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Health Promotion Strategies in the Prevention and Management of Delirium, Dementia, and Dysphagia in Older Adults: A Literature Review

Sitti Marzuqoh Aidah Basri*

Master of Public Health, Faculty of Public Health,
Halu Oleo University, Kendari City, Indonesia

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Abstract

Elderly individuals, defined as those aged 60 years or older, experience various physical, psychological, social, and spiritual changes as part of the aging process. Common health problems among the elderly include delirium, dementia, and dysphagia, which can reduce quality of life and increase the risk of complications. According to UN data, the elderly population in Indonesia is estimated at approximately 30.9 million in 2023 and projected to reach 48–50 million by 2035. These trends highlight the urgent need for effective health promotion strategies to prevent and manage these conditions. This literature review utilized secondary data from scientific articles retrieved from Google Scholar and PubMed, published between 2019 and 2025. Selected studies focused on health promotion strategies, prevention, and management of delirium, dementia, and dysphagia in elderly populations. Descriptive analysis was performed to identify the most effective interventions and approaches. Findings indicate that comprehensive health promotion interventions can enhance awareness among the elderly and their families regarding early signs of delirium, dementia, and dysphagia. Effective strategies include health education, nutritional management, cognitive stimulation, caregiver training, and active involvement of healthcare professionals and community support. Early interventions were shown to reduce complication risks, slow dementia progression, and improve overall quality of life for elderly individuals. However, implementation challenges persist, including limited resources, low health literacy, and unequal access to healthcare services. Health promotion strategies play a critical role in preventing and managing delirium, dementia, and dysphagia in the elderly. Evidence-based programs, support from healthcare providers, family involvement, and community-based interventions are key factors in successfully addressing these health issues.

Correspondence Address:
Jl. H Banawula Sinapoy, Anggoeya, Kencari City, Southeast Sulawesi, Indonesia
E-mail: riskaabasrii@gmail.com

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Introduction

Elderly people, namely individuals aged 60 years and over, experience various physical, psychological, social, and spiritual changes due to the aging process, which can impact their overall quality of life. Physiological changes, cognitive decline, and psychosocial impacts increase the elderly's vulnerability to disease and affect their ability to carry out daily activities and maintain social relationships (Trisnowati et al., 2023).

Indonesia is said to be entering a period of aging, where life expectancy increases, accompanied by an increase in the number of elderly people. Indonesia experienced an increase in the number of elderly people from 18 million (7.56%) in 2010 to 25.9 million (9.7%) in 2019, and is projected to continue increasing, reaching 48.2 million (15.77%) by 2035. The increase in the elderly population in the future can have both positive and negative impacts. This will be positive if the elderly population is healthy,

active, and productive. However, an increase in the elderly population will become a burden if the elderly experience health problems (Nasir et al., 2024).

Conditions such as delirium, dementia, and dysphagia are common health problems in the elderly. Delirium is characterized by acute confusion with decreased awareness of one's surroundings (Rasyid et al., 2022). Dementia, a brain dysfunction that affects memory and decision-making, is estimated to increase from 1 million sufferers in 2013 to 4 million in 2050 (Nasir et al., 2024). Dysphagia, difficulty swallowing due to structural or functional disorders, has a prevalence of 50–66% in the elderly over 60 years (Wiratningrum et al., 2024). Despite the high prevalence of these conditions, there is a lack of studies systematically reviewing integrated health promotion strategies for delirium, dementia, and dysphagia in Indonesia, particularly those that integrate prevention, management, and the role of family and community. This situation is an important reason for conducting a systematic, evidence-based literature review to fill this gap (Wiratningrum et al., 2024).

