

CHAPTER I

INTRODUCTION

1.1 Background

Degenerative changes that occur during the aging process cause a decline in the body's ability to maintain optimal sleep patterns, resulting in a reduced effective sleep time in the elderly. Poor sleep quality is a common health problem among the elderly. This condition is characterized by difficulty falling asleep, frequent nighttime awakenings, and feeling unrefreshed or fatigued upon waking. These sleep disturbances can negatively impact physical balance and cognitive function and increase the risk of various health problems, such as hypertension, diabetes mellitus, and depression. Furthermore, poor sleep quality also contributes to a reduced overall quality of life in the elderly.

According to data from the World Health Organization (WHO), the number of elderly people in Southeast Asia has reached approximately 142 million, equivalent to 8% of the total population, and is projected to triple by 2050. Meanwhile, the results of the 2023 Indonesian Population Census indicate that approximately 29 million people, or 12% of the total Indonesian population, are classified as elderly. The WHO also reports that approximately 18% of the world's population has experienced sleep disorders, with the prevalence showing an increasing trend from year to year. Furthermore, sleep problems among the elderly in Indonesia are a significant problem. Data from the Indonesian Journal of Health Development (2022) states that approximately 67% of elderly people

experience sleep disorders. Insomnia occurs in approximately 49% of the 9.3 million elderly people in Indonesia (Hadi et al., nd).

In the elderly, hormonal changes due to degenerative processes trigger hormonal changes that disrupt sleep patterns. These changes lead to reduced effective sleep time, so the elderly often have difficulty achieving optimal sleep quality. Sleep pattern regulation involves various hormones, including Adrenocorticotrophic Hormone (ACTH), Growth Hormone (GH), Thyroid Stimulating Hormone (TSH), and Luteinizing Hormone (LH), which are secreted by the anterior pituitary gland through a mechanism controlled by the hypothalamus. Furthermore, this mechanism also influences the release of several neurotransmitters, such as norepinephrine, dopamine, and serotonin, which play a vital role in regulating sleep cycles and quality (Sari & Halawa, nd-b).

Degenerative processes in the elderly contribute to a decrease in melatonin production. Melatonin production is influenced by serotonin availability and light exposure. During the day, the body produces greater amounts of serotonin to support physical activity, while at night, some serotonin is converted into melatonin to aid sleep. Melatonin is a hormone that plays a crucial role in controlling the circadian cycle, the biological system that regulates the shift between wakefulness and sleep. Production of this hormone generally increases at night, helping induce drowsiness and preparing the body for sleep (Wahyudi, 2016). In the elderly, insomnia can disrupt the normal sleep process and contribute to a decline in overall sleep quality.

Sleep quality in older adults can be improved through various nonpharmacological interventions, one of which is fitness exercises for older adults, which have been shown to have positive effects on sleep quality (Faidah et al., 2020). Physical activity during exercise increases muscle contraction, metabolic rate, and energy expenditure, thereby creating a greater physiological need for rest at night (homeostatic sleep drive). Additionally, the stimulation from physical activity helps the hypothalamus resynchronize the circadian rhythm, increases serotonin secretion—which has a relaxing effect—and boosts melatonin production at night, which plays a role in initiating and maintaining sleep. Regular fitness exercises also help lower cortisol levels at night, allowing the body to relax and avoid a state of hypervigilance. Through these mechanisms, older adults fall asleep more easily, wake up less frequently during the night, experience longer sleep duration, and enjoy better sleep quality. (American Academy of Sleep Medicine, 2021)

Based on this problem, the author was motivated to conduct a case study on "Implementation of Elderly Fitness Gymnastics for the Elderly with Sleep Disorder Problems in the Gribig Community Health Center Work Area".

1.2 Formulation Of The Problem

In order to avoid expanding the discussion and maintain its suitability with the research objectives, the author limits the scope of this case study to "Implementation of Elderly Fitness Gymnastics for the Elderly

with Sleep Disorder Problems in the Gribig Community Health Center Work Area".

1.3 Research purposes

1. General purpose

Implementing non-pharmacological therapy in the form of elderly fitness exercises for the elderly with sleep pattern disorders.

2. Special purpose

- a. Conducting assessments on elderly people with sleep pattern disorders.
- b. Implementing nursing diagnoses in the elderly with sleep pattern disorders.
- c. Implementing nursing planning for the elderly with sleep pattern disorders.
- d. Implementing nursing care for the elderly with sleep pattern disorders.
- e. Carrying out nursing evaluations on elderly people with sleep pattern disorders.

1.4 Benefits of research

1. Theoretical Benefits

The findings of this research can support nursing theory, particularly regarding exercise for the elderly. Therefore, exercise can be used as a nursing intervention to improve sleep quality in the elderly.

2. Practical Benefits

a. For Researchers

It is hoped that the results of this scientific paper can become scientific evidence regarding the application of elderly fitness exercises in improving sleep quality in elderly people with sleep pattern disorders.

b. For Health Workers

The findings of this research can be used to improve healthcare services for the elderly at the elderly health post in RW 10 Madyopuro. It will also increase healthcare workers' understanding of elderly people experiencing sleep disorders, enabling them to perform fitness exercises for the elderly.

c. For Respondents

Providing information regarding non-pharmacological treatment of sleep disorders, namely fitness exercises for the elderly.