

The Effect of Reminiscence Therapy Using Video on the Cognitive Function of the Elderly at Panti Pelayanan Sosial Lanjut Usia (PPSLU) Sudagaran

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ABSTRACT

By the increase in the quantity of the elderly, the percentage of health problems will also rise. The decline in cognitive function is an important problem to overcome for the welfare of the elderly. Cognitive function can be maintained with non-pharmacological therapy, namely reminiscence therapy. Reminiscence therapy can be given through various media, one of which is video. Video has advantages in terms of providing good visualization to facilitate the process of recognizing, recalling, and connecting facts and concepts. To determine the effect of reminiscence therapy through video media on the cognitive function of the elderly at Panti Pelayanan Sosial Lanjut Usia (PPSLU) Sudagaran. This was quantitative research. The pre-experimental method was employed with Pre Post Test One Group design. The sample was 45 respondents, obtained by using the probability sampling technique with purposive sampling. The results showed that the average age of the respondents was 72.07 years old. They were 28 (62.2%) females and 17 (37.8%) males. Before the intervention, the average value of the cognitive function of the elderly was 15,563,526. After the therapeutic intervention, there was an improvement with an average value of 18,242,673. The results of the paired sample t-test showed a significant value of $p = 0.001$ ($p < 0.05$) with an effect size value of $r = 0.87$. There was an effect of reminiscence therapy through video media on the cognitive function of the elderly at Panti Pelayanan Sosial Lanjut Usia (PPSLU) Sudagaran.

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1. INTRODUCTION

It is estimated that the world's elderly population will continue to grow. The world's elderly population increased significantly in 2013-2100, 2013-2050 (13.4% 25.3) 2050-2100 (25.3-5.1) [1]. Indonesia's elderly population is 9.60 percent, or about 25.64 million people. According to Susenas data for March 2019, central Java has 13.36 percent of the elderly population, second only to the province of DI Yogyakarta [2].

The older you get, the more health problems there are. Health problems in the elderly, which include impairment and weakness, are physical, cognitive, sensory, mental and social decline [3]. A study in Posbindu I South Tangerang, he used a descriptive approach to the cognitive function of older clients, which causes cognitive impairment in older adults as high as 68.06 percent [4]. The number of older people with normal cognitive function was as high as 31.94 percent. Cognitive impairment is a serious problem because it interferes with daily activities and parental independence. This state of cognitive impairment varies greatly between mild, moderate, and severe [5].

Cognitive impairment is a health and social problem. As they age, they experience physical, psychological and social changes that will reduce their intelligence [6]. If these aspects are ignored and these interventions are not administered, they can lead to impaired cognitive function. Cognitive impairment usually begins slowly, so early in the condition is often unaware. Increased cognitive impairment can lead to side effects, including decreased quality of life and dependence on the elderly, making them vulnerable to abuse and death [7].

To overcome the negative effects, cognitive impairment can be overcome through pattern therapy, sensory stimulation therapy and psychosocial interventions. Model therapy is a non-pharmacological therapy among parents that aims to improve and maintain attitudes among parents to survive and socialize with the surrounding community, in the hope that parents will be able to maintain contact with family, friends and support systems while receiving treatment [8]. Giving model therapy to parents helps prevent psychological problems, one of which is cognitive function. This therapy can prevent changes in cognitive function and can improve cognitive function in old age by telling the story of life problems, namely through reminiscence therapy [9].

Reminiscence therapy is a way to reduce some health problems, one of which is cognitive dysfunction experienced by the elderly [8]. This therapy provides memory impulses, a process that stores sensory impulses and is important for future use as a regulator of motor activity and thought processing [10]. Reminiscence therapy has been shown to be effective in improving life satisfaction, reducing and preventing depression, improving self-care, boosting self-esteem and helping older people switch, crisis and loss [11]. Reminiscence therapy media used can use kits filled with various items in the past, such as magazines, cooking tools, clothing, game tools, special potting tools to play music, videos, and cassettes. Significant differences were found between the experimental group's average post-test scores and controls. The study found that using internet-based video for group withdrawal therapy improved cognitive function and apathy in Alzheimer's patients [12].

