

Nostalgic card games as a dementia prevention therapy in the elderly

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ABSTRACT

PAKARNOS is a cognitive training effort to prevent dementia in the elderly by enhancing their memory through storytelling based on images. This nostalgia card game utilizes reminiscence therapy, encouraging elderly individuals to recall past events, relax their minds, and alter their response to dementia. Dementia is a clinical syndrome characterized by a decline in intellectual function, memory impairment, and cognitive deterioration, which can disrupt daily life and affect the elderly's bio-psycho-social-spiritual well-being. PAKARNOS involves showing old pictures to elderly participants, with a facilitator providing keywords to stimulate memory recall and storytelling. This method helps sharpen cognitive function and prevent dementia. This study used a case study method with nine elderly respondents at the Jolotundho guest house, Tresna Werdha Yogyakarta Social Service Center. The elderly actively engaged in the game, expressed happiness, and enthusiastically shared memories associated with the objects in the images. They recalled past experiences and demonstrated an improved ability to remember and describe objects, indicating enhanced cognitive function. The results suggest that PAKARNOS is an effective educational and recreational tool to improve memory, reduce dementia risk, and provide meaningful activities for the elderly.

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INTRODUCTION

PAKARNOS is an initiative designed to prevent dementia by stimulating cognitive abilities in elderly individuals. Engaging in PAKARNOS allows older adults to enhance their memory skills by narrating stories based on images. This occurs through reminiscence therapy, which encourages seniors to recall past experiences, promoting mental relaxation and altering their response to illnesses (Safitri, 2024). As a result, this method provides cognitive reinforcement while also improving emotional well-being (Rechika Amelia Eka Putri, 2024).

Old age is the final phase of life, characterized by a gradual decline in physical and functional capacities. Various perspectives suggest that aging begins at different stages, including 60, 65, or even 70 years (Ashworth et al., 2016). Physiological deterioration, such as reduced mobility, weakened bones due to degenerative conditions, and skin aging, including wrinkles, becomes apparent (Orizani, 2024). Additionally, psychological challenges such as loneliness, helplessness, and lack of companionship significantly impact the well-being of elderly individuals (Damayanti et al., 2023). The World Health Organization (WHO) classifies the elderly into three categories: early elderly (60-74 years), middle elderly (75-90 years), and very elderly (above 90 years). According to WHO projections, the global elderly population is expected to surpass 629 million in 2025 and reach approximately 2 billion by 2050. In Indonesia, the elderly population stood at 24.45 million in 2015 and is projected to rise to 80 million by 2050, including 35.8 million individuals aged 60-69, 21.4 million aged 70-79, and another 21.4 million aged 80 or older (Prawijaya et al., 2024).

The increasing percentage of the elderly population, along with longer life expectancy, has led to a surge in age-related health issues, including cognitive decline (Samsuni et al., 2024). The brain, as the most complex organ governing the body's systems and cognitive functions, is particularly vulnerable to aging (Kjelvik et al., 2023). With advancing age, organ functions deteriorate either naturally or due to underlying conditions (Rechika Amelia Eka Putri1, 2024). One of the most prevalent cognitive impairments among older adults is memory decline, which can manifest as dementia (Indarwati et al., 2019). Dementia is a clinical syndrome characterized by the progressive loss of intellectual and memory functions to the extent that it disrupts daily life (Li et al., 2020). In elderly individuals, dementia results in a gradual decline in cognitive abilities, including memory, judgment, concentration, and personality, ultimately impacting their bio-psycho-social-spiritual well-being (Safitri, 2024). Dementia prevalence rises significantly with age, doubling every five years after the age of 65. Among individuals aged 60 and above, the global prevalence of dementia is estimated at 5.6%. With increasing life expectancy, the number of dementia cases is projected to rise correspondingly. Currently, approximately 35.6 million individuals worldwide suffer from dementia, with 58% residing in low- and middle-income countries (Safitri et al., 2023).

Cognitive function decline can be mitigated through both pharmacological and non-pharmacological interventions. Pharmacological treatments involve the use of medications containing chemical compounds, while non-pharmacological approaches include physical, mental, and social activities. One effective non-pharmacological strategy is group activity therapy using nostalgic card games, which fosters cognitive engagement and social interaction among elderly individuals (J. Wang et al., 2022).

