

Ergonomic Exercise Based on Spiritual Care in The Management of Pain Levels Reduction on Elderly With Gouty Arthritis

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ABSTRACT

Gouty arthritis is a metabolic disease caused by a buildup of monosodium urate monohydrate crystals in the joints. The accumulation of uric acid in the joints can form crystals such as needles that cause pain and inflammation, causing interference with the motion system and changes in daily activities. Pain management caused by the accumulation of gout is one of them with physical activities in the form of ergonomic exercise based on spiritual care. This study aims to identify the effect of ergonomic exercise based spiritual care on reducing pain levels in the elderly with gouty arthritis. The design of this study used quasy experimental with control group pre test and post test. The population in this study were all patients with arthritis gout as many as 56 elderly. Samples were taken using total sampling and divided into two groups: 28 intervention groups and 28 control groups. The intervention group was given treatment in the form of ergonomic exercise for 4 weeks with the media being given a module. Pain levels are measured by visual analog scale (VAS). Analysis of the data used was paired T test with a significance of $p < 0.05$. The results of data analysis showed that the intervention group showed an average level of pain before intervention 6.5 and after the intervention showed an average level of pain 3.2 with a p-value of 0,000. Whereas the control group showed an average pain level of 6.2 and after 4 weeks the average pain level increased by 7.0 with a p-value of 0.008. The application of ergonomic exercise based on spiritual care can be given to people with arthritis gout in reducing pain. It is hoped that nurses can implement ergonomic exercise based spiritual care for reducing pain levels in elderly patients with gouty arthritis.

Keywords: ergonomic exercise, spiritual care, pain management, gouty arthritis

Introduction

Elderly experienced some health problems including decreased function of cells due to aging process that can result in weakness of organs, changes in cognitive function, feeling, mental, social and physical (Azizah, 2011). The changes in cognitive function include arthritis gout (Sustrani, Alam, Broto, 2006). Arthritis Gout is a metabolic disease caused by the hoarding of monosodium urate monohydrate crystals on the joints and Tophi fibrous tissue (Wiraputra & Putra, 2017).

The prevalence of incidence according to Riset Kesehatan Desa (RISKESDAS) or Village Health Research in 2013 the prevalence of joint disease is at number two in the elderly, age 55-64 in the total of 45%, age 65-74 in the total of 51.9%, and age above 75 years in the total of 54.8% (Infodatin Lansia, 2016). The incidence rate of uric acid in East Java is 26.4% (Kemenkes RI, 2013). According to the World Health Organization (WHO) in 2013, 81% of uric acid sufferers in Indonesia, only 24% of them who went to the doctor, while the 71% of them tend to consume the painkillers which freely sold in the market (Ardhi, 2018). Gouty arthritis partly attacks men aged > 35 years to the elderly and women at the menopause period, but the prevalence of arthritis gout becomes the same at the age of 60 years and is influenced by several factors such as diet, genetics and environment (Roddy & Doherty, 2010)

Arthritis gout is an uncontrolled disease that causes a life quality decrease, the improvement of the health care and has a negative impact on health caused by increased uric acid (Hasina & Khafid, 2020). The hoarding of uric acid in the joints can form a needle-like crystals that cause pain and inflammation, causing interference to the motion system and changes in daily activity (Clause & Saseen, 2018; Malo, Ariani, Yasin, 2019).

The efforts made in controlling the uric acid levels are focused on how to reduce joint damage, control the pain, enhance or maintain joint function and improve the quality of life (Hikmatyar & Larasati, 2017). The management of pain that caused by the increase of uric acid is the one with non- pharmacological therapy in the form of physical activity or exercise (Rastogi & Meek, 2013). The exact exercise for elderly patients with arthritis gout requires little energy and adapted to the physical condition. Regular exercise can improve the condition of the strength and flexibility of the joints and minimize the risk of damage to the joints due to inflammation of the joints and reduce the pain resulting from decreased levels of uric acid (Komariah, 2015; Malo, Ariani, Yasin, 2019).

Physical exercises that suitable for elderly who suffer from gout arthritis with pain complaints are ergonomic exercise with spiritual based care (Ardhi, 2018). Ergonomic exercise is a spiritual based care 6 Ergonomic exercise movement consisting of 6 movements that are standing perfectly (berdiri sempurna), the movement of the chest (lapang dada), subject to gratitude (tunduk syukur), sitting mighty (duduk perkasa), burning seated (duduk pembakaran) and resigned lying with the Allah remembrance, feeling sincere and gratitude is very effective to decrease the level of uric acid in the blood and directly affect the pain and improve the quality of life (Wratsongko, 2014 Ardhi, 2018; Hasina, Sukartini, Setyowati, 2018). The spiritual care value put into ergonomic exercise adds to the effectiveness of decreasing pain in patients because spiritual care is the essential need of every individual in all places and times with all dimensions both physical and spiritual and in the form of religious and non-religious (Gandi, Darmawan, Budiadnyani, 2019; Zehtab & Adib-Hajbaghery, 2014). Spiritual care is an intrinsic need and

as a key element in the holistic treatment in treating the patient in order to make the patient not stress and worsened the disease (Yousefi & Abedi, 2011).

