

BRAIN GYM FOR DEMENTIA PREVENTION IN ELDERLY PEOPLE

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ABSTRACT

Dementia, or also known as forgetfulness, is very common in elderly and is considered as a common occurrence as elderly age. Dementia and the normalization of senility have the potential to disrupt the daily lives of the elderly, where cognitive decline such as disorientation of people, time, and place, as well as decreased ability to argue and solve problems can complicate social relationships of the elderly. Therefore, the normalization of dementia in the elderly needs to be changed by providing health education on Dementia, especially Alzheimer's to the elderly. It is hoped that through this activity, the elderly and care givers can find out ways to prevent and manage Dementia-Alzheimer's, especially through the implementation of brain gym and to practice it in everyday life.

Keywords: Alzheimer's. Brain gym, Dementia, Elderly, Forgetfulness

ABSTRAK

Demensia atau yang dikenal oleh awam dengan istilah pikun sangat umum terjadi pada orang lanjut usia dan dianggap sebagai hal yang lazim terjadi seiring dengan bertambahnya usia pada lansia. Demensia dan normalisasi kepikunan berpotensi untuk mengganggu kehidupan sehari-hari lansia, dimana terjadinya penurunan kognitif seperti disorientasi orang, waktu, dan tempat, serta penurunan kemampuan berpendapat dan memecahkan masalah yang dapat memperumit hubungan sosial para lansia. Oleh sebab itu, normalisasi demensia pada lansia perlu dirubah dengan cara pemberian Penyuluhan Kesehatan berupa Pendidikan Kesehatan mengenai Demensia, terutama Alzheimer pada lanjut usia. Dalam kegiatan ini juga dilakukan skrining resiko Demensia dan *Brain Gym* atau senam otak. Diharapkan melalui kegiatan ini, para lansia dan *care giver* dapat mengetahui cara-cara pencegahan dan penatalaksanaan Demensia-Alzheimer terlebih khususnya melalui pelaksanaan *brain gym* dan dapat mempraktekannya dalam kehidupan sehari-hari.

Kata Kunci: Alzheimer, Senam otak, Demensia, Lansia, Pikun

INTRODUCTION

The process of aging (getting old) in the course of human life is a natural thing. The aging process is a process of slowly disappearing the ability of tissues to repair themselves or replace, maintain their normal structure and function so that they cannot defend

against infection and repair the damage suffered. The aging process in a person is a process throughout life, not only starting from a certain time, but starting from the beginning of life and lasting until the time of death [1].

Dementia is a condition that interferes with activities of daily living

and social and occupational activities. In dementia there are also other cognitive disorders such as language, orientation (time, place, person), decision-making ability, abstract thinking, emotional and behavioral disorders. These disorders can affect a person's personality. Dementia is a syndrome of cognitive decline characterized by changes in behavior, decreased memory, orientation, difficulty in communicating and making decisions resulting in a decrease in the ability to carry out daily activities in a person [2].

In an effort to overcome the imbalance, a person uses constructive coping or destructive coping. Constructive coping will produce an adaptive response, namely a positive self-concept and vice versa destructive coping will produce a maladaptive response, namely a negative self-concept. A healthy lifestyle is the main way to prevent decline in cognitive function, including Alzheimer's disease. Steps to prevent Alzheimer's are to exercise regularly, consume a balanced nutritious diet, consume more antioxidants and maintain an active social life [3].

Alzheimer's Disease Indonesia (ADI) estimates that there are 46.8 million people with dementia worldwide. Data from the World Health Organization and Alzheimer's Disease International Organization reported that the total number of people with dementia worldwide in 2015 was estimated at 47.5 million, 22 million of whom were in Asia. The total number of new dementia cases each year worldwide is almost 7.7 million, meaning that every 4 seconds there is 1

new case of dementia. In developed countries such as the United States, there are currently more than 4 million elderly people with Alzheimer's Dementia Disease. Asia has the most cases of dementia at 49% of all cases in the world. Global estimates of dementia prevalence are up to 7% of individuals over the age of 65, with slightly higher prevalence (8-10%) in developed countries due to longer life spans [4].

The prevalence of dementia in Indonesia is around 2.2 million out of a population of 220 million. The prevalence of Alzheimer's type dementia increases with age. For someone aged 65 years, the prevalence is 0.6% in men and 0.8% in women. At the age of 90 years, the prevalence reaches 21% [5]. The results of research conducted by Sengkey in 2017, found that the highest percentage of the incidence of elderly dementia at the Senja Cerah Elderly Assistance Center (BPLU) in North Sulawesi province was moderate dementia [6]. Based on data collected from several health centers in Manado City, there are 20,173 elderly people aged over 60 years. Of these data there are elderly people who have a risk of mental-emotional disorders 590 people [7].

Although the Government through the Indonesian Health Office has promoted the Healthy Living Community Movement (GERMAS) as an effort to promote health and disease prevention, including for the elderly, there were still cases of people with dementia and Alzheimer's in North Sulawesi. Thus, the community service team from the Faculty of Nursing carried out Health Counseling in the form of Health Education about

Dementia, especially Alzheimer's in the elderly, screening the risk of Dementia using MMSE and Brain Gym or brain gymnastics at Senja Cerah Paniki Social Home, Manado City as part of the government's realization of GERMAS.

