

Anxiety Management In The Elderly Through Tai Chi Exercise

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Abstract. Elderly people experience a decline in physical, cognitive, and emotional function as they age. One of the emotional problems often experienced by the elderly is anxiety. Factors that influence anxiety in the elderly that are difficult to overcome include loss of a spouse, loss of a job, family, social support, and excessive responses to life events or death. Complementary interventions such as tai chi are considered effective in helping to reduce anxiety levels in the elderly. The purpose of this study was to determine the effect of tai chi on anxiety in the elderly. This study used a quantitative pre-experimental design with a one-group pretest-posttest design. A sample of 16 elderly people was selected using purposive sampling techniques based on inclusion criteria. Data collection was conducted in January 2026 using the Hamilton Anxiety Rating Scale (HARS) questionnaire instrument. Data analysis was carried out descriptively to observe changes in anxiety levels before and after the tai chi intervention. Statistical data analysis used Wilcoxon. The results of the 16 respondents before being given tai chi exercise were mild anxiety 43.75% and moderate anxiety 56.25%. After the Tai Chi exercise intervention, 43.75% experienced no anxiety, 43.75% experienced mild anxiety, and 12.5% experienced moderate anxiety, with a p-value <0.001. This indicates the effect of Tai Chi exercise on anxiety in the elderly.

Keywords: Anxiety, Elderly, Tai Chi Exercise.

INTRODUCTION

Anxiety is a psychological condition in which a person feels fear and worry about uncertain events. Anxious behavior in the elderly can be caused by difficult-to-treat physiological medical conditions, the loss of a spouse, job, family, social support, and an exaggerated response to life events or death (Dadang, 2013). Symptoms of anxiety in the elderly include insomnia, irritability, worry, irregular heartbeat, trembling, loss of appetite, cold sweats, fear, and feelings of insecurity (Khamida *et al.*, 2018).

The prevalence of anxiety levels in the world is quite high according to the World Health Organization (WHO) in 2018, which estimated that 3.6% of people worldwide suffer from anxiety (WHO, 2018). In Indonesia, the prevalence of anxiety is 6.9% in the age group 55-65 years, 9.7% in the age group 65-75 years, and 13.4% in the age group 75 years and above (Kemenkes RI, 2018). According to the 2018 Basic Health Research (Riskesdas), Central Java Province has a percentage of 4.7% of the 37 population experiencing emotional mental illness with anxiety symptoms (Riskesdas, 2018).

Anxiety can be managed through pharmacological and non-pharmacological therapies. Non-pharmacological therapy is always preferred due to its relatively low cost, while pharmacological therapy is relatively expensive and can cause undesirable side effects, such as worsening the condition and leading to drug dependence. Non-pharmacological therapies for anxiety in the elderly include several approaches tailored to their needs, such as cognitive behavioral therapy, physical exercise (tai chi, yoga, mindfulness, and meditation), relaxation, social support, and art or music therapy. Exercise is one method that can be used to overcome anxiety. Tai chi is a type of exercise or physical exercise that can maintain physical and mental health (Khamida *et al.*, 2018).

Tai chi is a form of physical therapy aimed at relaxing and restoring physical and mental balance. Furthermore, tai chi can also help reduce anxiety. Tai chi is also considered an alternative stress reliever because its movements emphasize slow, graceful body movements combined with the art of smooth, rhythmic breathing (Jing Li, 2019). Tai chi encourages mindfulness, helping seniors focus on breathing and movement, thereby distracting them from anxious thoughts. Breathing regulation and comprehensive stretching exercises, including various hand and foot movements at a steady pace, engage large muscle groups. Not only does it train the legs, arms, and body through various movements, but it also strengthens the internal organs and central nervous system through slow, deep abdominal breathing and mental concentration (Diah, 2022).

