ENCULTURATION OF A-PIK (ANTI-SENILE) GYMNASTIC PROGRAM IN BANDUNG'S ELDERLY COMMUNITY

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ABSTRACT

Previous research has shown that A-Pik gymnastics improves cognition in healthy adults. Regular physical activity is related with healthier brains, enhanced memory, more effective planning, and other cognitive abilities, as well as a decreased chance of dementia. The brain continues to generate new cells and synapses throughout life, allowing us to continue learning. This skill is known as "brain plasticity." It is commonly known that the brain requires enough blood flow in order to receive sufficient oxygen and nutrients in order to function properly. Physical activity enhances the plasticity, survival, and development of brain cells, as well as their biological activities. This service initiative aims to offer APIK (Anti-senile) Gymnastics to senior citizens in the Bandung region. It is anticipated that after implementing this program, the elderly population will have enhanced physical and mental health. The socialization of the A-Pik Gymnastics program is conducted via videos uploaded to the A-Pik YouTube channel. Participants can learn the A-Pik gymnastics moves by using the URL provided, so individuals can practice whenever they like. Three times per week, the A-Pik gymnastics activities were conducted according to a predetermined timetable in order to track the participants' progress. Many passionate jumpers joined this program. Their enthusiasm for gymnastics shows this.

***Keywords**:Dementia, Cognitive Function, APIK (Anti-Pikun) Gymnastics*

1. INTRODUCTION

Sports activities immediately contribute to the components of physical fitness, which has a big impact on it. Sports activities, such as the type of exercise, safety concerns, and equipment, must be adjusted in accordance with age. Sports activities cannot be carried out haphazardly; specific methods and regulations must be followed. The American College of Sports Medicine (ACSM) recommends flexibility/flexibility exercises to preserve range of motion, neuromotor training, and a variety of activities to maintain and enhance physical function and reduce the risk of falls to improve physical fitness and health in the elderly (Garber et al., 2011; Laurin et al., 2001; Rose et al., 2002). Age doesn't affect cognitive plasticity. Cognitive growth improves cognitive control. Proactive tactics are used in training that is based on attention theory. Training places a strong emphasis on automatic regulated procedures (for example, driving a car or learning a new skill like tennis). Attention training for MCI has been

shown to enhance attention regulation, cognitive function, and critical brain activity. Research on a single attention domain may have produced inconsequential results since attention is dependent on networks in connected brain regions, which has been proved by advancements in neurophysiology and brain imaging (Yang et al., 2020).

Fitness slows aging and neurological diseases. In the Canadian Study of Health and Aging, exercise reduced cognitive decline and Alzheimer Disease (AD). Cardiorespiratory fitness lowers whole-brain atrophy and enhances white matter volume in AD. Several studies demonstrated that endurance activities (walking or ergocycle) may improve the cognitive abilities of Alzheimer's disease dementia patients as measured by the Mini-Mental State Examination (MMSE) .The effects of aerobic exercise for memory-impaired older adults are limited and primarily based on retrospective physical activity assessments, unstructured (e.g., home-based) programs, or general cognitive performance, but they are encouraging. Physical fitness and activity can prevent cognitive deterioration in the elderly by stimulating neuron growth. Cognitive functions may benefit from intellectually difficult exercise. Open-skill exercise improves executive-control performance. Training programs could use this form of activity to improve thinking and reduce cognitive decline. Low BDNF may suggest senility. The cognitive and physical benefits of gymnastics drive dementia patients to exercise. (Baker et al., 2010; Gokce et al., 2021; Kim & Song, 2020). This gymnastics paradigm is an efficient way to motivate persons with dementia to exercise since it has both cognitive and physical benefits (Fitri et al., 2021).

2. PROBLEMS

Early dementia patients are more likely to maintain an exercise habit, extending its health and well-being benefits as long as possible. Family, caregivers, and service providers must support and encourage the exercise program in intermediate to severe dementia (Motoi et al., 2016). According to 2010-2035 demographic estimates, West Java has 4.16 million seniors in 2017, up from 3.77 million in 2015. In 2021, West Java's old population will reach 5.07 million, 10.04 percent of its total population (Badan Pusat Statistik Provisi Jawa Barat, 2018). This condition indicates that West Java's population has reached the aging phase.