RESEARCH METHOD

The Nostalgic Card Game (PAKARNOS) is conducted by presenting elderly individuals with images from their past, prompting them with keywords to help them recall and name the objects depicted. This process naturally encourages them to share memories associated with the objects, thereby stimulating cognitive function and potentially reducing the risk of dementia. This scientific study employs a case study methodology, involving nine elderly participants residing at Wisma Jolotundho, Balai Pelayanan Sosial Tresna Werdha Yogyakarta.

This initiative follows the Planning, Implementation, and Evaluation (PIE) approach. Initially, the research team conducted interviews with elderly residents of Wisma Jolotundho to determine their specific needs. Findings indicated that an engaging educational intervention was necessary to aid in dementia prevention. Based on these needs, an intervention was designed in alignment with evidence-based practices. A study by (Ayuni et al., 2022) demonstrated that nostalgic card games such as PAKARNOS effectively optimize cognitive function in dementia prevention among elderly populations. The team then developed an engaging educational tool in

the form of the card game. Following a thorough literature review – analyzing the strengths and limitations of various relevant studies the intervention was carefully structured. Implementation proceeded after securing approvals from field supervisors, academic advisors, and all participating elderly residents (Safitri et al., 2024).

The intervention phase involved structured educational sessions with the elderly residents. The team conducted demonstrations and guided practice using PAKARNOS as an interactive approach to dementia prevention. The study included a single 30-minute session divided into three stages (Liu, 2023). The first stage provided an overview of dementia, covering its definition, causes, complications, prevention strategies, and management. The second stage focused on instructing participants on how to use PAKARNOS, while the third stage involved hands-on practice and reinforcement of the game's mechanics with participant engagement. The final phase consisted of evaluating the effectiveness of PAKARNOS as an educational tool for cognitive enhancement. Assessment was conducted using the Mini-Mental State Examination (MMSE) questionnaire following the gaming session to measure cognitive function improvements.

RESULTS AND DISCUSSIONS

Table 1. Pretest cognitive function (MMSE)

No.	Name	Quantity	Description
1.	Tn. S	29	Normal
2.	Tn. H	11	Definite cognitive impairment
3.	Tn. S	30	Normal
4.	Tn. G	20	Possible cognitive impairment
5.	Tn. P	23	Possible cognitive impairment
6.	Tn. B	22	Possible cognitive impairment
7.	Tn. K	10	Definite cognitive impairment
8.	Tn. B	23	Possible cognitive impairment
9.	Tn. B	15	Definite cognitive impairment

Source: Research Study, 2025

The pretest results indicate that 4 elderly individuals exhibited probable cognitive impairment, 3 had definite cognitive impairment, and only 2 had normal cognitive function.

Table 2. Posttest cognitive function (MMSE)

No.	Name	Amount	Description
1.	Tn. S	29	Normal
2.	Tn. H	20	Probable cognitive impairment
3.	Tn. S	30	Normal
4.	Tn. G	24	Probable cognitive impairment
5.	Tn. P	24	Probable cognitive impairment
6.	Tn. B	22	Probable cognitive impairment
7.	Tn. K	10	Definite cognitive impairment
8.	Tn. B	23	Probable cognitive impairment
9.	Tn. B	20	Probable cognitive impairment

Source: Research Study, 2025

The posttest results show an improvement in cognitive function, with 6 elderly individuals categorized as having probable cognitive impairment, 1 individual still exhibiting definite cognitive impairment, and 2 individuals maintaining normal cognitive function.

The intervention phase involved structured educational sessions with the elderly residents. The team conducted demonstrations and guided practice using PAKARNOS as an interactive approach to dementia prevention (Cohen et al., 2009). The study included a single 30-minute session divided into three stages. The first stage provided an overview of dementia, covering its definition, causes, complications, prevention strategies, and management. The second stage

focused on instructing participants on how to use PAKARNOS, while the third stage involved hands-on practice and reinforcement of the game's mechanics with participant engagement. The final phase consisted of evaluating the effectiveness of PAKARNOS as an educational tool for cognitive enhancement. Assessment was conducted using the Mini-Mental State Examination (MMSE) questionnaire following the gaming session to measure cognitive function improvements.



Figure 1. Activity documentation



Figure 2. Nostalgia card (PAKARNOS)

Figure 1 is the implementation of Group Activity Therapy activities for the elderly living in the Jolotundho guesthouse, educating and playing PAKARNOS. Figure 2 is a clip of the Nostalgia Card Game (PAKARNOS) media. Group activities were carried out at the Jolotundho guesthouse, based on an initial survey showing the need for education and prevention of dementia in the elderly at the Jolotundho guesthouse.

