



THE EFFECT OF GEMU FAMIRE EXERCISE ON EMOTIONAL LEVEL IN ELDERLY WITH CHRONIC DISEASES

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ABSTRACT

Emotional problems in the elderly can be caused by a decline in physical condition and the presence of chronic diseases experienced by the elderly. The impact of emotional disturbances in the elderly can lead to feelings of loss, loneliness, fear, depression, and can affect their daily activities. This study aims to analyze the effect of Gemu Famire gymnastics on the emotional levels of elderly individuals with chronic diseases. Method: This research is quantitative research with a pre-experimental one-group pre-posttest design research approach. The sample size in this study is 37 respondents in one group, using the purposive sampling technique. The research instrument for this study is the Self Report Questionnaire (SRQ). Based on the Wilcoxon test, the research results showed that there was an effect of Gemu Famire exercise on the emotional level of elderly individuals with chronic diseases, with a p-value of 0.000 (<0.05). The Gemu Famire exercise action plan can be done regularly by elderly individuals with chronic diseases to reduce emotional levels. The follow-up plan for Gemu Fa Mi Re exercise can be carried out periodically by elderly individuals with chronic diseases to reduce emotional levels, accompanied by community health workers.

Keywords: chronic diseases; elderly; emotional level; gemu famire

INTRODUCTION

Old age is a condition that occurs in human life, is a lifelong process, and begins from the beginning of life (Mawaddah et al., 2019). Old age is part of the human growth and development process that doesn't happen suddenly, but develops from infancy, childhood, adulthood, and finally old age. Aging is the period when an individual naturally undergoes a process of change that unconsciously progresses from time to time throughout their life (Hasanah et al., 2022).

The aging process can lead to physiological and psychological problems (Juwariyah et al., 2023). The problem of physiological decline in the elderly occurs slowly and gradually, caused by changes in the body's cells. These changes occur in almost all body systems and/or organs, especially in body organs whose constituent cells do not divide and replace themselves, such as brain and kidney tissue (Albert et al., 2019). Another physiological problem is the onset of various chronic diseases with increasing age and signs of aging (Jati, 2021). Psychological problems in the elderly, such as anxiety and neurosis (Albert et al., 2019). Other psychological problems include depression, fear, anxiety, and changes in emotional regulation. Psychological problems that arise in the elderly can result in feelings of loss, loneliness, fear, and depression. The fears experienced by the elderly include physical changes, social empowerment, isolation, economic problems, death, and the onset of chronic diseases (Juwariyah et al., 2025).

Chronic diseases that often occur in the elderly, such as Diabetes Mellitus (DM), hypertension, stroke, gout, joint pain, and depression (Fibra et al., 2021). The onset of chronic diseases increases with age due to the decline in organ function within the body (Juwariyah et al., 2025). According to a 2022 survey by

the Indonesian Medical Gerontology Association (PERGEMI), 24.6% of elderly people in Indonesia have chronic diseases. The chronic diseases most commonly suffered by the elderly are hypertension (37.8%), Diabetes Mellitus (22.9%), rheumatic diseases or joint pain (11.9%), and heart disease (11.4%). Other medical histories among the elderly include asthma (10.4%), acid reflux (8%), gout (5.5%), chronic lung disease (3%), high cholesterol (3%), and kidney disease (2%) (Fijri et al., 2025). Elderly individuals with Diabetes Mellitus are most prevalent in the 55-64 and 65-74 age groups (Juwariyah et al., 2025).

The impact of chronic diseases on the elderly affects their daily activities (Nurmayunita & Zakaria, 2021). Chronic diseases experienced by the elderly can also cause emotional problems for them. Changes that occur in the elderly, such as a decline in physical condition and various other factors, lead to changes in their psychological state, which can develop into emotional problems. Emotional problems can affect the physical condition of the elderly. Negative psychological responses can eventually become emotional problems (Yunus M; Aditya I, 2021).