METHODS

This activity was held at Senja Cerah Social Home, Paniki Subdistrict, Mapanget District, Manado City. Activities in the form of Dementia Health Counselling, especially Alzheimer's, health screening in the form physical assessments such as blood pressure assessment and MMSE assessment to determine the risk of dementia in the elderly, and the implementation of exercise for the elderlies in the form of brain exercises for the elderly to prevent or suppress the development of Dementia-Alzheimer. The target in this activity were all the elderly people and caregivers at Senja Cerah Social Home. This activity was held on Saturday, October 28, 2023.

RESULTS

The activities carried out went well according to plan. The activity was attended by 27 elderly people, 2 nursing home employees, 9 lecturers and students. Of the 27 elderly people, 10 of them were willing to do an MMSE assessment with the results of the assessment 7 of them did not experience cognitive impairment, while 3 others had an increased risk of dementia. Based on the MMSE results obtained, brain gym was carried out as a form of prevention of dementia and also as an intervention to improve cognitive function for elderly

people who experience an increased risk of dementia.



Pict 1. Health Screening

One way to assess dementia was with the Mini Mental State Examination (MMSE), which was developed to examine cognitive decline in older adults and the elderly. Questions on the MMSE were formulated to assess five areas of cognitive function, namely: orientation, immediate memory, attention or concentration, memory, and language. The results obtained from the MMSE can show a picture of a person's dementia status [8].



Pict 2. MMSE Assessment

According to Health Minister Nila F Moeloek, in 2014 there were

263,510,146 people in Indonesia. With about 62 million adolescents, 157 million people of productive age and children and the elderly making up the rest of the total population of Indonesia. Moeloe also said that the National Action Plan for Dementia, developed by the government and Alzheimer's Indonesia, used a healthy lifestyle and life cycle approach. This meant that dementia management could not be done separately from other health issues. So that dementia management was holistic and universal with a multisectoral approach on a global, national and regional scale [9].

Alzheimer's Indonesia, divided Dementia prevention into 5 (five) parts, namely: maintaining heart health; by maintaining a healthy lifestyle such as not smoking, controlling blood pressure, controlling cholesterol levels, controlling blood sugar and normal body weight. Physical activity such as exercising is a good way to prevent dementia and can control blood pressure, control weight and reduce the risk of diabetes. Eating vegetables and fruits can also reduce the risk of dementia. Brain, physical, mental and spiritual stimulation by learning new languages, new hobbies, doing brain exercises can strengthen and build neurons in the human brain. Socialization with friends, relatives and family can also provide good stimulation for brain health [4].

Verizarie wrote that the purpose of brain exercises in the elderly was to maintain the brain's memory function and cognitive function to stay in good condition. In addition, brain exercises also served to increase the speed of the brain in processing information and improve thinking skills in general. There

are several types of brain exercises, including learning new vocabulary, learning new languages, playing and listening to music, meditating, teaching, adding new skills, maximizing all five senses, playing brain-teasing games such as crossword puzzles, taking dance classes, and doing tai chi exercises. Another study showed that performing a 50 minutes brain gym for 2 times a week, for 12 weeks could increase cognitive function in the elderly people [10], [11], [12].



Pict 3. Brain Gym Exercise

Brain gym involves simple movements using the whole brain based on body movement. According to Moran, et al, stimulating cognitive aspect of the brain could improve mild cognitive impairment in diseases that were related to aging. The brain as the center of the body's activity will activate all organs and body systems through messages that are delivered through nerve fibers voluntarily and involuntarily. Basically, the left hemisphere of the brain regulates the movement of the right side of the body and vice versa. With brain gym exercises, three dimensions of the brain are activated, namely (1) left and right brain dimensions (laterality) as

communication, (2) front and back brain dimensions (Focusing) as a function of understanding, (3) upper and lower brain dimensions (Centering) as regulation [13], [14].

Brain gym opens parts of the brain that were previously closed or inhibited so that learning or working activities will use the whole brain; or known as whole brain learning. By doing brain exercises, it is expected to provide results, such as: language skills and memory improvement, emotional stress is reduced and the mind is clearer, the relationship between humans and the atmosphere of learning or working is more relaxed and happier, people become more energized, more creative and efficient, people feel healthier because stress is reduced, learning and work performance increases [15], [16].

In addition, brain exercises have several advantages, including: can be done in a short time, does not require special materials or places, can be used in a person's learning situation in everyday life, increases self-confidence, shows immediate and permanent results. It can be explained neurophysiologically, is very effective in handling someone who experiences learning obstacles and stress, independent a person in terms of learning and helping to utilize all the potential and skills possessed, and is recognized as one of the best learning techniques by the National Learning Foundation USA [17], [18].

In the process of implementing brain gym, it was seen that the elderly could follow the movements of the brain gym given, even though there were elderly people who experienced limited movement among the participants.

Elderly people with limited movement were advised to do brain gym movements as they could or do brain gym movements without having to stand to minimize injury.

CONCLUSION

This activity succeeded in providing knowledge and skills for caregivers and the elderly at Senja Cerah Social Home, Paniki, in implementing brain gym to prevent Dementia-Alzheimer's and reduce the rate of decline in cognitive abilities in the elderly. This service activity includes health screening in the form of blood pressure measurement, MMSE examination, and brain gym implementation. It is recommended that brain gym activities can be carried out regularly to get results in improving the cognitive function of the elderly.

LITERATURE

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