The use of video media as one way to consult about health, based on current technological advances. Health consultation through video media has the advantage of providing good visualization and contributing to the process of knowledge absorption. Video is included in audio-visual media because it involves auditory and visual sensations. This audiovisual medium can produce better learning outcomes for tasks such as memory, recognition, remembering, and connecting facts and concepts [13]. The purpose of this study was to scientifically demonstrate the increasing awareness of osteoporosis among the elderly through audiovisual media in Calumbendo Bantur village in Yogyakarta. This type of research is quasi-experimental and is designed as a set of pre-tests and post-tests. Examples of 42 parents were created. Data analysis uses paired t sample tests to compare parents' knowledge before and after using questionnaires, to provide audiovisual health education. The results showed that the average knowledge before receiving health education was 65.60 and the average knowledge after education was 74.17, with a representation of 0.001 ($P < 0.05$). Finally, osteoporosis awareness among parents is increasing through health education through healthy visual media in Karangbendo Bantul Village in Yogyakarta [14].

Based on preliminary studies by conducting a review into the Elderly Social Services (PPSLU) Sudagaran Banyumas obtained the results of the number of elderly population of 90 people, with the division of 50 elderly with (Activity Daily Living) ADL independent and elderly with a total of 40 people in a special care room. Health problems that arise there are hypertension, ISPA, asthma, rheumatism and impaired cognitive function dementia. Impaired cognitive function of dementia in PPSLU Sudagaran reaches half of the population. After interviewing three patients, they found signs of impaired cognitive function such as confusion and time disorientation. The orphanage has made several efforts to improve the cognitive function of the elderly, including social guidance, skills guidance, spiritual guidance and individual guidance. Reminiscence therapy with video media has never been done.

From the background above and still at least the application of reminiscence therapy with video media, researchers are interested in researching the influence of reminiscence therapy with video media on the cognitive function of the elderly. Researchers hope that therapy through video media can facilitate health workers in the implementation of nursing.

2. RESEARCH METHOD

This study aims to find out the Effect of Reminiscence Therapy With Video Media On The Cognitive Function of Elderly In Elementary Social Services (PPSLU) Sudagaran. This research uses quantitative research, Quasi experiment design with the design of Pre Post Test One Group Design. The sample used in this study as many as 45 respondents, probability sampling technique by purposive sampling.

3. RESULT AND DISCUSSIONS

3.1. Univariat

Tabel 1. Distribution of age frequency and gender of the elderly in PPSLU Sudagaran.

Characteristics of Respondents	Frequency	Percentage	Mean
Age			
45-54 Year	1	2.2%	72,07
55-65 Year	12	26.7%	
66-74 Year	12	26.7%	
75-90 Year	20	44.4%	
Gender			
Men	17	37.8%	
Women	28	62.2%	
Total	45	100%	

Based on table 1. most respondents aged 75-90 years as many as 20 (44.4%), with the average age of respondents is 72.07 years. Based on table 4.1, most of the respondents' genders were women as many as 28 (62.2%) and men as many as 17 (37.8%).

Table 2. Distribution of cognitive function of the elderly before and after the intervention of reminiscence therapy with media video in PPSLU Sudagaran (N=45)

Variabel	Before the intervention	After intervention
Mean	15.56	18.24
Median	16.00	18.00
Std. Deviation	3.526	2.673
Minimum	10	13
Maximum	22	23

Based on table 2. it is known that before therapy the average cognitive function of the elderly amounted to 15.56 ± 3.526 with a minimum score of 10 and a maximum of 22. After the therapeutic intervention showed an increase in the average value of 18.24 ± 2.673 with a minimum value of 13 and a maximum of 23.

The results of the data normality test using the Kolmogorov-Smirnov one sample test on cognitive function variables (MMSE) before and after showed normal distributed data, $p = 0.200$. Statistical tests in this study next use the t paired test. The results of the analysis can be seen in table 3.

3.2 Bivariat

Table 3. Difference in average Mini Mental State Examination (MMSE) (elderly cognitive function) before and after the intervention of reminiscence therapy with media video in PPSLU Sudagaran (N=45)

	Difference		<i>t</i> (df)	<i>p</i>	<i>R</i>
	<i>M</i>	<i>SD</i>			
Cognitive fungsi before and after reminiscence therapy	-2,6889	1,5495	-11,641 (44)	<0,001	0,87

Results in table. 3 showed there was a significant difference in elderly cognitive function (MMSE score) between before and after reminiscence therapy with video media at Sudagaran's Aged Social Services (PPSLU) Home, $t(44) = -11,641$, $p < 0.001$, $r = 0.87$.

To find out the effect of reminiscence therapy on the cognitive function of the elderly then calculated the magnitude of the effect (effect size). Effect size calculation on t paired test using effect size formula for t paired test:

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

where, r is the effect size, t is the value t, in this study the value $t = -11,641$, df is the degree of freedom, $df = 44$. So that the effect size (effect) of reminiscence therapy on the cognitive function of the elderly, $r = 0.87$, indicates a large effect [15].