METHODS

This study used a quantitative pre-experimental design with a one-group pretest-posttest design. This study involved one group and no control group. This study will be measured by the values before and after treatment and analyzed the results (Rukminingsih, 2020). The population in this study were 979 elderly in Tumpangkrasak Village, with a sample of 16 respondents. This study used a purposive sampling technique, meaning the technique of selecting research subjects based on special characteristics determined by the researcher (Muhammad Darwin *et al.*, 2020). The respondent criteria were elderly aged 60 years and above, both men and women, elderly who experienced mild, moderate, and severe anxiety from the interpretation of the HARS questionnaire. Tai chi exercises were carried out for 1 week, twice a week for 3 weeks with a duration of 30 minutes. This research was conducted in Tumpangkrasak Village, Jati Kudus District, from January 2 to January 21, 2026. Data collection used observation sheets, tai chi exercise SOPs, and the Hamilton Anxiety Rating Scale (HARS) to measure anxiety levels before and after the intervention. Data analysis in this study used univariate and bivariate analysis. This univariate analysis was conducted using descriptive statistics by calculating the frequency distribution and proportion. Bivariate analysis used the Wilcoxon Signed Ranks Test (Candiasa, 2019).

RESULTS AND DISCUSSION

This research was conducted from January 2 to June 21, 2026, in Tumpangkrasak Village. The instruments used in this study were the Hamilton Anxiety Rating Scale (HARS) questionnaire to measure anxiety levels and a standard operating procedure guide for tai chi exercises for anxiety in the elderly using a speaker and laptop. In this study, the number of samples was 16 people, and this study was conducted for 1 week, twice a week for 3 weeks with a duration of 30 minutes.

Table 1. Frequency Distribution of Respondent Characteristics Based on Age

	N	Minimum	Maximum	Mean	Mode	Median
Age	16	60	65	62	60	61.50

Table 1 shows that the age characteristics of the respondents were: the majority (mode) were 60 years old, with a median of 61.5 years and a mean of 62 years. The minimum age was 60 years and the maximum age was 65 years.

Elderly individuals who experience greater anxiety, aged 60-74 years, have a higher risk of developing anxiety and depressive disorders due to declining physical condition and weakness (Kurniasih & Nurjanah, 2020).

This finding is also supported by a study conducted by Sang Ayu Ketut Candrawati in 2022 entitled "Anxiety in the Elderly with Chronic Disease Conditions." The characteristics of respondents in this study indicate that the elderly are more susceptible to anxiety. The study found that the age group was in the 60-74 year range, with 44 elderly (83.67%) (Candrawati & Sukraandini, 2022).

Table 2. Frequency Distribution of Respondent Characteristics Based on Gender

Gender	Number (n)	Percentage (%)
Woman	14	87.5%
Man	2	12.5%
Total	16	100%

Based on Table 2 above, it can be seen that the gender characteristics of the respondents were mostly female (87.5%) and male (12.5%). Anxiety is more frequently experienced by elderly women because women tend to be more sensitive than men. Women's high level of sensitivity is due to their daily activities tending to involve emotions. Meanwhile, men, when faced with conflict, tend to enjoy it because they perceive conflict as providing positive encouragement. Elderly men experience relatively lower levels of anxiety because they are more active and exploratory compared to elderly women who are more anxious about their disabilities. They are more sensitive when the hormone estrogen stimulates receptors in the brain. When hormones fluctuate, brain serotonin sensitivity changes, so when estrogen is low, women feel anxious (Kurniasih & Nurjanah, 2020).

This is also supported by a research journal conducted by Dini Nur Alpiyah in 2023 entitled "The Effect of Tai Chi Exercise Modification on Anxiety in the Elderly at the Elderly Posyandu RW 03, Cipayung Village, East Jakarta." This study showed that the majority were female, namely 17

respondents (85%) and 3 male respondents (15%). The population at the study site was more female than male. Women tend to have more sensitive feelings than men. The high level of sensitivity possessed by women is because women in their daily activities tend to involve their emotions (Alpiah *et al.*, 2023).

Table 3. Anxiety levels in the elderly in Tumpangkrasak Village before receiving Tai Chi exercise (n=16)

Anxiety Level	Number (n)	Prosentase (%)
Mild Anxiety	7	43.75%
Moderate Anxiety	9	56.25%
Total	16	100%

Based on Table 3 above, it can be seen that respondents experienced two levels of anxiety before the tai chi exercise: mild and moderate. There are 7 respondents (43.75%) experienced mild anxiety, while 9 respondents (56.25%) experienced moderate anxiety.

