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Difference In VAS Value Before and After Physiotherapy In Osteoarthritis Patients At The Noble Heart General Hospital Kendari

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ABSTRACT

Background: *Osteoarthritis (OA) is a joint disease that most often occurs in adulthood to old age throughout the world, according to the world health organisation (WHO) in 2014 stated that the world's population experiencing osteoarthritis is 335 million people worldwide. Risk factors that affect the incidence of Osteoarthritis include age, gender, obesity, genetics, joint injury, exercise and work, and other risk factors. One of the OA treatments is physiotherapy to reduce the pain intensity of Osteoarthritis sufferers. This study aims to determine the difference in VAS values before and after physiotherapy in Osteoarthritis patients at the Mulia Hati General Hospital Kendari.* ***Method:*** *This study used a descriptive analytic method with a cross sectional approach. This research was conducted at the Mulia Hati General Hospital Kendari from November to December 2022. This sampling uses total sampling that meets the inclusion criteria with a total sample of 37 patients. Data analysis using the Wilcoxon test.* ***Result:*** *The results showed a P value of 0.000 (p value <0.05), so Hawas accepted, which means that the results of the research conducted showed a difference in VAS values before and after physiotherapy.* ***Conclusio:.*** *The conclusion of this study is a decrease in VAS value after physiotherapy is performed at the Mulia Hati General Hospital Kendari.*
Keywords. *Osteoarthritis, Pain, physiotherapy*

INTRODUCTION

Osteoarthritis (OA) is the most common joint disease in adults and the elderly worldwide. *Osteoarthritis is* defined as a progressive degenerative disease of thejoint cartilage. (Sasono et al., 2020).

According to the *world health organisation (WHO)* in 2014 stated that the world population with osteoarthritis is 335 million people worldwide (Isnaini et al., 2020).

The global prevalence of OA is 9.6% in men and as much as 18% in women over 60 years of age respectively. In the US, the incidence of OA is estimated at 15.8 million people aged 25to 74 years (Sahrudi, 2022).

In Southeast Asia, the prevalence ofOA is suffered by 27.4 million people (Putri et al., 2022). based on Riskesdas data in 2013, the prevalence of joint disease and osteoarthritis in Indonesia was recorded at around 24% and decreased in 2018 to 7.3%. The prevalence of joint disease in Southeast Sulawesi province reached 5.63%, in the city of Kendari data was obtained as much as 5.90% (Kemenkes, 2018).

The impact of OA can cause a decrease in the patient's quality of life such as obstruction of the patient's movement, decreased work ability.

It can cause severe pain and disability in patients so that it can interfere with daily activities (Ariyanti et al., 2021). The most common complaint of *osteoarthritis* patients is pain. Pain inpatients with OA is multifactorial. Pain can come from *intraosscous hypertension,* stretching of the *periousteum* nerve fibres, stretching of the joint capsule, microfracture of the subchondral bone *intra-articular hypertension*, *enthesopathy*, *bursitis*, and

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muscle spasm (Tika 2018).

The degree of pain is a subjective complaint, one person with another describes the degree of pain differently. The degree of pain is classified into three, namely mild, moderate and severe pain. One of the instruments that can be used to measure the degree of pain is the *Visual Analog Scale (VAS),* or *Numeric Rating Scale (NRS),* where in the instrument there is a scale of 0-10 (scale 0 indicates no pain while scale 10 indicates the heaviest pain scale) (Putra et al., 2018).

Based on the description above, the researcher is interested in conducting a study entitled "Differences in *VAS* Values Before and After Physiotherapy in *Osteoarthritis* Patients at the Mulia Heart General Hospital".

METHODS

The research method used in this study was descriptive analytic with a *cross sectional* approach. This research was conducted in October 2022 at the General Hospital of Hati Mulia Kendari. Sampling with total sampling technique that meets the inclusion criteria. The number of samples obtained was 37 patients who were willing to become respondents and met the inclusion criteria. Data analysis was performed with the *Wiloxon* test. This study has obtained Ethical eligibility from the Research Ethics Commission Health Faculty of Medicine,Halu University Oleo with number 051/UN29.17.1.3/ETIK/2022 and RSU Hati Mulia Kendari City.

RESULTS

Based on table 2. regarding the characteristics of respondents according to age, it shows that respondents aged 45-59 years were 11 people with a percentage of (29.7%), respondents aged between 60-74 years were 21 people with a percentage of (86.5%), and respondents aged 75-80 years were 5 people with a percentage of (13.5%) based on age characteristics, the highest level of *Osteoarthritis* sufferers is at the ageof 60-74 years.

Based on table 3. shows that there are 15 male respondents with a percentage of (40.5 %) and 22 female respondents with a percentage of (59.5). Based on gender characteristics, the highest level of OA is female.

Based on table 4. shows that the moderate pain scale is 19 people with a percentage of (51.4%), and the severe pain scale is 18 people with a percentage of (48.6%).

Based on table 5. shows that the mild pain scale is 22 people with a percentage (59.5%) and the moderate pain scale is 15 people with a percentage (40.5%).

