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The Effect of Qigong on Joint Pain in Elderly at Elderly Social Homes

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ABSTRACT

The prevalence of elderly over 65 years is increasing, and in line with the decline in the function of various systems, this causes many complaints arising from non-communicable diseases. Pain is a common complaint from the elderly who visit the health center. Qigong exercises can reduce pain by relaxing damaged tissue and increasing blood flow to the affected site in patients with arthritis. The design used in this study was pre-experimental. The total sample of 15 respondents with a sampling technique using purposive sampling. The independent variable is Qigong gymnastics, and the dependent variable is joint pain. The data were collected using a questionnaire and observation of the Burbonais pain scale. The data were analyzed using the Wilcoxon test with a significance level of $\alpha<0.05$. The results showed there was an effect of Qigong exercise on joint pain in the elderly ($p=0.002$). Qigong exercises can reduce joint pain in the elderly because the movements are easy to do and memorized by people who are elderly, exercise movements are more straightforward and move the joints that are usually attacked by pain so that joint flexibility is increased.

Keywords: elderly, gymnastics, joint, pain, qigong

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INTRODUCTION

The number of people aged ≥65 years is increasing very quickly. In Indonesia what is meant by the elderly are those aged ≥60 years. In developing countries, the increase in the elderly population has been very rapid. The ratio between the population aged ≥65 years compared to the population old 15-64 years is expected to be three times greater by 2050 [1]. By the increase of age, a physiological function has decreased due to degenerative processes aging) so that many non-communicable diseases appear old. Non-communicable disorders in the elderly include hypertension, stroke, diabetes mellitus, and arthritis or rheumatism [2]. Changes that occur include a decrease in the quality and quantity of collagen, which can cause a reduction in bone flexibility, cartilage function becomes ineffective so that the joints become vulnerable to friction [3]. Decreased bone strength in join flexibility also has an impact on pain and reduced area of joint motion [4]. Continous pain can affect the psychological condition of the elderly [5]. The elderly tend to use drugs that are felt to be more effective in relieving pain. Medications such as allopurinol and piroxicam are often used to relieve pain, but chemical drugs have side effects on cell life, and even cell death can [6]. Doing physical exercise when suffering from joint pain is something that is considered impossible. Still, an actual physical activity in people with arthritis or rheumatism is a mechanism to maintain joint flexibility and muscle strength. So that it can reduce the pain [7].

Results of preliminary studies conducted obtained 76.3%or a total of 42 elderly from 55 elderly with an age range of 60-82 years suffering from joint pain. Some elderly complain of joint pain when they wake up, after too much activity, shortly after sitting and going to stand. The elderly, in general, overcome their anxiety with a pharmacological approach, namely with drugs.

The results of direct interviews with seven elderly found information that the elderly said they often experience joint pain in the back and lower waist in addition to frequent pain in the knees and ankles and the rest complained of pain in the hands, fingers, and neck of the end. During the interview, the seven elderly also said that they took medication to relieve distress because every two weeks, thee institution provided treatment. The use of pain relievers is indeed useful for relieving pain for a moment, but the pain will reappear if the effects of the drug are gone [8]. Some elderly also experience it. The elderly claim that the pain disappears after taking the medication they get, but the pain reappears when the drug has run out, so they continue to complain about the same thing during regular health check-ups.

The theory of gate control proposed by Melzack & Wall (1968) is the basis of the process of joint pain in the elderly [9]. Decreased muscle strength, collagen, and elastin function, reduced tissue elasticity around the joint and inflammation trigger afferent fibers to send pain impulses to the brain. Pain impulses must pass through the gate in the spine. The entrance in question is a pattern of nerve activity that can block or allow pain messages to come. This gate will typically be closed, both by impulses that lead to the spine from large fibers that respond to pressure or stimulation or by signals coming down from the brain itself. When injuries from a decrease in musculoskeletal function, the large nerves will be damaged, and small fibers will open the gate so that pain messages can reach the brain [10].

Qigong gymnastics is one of the non-pharmacological therapies in the form of physical activity. Qigong is an exercise in the body and mind using a physical activity that utilizes chi energy. Chinese medicine theory states that pains are the result of blockage or stagnation in the flow of energy in energy channels in the human body. Qigong is believed to help open the gates of chi flow in the body. Qigong movement can train the flexibility of muscles and joints, and deep breathing meditation can relax the body so that the pain control system will decrease, and the excitement of pain to the brain reduces [11].

In patients with arthritis, Qigong can reduce complaints by relaxing diseased tissue and increasing blood flow to the affected area. Increased blood flow can cause the delivery of oxygen, nutrients, and pain relief substances such as drugs and more efficiently eliminate pain

mediators and metabolic waste that contribute to causing pain [12].

As explained earlier, besides walking and rheumatic exercises, joint pain can also be reduced by Qigong exercises. Although both physical activities are in the form of gymnastics, Qigong exercises are more practical than rheumatic events. Qigong exercises are fewer and more comfortable to memorize, but they can train all joints that are prone to pain [13]. Research on the benefits of Qigong gymnastics for various health disorders has been widely carried out abroad, but in Indonesia, the researcher has not found research on Qigong gymnastics. Based on the description above, the researchers want to examine the effect of Qigong exercises on decreasing joint pain in the elderly.

METHODS

This study used a *Pre experimental* research design with *one group pre-posttest*. The sample in this study was 14 elderly by using *purposive sampling*. The independent variable in this study was the Qigong exercise. The dependent variable in this study was joint pain in the elderly. The instrument used a questionnaire and a Burbonais pain scale observation sheet. Implementation of exercise used SAK guidelines. Data were analyzed using the *Wilcoxon Sign Rank Test* method (comparative test of 2 paired samples in the elderly with joint pain before and after Qigong exercises) with $\alpha<0.05$. This study has received ethical clearance from the research ethics committee.