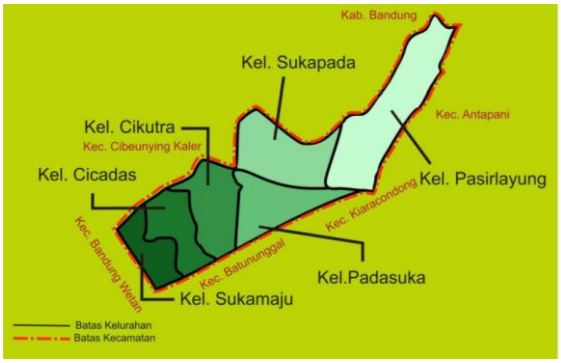

Figure 1 District map of the Cibeunying Kidul area.

The Cibeunying Kidul sub-district (Fig.1) was chosen for this service program because it has a reasonably active elderly group. Furthermore, the number of cases of hypertension in this area is high (PPID Kota Bandung, 2015). It is believed that this program this program may solve some local health issues. This service initiative assesses community acceptability of A-Pik gymnastics and its impact on senior cognition.

3. LITERATURE REVIEW

Numerous studies have shown that physical exercise improves cognition in healthy persons. Mild cognitive impairment positively impacts physical activity (Savikko & Strandberg, 2014). Cognitive function is closely related to physical capacity. In older persons with MCI, limited functional mobility is a key problem. Gait changes in older persons are caused by muscle mass and strength loss, as well as degradation of postural stability and vestibular function. Motor control, such as gait, can be hampered further in older persons with MCI due to primary motor cortical abnormalities. Evidence for a link between gait and MCI suggested that older persons with MCI performed worse in gait assessments, which were quantified using gait parameters such as velocity, stride length, and coefficient of variation (Ibrahim et al., 2017). Cognitive training relies on the premise that aging brains may change, despite considerable dispute. Cognitive training, like physical activity, targets different brain functions and "utilizes it or loses it" like muscles. Cognitive training can be done on paper, online, or in groups. However, it usually involves repetitive exercises to develop one or more cognitive abilities (e.g., memory and reasoning) (Husseini et al., 2016). The association between physical exercise and dementia depends on the activity's qualities, the dementia stages, and the neuropsychiatric symptoms (NPS), thus precise practical guidelines about its form, intensity, frequency, and duration are needed to improve its treatment of the disease. Thus, identifying the elements that determine this relationship can lead to the development of individualized or adapted physical exercise programs that can be safely integrated into dementia patients' regular therapeutic schedules (Kouloutbani et al., 2021). Aerobic physical exercise has a significant impact on enhancing cognitive function, behavior, and functional mobility in people with dementia (Gokce et al., 2021).

Yu, Vock, and Barclay (2017) examined the effect of six months of aerobic exercise on the maintenance of function in mild Alzheimer's disease patients. Inactive adults are more likely to get dementia than active ones. Because dementia-related cognitive impairment in the elderly requires physical activity for neuroprotection and cognitive function, a structured, customized, higher intensity, longer duration, and multicomponent exercise program is beneficial (Fitri et al., 2020). Physical activity should be performed as long as feasible for people with dementia in order to maintain their general physical health, since numerous benefits have been demonstrated. It can help avoid muscle weakness, mobility issues, and other associated health disorders, as well as improve your mood and social relationships. Dementia patients commonly experience stress and depression, which can be alleviated via physical activity. Because there are no decisions to make or things to remember about what to do next, repetitive activities such as walking on a treadmill or using an exercise bike can relieve anxiety in those with dementia (Kouloutbani et

al., 2021).

In a cross-sectional study, it was found that open-skill exercise improves executive functioning, most likely as a result of the many different aspects of athletic training that demand higher levels of cognitive complexity. Like closed-skill exercise, open-skill exercise has been shown to boost executive network efficiency. Some researchers have hypothesized that the open skill exercise, which combines physical activity and cognitive training, is responsible for the observed enhancement in the attentional system component(Gokce et al., 2021).

4. METHOD

The socialization of the A-Pik Gymnastics program to the older community is conducted via videos uploaded to the A-Pik YouTube channel. Participants can learn the A-Pik gymnastics moves by using the URL provided. Thus, individuals can practice whenever they like. More than 50 participants join this program. Three times per week, the A-Pik gymnastics activities were conducted according to a predetermined timetable in order to track the participants' progress. At each session, their heart rate and pulse were measured. During implementation, local Posbindu cadres participated in this activity so that the A-Pik Gymnastics program can be continued as a routine program, especially for the elderly, in the future. In order to evaluate the efficacy of the implemented exercise program, cognitive tests were conducted at the beginning and end of the program.