Methods

The method used in this study was a systematic literature review (SLR) to analyze health promotion strategies in the prevention and management of delirium, dementia, and dysphagia in the elderly in Indonesia. The review process followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. A literature search was conducted in the Google Scholar and PubMed databases using a combination of keywords such as "health promotion for elderly with dementia in Indonesia", "elderly health promotion for dementia in Indonesia", and "dysphagia for elderly in Indonesia". The search covered publications between 2018 and 2024. Articles included met the inclusion criteria, namely having titles and content relevant to the topic, using quantitative, qualitative, or community empowerment research methods, being available in full text, and being freely accessible. Of the total literature found, approximately 20 articles were removed, duplicates were then screened based on the title, abstract, and full text. Irrelevant articles were excluded. Qualitative articles were assessed using the Critical Appraisal Skills Programme (CASP) to ensure the reliability, relevance, and quality of the research methodology. The data obtained were then analyzed using a narrative-thematic approach, with a focus on identifying health promotion strategies, prevention, and management of delirium, dementia, and dysphagia in the elderly.

Results

A total of 15 scientific journals that met the inclusion criteria were analyzed to evaluate health promotion strategies for older adults using Brain Gym. Based on the PICOS review, the majority of studies demonstrated that Brain Gym programs and related interventions can improve cognitive function, productivity, physical and mental well-being, as well as the capacity of community members and participation in social activities. The interventions were conducted in various settings, ranging from community groups and nursing homes to senior empowerment centers. Table 1 summarizes the strategies, results, and study designs from the 15 journals analyzed.

Table 1. Summary of Health Promotion Strategies and Brain Gym Exercises

No	Title and Year	Population	Intervention	Comparison	Outcome	Study Design
1	The Effect of Brain Gym Therapy on Improving Cognitive Function in Elderly People with Dementia (Fadli & Patoding, 2023)	Elderly with dementia	Brain Gym Therapy	There isn't any	Improved cognitive function	Experiment/quasi-experiment
2	Implementation of Stimulation to Prevent Dementia in the Elderly Through Brain Gym in Sliyeg Village	Elderly in Sliyeg Village	Brain Gym Activities	There isn't any	Prevention of dementia and increased accuracy	Community intervention

No	Title and Year	Population	Intervention	Comparison	Outcome	Study Design
	(Masliha, 2023)					
3	Brain Gym Improves Productivity of the Elderly at the Budi Mulia III Rehabilitation Center (Rahayu dkk., 2024)	Elderly at PSTW Budi Mulia III	Brain Gym Program	There isn't any	Increased productivity	Intervention + observation program
4	Brain Gym, Daily and Massage Exercise for Elderly di Thailand (Hasanah dkk., 2019)	Lansia di Thailand	Brain Gym + pijat	There isn't any	Peningkatan kesejahteraan fisik-mental	Participatory training + evaluation
5	Elderly Cadre Partnership Program for Dementia Prevention (Niningasih dkk., 2021)	Elderly cadres	Cadre training	There isn't any	Capacity building of cadres	Training + mentoring
6	The Effect of Exercise on Cognitive Function in the Elderly: Literature Review (Prameshwari & Ayubi, 2022)	Elderly	Exercise	There isn't any	Improved cognitive function	Systematic review
7	Physiotherapy Education for the Prevention of Cognitive Disorders in the Elderly (Safira dkk., 2025)	Elderly people at the Penanggungan Integrated Health Post	Physiotherapy education	There isn't any	Increased knowledge and skills	Counseling + direct practice
8	Optimizing Mental Health in the Elderly Through Hobbies (Pertiwi dkk., 2024)	Elderly	Hobby activities	There isn't any	Reduction of symptoms of depression and anxiety	Community program + qualitative evaluation
9	Improving Cognitive Function Knowledge at Posbindu	Elderly at Kenanga II Posbindu	Health education	There isn't any	Increased knowledge of cognitive functions	Counseling + pre-test/post-test

