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COMBINATION EXERCISE IN LUMBAL SPONDYLOSIS DISEASE

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Abstract: Back pain is a common complaint in everyday life. Low back pain remains a major public health burden throughout the industrialized world. Epidemiological data showing low back pain ranks 19th with a percentage of 27% and a lifetime prevalence of 60%. Various data in several developing countries state that the incidence of low back pain is approximately 15-20% of the population, most of which are acute or chronic low back pain, including the benign type. Functional limitations include difficulty bending, walking for a long time, and sitting for a long time because of the pain. Assessment of signs and symptoms is very important to the planning and evaluation. Benefits for Academics This research is expected to add scientific insight to personnel who want to know about case reports of lumbar spondylosis in the elderly. Interviews were conducted by filling out a questionnaire with the researcher's guide. Exercise Performing exercises with the guidance of the researcher, which includes an operating system for physiotherapy intervention procedures. Case report The researcher conducted a literature review related to the combined exercise of lumbar spondylosis in the elderly.

Keywords: back pain, industrial world, bending motion.

INTRODUCTION

Back pain is a common complaint in everyday life. It is estimated that almost everyone has experienced back pain in their lifetime. Low back pain remains a major public health burden throughout the industrialized world. Epidemiological data show low back pain ranks 19th, with a percentage of 27% and a lifetime prevalence of 60% (Demoulin & Montano-Almendras, 2012). According to the World Health Organization (WHO), 2-5% of employees in industrialized countries experience low back pain each year, and 15% of absenteeism in the steel industry and trade industry is caused by low back pain (Sakinah & Pudjianto, 2018).

In Indonesia, the incidence of low back pain is not well known. Various data in several developing countries state that the incidence of low back pain is approximately 15-20% of the population, most of which are acute or chronic low back pain, including the benign type. Ninety percent of mild low back pain can heal spontaneously within 4-6 weeks, but there is a tendency to recur, causing chronic pain and disability (Wahyuni, 2012).

Lumbar spondylosis can mean changes in the joints of the spine characterized by increasing degeneration of the intervertebral discs followed by changes in bone and soft tissue, or it can mean overgrowth of bone (osteophytes), which are mainly located on the anterior, lateral, and sometimes posterior aspects of the spine. Superior and inferior edges of the central vertebra (corpus) (Vanti et al., 2021). According to Andryanto (2013), spondylosis is a degenerative spine disease often found in physiotherapy services. Most of the cases written in scientific publications are in the form of management or physiotherapy management of low back pain, so they are not specific to certain cases of the disease. There is a difference between low back pain and lumbar spondylosis. Low back pain is a collection of disease symptoms related to low back pain, while lumbar spondylosis is a diagnosis, a part of low back pain syndrome.

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The presence of pain caused by lumbar spondylosis can cause impairment in the form of pain in the lower back, limited range of motion of the lumbar joints, and weakness of the abdominal and back muscles. Functional limitations include difficulty in bending, walking for a long time, and sitting for a long time because of the pain that is felt. Disabilities in daily activities, such as no longer being able to participate in community social activities in their environment. Physiotherapy, in this case, plays a role in returning and overcoming these impairments, functional limitations, and disabilities so that patients can return to their activities (Virchow et al., 2019).

Assessing signs and symptoms is crucial for planning and evaluation (Rusdianawati, Usman, Biidznillah, & Rohman, 2021). So to evaluate the results of disability measurements, a tool that meets international standards is needed. The measuring instrument must meet psychometric elements and be able to adapt to local socio-cultural characteristics. One of the internationally agreed disability measurement instruments that are often used in LBP is a modified disability questionnaire for low back pain (the Modified Oswestry Low Back Pain Disability Questionnaire).

METHODS

Research design

This research is a descriptive study using a case report approach based on interviews, assessments, and intervention management with the aim of improving the quality of life of the elderly, reducing pain, and increasing the range of motion (ROM) of lumbar spondylosis disease in the elderly by giving combination exercise.

Research Flow

Case report research stages:

1. Determine the object of research.
2. Case identification.
3. Conducting interviews and assessments.
4. Provide combination exercise intervention.

Time and Place of Research

This research lasted two weeks, from June 21, 2021, to July 5, 2021. The location of this research was carried out at the STIKES Telogorejo physiotherapy laboratory. The reason for choosing this location is that it can be used as a research facility.

Data Collection Tools and Techniques

Collecting data in this study using techniques or instruments:

1. Interview

Conduct interviews with geriatric patients and provide an explanation of the research to be studied, namely combination exercise in lumbar spondylosis in the elderly. Interviews were used to assess spinal pain with the Oswestry disability index (ODI) and range of motion (ROM) with the Schober test in the elderly. Interviews were conducted by filling out a questionnaire filled out by respondents with the researcher's guide.

2. Exercise

Doing exercises with the guide of the researcher, which includes an operational system for physiotherapy intervention procedures.

3. Documentation

The results of exercise photos and radiology results of a CT scan with a history of lumbar spondylosis are documented as material for consideration in making this study.

4. Case reports/case reports

Researchers conducted a literature review related to combination exercise of lumbar spondylosis disease in the elderly. A literature study as a secondary source is needed in the preparation of this research.