The emotional problems of the elderly are influenced by the presence of determinant factors that cause them to be forgetful, leading to uncontrolled emotions (Ayu Lely Suratri et al., 2020). Emotional intelligence is a person's ability to regulate their mental state, control emotions, be resilient, delay gratification, and self-motivate (Wardani et al., 2024). The research results indicate a relationship between emotional problems and age factors in the elderly, particularly those aged 65 and over (Juwariyah et al., 2025). Other research findings show that individual factors, such as the presence of physical illness, have a strong relationship with emotional problems like anxiety and depression (Axon et al., 2022). Emotional problems in the elderly include a decline in recognizing one's own and others' emotions, difficulty managing one's own emotions, decreased self-motivation, and an inability to build relationships with others (Nurkhalizah et al., 2021).

Efforts that can be made to overcome emotional problems in the elderly thru pharmacological and non-pharmacological therapies. Pharmacological therapies include medications that can reduce the causative factors for the emergence of emotional problems in the elderly, such as medications to reduce depression, anxiety, sleep disorders, or chronic diseases (Pinilih & Amin, 2022). Non-pharmacological efforts that can be made include relaxation therapy, Spiritual Emotional Freedom Technique (SEFT) therapy, laughter therapy, and exercise (Axon et al., 2022).

Exercise for the elderly aims to reduce stress and allows them to express their emotional feelings, as well as alleviate emotional pressure (Jati, 2021). Exercise for the elderly can provide brain stimulation with pleasant feelings, making the elderly productive and active, improving their quality of life, and inhibiting the process of cognitive decline (Qiu et al., 2020). Types of gymnastics for the elderly include brain gymnastics, ergonomic gymnastics, Tai Chi gymnastics, basic dance movements, and Maumere or Gemu Famire gymnastics (Kunci, 2017).

Gemu Famire gymnastics is one of the rhythmic exercises that is easy for the elderly to do, using free movements accompanied by the music of the Gemu Famire song (Idaiani et al., 2022). Gemu Famire gymnastics uses energetic music that makes the body sway (Wardani et al., 2024). The advantages of Gemu Famire gymnastics compared to other forms of exercise are that it is easy to do, economical, the movements are free and can be adapted to the elderly's age, and the music accompaniment is enjoyable (Nurmayunita & Zakaria, 2021). On efforts to address psychological issues in the elderly, the study showed an increase in the emotional development stimulation scores of the elderly after basic dance movement was administered. Supported by research by (Pinilih & Amin, 2022), which showed that Maumere gymnastics has an effect on lowering blood sugar levels in elderly individuals with diabetes mellitus (DM) with a p-value of <0.05.

A preliminary study conducted in January 2024 on 10 elderly individuals in the Cinde area using the SRQ 20 measurement tool found that 6 elderly individuals (60%) experienced emotional disorders, while 4 elderly individuals (40%) did not. The factors that cause the elderly to experience emotional disturbances are largely due to having the chronic disease of hypertension.

METHOD

The type of research in this study is quantitative research with a pre-experimental one-group pre-posttest design. The population in this study consists of all elderly individuals with chronic diseases in the Cinde area, totaling 56 people. The sampling technique used in this study is purposive sampling. The sample in this study consisted of 36 elderly individuals with chronic diseases in the Cinde area. The data collection instrument in this study used the Self Reporting Quessinare (SRQ) questionnaire. The reliability test result using Cronbach's alpha obtained a reliability coefficient of 0.796 (> 0.6) and the validity test results using confirmatory factor analysis showed that the SRQ-20 met the model fit criteria, so the SRQ-20 is declared valid and reliable. The Wilcoxon test was used to analyze the effect of the Gemu Famire exercise on the emotional level of the elderly with chronic diseases.

RESULT AND DISCUSSION

Table 1.
Frequency Distribution of Respondent Characteristics by Age, Gender, and Chronic Disease
(n= 36)

	Variabel	f	%
Age	60 – 74 year old	34	94.4
	75-90 year old	2	5.6
	> 90 year old	0	0
Gender	Male	12	33.3
	Female	24	66.7
Chronic Disease	Hypertension	23	63.9
	Stroke	1	2.8
	Diabetes mellitus	3	8.3
	Gout	1	2.8
	Vertigo	5	13.9
	Osteoarthritis	3	8.3

