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The Use of Guided Imagery Therapy for Insomnia Prevention in the Elderly: Literature Review

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Abstract

Background: Insomnia is a common disorder among the elderly population. Appropiate of insomnia management will reduce the health risks during treatment. Guided imagery therapy is important to reduce anxiety, muscle contraction, facilitate good sleep, improve sleep quality and prevent insomnia in the elderly. **Aim:** The purpose of this study was to describe the use of guided imagery therapy for prevention of insomnia in the elderly. **Method:** Narrative literature review was performed to select article that relate with guided imagery therapy for prevention of insomnia in the elderly using search engines including PubMed, Scopus, Springerlink, Scienderect, and Google Scholar. The analyzed of articles was carried out using four stages based on the PRISMA Flowchart diagram. **Results:** The results were indicated six of articles that analyzed in this study. Guided imagery therapy is a relaxation technique performed by imagining a peaceful and pleasant scene, event or object to help stimulate the body's natural relaxation response. All of the articles reviewed show that guided imagery can be used as a non-pharmacological therapy in the management of sleep disorders in the elderly because it has been shown to be effective in improving sleep quality and preventing insomnia in the elderly. **Conclusion:** The applied guided imagery therapy has a significant effect on reducing insomnia in the elderly. Therefore, guided imagery therapy could be used as an intervention to prevent insomnia in the elderly.

Keywords: Guided imagery, Insomnia, Elderly

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I. BACKGROUND

Insomnia is one of the health problems that often occur in the elderly than young people (Patel et al., 2018). This is related to the aging process, physical illness, lifestyle, environment (Februanti et al., 2019), stress levels (Hindriyastuti & Zuliana, 2018), and anxiety (Sincihu et al., 2018). Many changes occur with aging. These changes include physical, psychological, and social changes (Practica et al., 2021). The aging process causes a decrease in neurotransmitter function which is characterized by a decrease in the

distribution of norepinephrine. This causes changes in circadian rhythms, where there is a change in the elderly's sleep in NREM phases 3 and 4 which causes the elderly to not have deep sleep, often waking up with difficulty restarting sleep (Perry, 2012).

Based on the National Sleep Foundation (2018), the incidence of insomnia in the world is estimated at 67% (Fernando and Hidayat, 2020), with the overall prevalence of insomnia ranging from 30% to 48% in the elderly (Patel et al., 2018). Based on data from Cable News Network Indonesia (2017), the prevalence of insomniacs in Indonesia is estimated to reach 10% of the total population, which means that from a total of 238 million Indonesians, around 23 million people suffer from insomnia. Where this figure is the highest number in Asia (Olii et al., 2018). In Indonesia, the prevalence of insomnia in the elderly is quite high, around 67% with an incidence rate of around 20- 50%, and about 17% experiencing serious insomnia (Hindriyastuti and Zuliana, 2018). Sleep is important for health and contributes to healthy aging, because it plays an important role in various physiological processes of the body, such as the regulation of metabolism, hormones, and immune function (Stone and Xiao, 2018).

The fulfillment of sleep needs in the elderly is needed for the restoration of body functions to achieve optimal quality and quantity of life (Chasanah and Supratman, 2018). The existence of sleep disorders in the elderly causes changes in the quality and quantity of sleep that can reduce the quality of life of the elderly (Nurhayati et al., 2020). Not getting enough sleep at night is commonly associated with daytime sleepiness, daytime fatigue, depressed mood, poor daytime functioning, and other health and safety problems (Chaput et al., 2018). Insomnia in the elderly can accelerate the aging process, and contribute to various chronic diseases (Stone and Xiao, 2018) such as stroke, coronary heart disease, and cancer that can reduce productivity, weak physical condition, and poor relationships with other people (Detalia et al., 2020). Therefore, prevention and nursing therapy are needed to avoid the emergence of health problems caused by insomnia. One of these prevention efforts is to use guided imagery therapy (Mahanani, 2020).

Guided imagery therapy for the elderly is needed to provide a sense of calm, relaxation, and relaxation (Krau, 2020), divert negative feelings when going to sleep, accelerate the achievement of starting sleep and be able to prevent insomnia in the elderly (Haslina et al.,

2021). Guided Imagery is a relaxation technique that works to reduce heart rate, blood pressure, and respiratory rate, increase global awareness, reduce oxygen demand, reduce muscle tension and metabolic rate which creates a feeling of relaxation and peace, can accelerate the achievement of starting sleep to prevent the occurrence of insomnia in the elderly (Mahanani, 2020). Guided imagery or visualization as a therapy that focuses on depicting calming objects, sights, events, or things can replace negative feelings with feelings of relaxation or relaxation (Haslina et al., 2021). Guided imagery requires special attention for the elderly because it has benefits for relaxation, stress reduction, anxiety reduction, immune system enhancement, and overall well-being (Krau, 2020).