3.3 Characteristics of Respondents

The results showed that most respondents aged 75-90 years as much as 20 (44.4%), with the average age of respondents is 72.07 years. The aging process can lead to chronic health problems and cognitive and memory decline. Slow thought process, lack of proper memory strategy, lack of attention, mild impairment, long study time and other symptoms [8].

The results of this study are in accordance study on the picture of factors affecting cognitive status in the elderly in the working area of The Kubu II Bali Health Center 54.8 percent of respondents may have probable cognitive impairment) or cognitive impairment, while 73.1 percent are between the ages of 75 and 90 years [16]. Age factors greatly affect cognitive function in humans. In general, parents often find it difficult to remember new or old things because they have no incentive to remember things. The inability to remember this is one of them, influenced by age. Aging is an important risk factor for cognitive decline because the brain undergoes several changes. The formation of plaques around brain regions makes mitochondrial cells in the brain more vulnerable and affects the appearance of increased inflammation [17].

Information storage function changes only slightly in the brain due to changes in age and other factors. Older people tend to have less memory than younger people. As they age, brain cells become more tired when performing their functions, preventing them from working as well as they did when they were younger. Changes in brain function include the speed at which learning is taught, the speed at which new information is processed, and the speed at which actions are made to counter simple or complex stimuli. This decline in cognitive function varies from person to person [18].

Women are more likely than men to experience cognitive decline. This is due to the role of androgen levels in changes in cognitive function [19]. These gender factors affect cognitive function in older adults. Women tend to have a higher risk of cognitive impairment than men because menopausal women have less estrogen, which increases the risk of neurodegenerative diseases, as it is known to play an important role in maintaining brain function. In addition, women's life expectancy is higher than that of men, making the female elderly population more than the male elderly population [20].

Differences in the characteristics of the elderly in Sudagaran orphanages show a diversity of different cognitive problems. Age and gender factors are very influential in the development of cognitive function of the elderly. Many elderly people have experienced a deterioration in cognitive function with the age of 65 years and above. Female sex is very influential on this change in cognitive function, due to different hormones and psychological compared to men.

3.4 Cognitive function of the elderly before and after the administration of reminiscence therapy with video media

The results showed that before therapy the average cognitive function of the elderly amounted to $15.56 \pm 3,526$ with a minimum score of 10 and a maximum of 22. After the therapeutic intervention showed an increase in the average value of $18.24 \pm 2,673$ with a minimum value of 13 and a maximum of 23. Cognitive function is a kind of human psychological process, including attention perception, thought processes, knowledge and memory. Up to 75% of the brain is cognitive. One person's cognitive abilities are different from others, and the results show that the damage to subsystems that build memory and learning processes goes through varying degrees of decline. Memory is a complex process because it connects the past with the present [18]. Cognitive patterns consist of nine patterns: memory, language, practice, vision, attention and concentration, calculation, decision-making (execution), reasoning, and abstract thinking [21].

This function will decrease as a person ages, so a therapy is needed that is used to improve cognitive function, one of which is reminiscence therapy.

Reminiscence therapy is a way to reduce some health problems, one of which is cognitive dysfunction experienced by the elderly [8]. Reminiscence therapy has also been shown to be effective in improving life satisfaction, reducing and preventing depression, improving self-care, improving self-esteem, aiding transitions, crises, and losing parents. This therapy is used to improve cognitive function in older adults, which decreases as a result of the aging process. In Jakarta, the results were achieved in healthy parents in 2016 (n=83) and 2017 (n=33). Results obtained in 2016 still found that 41% of older adults (n=34) had normal cognitive function scores, compared with 67% (n=22) in cognitively recognized healthy older adults (n=33) a year later [22]. Parents who participate in memory therapy activities will have experience in improving their focus and attention skills on a particular topic. Older people will be led to focus on their success from childhood, adolescence to adulthood. The success of parents to focus on certain activities can help parents to carry out daily activities and allow parents to behave normally [23].

In accordance with the above exposure can be mentioned this therapy gives rise to a perception of the actual sensation experience and get the body's response even though the influence or consequences that arise are just a memory of a sensation. Once memory is stored in the nervous system, the memory will be part of the processing mechanism. Cognitive function increases after being given reminiscence therapy.

With a significant difference in outcomes, seniors have a task to adapt to the importance for individuals who have entered old age to achieve a sense of self-integrity by looking back on their lives and collecting feelings, goals and meanings of life.

3.5 The influence of memory therapy using video on the cognitive function of the elderly

The results of the study obtained a significant p value of $0.001 < 0.005$ and after calculating the amount of influence (effect size) obtained $r = 0.87$, this showed there was a large influence of reminiscence therapy with video media on the cognitive function of the elderly in the Sudagaran Aged Social Services (PPSLU) Home.