Ergonomic exercise is an exercise that combines muscle movements and respiratory techniques. The breathing technique that is done consciously using diaphragm muscles, stimulus the heart to open the obstruction and facilitate blood flow to the heart and whole body. The respiratory technique will facilitate the transportation of residual from burning such as gout by blood plasma from cell to kidney which will be excreted in the form of feces and urine (Wratsongko, 2015). ergonomic exercise with the spiritual-based care helps the muscles to relax, the relaxation of muscles that will later increase the process of re-absorption of uric acid on urine because levels of uric acid in the blood is reduced. Reduced levels of uric acid in the blood in the process of muscle relaxation triggers the process of homeostasis to maintain the concentration of uric acid in the blood by reabsorption of uric acid that cause the pain in the joints decreases and can make the patients do their normal daily activities (Ardi, 2018).

Methods

This research uses Quasy-Experimental research pre post test with control group design approach. This plan seeks to disclose causal relationships by involving control groups other than intervention groups. This research was conducted for 4 weeks in Mei in the elderly Posyandu Mahatma of Surabaya. This research has been laic ethics with No. 56/EC/KEPK/UNUSA/2020. The population of this research is all patients with arthritis gout in Posyandu elderly Mahatma 56 people. Sampling techniques use a total sampling. Analysis of data Using Test T. The research was divided into two groups, namely the intervention group of 28 respondents who received the form of Ergonomic Exercise based on spiritual care performed daily for 4 weeks for 10-15 minutes with the media in the form of modules and in the control group of 28 respondents who were not given Ergonomic Exercise-based spiritual care treatment. In the 1st week All respondents were performed a pre test and at the end of the 4th week, a post test was taken in the form of pain measurement using VAS (Visual Analog Scale).

Results and Discussion

The data obtained in this study indicate that the distribution of frequency according to age shows that most (67.9%) respondents in the intervention group are at the age of 65-74 years, while for the control group respondents mostly (64.3%) are at age group 65-74 years. The distribution of frequency according to gender showed that most (57.1%) respondents in the intervention group were female and in the control group most (53.6) were female.

Epidemiologically, gouty arthritis affects more men than women. Prevalence estimates state that gouty arthritis is 5.9% in males and 2% in females. In males uric acid levels increase at puberty, and the onset of gouty arthritis peaks in the fourth to sixth decades of life. However, gouty arthritis in men can also occur earlier if they have a genetic predisposition and risk factors. Whereas in women, uric acid levels increase at menopause then the risk begins to increase at age 45 with a decrease in estrogen levels because estrogen has a uricosuric effect, this causes gouty arthritis rarely in young women (Roddy and Doherty, 2010; Wiraputra & Putra, 2017). The prevalence of arthritis gout was the same between the sexes after the age of 60 years (Weaver, 2008). Women have a greater risk of experiencing pain caused by gout than men in all age groups, although the sex ratio of men and women is the same in the elderly (Rahmatul, 2015).

The aging process causes a decrease in the enzyme Hypoxanthine Guanine Phosphoribosyl Transferase (HGRT) which results in increased purines in the body, purines that are not metabolized by HGRT will be metabolized by the xanthine oxidase enzyme into increased uric acid in the body or hyperuricemia (Effendi & Makhfud, 2009). In addition, the aging process results in a decrease in the production of the uricase enzyme which is responsible for converting uric acid into altonine so that uric acid excretion in the urine is inhibited and results in pain in joints (Fatimah, 2017; Gandari, Darmawan, Budiadnyani, 2019). As they get older, the elderly need efforts to improve and maintain health (Maryam, 2008). This is caused by a systematic reduction in body condition both physiologically, accompanied by an increase in susceptibility to disease and death. This process causes the elderly to lose their existential orientation, weak, helpless, useless, experience a crisis of old age, a crisis of life meaning and a decrease in quality of life (Bastaman, 2007; Vallentina, 2019; Hasina, Putri, & Sulistyorini, 2020).