2. METHODS

The design of this research is a literature review study. Determining the articles involved in this literature review study were selected based on inclusion and exclusion criteria. The inclusion criteria in this study were: 1) Articles written in Indonesian and English, 2) The population analyzed in the article was the elderly with insomnia problems, 3) Articles were published between January 2015 to 2021, 4) The intervention used was guided imagery therapy, 5) The topic of the study is to identify the incidence of insomnia in the elderly, describe guided imagery therapy, identify the use of guided imagery in the prevention of insomnia in the elderly. The exclusion criteria in this study were: 1) Studies that are not in accordance with the topic of guided imagery for the prevention of insomnia in the elderly, 2) Articles that are not full-text, 3) Articles published in two or more different journals, 4) Articles are the result of proceedings or conferences, 5) Articles withdrawn from the journal due to ethical violations. The article search process went through 4 stages based on the PRISMA flowchart (figure 1).
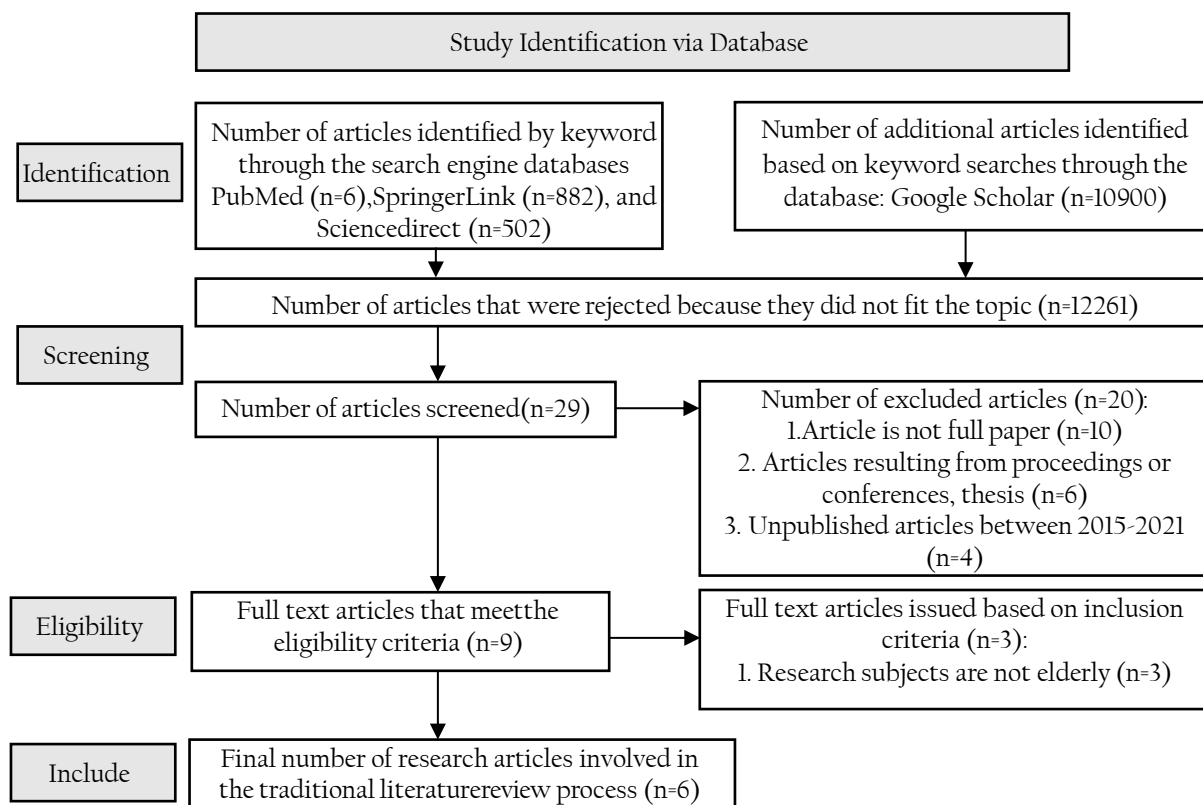
Figure 1. PRISMA Flowchart

The first phase of the article search used the keywords as many as 12290 articles: PubMed: 6; SpringerLink: 882; Scopus: 0; ScienceDirect: 502; Google Scholar: 10900. In the second stage, 12261 articles were published because they were off-topic, leaving 29 articles on the topic. Of the 29 articles, it was found that 10 were not full papers, 6 were proceedings or conference articles, and 4 were not published between 2015-2022. So that 9 total articles were obtained which were then continued at the selection stage for article eligibility or eligibility based on inclusion criteria. Of the 9 articles, it was found that 3 articles had non-elderly respondents. The results of the selection left a total of 6 articles that were continued at the included stage which would be involved in the traditional literature review research process.

