

THE EFFECT OF PUZZLE THERAPY ON IMPROVING COGNITIVE SKILLS IN ELDERLY PEOPLE WITH DEMENTIA

Rizkyza Cita Prestasi*, Riani Pradara Jati

Sekolah Tinggi Ilmu Kesehatan Kendal, Jl. Laut No 31, Kendal, Central Java 51311, Indonesia

*Rizkyza@stikeskendal.ac.id

ABSTRACT

Dementia is a common problem in the elderly, primarily due to aging and disease. Non-pharmacological interventions such as puzzle therapy are a safe and effective option for managing this condition. To evaluate the implementation of puzzle therapy in nursing care for elderly people with dementia at the Tedakoen nursing home in Okinawa (Japan). This study used a case study of a 92-year-old woman with dementia and cognitive decline. The puzzle therapy intervention was conducted for three consecutive days, with each session lasting 15-30 minutes. There was an improvement in cognitive function in the elderly with dementia. Playing puzzles can reduce the level of dementia in the elderly, so this therapy can be used as an alternative to improve memory in the elderly, as it stimulates the elderly's brain to function and remember. Puzzle therapy has an effect on the cognitive function of the elderly with dementia.

Keywords: dementia; elderly; gerontological nursing; non-pharmacological intervention; puzzle therapy

INTRODUCTION

Elderly is a phase of life that every human being experiences. Although increasing age is accompanied by a decline in organ function, older adults can still lead healthy lives. According to (Darmojo, 2016), one important aspect is changing habits.

Elderly individuals are defined as those who have aged and exhibit physical characteristics such as wrinkled skin, tooth loss, and graying hair. In social life, individuals are no longer able to fulfill their adult roles, such as men who are no longer engaged in productive economic activities, and women who are unable to fulfill household duties. The reactions of individuals entering retirement depend more on their personality traits. Changes that occur in old age lead to decreased bodily functions, including demotion, psychological, cognitive, and social changes in an individual's emotions, and various disorders such as dementia. (Sunaryo, 2022)

Elderly or elderly is the advanced stage of the growth and development process that begins from birth and continues, which is said to be elderly is a person who is over 65 years old. In the elderly, many changes occur, including physical, psychological changes and spiritual changes (Meiner, 2015).

Dementia is a syndrome that disrupts brain function caused by disease and is often long-term or progressively worrisome. Among the various types of dementia, the most common is Alzheimer's dementia, which includes problems with memory, comprehension, calculation, learning, language, and judgment. This syndrome is triggered by Alzheimer's disease, cerebrovascular problems, and other conditions that directly or indirectly affect the brain and is usually characterized by a decline in cognitive function. Often, early symptoms include loss of emotional control, changes in social behavior, or decreased motivation (Nisa, 2016).

According to national statistics from 2015, the median age of Japanese residents was 83 years. The population of 127 million, including 33.5 million elderly people, is 127 million. Okinawa has the

highest average life expectancy in the world at 81.2 years. This figure exceeds the average of 79.9 years in other Japanese prefectures. Furthermore, Okinawa has 400 residents aged over 100 years: 78 for men and 86 for women. Okinawa also has the highest proportion of residents aged over 100 years (5 per 10,000). The life expectancy of Okinawan females in 2015 was 87.44 years. Meanwhile, the life expectancy of Okinawan males was 80.27 years. The average life expectancy in Japan is 80.79 years for men and 87.05 years for women. When compared with other countries such as Switzerland, France, Sweden and the United States, Japan is at the top (Michel Poulain., 2024)

In old age, physical changes are characterized by physical decline, characterized by sagging skin, graying hair, diminishing teeth, increasingly blurred vision, and a less clear sense of sound. As people age, they experience several changes in their lives, such as physical, psychological, and cognitive changes, slow movement, and a disproportionate body shape (Ramli, 2020). Furthermore, psychological changes also occur in the elderly, with behavioral changes due to decreased cognitive function. Mental changes also occur, characterized by decreased cognitive function and depression (Ramli, 2020) In addition, psychological changes occur in the elderly, including behavioral changes due to cognitive decline. Mental changes also occur in the elderly, characterized by cognitive decline and depression. (Ramli, 2020).

Cognitive impairment can be treated with interventions such as puzzle games. Incorporating games into seniors' daily routines can improve cognitive function, making this activity essential. An effective non-pharmacological therapy for dementia is page therapy. Puzzle therapy involves dividing a picture into pieces to sharpen thinking skills, cultivate patience, and foster sharing skills. Puzzles are construction games in which players must assemble or match picture tiles to form meaningful patterns. Cognitive exercises such as puzzle therapy can improve cognitive function in older adults. These exercises stimulate the brain by providing the necessary stimulation to maintain and enhance remaining cognitive functions, which are used to process and interpret questions or information absorbed by the brain.