Following the implementation of the Nostalgic Card Game (PAKARNOS) for elderly residents at Wisma Jolotundho, a post-test using the Mini-Mental State Examination (MMSE) instrument revealed that six participants exhibited potential cognitive impairment, one participant experienced significant cognitive decline, and two participants demonstrated normal cognitive function. The findings from this therapeutic group activity suggest a noticeable enhancement in cognitive abilities among the elderly participants at Wisma Jolotundho BPSTW Yogyakarta.

Throughout the engagement with the Nostalgic Card Game (PAKARNOS), the elderly actively listened to educational explanations and attentively followed instructions. Participants expressed enjoyment, highlighting that the game not only provided entertainment but also stimulated recollection of past possessions and experiences. When prompted to narrate stories

related to the objects depicted on the cards, the elderly enthusiastically shared personal memories and explained the historical functionality of those objects (Ma et al., 2024). This interaction indicates that PAKARNOS serves as an effective cognitive exercise, fostering memory recall and mental stimulation (Rosdiana et al., 2023).

Engaging in PAKARNOS represents a preventive measure against dementia by reinforcing cognitive faculties through narrative recollection associated with visual stimuli (Huang et al., 2024). This is supported by reminiscence therapy principles, wherein participants are encouraged to recall past experiences, leading to relaxation and an altered perception of their existing health conditions (C. M. Wang et al., 2020). The aging process is frequently accompanied by cognitive decline and memory deterioration, often exacerbated by chronic health issues. Early indicators of mild cognitive impairment include delayed thought processing, ineffective memory strategies, concentration difficulties, susceptibility to distractions, and prolonged learning times (Dwi et al., 2024). While such symptoms are common in aging individuals, their progression may escalate into more severe cognitive disorders, significantly impacting daily life (Orizani, 2024).

Upon receiving educational intervention and engaging in the PAKARNOS game, two participants demonstrated substantial cognitive improvements (Niotis et al., 2022). This suggests that targeted cognitive activities contribute to memory enhancement and psychological well-being. Through reminiscing about past events and mentally reconstructing previous experiences, participants displayed increased acceptance of age-related memory decline and their existing health conditions (Chang et al., 2022). The intervention facilitated behavioral adaptation, promoting effective memory management strategies. The application of reminiscence therapy through PAKARNOS enables elderly individuals to retrieve and articulate past events, reinforcing their cognitive resilience.

The success of reminiscence therapy via PAKARNOS in managing memory retention among elderly individuals with dementia is closely linked to their ability to recall past experiences. Participants' commitment to the therapy played a pivotal role in achieving positive outcomes. The established trust between the participants and facilitators fostered a sense of comfort, enhancing the efficacy of the intervention. This sense of ease significantly contributed to improved memory function among participants (Yahya et al., 2019). Reminiscence therapy yields numerous benefits for individuals with dementia, particularly in improving their quality of life, cognitive abilities, communication skills, and emotional well-being. Regular implementation of this therapy by caregivers within residential settings can further support the holistic well-being of elderly individuals (ChePa et al., 2020).

CONCLUSION

The Nostalgia Card Play and Education Program (PAKARNOS) has demonstrated efficacy in enhancing cognitive function among elderly individuals by facilitating recollection of past experiences, potentially mitigating the prevalence of dementia among residents of Wisma Jolotundho. Engaging in PAKARNOS serves as a viable alternative for leisure activities among seniors and contributes to dementia prevention strategies. Furthermore, group therapy utilizing PAKARNOS fosters cognitive stimulation by enabling elderly participants to retrieve and narrate past memories through visual cues.

To further enhance its impact, future research should explore the development of technology-based interventions, such as digital applications incorporating reminiscence therapy features. A digital adaptation of PAKARNOS could expand accessibility and provide a more personalized experience for elderly users, allowing them to engage in cognitive exercises remotely and at their convenience. In addition, health workers and caregivers can integrate nostalgic card game therapy into elderly care routines by incorporating structured storytelling sessions using PAKARNOS. Training programs should be provided to equip caregivers with the necessary skills

to facilitate meaningful engagement through this method, ensuring that elderly individuals receive sustained cognitive stimulation in both institutional and home-based care settings.

To support this initiative, BPSTW Yogyakarta is encouraged to provide facilities that promote storytelling sessions among seniors, ensuring continuous cognitive engagement and reducing the risk of cognitive decline.

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