3. RESULTS

Based on the year of publication, most of the articles analyzed were published in 2019 as many as 3 articles, while in 2017, 2021, and 2022, one article was found each. The type of research design obtained as many as 3 articles was found using a pre-experimental design or

pre and post-test design. Meanwhile, the true experimental research design was found in 1 article and the randomized controlled trial was found in 2 articles. Based on the research location, the 4 articles reviewed were conducted in Indonesia and 2 articles were conducted in Iran. The population analyzed in these 6 articles are the elderly with insomnia problems. The research time in all 6 articles was carried out in less than 3 months. (table 1).

According to a study by Ningsih et al., 2019 the incidence of insomnia in the elderly is mainly caused by age factors, namely 60-74 years, gender is female, negative psychological factors, physical disease factors, bad environmental factors, and negative lifestyles. According to Nugroho., 2008 in Mahanani, (2020), the incidence of insomnia is caused by two factors, namely external factors, and internal factors. External factors are caused by a bad environment such as a dirty bedroom, noise, etc. While the intrinsic factor is divided into two kinds, namely organic caused by the presence of certain degenerative diseases such as cancer, diabetes, etc., and psychogenic factors caused by psychological disorders such as depression, anxiety, stress, etc.

The use of guided imagery in non-pharmacological therapy is simple, easy to do, and inexpensive without side effects (Mahanani, 2020). In guided imagery, individuals are given verbal suggestions to build imagination through sensory experiences to evoke physiological responses such as relaxation and sleepiness (Foji et al., 2014 in Nia et al., 2019). The feeling of relaxation and calm that is generated after guided imagery therapy will then be transformed into the hypothalamus and produce the Corticotropin Releasing Factor which stimulates the pituitary gland to increase the production of Proopioid melanocortin (POMC) so that the production of enkephalin by the adrenal medulla increases. In addition to increasing the production of POMC, the pituitary gland also produces endorphins which increase the mood of relaxation. The feeling of relaxation generated after guided imagery therapy can reduce stress, improve sleep quality, and prevent insomnia in the elderly.

Guided imagery has been shown to decrease sympathetic activity and increase parasympathetic activity which relaxes the body and improves sleep quality (Nia et al., 2019). The success of using guided imagery in the prevention of insomnia depends on the response of the elderly who do relaxation. seriously and cooperatively (Aprilyawan and Wibowo, 2021).