Furthermore, the brain works to store messages or information received. During old age, constant stimulation can cause brain nerve cells to gradually grow. This results in stronger networks between cells, preventing significant brain decline. Puzzle therapy works on the brain's reading (perception), understanding (comprehension), and analysis (analysis). Furthermore, puzzle therapy activates parts of the brain in the hippocampus and entorhinal cortex by producing the neurotransmitter acetylcholine, which can improve cognition. (Faturrohman, 2024)

The relationship between the influence of puzzle games to improve cognitive function in the elderly as found in research (Flora Sijabat, 2023) Playing puzzles can reduce dementia rates in the elderly, making this therapy a viable alternative for improving memory, as it stimulates the brain's ability to function and remember. Research conducted by (Nur Isnaini, 2020) The results of the study of the elderly at the Sudagaran Banyumas Elderly Social Service Center (PPSLU). The mean MMSE value before the puzzle therapy intervention was 22.83 in the experimental group and 22.33 and the mean MMSE value after the puzzle therapy intervention was 5 times was 28.11 in the experimental group and 22.22 in the control group that was not given puzzle therapy intervention (CPT). The results of the Mann Whitney test in the study. The Asymp.Sig value (Sig 2-tailed) was 0.000 <0.05, meaning that there was an effect of puzzle therapy on the cognitive function of the elderly at the Sudagaran Banyumas Elderly Social Service Center (PPSLU). This research is also

in line with research (Deesirene Rohani Simanulang., 2024) that puzzle therapy is effective in improving cognitive function in the elderly as evidenced by an increase in MMSE scores before and after the implementation of puzzle therapy which was carried out for 5 days with a duration of 15 minutes. Therefore, the author is interested in conducting research on the effect of puzzle therapy on improving cognitive levels in elderly people with dementia. The implementation of puzzle therapy at the Tedakoen nursing home not only focuses on the patient's physical aspects but also emphasizes comfort and a sense of calm, supporting a holistic approach to care.

METHOD

This study design used a qualitative descriptive approach, aiming to provide an in-depth description of nursing care for elderly people with dementia through the implementation of non-pharmacological interventions such as puzzle therapy. This study was chosen because it could provide a comprehensive overview of the patient's condition, the nursing process, and a concrete evaluation of the intervention's outcomes for a single individual. The intervention was conducted once daily for 3 days (15-30 minutes). Activities were conducted every day at 1:00 PM, when the patient was relaxed, ensuring a conducive and safe environment.

RESULT AND DISCUSSION

This chapter provides a comprehensive overview of the nursing care provided to Mrs. CC, a 92-year-old elderly person with dementia at the Tedakoen nursing home in Urasoe, Okinawa, Japan. The approach used aims to provide a comprehensive overview of the effectiveness of puzzle therapy as a non-pharmacological intervention in reducing cognitive decline in the elderly. Data analysis is structured based on the stages of the nursing process, including assessment, diagnosis, intervention, implementation, and evaluation.

Assesment

In the assessment phase, it was found that Mrs. CC said she was unable to remember the information that had been given, and said she was unable to remember behavior that had been done. The MMSE test results were 21. Vital signs examination showed blood pressure: 116/70 mmHg, pulse 68x/minute, temperature: 35.9°C and RR: 96%. This complaint indicates that the severity of cognitive decline increases with age, physical conditions will worsen which can cause problems with physical, psychological, cognitive functions, and even cause dementia. This fact is in accordance with the theory (Nisa, 2016) which states that dementia is characterized by a decline in cognitive function. Often, early symptoms include loss of emotional control, changes in social behavior, or decreased motivation. Thus, Mrs. CC's assessment demonstrates a congruence between clinical evidence and existing theory.

Nursing Diagnosis

Based on the results of the assessment, the author determined several nursing diagnoses for the patient. The primary diagnosis was memory impairment related to neuronal degeneration due to the aging process. In addition, a diagnosis of fall risk related to disorientation and decreased cognitive function, as well as impaired verbal communication related to impaired cognitive function, was also found. The determination of these diagnoses is in accordance with the Indonesian Nursing Diagnosis Standards (SDKI), which explains that dementia is often a problem in the elderly and can cause hereditary problems such as memory impairment, fall risk, and impaired verbal communication. Thus, the diagnosis established for Mrs. CC is in accordance with the theory and reflects the patient's actual condition.

Nursing Intervention

The next stage is nursing intervention. The author developed nursing interventions based on the Indonesian Nursing Intervention Standards (SIKI), focusing on dementia management and environmental safety management. One of the primary interventions chosen was puzzle therapy, an activity involving assembling separate pieces to form a unified picture or model.