Based on Table 1, the highest age group of respondents is 60-74 years old, with 34 respondents (94.4%). The highest gender group is female, with 24 respondents (66.7%), and the highest chronic disease is hypertension, with 23 respondents (63.9%). The factor that most influences respondents aged 60-74 years is that they are entering old age, still have high spirits and motivation to maintain their health by actively participating in exercise. The factor causing respondents the highest number of respondents were female because in the Cinde area, there are more elderly people with chronic diseases who are female compared to male, and elderly women are more active in participating in social activities in the community. The most common type of chronic disease among respondents was hypertension, which is due to the fact that in the Cinde area, there are still many elderly people with irregular eating patterns, smoking habits, stress, and a belief that they are still healthy and can be active independently, leading them not to seek healthcare until they are in a severe state of illness.

Table 2.
Emotional Levels Before and After Gemu Famire Exercise Intervention in Elderly Individuals
with Chronic Diseases (n= 36)

Variable	Pretest		Posttest		
	f	%	f	%	
Emotional Level	Not Emotional	17	47.2	33	91.7
	Emotional	19	52.8	3	8.3

Table 2, it shows that the majority of respondents' emotional levels before the Gemu Famire exercise intervention were in the emotional category, with 19 respondents (52.8%), and the highest score was 8, with 3 respondents. After the Gemu Fa Mi Re exercise intervention, 33 respondents (91.7%) were in the non-emotional category, and the highest score was 6, with 3 respondents. The emotional level of respondents before the Gemu Famire exercise intervention was 19 respondents because they were entering retirement, which made them unproductive and lacking social roles in society. They felt lonely, which triggered stress and a poor mood, resulting in a high emotional level. The emotional level of the elderly after Gemu Famire exercise decreased in 3 respondents because the respondents actively participated in the Gemu Famire exercise according to the mutually agreed-upon time. Gemu Famire exercise can stimulate the brain to relax, thereby reducing the emotional state of the elderly.

Tabel 3
The influence of Gemu Famire gymnastics on the emotional levels of elderly individuals with chronic diseases (n=36)

Variabel	N	P value
Emosional posttest-emosional-pretest	<i>Negative ranks</i>	33
	<i>Postive rank</i>	0
	<i>Ties</i>	3
	Total	36

Table 3, which shows 33 respondents with negative ranks, there was a decrease in emotional levels after the Gemu Famire exercise intervention for emotional levels in elderly individuals with chronic diseases. Positive ranks show 0 respondents, indicating no improvement in emotional levels after the Gemu Famire exercise intervention. Ties show 3 respondents, meaning 3 respondents had the same emotional level before and after the Gemu Famire exercise intervention. Based on the Wilcoxon test, the p-value obtained was 0.000 (<0.05), so H_a was accepted and H_o was rejected. Therefore, it can be concluded that there is an effect of Gemu Famire exercise on the emotional level of elderly individuals with chronic diseases. The decline in birth rates, death rates, morbidity rates, and the increase in life expectancy at birth (LEB) are a testament to the success of development in Indonesia. There was an increase in life expectancy at birth in 2017, which was 72.9 years, rising to 73.2 years in 2019 and reaching 73.5 years in 2021. It is predicted to continue increasing, leading to a rise in the number of elderly people in the future (Mawaddah et al., 2019).

Emotionality in old age is a strong feeling that arises in the elderly or in psychology, or a state that emerges from the organism, including conscious changes, deep within the nature of changing feelings. Emotions become conscious experiences activated from outside, charm, and physical condition (Pinilih & Amin, 2022). Emotions in the elderly are very unique because they have reached the age of 60 and above, leading to frequent mood swings and resulting in fluctuating emotions as well (Juwariyah et al., 2023). As age increases, emotional changes will fluctuate according to their condition (Nurmayunita & Zakaria, 2021). Older adults are vulnerable to physical and psychological health problems due to declines in physical, mental, and social aspects that can occur suddenly, gradually, or evolutionarily (Qiu et al., 2020).