Table 1. Articles results *(continue to page 258)*

No.	Title & Author	Design	Subject	Measurement	Findings
1.	Analysis of Lavender Aroma and Guided Imagery on Insomnia in Lansia in Technical Specific Unit Social Tresna Wherda Glenmore District Banyuwangi (Grenda Aprilyawan, 2019)	True experimen tal research design	The research population is all 36 elderly people who experience insomnia and a sample of 33 people using simple random sampling	Data collection using a checklist sheet then analyzed using the Cochran test	The results showed that the significant probability value of the Cochran test was 0.032 < 0.05, meaning that there was a significant difference between giving lavender scent, guided imagery and the control group to insomnia. While the treatment before and after giving lavender aroma had a significant effect on insomnia (p: 0.008 < 0.05). The treatment before and after guided imagery had a significant effect on insomnia (p: 0.016 < 0.05). The treatment before and after the control group had no significant effect on insomnia (p: 0.500 > 0.05). It can be concluded that aromatherapy and lavender guided imagery have both been shown to reduce insomnia.
2	Guided Imagery to Reduce Insomnia in Elderly (Srinalesti Mahanani, 2020)	Pre-Experiment Design Pre-Post Test Design.	The population in this study were all elderly people with insomnia with a total sample of 36 respondents, data collection	Collecting data using the Insomnia Rating Scale questionnaire.	Based on the results of research conducted at the City Health Center of the North Region of Kediri, it was found that after Guided Imagery therapy, 9 people experienced a decrease in the insomnia scale. The results of the Wilcoxon signrank test statistical test with computer software obtained p = 0.000 and z score = 4.054. p > 0.05 and it can be concluded that there is a significant effect of changes in insomnia before
3.	The effect of guided imagery therapy relaxation techniques on sleep quality in the elderly at PSTW Binjai (Indra Hizkia P, Linda F. Tampubolon, and Samani Ndruru, 2019)	Pre-eksperimet with one group Pre-test and post test design	The sampling technique was purposive sampling, with a sample of 20 elderly respondents at the Binjai Elderly Social Services.	The measuring instrument used is the PSQI questionnaire	The results showed that the guided imageryrelaxation technique had an influence on the sleep quality of the elderly at the Binjai Social Service UPT. The mean quality of sleep before intervention was 15.30 (95% CI = 14.19), with a standard deviation of 2.364 and the mean quality of sleep after intervention was 7.20 (95% CI = 6.64-7.76) with a standard deviation 1,196. P Value = 0.001 (p < 0.05). It can be concluded that in this study there is an effect of guided imagery relaxation techniques on improving the sleep quality of the elderly. In this study, the guided imagery relaxation technique was carried out 4 times for 4 consecutive days with a frequency of 1 time a day, duration of 15-30 minutes
4.	The Effect of Guided Imagery on Insomnia in the Elderly in the Jara Mara Pati Technical Implementati on Unit (UPT) Kab. Buleleng (Grenda Aprilyawan, Tri	Pre-eksperimet with one-group pre-test post-test design	The population in this study were all elderly people who experience d insomnia in the Technical Implement ation Unit (UPT) Jara Mara Pati	Collecting data using a checklist sheet.	The results of the Wilcoxon test in this study obtained a result of 0.000, which means that there is an effect of giving guided imagery to the reduction of insomnia in the elderly. In this study, the characteristics of insomnia respondents based on age mostly occurred in the elderly aged 66-74 years, while the characteristics of insomnia respondents based on gender mostly occurred in elderly women. The use of thinking power by imagining things that are interesting and liked by

No.	Title & Author	Design	Subject	Measurement	Findings
	Suryo Wibowo, 2021)		Kab. Buleleng with a sample of 36 respondents		the elderly that is carried out continuously can grow and create a relaxed atmosphere so that it can increase feelings of pleasure, reduce muscle tension and sleep needs can be met properly, because of the increase in encephalon and endorphins after getting guided imagery.
5.	The Effect of EMDR Versus Guided Imageryon Insomnia Severity in Patients with Rheumatoid Arthritis (Nasrin Ghanbari Nia, Ardashir Afrasia bifar, Mohammad Behnammoghadam, 2018)	Randomiz ed controlled trial	The population in this study, 75 patients with RA were selected by convenien ce sampling before using block randomiza tion to assign patients to three groups consisting of (a) six EMDR sessions, (b) six guided imagery sessions, and (c) a control group.	Persian version of Insomnia Severity Index	In the EMDR group, the mean insomnia severity scores before and after the intervention were 23.5 ± 2.5 (95% CI: 22.5–24.6) and 11±1.2 (95% CI: 10.1–11,9), in the guided image group, these were 24 ± 3 (95% CI: 22.8–25.2) and 5.3 ± 2.3 (95% CI: 14.4-16.2). In the control group, these were 24.2 ± 3.3 (95% CI: 22.8–25.6) and 23.6 ± 3 (95% CI: 22.8–24.8). EMDR and guided imagery are both effective in reducing the severity of insomnia in RA patients. Guided imagery is implemented individually in six consecutive daily sessions, in the afternoon from 18 to 19:30. Guided imagery has been shown to decrease sympathetic activity and increase parasympathetic activity. Relaxation and improved sleep quality can be achieved by the effects of guided imagery on the limbic system and the neuroendocrine axis in emotion reduction.
6.	The impact of guided mental imagery on the sleep quality of the elderly after having heart attack (Sepideh Aghababae, Ahmad Reza Yazdannik, Mahrokh Keshvari, 2017)	Randomized controlled trial	60 elderly patients	Demographic data, Pittsburgh sleep quality index (PSQI) suffering from heart attacks who were discharge d with sleep problems from the selected teaching hospital of the Isfahan University of Medical Sciences	The survey results showed that guided mental imagery resulted in an increase in the total score of sleep quality and its components in the elderly diagnosed with a heart attack. The results of this study showed that sleep disturbances were lower in the intervention group compared to the control group. Guided imagery helps people to move to the alpha level. Alpha is a brain wave level with half the brainwave frequency in full awareness and is a state of light sleep. At this level, the ability of imagination, focus, and suggestion increases, distracting thoughts are reduced, and the person is completely relaxed, making it easier for the elderly to get to optimal sleep.