Nursing Implementation

The effectiveness of puzzle therapy has been proven in research conducted by h (Nur Isnaini, 2020) which showed a significant difference in MMSE results after puzzle therapy ($0.000 < 0.05$). (Flora Sijabat, 2023) Research also supports the possibility that playing puzzles can reduce dementia rates in the elderly because puzzle therapy can stimulate the elderly's brain. Therefore, the puzzle therapy intervention applied to Mrs. CC aligns with previous research theory and is considered appropriate for addressing cognitive decline in the elderly with dementia.

Evaluation

The final stage is the nursing evaluation. After three days of intervention, Mrs. CC's cognitive decline showed significant improvement. The patient was able to recall newly presented information, with an MMSE score of 25 after the intervention, indicating a good cognitive range. Prior to the intervention, the patient's MMSE score was 21, indicating mild cognitive impairment. This reinforces the (Flora Sijabat, 2023) which proves that puzzle therapy can significantly reduce cognitive decline problems in elderly people with dementia.

Based on this description, it can be concluded that puzzle therapy is an effective, safe, simple, and appropriate non-pharmacological therapy for addressing cognitive decline in elderly people with dementia. Puzzle therapy can improve Memory in the elderly because puzzle therapy can stimulate the brain by providing adequate stimulation can help stimulate the brain so that the ability of cognitive function that still exists can be maintained and improved. The brain will actively receive, process, and interpret incoming images or information and store the information obtained. The facts found in Mrs. CC are in line with previous theories and research, so puzzle therapy is worthy of consideration as a routine nursing intervention in the elderly with cognitive decline in long-term health care facilities.

CONCLUSION

At the assessment stage, data was obtained that the patient was experiencing dementia, which was characterized by forgetfulness, not remembering newly conveyed information, not remembering previous events, and not remembering the names of those closest to him. At the nursing intervention stage, the action plan is based on SIKI with a focus on dementia management and environmental safety management. Puzzle therapy was selected as the primary intervention. During the nursing implementation phase, puzzle therapy was performed routinely once a day for three days, lasting 15-30 minutes. Results showed changes in the patient's ability to remember newly presented information. During the nursing evaluation phase, the cognitive decline gradually resolved, as indicated by an increase in the MMSE score to 25, indicating that the patient's cognitive aspects were in good condition. This demonstrates that puzzle therapy is effective in managing cognitive decline in the elderly. Thus, the specific objectives of the case study, including assessment, diagnosis determination, intervention formulation, implementation and evaluation, have been achieved well.

REFERENCES

- Chairina, N. &. (2019). Selamatkan otak kenali gangguan demensia (pikun) menjelang lansia. Universitas malikussaleh, 1-8.
- Darmojo, R. &. (2016). Ilmu Kesehatan Usia Lanjut. Jakarta: FK UI Press.
- Deesirene Rohani Simanulang., L. P. (2024). Penerapan Terapi puzzle untuk meningkatkan fungsi kognitif pada lansia di panti Werdha Palembang. Jurnal Kesehatan Umum, 255-265.
- Dwisetyo, B. (2024). Strategi holistik peningkatan kualitas hidup lansia. Jawa Tengah: Amerta media.
- Faturrohman, R. e. (2024). asuhan keperawatan gerontik pada pasien demensia dengan masalah keperawatan gangguan memori menggunakan terapi puzzle. jurnal penelitian keperawatan, 10(1), 9 - 17.
- Flora Sijabat, R. S. (2023). Bermain puzzle dalam meningkatkan fungsi kognitif lansia. abdimas mutiara, 56-59.
- Gandana, Y. &. (2019). Alat permainan edukatif anak usia dini. Jawa Barat: Ksatria Siliwangi.
- Muntasir, D. (2022). Ilmu biomedik dasar. Indonesia: Rizmedia pustaka Indonesia.
- Nisa, K. &. (2016). Faktor risiko demensia Alzheimer. jurnal kedokteran universitas lampung, 86-90.
- Nur Isnaini, N. K. (2020). Gambaran fungsi kognitif pada lansia dengan pemberian terapi puzzle. Human care, 1060-1066.
- Papalia, B. 1. (2014). Human development. Amerika: McGraw Hill Education.
- PPNI, T. P. (2016). Standar Diagnosis Keperawatan Indonesia. Jakarta: Dewan pengurus pusat persatuan perawat nasional Indonesia.
- PPNI, T. p. (2018). Standar Intervensi Keperawatan Indonesia. Jakarta: Dewan pengurus pusat persatuan perawat nasional Indonesia.
- PPNI, T. p. (2022). Standar Luaran Keperawatan Indonesia. Jakarta: Dewan pengurus pusat persatuan perawat nasional Indonesia.
- Ramli, R. &. (2020). Faktor yang mempengaruhi fungsi kognitif pada lansia. Window of Nursing Journal, 23-32.
- Sunaryo, D. (2022). Asuhan keperawatan gerontik. Yogyakarta: Andi.