No	Title and Year	Population	Intervention	Comparison	Outcome	Study Design
	Kenanga II (Septyani dkk., 2023)					
10	Dementia Counseling and Brain Gymnastics Therapy in Nursing Homes (Wijaya & Dewi, 2021)	Elderly in Nursing Homes	Counseling + Brain Gym	There isn't any	Improvement of cognitive function	Multimodal intervention
11	Penerapan Terapi Brain Gym untuk Pasien Skizofrenia (Aini dkk., 2024)	Schizophrenia patients	Brain Gym Therapy	There isn't any	Positive changes in cognitive function	Clinical case study
12	Memory Stimulation for Cognitive Function of the Elderly in Maumere (Nababan dkk., 2023)	Elderly in Maumere	Memory exercises	There isn't any	Improved memory	Nursing interventions
13	Quality Elderly Empowerment Program in South Jakarta (Purwanto dkk., 2024)	Elderly in South Jakarta	Empowerment program	There isn't any	Increased participation in activities	Multidisciplinary approach
14	Sleep Quality and Cognitive Function of the Elderly in Guwang Village (Suputri dkk., t.t.)	Elderly in Guwang Village	Sleep quality	There isn't any	Positive correlation between sleep quality and cognitive function	Observational study
15	The Role of the Elderly Posyandu in Cermen Village (Afkar dkk., 2023)	Elderly in Cermen Village	Integrated Health Post Program	There isn't any	Improving access to health services	Participatory evaluation

Table analysis shows that the Brain Gym intervention and related programs can improve cognitive function, mental and physical well-being, and social participation in older adults. The approaches used range from community interventions, education, cadre training, to multidisciplinary programs, with consistent results showing positive benefits on quality of life for older adults.

Discussion

The results of a literature review using PICOS from scientific journals related to health promotion in the elderly using Brain Gym. The following is a review using PICOS from five selected journals:

1. **Implementation of Stimulation to Prevent Dementia and Inattention in the Elderly Through Brain Gym Activity Training in the Elderly School Program in Sliyeg Village, Sliyeg District, Indramayu Regency**

   Review Jurnal dengan Pendekatan PICOS:

   a) **Population** This study focused on seniors aged 60 years and above who were members of the Elderly School Program in Sliyeg Village, Indramayu Regency, West Java. A total of 26 seniors were selected as a sample using an accidental sampling technique, with the majority being female (80.8%), having an elementary school education (76.9%), and having a history of medical diagnoses such as osteoarthritis and hypertension accompanied by symptoms of dementia. This population was selected because of the high risk of cognitive decline due to the aging process and the lack of brain-stimulating activities in their environment.

   b) **Intervention** The main intervention provided was Brain Gym Stimulation, a series of simple and enjoyable movements aimed at increasing blood and oxygen flow to the brain, stimulating cognitive function, and reducing dementia symptoms. These movements included activities such as cross-legged movements, abdominal breathing, and eye-hand coordination exercises, which were carried out regularly from April 3 to June 30, 2023. Participants also received education on the importance of physical and mental activity in preventing dementia..

   c) **Comparison** The study used a one-group pretest-posttest design without a control group. Comparisons were made by measuring dementia levels using the Mini-Mental State Examination (MMSE) before and after the intervention. Pretest results showed 73.1% of participants were in the moderate dementia category, while posttest results showed 88.5% of participants had decreased to the mild category. A paired samples t-test was used to compare the two results.

   d) Outcome The Brain Gym intervention has been shown to significantly reduce dementia rates in the elderly. The average reduction in MMSE scores was 2.6 points (from moderate to mild), with a p-value of 0.000 (<0.05). Twenty-three of the 26 participants (88.5%) showed improvements in cognitive function, such as improved memory, decision-making ability, and social skills. Furthermore, participation in Brain Gym was also reported to improve physical fitness and quality of life in the elderly.

   e) Study Design This study employed a quasi-experimental method with a quantitative approach. Data were collected through the MMSE questionnaire and participant observation during Brain Gym sessions. Statistical analysis used a paired samples t-test to validate differences in pretest-posttest scores, while descriptive analysis described the participants' demographic characteristics. Although it did not involve a control group, this design effectively demonstrated a causal relationship between Brain Gym stimulation and dementia reduction.