Based on table 6. shows that the results of the analysis using the *Wilcoxon* test obtained an average value before physiotherapy of 1.4865 and an average value after physiotherapy of 0.4054 with a P value of 0.000 and can be concluded that there is a difference in VAS value before and after physiotherapy.

DISCUSSION

Osteoarthritis is a degenerative joint disorder due to chronic inflammation of the knee joint characterised by progressive destruction of cartilage, the appearance of osteophytes, and changes in the synovial membrane. patients with *Osteoarthritis Knee* generally complain of pain, muscle weakness, decreased stability of the knee joint, stiffness in the knee in the morning, a "cracking" sound when the knee is bent or straightened, and decreased

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functionalability (Khasanah et al., 2022).

The exact cause of OA is still unknown, but based on a number of studies it is known that the cause is multifactorial. The main risk factors for OA are age, female gender, obesity, physical activity, genetic factors, race, joint trauma (Soeryadi 2017).

Based on the research results in the table 2. the youngest age of knee OA was 45 years and the oldest occurred at the age of 80 years. The incidence of knee OA was most prevalent in the age group 60-74 years, namely (56.8%). This is because the aging process causes increased weakness around the joint. The aging process can also reduce the flexibility of cartilage classification joints and reduce chondrocyte function, all of which support *osteoarthritis(*Paerunan et al., 2018).

Based on the results in table.3 regarding the gender that most experienced knee OA was female, namely 22 people with a percentage (59.5%). This is in line with the statement (sasono et al., 2020) that women have a greater risk of developing knee OA. While women are more likely to suffer from OA than men, they also have thepotential to suffer from a more severe degree of OA than men. The risk of OA in women increases with age towards menopause due to hormonal decline, especially estrogen and other physiological functions of the body.

Based on the OA therapy guideline from the *American College of Rheumatology (ACR),* OA therapy can be divided into two, namely non pharmacological therapy and pharmacological therapy (Leni 2022). In this study, severe and moderate pain felt by respondents was first given non-opiod class drugs, namely NSAIDs in the form of oral meloxicam and diclofenac sodium combined with non-pharmacological management, namely by providing physiotherapy interventions which are very useful for reducing pain and inflammatory responses (Iqomi et al., 2021).

One of the physiotherapy modalitiesthat can be used in patients with OA is *Transcutaneous Electrical Nerves Stimulation (TENS)* which is a physiotherapy intervention that aims to reduce pain by delivering electrical impulses to patients (Haryono et al., 2021).

In research conducted by Pertiwi 2018 on "Physiotherapy Management of *Sinistra Genu Osteoarthritis* Conditions with Modalities *Ultrasounnd, Trancutaneus Electrical Nerve Stimulation* and Exercise with *Theraband* Method at Kraton Hospital Pekalongan City." Stating that patients diagnosed with OA *knee sinistra* after pain assessment using the *VAS* scale were found to have severe pain complaints when doing activities, so that physiotherapy treatment is carried out with *TENS* and *US* for 3 times a week and giving *Exersice Theraband* method 5 times, the final result is a decrease in motion pain from severe pain to moderate pain (Pertiwi,2018).

Based on the research in table.4, it was found that the majority of *VAS* values experienced mild pain as many as 22 people (59.9%). These results are supported by previous research, namely that there was a significant decrease in the left knee from *VAS* 7 (moderate pain) at evaluation 1 to VAS 1 (mild pain) at evaluation 6 after the *TENS* therapy modality with *Ultrasound* (Denny 2019).

The success of a physiotherapy

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programme is determined by many things. The response of each patient to physiotherapy is different, this is influenced by the course of the disease, body shape, movement patterns and behaviour patterns in patients (Ismaningsih 2018).

In the research I did there were 3 respondents with *VAS* values before and after physiotherapy did not change. this is because the patient did not follow physiotherapy with a predetermined schedule, the patient also did not support physiotherapy by not consuming healthy and nutritious food so that it affected the physiotherapy program carried out.

Based on the results in table.6, it shows that the results of the analysis using the *Wilcoxon* test obtained an average value before physiotherapy of 1.4865 and an average value after physiotherapy of 0.4054 with a P value of 0.000 which means 0.000
<0.05, so it can be concluded that there is a difference in *VAS* pain value before and after physiotherapy.

This in line with Milenia's research(2021) obtained as many as 13 people (37.1%) patients with moderate pain degrees (4-7) before intervention using *TENS* more than other pain scales. Based on the results of measurement Vas after physiotherapy action as much as ≥6 times on patients with osteoarthritis at Hati Mulia General Hospital kendari,respondent the majority of pain at *Osteoarthritis*
(Pujianto 2017).

CONCLUSIONS

Based on the results of the above study, it was found that the *VAS* value before physiotherapy in osteoarthritis patients was mostly moderate pain and the *VAS* value after physiotherapy in *Osteoarthritis* patients was mostly mild pain. With this it is concluded that there is a decrease in *VAS* value after physiotherapy is performed on *Osteoarthritis* patients at the Mulia Hati General Hospital Kendari.

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