1. Characteristics of Elderly Age

Hypertension is a condition where systolic blood pressure is > 140 mmHg and diastolic blood pressure is > 90 mmHg on two measurements with an interval of five minutes in a resting state. Based on the data above, it shows that the incidence of hypertension is highest in the elderly (Suarayasa et al., 2023).

Categoryyy	SBP (mmHg)	DBP (mmHg)	Number	Percentage (%)
Normal	<120	<80	6	40
Pra- Hiptertension	120- 139	80- 89	1	26,67
Hiptertension stage 1	140- 159	90- 99	0	0
Hiptertension stage 2	>160	>100	3	33,33
Isolated Systolic Hiptertension	>140	<90	0	0
			10	100

Table 2. Blood Pressure Examination Results

There are 3 categories of MMSE examination, the first is normal where there is no cognitive impairment in patients with a range of values obtained during screening of 24-30. Second, probable cognitive impairment or the possibility of cognitive impairment in the elderly with a screening value obtained of 17-23. Third, definite cognitive impairment or cognitive impairment is certain to occur in the elderly with a screening value obtained of 0-16 (Id et al., 2024).

Category	Number (n)	Percentage (%)
Normal	10	100
Probable Cognitive Impairment	0	0
Definite Cognitive Impairment	0	0
Total	10	100

Table 3. Results of Participant Assessment Using SPO MMSE

Based on the table above, it was found that participants were able to take the Mini Mental Status Examination (MMSE) in the normal category with a total of 10 people

(100). Evaluation of the implementation of the activity can be measured through the ability of each participant so that the achievement of the assessment objectives focuses on the individual and this activity.

Closing

The activity was closed by giving gifts in the form of consuming snacks, distributing leaflets, documentation, and saying hamdallah together because the activity had gone smoothly.

Conclusion

Community service activities at HKS North

Banjarmasin went smoothly and successfully. This activity carried the theme "Optimizing Early Detection of Dementia Through Mini-Mental State Examination (MMSE) in the Elderly in Banjarmasin" to prevent dementia. Participants gained new knowledge and health benefits from the results of the examination. In this activity, the SPO MMSE instrument was standardized and recognized by professionals to assess older people's cognitive function accurately.

Suggestion

This community service activity was carried out using the interview method, starting with filling out the attendance sheet, assessment, blood pressure check, and screening through interviews, then ending with an evaluation of the examination results and providing education about brain gymnastics using leaflet media. The activity results showed that 10 participants had cognitive functions in the normal category, while one was in the category of possible cognitive impairment. As a follow-up, participants are advised to routinely do brain gymnastics at home or with family anywhere to prevent dementia.

Thanks To

All praise and gratitude we offer to Allah SWT for the abundance of His grace and guidance so that the community service activity with the theme "Optimizing Early Detection of Dementia Through Mini-Mental State Examination (MMSE) in the Elderly in Banjarmasin" as an Effort to Prevent Dementia" can run smoothly and successfully. As the service team, we would like to thank the Banjarmasin Utara religious study group and the community, which have supported and warmly welcomed this activity. This activity will benefit the community and inspire future implementation of other community services.

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