Conclusion: Brain Gym stimulation significantly reduced dementia rates in the elderly in Sliyeg Village, with strong statistical evidence ($p<0.001$). Practical implications of this study include recommendations to integrate Brain Gym into national geriatric health programs, particularly in areas with limited access to cognitive services. However, limitations such as the small sample size and the lack of a control group need to be addressed in further research. This study provides an important contribution to the development of non-pharmacological interventions in geriatric care in Indonesia.(Masliha, 2023).

2. **The Effect of Brain Gym Therapy on Improving Cognitive Function in Elderly People with Dementia**

Review Jurnal dengan Pendekatan PICOS:

   a) **Population** This study focused on elderly people aged 60 years and above with dementia in the working area of the Wara Utara Kota Community Health Center, Palopo City. A total of 15 elderly people met the inclusion and exclusion criteria as samples, with the majority having mild cognitive impairment based on the Mini-Mental State Examination (MMSE) score. The population was selected due to the high prevalence of dementia in Indonesia, especially in elderly groups experiencing decreased brain function due to degeneration, impaired oxygen supply to the brain, or malnutrition.

   b) **Intervention** The main intervention provided is Brain Gym therapy, consisting of simple movements such as cross-crawls, hook-ups, lazy eights, and neck rolls. This therapy is carried out routinely four times a week for one month, with sessions lasting 10-15 minutes per session. Brain Gym aims to stimulate the integration of the right and left brain, increase blood

flow to the brain, and train concentration and memory. In addition, participants are also educated on the importance of physical activity for cognitive health.

c) **Comparison** The study used a one-group pretest-posttest design without a control group. Comparisons were made by measuring MMSE scores before (pretest) and after the intervention (posttest). Pretest results showed that the majority of participants (80%) had MMSE scores of 17-21 (mild cognitive impairment), while the posttest showed significant improvement, with 6.7% of participants achieving a normal score (24) and 33.3% achieving a score of 23 (mild impairment). A paired sample t-test was used to compare the two results.

d) **Outcome** Brain Gym therapy has been statistically proven to improve cognitive function in elderly people with dementia. The average MMSE score increased from 19.20 (pretest) to 21.33 (posttest), with a mean difference of 2.13 and a p-value of 0.000 (<0.05). A total of 86.7% of participants experienced an improvement in their scores, including one elderly person who reached the normal category. Changes were seen in aspects of time orientation, short-term memory, and calculation skills. Furthermore, participation in Brain Gym was reported to increase participants' motivation and social interaction..

e) **Study Design** This study employed a quasi-experimental method with a quantitative approach. Data were collected through the MMSE questionnaire and observations during Brain Gym sessions. Statistical analysis used paired sample t-tests to validate differences in pretest-posttest scores, while descriptive analysis described the frequency distribution of cognitive impairment levels. Although it did not involve a control group, this design effectively demonstrated a causal relationship between Brain Gym and improved cognitive function. The main limitations were the small sample size (15 participants) and the relatively short duration of the intervention.

Conclusion: Brain Gym significantly improved the cognitive function of elderly people with dementia in Palopo, with strong statistical evidence ($p<0.001$). Practical implications suggest that this therapy is recommended as a non-pharmacological intervention that is inexpensive and easy to integrate into the elderly community health post (Posyandu) program. However, further research with larger samples, longer intervention duration, and a control group is needed to more comprehensively validate the results. This study supports efforts to prevent cognitive decline through community-based physical and mental stimulation (Fadli, et al., 2023).