Based on the above description, it can be concluded that elderly individuals with chronic diseases experience physical and psychological decline, which can occur suddenly. The analysis results show that as the age of the elderly increases, the onset of chronic diseases and psychological decline occurs, leading to changes in emotional levels according to the conditions experienced by the elderly. According to (Juwariyah et al., 2023), age is a factor that influences psychological problems, specifically the emotional state of the elderly, although they can continue to be productive and maintain their existing abilities by continuously stimulating their brains.

The number of elderly women is higher because their life expectancy is longer (Idaiani et al., 2022). Hormonal balance (estrogen) in women is more active and abundant, making women more protected from damage. Estrogen has been shown to have beneficial effects and is correlated with exercise, health fitness, and brain neuron plasticity (Hasanah et al., 2022). According to (Albert et al., 2019), gender is considered to have an influence on how someone manages their feelings and emotions (emotional regulation). Women are considered more capable of managing their emotions and feelings, which is why women's lifespans are typically longer than men's. Women have lower emotional levels than men because this is closely related to their ability to control their emotions and hormonal influences (Axon et al., 2022).

Based on the above description, it can be concluded that there are more elderly women than men because women have a longer life expectancy and are influenced by hormonal factors. The analysis results show that elderly women can be affected by life expectancy and hormonal factors. According to (Nurkhalizah et al., 2021), the emotional state of elderly women can be influenced by hormones. Aging is a major risk factor for most chronic diseases and health-limiting conditions (Juwariyah et al., 2025). The exact mechanism of hypertension in the elderly is not yet fully understood. The main effects of normal aging on the cardiovascular system are changes in the aorta and systemic blood vessels. As we age, the walls of the aorta and large blood vessels thicken, and the elasticity of the blood vessels decreases. These changes lead to a reduction in aortic and large blood vessel compliance, resulting in an increase in systolic blood pressure. The decrease in blood vessel elasticity increases peripheral vascular resistance. Baroreceptor sensitivity also changes with age. Decreased baroreflex sensitivity often results in blood pressure fluctuations and postural hypotension. Fluctuations caused by stress and exercise are also more common in older people. Arteries that harden due to atherosclerosis cause higher blood pressure (Fijri et al., 2025).

Hypertension is common in the elderly and can lead to stroke, myocardial infarction, kidney failure, brain damage, and even death (Jati, 2021). The problems that arise in the elderly with hypertension are very complex, such as issues with the patient's body organs, for example, the heart, blood vessels, brain, and kidneys. In addition, problems related to emotional mental health will also arise, such as difficulty sleeping, irritability, and mood disorders. These problems will make hypertension sufferers vulnerable to emotional mental disorders (Hasanah et al., 2022). Based on the above description, it can be concluded that the majority of elderly respondents have the chronic disease of hypertension. According to the research results conducted in the Cinde area, the highest number of respondents were elderly individuals with hypertension. The analysis results show that hypertension in the elderly occurs due to a decrease in blood vessel elasticity, which increases peripheral blood vessel resistance, leading to atherosclerosis that can raise blood pressure. This can also be caused by the respondents' dietary patterns, smoking habits, and stress levels.

The high level of emotionality before the Gemu Famire exercise intervention in the elderly is closely related to changes in their physical, mental, or psychological state. Psychological changes such as mood swings in the elderly are one of the factors of change within them. Continuous cognitive decline in the elderly can disrupt their mood, making them easily irritable and sensitive. The more significant the decline in cognitive function, the higher their sensitivity to their surroundings. Additionally, the changes in her life have also required her to adapt, as she has become more isolated because her children and grandchildren have their own activities or are far away, and she is no longer productive at work, which can affect her mood (Pinilih & Amin, 2022).

Factors that can influence emotional regulation in the elderly include physical changes, reduced social roles, the onset of various chronic diseases, the appearance of signs of aging, and the emergence of

psychological problems in the elderly such as feelings of loss, loneliness, fear, and depression (Ayu Lely Suratni et al., 2020). The research results show that after the Gemu Famire exercise intervention, the emotional level of the elderly decreased. This is because the Gemu Famire exercise provides a sense of calm and comfort during the exercise. Gemu Famire exercise can have a positive impact by reducing stress and emotional problems. The decrease in AVP and ACTH, along with the increase in endorphins, will lower peripheral resistance and cardiac output, resulting in a decrease in blood pressure and body relaxation (Qiu et al., 2020).