RESULTS

Table 1. Distribution of general data characteristics of elderly who experience joint pain

Demographic Data	n	%
Gender		
Male	5	35.7
Female	9	64.3
Total	14	100
Age		
60-64 years	1	7.1
65-69 years	1	7.1
70-75 years	12	85.7
Total	14	100
Exercise		
Walking	0	0
Cycling	0	0
Gymnastics	14	100
None	0	0
Total	14	100
Previous occupation		
Housewife	1	7.1
Farmer/breeder	3	21.4
Seller	2	14.3
Labors	2	14.3
Etc	6	42.9
Total	14	100
Pain History		
<1 year	4	28.6
1-2 years	4	28.6
3-4 years	1	7.1
>4 years	5	35.7
Total	14	100
Medication History		
Yes	9	64.3
No	5	35.7
Total	14	100
Pain location		
Knee joint	9	57.1
Lower back joint	3	21.4
Wrist joint	0	0
Fingers joints	0	0
Shoulder and neck joints	3	21.4
Total	14	100
Increased pain		
Heavy activity	3	21.4
Wake up get up from sitting	7	50.0
Stress	0	0
Spontaneous/suddenly	4	28.6
Total	14	100
Picture of pain		
Blunt (Such being beaten)	6	42.9
Sharp (such being pricked)	0	0
Throbbing	8	57.1
Total	14	100
Pain duration		
Missing arises	3	21.4
<30 minutes	7	50.0
>30 minutes	4	28.6
Total	14	100

Based on table 1, the majority of older women are nine people or around 64.3%. The elderly who most complained of joint pain was at the age of 70-75 years, with a percentage of 85.7% (12 people). Sports activities that are routinely performed by the elderly are gymnastics (not Qigong gymnastics). Based on the history of pain, it is known that the elderly have the most joint pain for more than four years, as many as five people (35.7%). It is recognized that 64.3% of the elderly have a history of taking medication that can reduce pain. The location of pain that is most experienced by the elderly is a pain in the knee joint experienced by eight people (57.1%), and the pain will increase when waking up or getting up from a seat, as revealed by seven elderly (50%). The most common pain picture experienced by the elderly is throbbing pain, 57.1%. Based on the duration of pain that arises, known seven elderly (50%) experienced pain for less than 30 seconds.

Table 2. Distribution category of elderly pain who experience joint pain

Pain Category	pre	post
Mild	2	7
Moderate	10	7
Heavy-controlled	3	1
Heavy-uncontrolled	-	-
Wilcoxon Sign Rank Test	p=0.002	

Based on table 2, it can be seen that the joint pain score experienced by the majority of the elderly before doing Qigong exercises ten elderly experience moderate pain. Joint pain scores experienced by the elderly after doing exercises as many as seven people experienced mild pain, and seven elderly experienced moderate pain. Analysis using the Wilcoxon sign rank test statistical test obtained p=0.002. The results indicate that there is an effect of Qigong exercise on decreasing joint pain in the elderly.

DISCUSSION

Qigong exercises have been proven effective in reducing the level of joint pain in the elderly. Qigong can balance

the sympathetic and parasympathetic with deep breathing techniques and overcome various health problems. Such as psychiatric disorders, cancer, rheumatic pain, musculoskeletal disorders, neurological dysfunction, and cardiovascular disease [14]. Qigong has a low risk of causing cardiovascular problems, and this is because of its unique movements and slow body movements with breathing techniques [15].

Qigong gymnastics has three stages, namely starting from the heating, core, and cooling. Qigong gymnastics movements that influence decreasing joint pain complaints are on the whole move, especially the core movements. The core movements include actions that can increase muscle tone, increase joint flexibility and breathing regulation, such as rotating the upper body, and bending the legs while breathing deeply [16]. Qigong exercises can reduce joint pain in the elderly with softer and simpler movements, so it is considered very suitable as a low-level physical activity for the elderly [15], [17]. Qigong gymnastics movements are mostly focused on joint members such as rotating knee joints, lumbar, and back joints, shoulder joints, and wrist joints. Switching changes in the joints that are done regularly can increase joint flexibility, thereby reducing joint pain.

In the elderly with arthritis, Qigong exercises can reduce complaints by relaxing diseased tissue and increasing blood flow to the sick site [12], [18]. Increased blood flow can cause oxygen delivery, nutrients, and pain relief substances such as drugs and more efficiently eliminate pain mediators and metabolic waste that contribute to causing pain [19], [20]. Qigong is a body exercise that uses physical activity and meditation to harmonize the body, mind, and spirit [21]. The discomfort and pain is the result of a blockage or stagnation in the flow of channels in the human body. Based on this theory, Qigong can be used as prevention [11].

Regular exercise can also reduce chronic pain [22]–[25]. Gymnastics are suitable for the elderly are exercises that can maintain fitness and adapt to the conditions of the elderly before doing physical activity. Components such as endurance, strength, flexibility, coordination, balance, and speed must be adjusted to the health of the elderly [26].

CONCLUSION

Based on research on the influence of Qigong exercises at the social institution, it is known that Qigong exercises can reduce joint pain in the elderly. Besides, Qigong movements are easy to do and memorized by people who are elderly, gymnastic movements are more straightforward and move the joints that are usually attacked by pain so that joint flexibility is increased.

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