The results showed that the average pain level in the intervention group before the intervention in the form of ergonomic exercise based on spiritual care was 6.5 and after the intervention showed an average pain level of 3.2 with a p-value of 0.000. Meanwhile, the control group showed an average pain level of 6.2 and after 4 weeks the average pain level increased by 7.0 with a p-value of 0.008. From these data, it is shown that the application of spiritual-based ergonomic exercises has an effect on reducing pain levels in the intervention group.

The pain or soreness caused by arthritis gout sufferers is very painful. This disease causes the affected body parts to become swollen and inflamed, thereby increasing the pain or pain experienced by the patient (Mumpuni & Wulandari, 2016). The cause of this pain is due to the presence of MSUM (Monosodium Urat Monohydrate) crystals in the joints that move the joints, so that the muscles feel like they are torn (Rahmatul, 2015). Lack of exercise makes the body's metabolic system less likely to impair organ function and we become sick more easily. This is because the body is not trained to work hard to balance the food intake that enters the body. With exercise, the joints in the body will stretch and move so that the accumulation of purines or uric acid levels in the joints in the body does not occur. The accumulation of salt crystals in the joints of the body is what ultimately causes pain and joint inflammation or better known as gout (Mujiyanto, 2013).

This study applies an intervention in the form of an ergonomic exercise based on spiritual care, every

movement of ergonomic exercise begins with taking a breath while remembering Allah and using deep breathing techniques that aim to develop the lungs optimally so that they can collect more oxygen so that the body becomes more relaxed. Movement in ergonomic exercise consists of 6 movements. Ergonomic exercise consists of opening

movements in the form of standing perfectly, graceful movements of the chest, submitting to gratitude, sitting mightily, sitting burning and lying down resignedly. Movement contains tremendous benefits in disease prevention and health care. Ergonomic exercise based on spiritual care can be done at least once a day for 10-15 minutes (Wratsongko, 2015). Ergonomic exercise based on spiritual care is a combination of muscle movement and breathing which is added with the value of spiritual care in the form of remembering Allah with feelings of gratitude and sincerity, when standing perfectly all nerves become one point in control in the brain and at that time the mind is controlled by the awareness of reason to be healthy. and fit, and when the body bends in a gesture of submission, gratitude can supply oxygen to the head and increase blood flow to the upper body, especially the head, which can stimulate our body's relaxing response from all physical and mental stress (Sagiran, 2012).

Ergonomic exercise in the elderly is trained to elicit a relaxation response. So that the release of endorphins can inhibit the activity of the trigger cell, the gelatinosa gate subsidence is closed and the pain impulse is reduced or slightly transmitted to the brain, this condition can make the client reach a state of calm. The relaxed condition that is felt is due to relaxation exercises that can provide a gentle massage to the various glands in the body, reduce the production of cortisol in the blood, restore sufficient hormone output so as to provide emotional balance and complete peace of mind when done regularly and maintain a healthy lifestyle for prevent the reoccurrence of joint pain that is felt due to increased uric acid (Gandari, Darmawan, Budiadnyani, 2019; Komariah, 2015).

Ergonomic exercise can reduce the scale of joint pain because Ergonomic exercise is done to restore or correct the position and flexibility of the nervous system and blood flow, maximize oxygen intake to the brain, open up the intelligence system, musculoskeletal system, sweat system, body heating system, uric acid combustion system, cholesterol, blood sugar, lactic acid, oxalate crystals, carbohydrate conversion system, electrolyte or ozone production system in the blood, immune system. When you do ergonomic exercises, you will have peace of mind. This calmness is a useful phase for the body to relax and rest all organ activities and organ systems after a full day of activity. This calm causes the hormone adrenaline, the stimulating hormone, to relax. An attitude of relaxation is important because it can relieve fatigue, fatigue, and pain (Wratsongko, 2015).

The success of the intervention in this study was added to the value of spiritual care by affirming belief by remembering Allah with feelings of gratitude and sincerity. Spiritual values have a positive effect on stress responses in individuals, spiritual well-being (balance between physical, psychosocial and spiritual aspects), a sense of integrity, and increase interpersonal relationships (Cavendish et al, 2003). Spiritual values are important to improve individual health in order to avoid diseases that can threaten the achievement of optimal self-potential and are the responsibility of nursing (Ross et al, 2014).

Conclusion

Changes in pain levels in the intervention group showed a decrease in pain levels after intervention in the form of ergonomic exercise based on spiritual care.

Elderly with arthritis gout with complaints of pain are expected to be able to change their healthy lifestyle by exercising in pain management that can be done routinely and continuously. The application of ergonomic exercise based on spiritual care can be given to arthritis gout sufferers in reducing pain levels which can be done by nurses independently so that nurses can treat patients holistically. Including spiritual care in nursing interventions can accelerate the healing of patients' illnesses and increase satisfaction in meeting individual spiritual needs.

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