5. RESULT AND DISCUSSION

The implementation of this gymnastics program attracted a large number of eager participants. The rhythm of classical traditional music that is offered in a contemporary manner as an accompaniment to this gymnastics is one of the primary attractions for senior participants. They can listen to sentimental music while engaging in physical activity. This can be seen in their eagerness and excitement while performing gymnastic movements (Fig. 2).

Figure 2. Exercise with the elderly community and cadres

Research has shown that those with mild cognitive impairment, dementia, and healthy subjects all benefit from increased cognitive function after engaging in physical activity. Exercising, and particularly

aerobic exercise, has been linked to a significant increase in the amount of gray matter in the frontal and left superior temporal lobes, as well as in the amount of white matter tracts within the anterior third of the corpus callosum (Brondino et al., 2017). Physical activity enhances brain plasticity as well as brain cell development and survival. Brain imaging studies have indicated that those who engage in moderate-intensity physical activity on a regular basis have increased brain volume in regions crucial for memory, learning, focus, and planning compared to those who are sedentary (Erickson et al., 2013). Additionally, they have enhanced connectivity between brain regions and superior cognitive function. This implies that they have more brain cells, which contribute to a more efficient brain function. It is typical for the brain to shrink slightly with age, but persons who engage in regular physical activity report a reduction in this age-related shrinking. Physically active seniors had the brain volume and connections of younger persons (Baloh, 2022).

The Alzheimer's Program of Australia recommends that a healthy and active lifestyle is related with improved brain function and a decreased risk of dementia. The disruption of these functions has a negative impact on both the quality and productivity of life. The symptoms of dementia can be controlled. ADL performance in elderly dementia patients can be improved by the use of programmed exercise by increasing mobility, strength in the lower extremities, balance, and endurance (Mulyana et al., 2021). Regular physical activity is a crucial component of the brain. Physical activity comprises organized exercises and sports, as well as various activities involving body movement and performed as part of play, work, transit, household, and recreation. People who engage in regular physical activity are less likely to develop dementia and have healthier brains, greater memories, and enhanced planning and other cognitive abilities (Amanollahi et al., 2021). The brain produces new cells and connections throughout life, allowing us to continue to learn. Occasionally, this is referred to as brain plasticity. We also know that the brain requires a sufficient blood supply to obtain the oxygen and nutrients it needs to function correctly. Physical activity promotes brain function.

In order to ensure the long-term viability of the program, the function of mentoring in program implementation is strategically positioned to provide instruction during the training program's implementation. However, this is not always practicable due to a lack of resources and staff. It is important, therefore, to prepare Cadres for program continuity in accordance with the original objectives. In this situation, the involvement of Posbindu Cadres in the implementation of the program, as well as the training of trainers who will later operate as an extension of the companions/universities whose existence is in the midst of the community, so that they can reach the target community more readily. Thus, the program's sustainability can be effectively managed until its goals are accomplished.

Several problems were faced throughout this program's implementation. Among of them is that participants in the Exercise program do not consistently attend. In one month of exercise, which should have consisted of 12 sessions, some individuals did not attend because they were preoccupied at home or because they had more pressing obligations. In addition, not all participants were administered the cognitive capacity test at the beginning of the program since not all participants were

present. Similarly, there were intended participants who were absent for the program's final evaluation. To counteract this, we distribute Exercise videos on a YouTube channel that customers may access at any time. In addition, we provide individuals who dutifully attend each meeting with small mementos.

We can conclude from the description as a whole that since information is gathered through the execution of activities, the implementation of the Apik gymnastics service program necessitates a number of factors, including good collaboration with community leaders. We should continue to conduct the program and train the cadres to ensure its perfection. Simple rewards could be provided in order to pique their interest in and enthusiasm for the program. It is essential to regularly assess the program's development and its effects on both individuals and society in general.

6. CONCLUSION

The implementation of this gymnastics program attracted a large number of eager participants. The rhythm of classical traditional music that is offered in a contemporary manner as an accompaniment to this gymnastics is one of the primary attractions for senior participants. They can listen to sentimental music while engaging in physical activity. This can be seen in their eagerness and excitement while performing gymnastic movements.

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