Based on the interview results, the majority of respondents reported experiencing anxiety due to a history of chronic illnesses such as hypertension and diabetes mellitus (7 respondents), the loss of a spouse (3 respondents), the worry of elderly people not having anyone to care for them when they are sick (4 respondents), and the lack of family support (2 respondents) all contributed to increased anxiety.

The results of this interview indicate that respondents experienced anxiety due to factors causing anxiety, namely experience with illness and lack of support factors (Widati, 2019). This is supported by a study conducted by Khamida in 2018 entitled "Tai Chi Exercise in Reducing Anxiety in the Elderly" in this study respondents before the tai chi exercise action showed results of 32 respondents experiencing anxiety with mild to severe anxiety categories. This study states that anxiety experienced by the elderly is caused by several factors, namely declining health, persistent illnesses and traumatic experiences in the past that can cause mild to severe anxiety (Khamida *et al.*, 2018).

Table 4. Anxiety levels in the elderly in Tumpangkrasak Village after receiving Tai Chi exercise (n=16)

Anxiety Level	Number (n)	Prosentase (%)
No Anxiety	7	43.75
Mild Anxiety	7	43.75%
Moderate Anxiety	2	12.5%
Total	16	100%

Based on Table 4 above, it can be seen that after the tai chi exercise, respondents experienced three levels of anxiety: no anxiety, mild anxiety, and moderate anxiety. There are 7 respondents (43.75%) experienced no anxiety, 7 respondents (43.75%) experienced mild anxiety, and 2 respondents (12.5%) experienced moderate anxiety.

In this study, two respondents still experienced moderate anxiety. Mrs. N, 65, still experienced moderate anxiety after the exercise due to her history of hypertension and age. Mrs. W, 64, still experienced moderate anxiety after the exercise due to her history of persistent diabetes mellitus. Physiologically, stress from managing a chronic disease can trigger activation of the sympathetic nervous system and increase cortisol levels, contributing to the development of anxiety disorders. Furthermore, fluctuating blood glucose levels in diabetes patients can disrupt the balance of brain neurotransmitters, such as serotonin and dopamine, which play a crucial role in regulating mood and emotional well-being (Wahyuni, 2018).

Table 5. The Effect of Tai Chi Exercise on Anxiety in the Elderly

Z (pretest – posttest)	-3.539 ^b
P-value	<.001

Table 5 shows a p-value <0.001, indicating a significant effect of Tai Chi on anxiety in the elderly. Tai Chi is a form of exercise that involves slow, calming, and very easy-to-do body movements. It has three main movements: a warm-up, core movements, and a cool-down, which can help maintain balance. Tai Chi also stimulates decreased sympathetic nervous system activity and increased parasympathetic nervous system activity, which results in decreased levels of the hormones adrenaline, norepinephrine, and catecholamines. It also promotes vasodilation in blood vessels, resulting in smoother oxygen

transport throughout the body, especially to the brain, which can promote relaxation in the elderly. Therefore, anxiety experienced by the elderly decreased after Tai Chi (Rismawati *et al.*, 2025).

This finding is supported by a 2018 study by Khamida entitled "Tai Chi Exercise in Reducing Anxiety in the Elderly." The results showed that before Tai Chi, the majority (59.4%) of respondents had mild anxiety. After being given tai chi exercise, the majority (59.4%) of respondents were not anxious (normal). The Wilcoxon Sign Rank Test analysis obtained $p = 0.000 < \alpha = 0.05$, meaning that there was an effect of tai chi exercise on reducing anxiety levels in the elderly in the Ngagel sub-district of Surabaya (Khamida *et al.*, 2018).

CONCLUSION

Based on the results of a study conducted in Tumpangkrasak Village, six treatments were administered over three weeks, showing a p -value < 0.001 . This result indicates a significant effect of Tai Chi on anxiety in the elderly.

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