Based on the above description, it can be concluded that the high emotional levels of elderly individuals with chronic diseases are due to physical changes, reduced social roles, the onset of various chronic illnesses, the appearance of signs of aging, and the emergence of psychological problems in the elderly such as feelings of loss, loneliness, fear, and depression. According to the results of this study, elderly respondents are entering retirement, making them unproductive and lacking social roles in society. They feel lonely, which triggers stress and poor mood, leading to high emotional levels. The analysis results show that the highest emotional level in the elderly is caused by difficulty thinking clearly and restless sleep. This is due to chronic illnesses, feelings of loneliness and loss, and social roles in the community.

The research results showed a decrease in the emotional level of the elderly by 33 respondents after being given Gemu Famire exercise. This is in accordance with the theory stating that exercises like Gemu Famire are a series of movements that can stimulate the integration of the right and left brain functions to produce harmonious brain coordination, thereby improving the elderly's ability to handle stress and manage emotions (Fijri et al., 2025). Exercise is very necessary to keep the body healthy, especially in old age when daily physical activity is less. By exercising, the body's muscles become relaxed and can provide inner peace, which can lead to changes in the depression levels of the elderly (Mawaddah et al., 2019). According to (Nurkhalizah et al., 2021), gymnastics reduces muscle tension in the body, which is one of the causes of psychological problems in the elderly. Thru calming physical exercises, breathing techniques, and relaxation, one can achieve peace of mind without resorting to medication.

Gemu Famire gymnastics consists of simple movements combined with controlled breathing exercises, a series of muscle contractions and stretches, and muscle group relaxation. Gemu Famire gymnastics can stimulate both physical and psychological relaxation responses (Mawaddah et al., 2019). Gemu Famire gymnastics will affect the limbic system in the brain, which will be activated, causing a person to respond to emotions and stimulate the cerebral cortex in positive cognitive and emotional aspects, resulting in positive perceptions that will lead to a positive coping response. In this case, it will cause nerves and muscles to relax from tension, emotional stress will decrease, and blood circulation will become smoother (Jati, 2021).

The feeling of calm and comfort during Gemu Famire exercise can have a positive impact, namely reducing stress and emotional problems. This positive response, thru the HPA (hypothalamic-pituitary-adrenal) axis, will stimulate the hypothalamus and the LC (Locus Coeruleus). The hypothalamus will decrease the secretion of CRH (Corticotropin Releasing Hormone), which will lower ACTH (Adrenocorticotrophic Hormone) and stimulate POMC (Pro-opimelanocortin). This will also decrease ACTH production and stimulate endorphin production. The LC (Locus Coeruleus), which is responsible for mediating many sympathetic effects during stress, will decrease norepinephrine synthesis in the adrenal medulla in a relaxed state, which will stimulate a decrease in AVP (Arginine Vasopressin). The decrease in AVP and ACTH, along with the increase in endorphins, will lower peripheral resistance and cardiac output, resulting in decreased blood pressure and body relaxation (Qiu et al., 2020).

Based on the above description, it can be concluded that there is an influence of Gemu Famire gymnastics on the emotional level of the elderly with chronic diseases. The emotional level of the elderly decreased after being given Gemu Famire exercise because Gemu Famire exercise can stimulate nerves and muscles to relax, and release endorphins, thus reducing the emotional state of the elderly. The analysis results show that the decrease is because the respondents can cooperate well in doing the Gemu Famire exercise, have high enthusiasm and motivation to participate in the Gemu Famire exercise, which makes them relaxed and lowers their emotional level. However, the research results show that the emotional level of the elderly is the same before and after being given the Gemu Famire exercise for 3 respondents. According to the researcher's assumption, this is because during the Gemu Famire exercise, the respondents were unable to think clearly, resulting in a lack of focus.

CONCLUSION

There is an influence of Gemu Famire gymnastics on the emotional level of elderly individuals with chronic diseases in the Cinde area, with a p-value of 0.000 (<0.05). The results of this study can serve as a reference for further research on ways to improve emotional development stimulation in the elderly with chronic diseases based on the social and environmental aspects of the elderly.

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