4. DISCUSSION

Based on the findings of the research 6 articles have been reviewed. The incidence of insomnia in the elderly is often associated with aging. Individual sleep quality will tend to deteriorate with age. Mahanani's research, (2020), stated that changes that occur in the elderly with age include a decrease in the homeostatic drive to sleep earlier, an increase in the circadian

rhythm drive to wake up, a decrease in alpha waves, a reduction in slow waves, especially at stage four and a decrease in secretions. levels of hormones secreted during sleep such as growth hormone, prolactin, thyroid, cortisol, and melatonin so that the elderly find it difficult to maintain good sleep. Potter & Perry, (2009) in (Sumirta and Laraswati, 2015) state that age-related changes in the sleep-wake cycle are caused by a decrease in the number of neurons and neurotransmitter function, causing the elderly to often complain of difficulty sleeping, difficulty staying awake, difficulty falling asleep. coming back after waking up at night, waking up too early, and having too many naps during the day.

The incidence of insomnia in the elderly is associated with gender, indicating that the elderly of the female gender tend to experience insomnia more than the male elderly. In a study by Mahanani, (2020) older women tend to have more difficulty sleeping than men, this is because every elderly woman enters the menopause stage in her life and hormonal changes occur which make the elderly's sleep efficiency decrease. Based on educational characteristics, the majority of insomnia incidences occur in the elderly who received primary school education (Rarasta et al., 2018). The level of education

affects the incidence of insomnia related to the desire to access health information, especially insomnia (Aghababaei et al., 2017).

Based on the characteristics of marital status, the majority of insomnia occurs in the elderly who have widowed or widowed marital status. Loneliness and anxiety after being abandoned by a partner are associated with an increased incidence of insomnia in the elderly. This study is in line with research by Danirmala and Ariani, (2019) which stated that significantly more individuals who did not have a life partner reported experiencing insomnia compared to individuals who had a partner, which was 63.6% compared to 53.7%. Individuals who do not have a partner are at a higher risk of experiencing poor sleep habits such as irregular sleeping hours where this will increase the occurrence of sleep disorders, one of which is insomnia. research conducted by Ningsih and Wibowo, (2018) states that the factors that influence the incidence of insomnia in the elderly include age, gender, psychological factors such as stress, depression or anxiety, physical illness, environmental factors, and lifestyle.

In a review that has been conducted on 6 articles, the use of guided imagery therapy is a simple and easy method so that it can be done independently by the elderly at home and inexpensively without side

effects (Aghababaei et al., 2017). Guided imagery can be done every day before bed with a duration of 15 to 30 minutes (Hizkia P et al., 2019). In this method, the elderly are placed in a comfortable position with their eyes closed. After that, the elderly are directed to imagine something pleasant such as a forest or beach to encourage relaxation (Nia et al., 2019). The relaxation received will be recognized as a stimulus and continued to the brain stem to the thalamus sensor so that the elderly become calmer and more comfortable to sleep. The use of thinking power by imagining things that are liked and fun will continuously grow and create a relaxed and comfortable atmosphere, increase feelings of pleasure, reduce muscle tension, and make it easier for the elderly to go to sleep so that their sleep needs of the elderly can be met (Aprilyawan and Wibowo, 2021).

National Safety Council, 2012 in (Aprilyawan, 2019) states that guided imagery has benefits for reducing stress, increasing calm and peace that creating a sense of relaxation and comfort, and making it easier for the elderly to go to optimal sleep. Guided imagery helps the individual to move to the alpha level. Alpha is the level of brain waves with half the frequency of brain waves in full awareness and is a state of light sleep. At this level, the abilities of imagination, focus, and

suggestion are increased, distracting thoughts are reduced, and the person is truly in a relaxed state. Furthermore, the imagery method is based on the idea that thinking about a calming scene helps to feel more relaxed and as a mind-body technique suggests that the mind and body are interconnected and can reinforce one another (Aghababaei et al., 2017).

5. CONCLUSION

Insomnia remains one of the most common sleep disorders in the elderly population. This is related to the age factor. Guided imagery is a therapy that is done by imagining a good place, or object where it can distract the client from pain, stress, and personal/emotional problems that help create a relaxed and conducive state of mind to fall asleep. Guided imagery therapy has been recognized in various studies and theories as playing an important role in mental health treatment including stress/anxiety and insomnia treatment.

AUTHOR CONTRIBUTIONS

Substantial contributions to conceptualization, data curation, analysis, Supervision Writing - review & editing: Neneng Kurnia Fitriani, Tantut Susanto, Fahruddin Kurdi. Manuscript revisions: Neneng Kurnia Fitriani.

CONFLICT OF INTEREST

The authors declare no conflict of interest for this publication.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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