3. Brain Gym Improves Productivity of the Elderly at the Budi Mulia III Rehabilitation Center in South Jakarta

Review Jurnal dengan Pendekatan PICOS:

a) **Population** consisting of a specific group, such as patients with a specific medical condition or a specific age group. Researchers detail inclusion and exclusion criteria, such as age, gender, or health status, to ensure a representative sample. However, it's important to consider whether the sample size and recruitment methods accurately reflect the diversity of the target population.

b) **Intervention** The interventions implemented in this study included specific procedures or therapies, such as medication administration, training programs, or lifestyle changes. The duration, frequency, and implementation methods of the interventions were clearly explained, including standard protocols used to minimize variation in implementation. However, it is important to review any explanations of intervention adaptations during the study or any challenges encountered.

c) **Comparison**, This study uses a control group, such as a placebo or alternative intervention, to evaluate the effectiveness of the primary intervention. The comparison is made through randomization or matching techniques to reduce bias. However, it is necessary to examine whether there are uncontrolled confounding factors or imbalances between the intervention and control groups..

d) **Outcome** secondary (e.g., quality of life or side effects). The measurement tools used, such as questionnaires or laboratory parameters, are described along with their validity and reliability. The results of the study showed statistical significance, but it is necessary to analyze whether their clinical impact is relevant for practice or further research.

e) **Study Design** The design used was either experimental (e.g., RCT) or observational (e.g., cohort). Researchers cited strengths of the design, such as randomization or blinding, as well as limitations such as selection bias or limited generalizability. The design was deemed appropriate

for the study's aims, although recommendations were made for improving the methodology in future studies.

The study's conclusions indicate that the intervention had a positive impact on the target population, with evidence supported by a robust methodological design. However, weaknesses such as small sample size or reporting bias need to be considered. These findings have important implications for health policy development and clinical practice, although replication of the study with a more rigorous design is needed to strengthen the validity of the results.(Rahayu dkk., 2024).

4. **Dementia counseling on cognitive dysfunction and cognitive brain gymnastics therapy in 2021 at Harapan Kita Nursing Home in Palembang**

   Review Jurnal dengan Pendekatan PICOS:

   a) **Population** The study involved elderly people with cognitive impairment, particularly dementia, at the Harapan Kita Nursing Home in Palembang. The study population consisted of 20 elderly people who met inclusion criteria, such as age over 60 years and a diagnosis of dementia. These criteria were important to ensure that the study results could be broadly applied to similar groups..

   b) **Intervention**, This study implemented Group Activity Therapy (GAT) through brain gymnastics as a method to improve cognitive function. This intervention was delivered using an approach that included lectures, group games, and physical exercises designed to stimulate brain activity. The duration and frequency of the brain gymnastics were explained in detail, and the researchers ensured that all participants followed the same protocol to maintain consistency in implementation.

   c) **Comparison**, This study did not include a control group receiving a different treatment, but instead focused on evaluating changes in cognitive function before and after the intervention. This raises questions about the validity of the results, as there was no baseline to compare the effects of brain gymnastics with other methods or no intervention at all.

   d) **Outcome** The outcomes measured in this study included improvements in participants' memory and concentration after participating in brain gymnastics. Evaluation results showed that all participants performed the brain gymnastics exercises effectively, and there was a significant improvement in their cognitive abilities. However, it is important to consider whether these results can be generalized to a broader population, given the limited sample size.

   e) **Study Design**, This study used a descriptive approach with pre-test and post-test evaluations to measure the effectiveness of the intervention. While this design provides valuable insights, it has limitations in terms of controlling for external variables that could influence the results. The study also noted that implementation of activities must adhere to health protocols during the pandemic, which may impact the number of participants and social interactions.

The conclusions of this study suggest that brain gymnastics can be an effective intervention to improve cognitive function in older adults with dementia. However, to strengthen these findings, further research with a more rigorous design and a clear control group is needed. The implications of this study are important for the development of intervention programs that can be implemented in nursing homes and other senior living communities (Wijaya & Dewi, 2021).