Originally introduced by Robert Butler in the 1960s, memory therapy emphasizes the importance of individuals entering their age to achieve a sense of self-integrity by reviewing their lives and gathering their feelings, goals and meanings. Reminiscence therapy is treatment performed in groups or individuals of the elderly by incentivizing them to remember past events and experiences, and then adapting to the problem through family and group friends [24].

Studies conducted showed that therapeutic encounters for the parents studied had beneficial effects on subjects' cognitive and memory, thus adding value [25]. Memory therapy is effective in improving cognitive function and depressive symptoms in Alzheimer's patients [26].

Providing reminiscence therapy using video can help parents better understand, in addition to the appearance of interesting videos, can increase parents' enthusiasm to follow this activity. The success of this therapy was influenced by additional factors used in the study. Through video media, parents can see and hear the material provided at the same time. This medium allows parents to better receive and track shipping materials. Audiovisual media provides an important foundation for the development of learning, so that the lessons learned are more interesting and easier to understand [27].

Video media has several advantages, namely the transmission of more interesting information, visual images can quickly transmit information, the presentation of visual information can encourage parents to concentrate, help develop abstract imagination and generate motivation [28].

A study that focused on "quasi-experimental studies of withdrawal programs that focused on autobiographical memory in seniors hospitalized with cognitive impairment." Reminiscence therapy has been shown to improve cognitive function, reduce anxiety and regulate depressive and behavioral symptoms [29].

Reminiscence therapy can help older people rethink and explain past experiences, thus facilitating individuals' adaptation to the aging process, and several studies have shown improvements in mental health as a result of these treatments. In addition, memory therapy has been studied to determine its effects on depression. At the Karolinska Institute in Stockholm, Sweden, the results showed that adaptation for the elderly was successfully overcome [30].

Reminiscence therapy is therapeutic in nature meaning it can heal because reminiscence therapy can affect new labor in the brain, allowing a person to remember something pleasurable so that it will be mentally healthy and release connections when experiencing a pleasurable event. The brain stores the same chemical patterns we enter when health events occur. To balance bad memories, it is important to remember a happy past, as it can evoke feelings of happiness and reduce parental pressure [31].

The brain captures all the stimuli that need to be understood (observed) through the work of nerve cells, neural circuits, and neurotransmitters [32]. Memory therapy causes impulses in memory. Memory is an important sensory impulse stored process for future use as a regulator for motor activity and thought

processing. Most of these stores are in the cerebral cortex. The cortex has more than 10 billion brain cells that connect to other cells in the brain region. Each brain cell is associated with 4,000 to 10,000 other brain cells and is associated with electrical impulses and chemicals called neurotransmitters [33].

The process of storing information is also a synapse function. In the future, each particular sensory signal through a series of synapses will be able to transmit the same signal. If synapses are often transmitted through sensory signals, the signals are so convenient that signals from the brain itself can run pulses through the same synaptic range, even without sensory input [34]

Reminiscence therapy with video media gives members the opportunity to recall the good times of the past, which gave rise to positive feelings and took place in a relaxed atmosphere. This therapy gives impulses to memory which is a process of storage of sensory impulses that are important for future use as a regulator of motor activity and thinking processing. Decreased function of organs due to aging, especially the brain can be maintained by giving reminiscence therapy periodically. After watching videos of pleasurable reminiscence therapy in addition to improved cognitive function, the elderly will also have a happy feeling from the pleasant memories they have gone through. Feeling happy will be a positive energy to build creativity during old age. This therapy can be included in any activities that are routinely carried out by the elderly in the home such as gymnastics and sports. So that later the elderly will have good physical, psychological and spiritual fitness in the face of old age.

4 CONCLUSION

Most respondents aged 75-90 years as many as 20 (44.4%), with the average age of respondents is 72.07 years. The gender of the respondents was mostly female as much as 28 (62.2%). Before therapy the average cognitive function of the elderly amounted to 15.56 ± 3.526 with a minimum score of 10 and a maximum of 22. After the therapeutic intervention showed an increase in the average value of 18.24 ± 2.673 with a minimum value of 13 and a maximum of 23. Paired sample t test results that show a significant value of 0.001, meaning a significant value of $< \alpha$ (0.05). Effect size (effect) of reminiscence therapy on the cognitive function of the elderly, $r = 0.87$, indicates a large effect (Cohen, 1988). So it can be concluded that there is a large influence of reminiscence therapy with video media on the cognitive function of the elderly at Panti Pelayanan Sosial Lanjut Usia (PPSLU) Sudagaran.

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