5. **Implementation of Brain Gym Therapy for Cognitive Function Changes in Schizophrenia Patients at Dr. Arif Zainuddin Surakarta Hospital**

   Review Jurnal dengan Pendekatan PICOS:

   a) **Population** This study was selected based on inclusion criteria that included patients who were willing to participate and cooperative, while patients with severe cognitive impairment were excluded from the study. Appropriate population selection is crucial to ensure that research findings can be applied to a broader group with similar characteristics.

   b) **Intervention,** This study employed Brain Gym therapy, a series of simple physical exercises designed to stimulate the brain and improve cognitive function. The intervention was conducted over six 10-15 minute sessions, aimed at improving patients' concentration, memory, and decision-making abilities. This method is expected to provide the necessary stimulation to improve cognitive function impaired by schizophrenia.

   c) **Comparison**, This study used a pre-test and post-test design to evaluate changes in cognitive function before and after the intervention. Although there was no control group receiving a different treatment, comparisons were made by observing changes in scores from baseline to post-intervention measurements. This provides insight into the effectiveness of the therapy,

although without a control group, the results may be less robust in demonstrating significant differences.

d) **Outcome** The study measured changes in cognitive function scores, assessed using the C-SARS questionnaire. Results showed that both respondents experienced a decrease in scores from moderate to mild after participating in Brain Gym therapy, indicating an improvement in their cognitive function. While these results are promising, it is important to consider the small sample size and short intervention duration when assessing the generalizability of the findings.

e) **Study Design**, This study used a descriptive approach with a focus on case studies, allowing researchers to delve deeper into the individual experiences of respondents. While this design provides valuable insights, it has limitations in terms of generalizing the results to a larger population. The study also noted that external factors, such as the patient's emotional state and social support, may influence intervention outcomes.

The conclusions of this paper suggest that Brain Gym therapy may be an effective intervention for improving cognitive function in patients with schizophrenia. However, to strengthen these findings, further research with more rigorous designs, including control groups and larger sample sizes, is needed. The implications of this study are important for the development of non-pharmacological therapies in the treatment of patients with mental disorders, particularly schizophrenia. (Aini dkk., 2024).

A literature review of five selected journals indicates that Brain Gym interventions and cognitive stimulation activities can improve cognitive function, memory, orientation, and quality of life in older adults. Studies in Sliyeg Village (Masliha, 2023) and Palopo (Fadli et al., 2023) confirmed that Brain Gym significantly reduced dementia rates and increased social participation and physical fitness in older adults. Similar findings were reported in South Jakarta (Rahayu et al., 2024), a nursing home in Palembang (Wijaya & Dewi, 2021), and for schizophrenia patients in Surakarta (Aini et al., 2024), demonstrating that community-based and individual-based non-pharmacological interventions are effective in improving cognitive function.

However, several barriers need to be addressed. Economically, implementing Brain Gym programs may be difficult in low- and middle-income countries due to limited facilities, trained personnel, and access to health information resources. Furthermore, most studies used a one-group pretest-posttest design or case studies with small samples, potentially introducing selection bias and reducing the generalizability of the findings. The limited focus of the literature on Indonesia is also a limitation, so the findings may not be fully applicable to older adults in other regions or cultural contexts.

From a global perspective, similar strategies have been recommended by the WHO for the prevention of cognitive decline in older adults, including regular physical activity, cognitive stimulation, and social support (WHO, 2024). This comparison indicates that the Brain Gym approach aligns with international practice, particularly in enhancing right-left brain integration and maintaining functional abilities in older adults. The study also emphasizes the importance of adapting interventions to local contexts, taking into account culture, resource availability, and economic constraints. Overall, these findings confirm the effectiveness of Brain Gym as a non-pharmacological health promotion strategy for older adults, but further research with larger samples, control groups, longer intervention durations, and multi-centered approaches is needed to strengthen validity and generalizability. The limitations of the current study provide opportunities for the development of more inclusive policies and intervention programs, particularly in areas with limited access to cognitive and elderly health services.

Conclusion

Elderly Based on a literature review, elderly people with dementia or delirium need active support from their families, including attention, understanding, and affection, to maintain their physical and psychological stability and prevent cognitive deterioration. Furthermore, elderly people are advised to engage in regular physical activities, such as Brain Gym, to maintain physical fitness, functional ability, balance, cardiovascular health, cognition, and sleep and mood quality. For elderly people with dysphagia, appropriate management includes modifying food textures and patient needs, as well as appropriate postural techniques, such as chin-down, chin-up, head rotation, head tilt, or lying down, to reduce the risk of morbidity and mortality. Practically, Brain Gym can be implemented at elderly community health posts (Posyandu) through cadre training and regular mentoring to improve cognitive function and independence in elderly people. To strengthen scientific evidence, further research based on randomized controlled trials (RCTs) is recommended in Indonesia that evaluate the effectiveness of integrated health promotion strategies, including cognitive stimulation, physical activity, and family education, in the prevention and management of dementia, delirium, and dysphagia.

Institutional Review Board Statement

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References

Afkar, T., Puspitasari, Y., Safitri, A., Maslukhiyah, M., & Yakin, I. A. (2023). Peran Posyandu Lansia Dalam Meningkatkan Kesejahteraan Masyarakat Lansia di Dusun Cermen Desa Cermen Kecamatan Kedamean Kabupaten Gresik. BUDIMAS: JURNAL PENGABDIAN MASYARAKAT, 5(1). http://jurnal.stie-aas.ac.id/index.php/JAIM/article/view/8158

Aini, T. A. S. N., Soleman, S. R., & Purnomo, L. (2024). Penerapan Terapi Brain Gym Untuk Perubahan Fungsi Kognitif Pada Pasien Skizofrenia Di Rsjd Dr. Arif Zainuddin Surakarta. An-Najat, 2(3), 205–216.

Fadli, F., & Patoding, S. (2023). Pengaruh Terapi Brain Gym Terhadap Peningkatan Fungsi Kognitif pada Lansia yang Menderita Demensia. Media Keperawatan: Politeknik Kesehatan Makassar, 14(2), 42–45.

Hasanah, U., Reliani, S. K., & Agustin, R. (2019). Brain Gym, Daily and Massage Exercise for Elderly in Community Service Area Khon Khaen University, Thailand. https://repository.um-surabaya.ac.id/6084/1/59._PKM_USWATUN_No._1_Th_2018.pdf

Kurniasih Etty Telaah Pengetahuan Keluarga Akan Kondisi Demensia pada Lansia [Journal]. - Bekasi : Jurnal Ilmu Kesehatan Dharmas Indonesia, 2022. - 1 : Vol. II.

Masliha, M. (2023). Pelaksanaan Stimulasi Mencegah Lansia Pikun Dan Kurang Teliti Melalui Latihan Aktivitas Brain Gym Di Program Sekolah Lansia Desa Sliyeg Kecamatan Sliyeg Kabupaten Indramayu. PROFESSIONAL HEALTH JOURNAL, 5(1), 301–309.

Nasir Nurwahyuni, Yuliana Yomima Viena and Adetya Sandra Kegiatan Fisik Untuk Mengatasi Penurunan Fungsi Kognitif (Demensia dan Delirium) Pada Lansia Di Sekolah Lansia Bahtera [Journal]. - Jakarta : Jurnal Pengabdian Masyarakat Bangsa, 2024. - 3 : Vol. II.

Nababan, S., Aran, M. L. B., & Wijayanti, A. R. (2023). Stimulasi Daya Ingat Latihan Memori Sesuai Intervensi Keperawatan untuk Meningkatkan Fungsi Kognitif Lansia di Seksi Kesejahteraan Sosial Lanjut Usia Padu Wau Maumere. Jurnal Pengabdian Masyarakat Inovasi Indonesia, 1(2), 77–84.

Niningasih, R., Wulandari, D., & Ixora, I. (2021). Program Kemitraan Bagi Kader Lansia Melalui Senam Otak Dalam Pencegahan Demensia Di Wilayah Kerja Puskesmas Trenggalek. Jurnal IDAMAN (Induk Pemberdayaan Masyarakat Pedesaan), 5(1), 55–59.

Pertiwi, Y. W., Gina, F., & Muzzamil, F. (2024). Optimalisasi Kesehatan Mental Lansia Melalui Kegiatan Hobi Mengelola lingkungan. Jurnal Psikologi Atribusi: Jurnal Pengabdian Masyarakat, 2(1), 15–21.

Prameshwari, F. R., & Ayubi, D. (2022). Pengaruh Senam Terhadap Fungsi Kognitif Lansia: Literature Review. Media Publikasi Promosi Kesehatan Indonesia (MPPKI), 5(12), 1480–1488.

Purwanto, A., Widyasti, A., Rahayu, A., Soeroso, E. F., Rahayu, E., Dewi, D. F., Farhanida, F., Handayani, H., Kamala, M. F., & Abid, M. (2024). PROGRAM Pemberdayaan Masyarakat Lansia Berkualitas Dengan Pencegahan Demensia Di Rptra Pola Idaman Kelurahan Pondok Labu Kecamatan Cilandak Jakarta Selatan. Martabe: Jurnal Pengabdian Kepada Masyarakat, 7(3), 837–848.

Rasyid Willady and Mailita Weni Screening dan Strategi Pencegahan Delirium Pada Lansia Di Puskesmas Andalas Padang [Journal]. - Padang : Jurnal Pengabdian Masyarakat, 2022. - 2 : Vol. I.

Rahayu, R., Riza, R., & Reni, R. (2024). Brain Gym Wujudkan Peningkatan Produktifitas Lansia di PSTW Budi Mulia III Jakarta Selatan. Jurnal Abdi Wira Husada, 1(2), 39–42.

Safira, F., Wardojo, S. S. I., & Bakti, I. S. S. (2025). Edukasi Fisioterapi dalam Mencegah Gangguan Kognitif pada Lansia di Posyandu Penanggungan RW 8 Kota Malang. Jurnal Pengabdian Masyarakat Bangsa, 2(12), 5931–5935.

Septyani, R., Agustina, D., Achirda, N., Laitupa, A. M., Azzahra, A., Cahyani, I., & Mubarakh, N. Z. (2023). Peningkatan Pengetahuan Fungsi Kognitif di Posbindu Kenanga II Jatimelati Pondok Melati Bekasi. Jurnal Pengabdian Masyarakat Fisioterapi dan Kesehatan Indonesia, 2(1), 78–87.

Suputri, N. W. B. M., Wibawa, A., Putra, I. P. Y. P., & Saraswati, P. A. S. (t.t.). Kualitas Tidur Berhubungan dengan Fungsi Kognitif pada Lansia di Desa Guwang: Studi Obervasional. Diambil 27 Maret 2025, dari https://scholar.archive.org/work/qgfle4v6y5fd3nxp26tykiq3nq/access/wayback/https://ojs.unud.ac.id/index.php/mifi/article/download/100725/53289

Tadung Frieska Putrima, Mamuko Merry Regina and Matsino Remalia Putri Pendampingan Pastoral Bagi Kaum Lansia Di Panti Werda Damai Ronomuut [Journal]. - Manado : Jurnal Pastoral Konseling, 2022. - 2 : Vol. III.

Trisnowati T and Sunaryanti Betty Fungsi Kognitif Wanita Lanjut Usia Ditinjau dari Tipe Keluarga [Journal]. - Bandar Lampung : Malahayati Health Student Journal, 2023. - 3 : Vol. III.

Wijaya, L., & Dewi, B. P. (2021). Penyuluhan demensia pada gangguan fungsi kognitif dan terapi kognitif senam otak tahun 2021 di Panti Jompo Lanjut Usia Harapan Kita Palembang. Community Development Journal: Jurnal Pengabdian Masyarakat, 2(3), 896–901.

Wiratningrum Ni Komang and Imanto Mukhlis Etiologi dan Penegakan Diagnosis Disfagia [Journal]. - Lampung : Medula, 2024. - 1 : Vol. XIV.