Data analysis method

The data analysis method used by the researcher was a direct interview using a questionnaire, then given

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a combination exercise and making notes in the form of a copy of the data and the results collected, analyzed whether there was an improvement in the quality of life and functional activity of elderly patients with lumbar spondylosis and range of motion carried out in the STIKES physiotherapy laboratory Referral Telogorejo RSDK Semarang.

RESULT AND DISCUSSION

Results

Based on the results clinical status, physiotherapy was performed on the patient elderly, Mrs. N, with a history of disease *lumbar spondylosis* at Home Sick General Dr. Kariadi Semarang, then in Thing, this writer discusses the results problem obtained patient _ implementation report case. Researchers will too discuss improvements found _ in giving intervention *combination exercises* to patient elderly Mrs. N with a history *of lumbar spondylosis* with the description as follows:

CLINIC STATUS

1. **GENERAL DESCRIPTION OF THE PATIENT**
   Name: Mujiati
   Age: 65 years
   Gender: Female
   Religion: Islam
   Occupation: Worker
   Address: Jl. Sudirman No. 20
2. **HOSPITAL MEDICAL DATA**
   Medical diagnosis: Lumbar Spondylosis
   Clinical Notes: Suspect Ischialgia EC HNP
   Referrals from doctors: Medical Rehab Specialist
3. **PHYSIOTHERAPY AGENCY**
   Anamnesis (Auto/Hetero)
   Main complaint :
   The patient feels stiff and sore all-around backdown and sore localized on the back bottom, especially the buttocks. Often experience tingling and numbness in the limbs down. And there is difficulty in the walk .
   History of Present Disease: Osteoporosis
   Past medical history: Suspect Ischialgia etc HNP
   History of Associated Diseases: Osteoarthritis
   Anamnesis systems
   Musculoskeletal: spasm muscle
   Neurology: tingling and numbness _
   Respiration: no there is the complaint
   Cardiovascular: no there is problem
   Physical examination
   Vital Signs
   Blood Pressure: 130/90 mmHg
   Pulse : 84 x/ minute
   Breathing : 24x/ minute
   Temperature: 36.8 ^{0}C
   Inspection
   static: expression patient accompanied with worry
   dynamic: seen posture patient is more comfortable when sitting, patterns Street a little dragged because there is the history of OA, use tool to help walk (stick).

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Palpation: there are spasms in the muscles

Specific Examination:

- Laser: + pain position 60 ^{0}
- Bragard : + pain position 40 ^{0}
- Neri: + pain position 30 ^{0}
- Patrick: -
- Counter Patric Tests: -

Cognitive, intrapersonal and interpersonal :

Cognitive : patient could tell the chronology happening disease

Intrapersonal : patient has high motivation _ for return recovery and believe self like activity with family and playing with grandson.

Interpersonal: the patient could socialize with inhabitants around.

4. **PHYSIOTHERAPY DIAGNOSIS**

   Disturbance balance and pattern Street

5. **PROBLEMATIC PHYSIOTHERAPY**

   a. **Impairments**

      There are spasm muscles and *bad posture* (disorders balance and pattern way)

   b. **Functional limitations**

      Patient difficulty walking without tool help walk (stick)

   c. **Disabilities**

      Patient not yet could long stand and sitting for hours

6. **PHYSIOTHERAPY ACTION PLAN PROGRAM**

   long term goals: increase the quality patient

   Short-term goals : deduction spasm muscle and increase activity functional (pattern walk and balance).

7. **PHYSIOTHERAPY EVALUATION**

   Evaluation management physiotherapy geriatric patients _ with Lumbar Spondylosis aim to know results level success 14 times practice for 14 meetings, with the exercises given that is *combination exercise.*

Discussion

In the reported case, the researcher discusses a patient elderly 65-year old, diagnosed _ with lumbar spondylosis (SATRIA, 2022). Diagnosis-based results inspection laboratory then diverted to the doctor's nerves and referred to the physiotherapy clinic (Fitria, 2020). Based on anamnesis from inspection, the patient experiences problems with the muscles backing down and changing posture.

Lumbar spondylosis occurs due to the formation of new bone in the area of the ligament that is under pressure (Septiani et al., 2022). Various pain-sensitive structures are present in the lower back. These structures are the periosteum, outer 1/3 of the annulus fibrosus, ligaments, articular capsule, fascia, and muscles. All of these structures contain nociceptors that are sensitive to various stimuli (mechanical, thermal, and chemical). These receptors actually function as protection. If the receptors are stimulated by various local stimuli, they will be responded with the release of various inflammatory mediators and other substances, which cause the perception of pain, hyperalgesia, and allodynia, which aims to prevent movement to allow the healing process to continue. One of the mechanisms to prevent damage or more severe lesions is muscle spasms that limit movement. This muscle spasm causes ischemia and, at the same time, causes trigger points to appear, which is one of the painful conditions. Various stimuli, such as mechanical, thermal, or chemical can activate or sensitize nociceptors. Direct nociceptor activation causes pain, and sensitization causes hyperalgesia. Pain that arises due to the activation of nociceptors is called nociceptive pain. Another form of pain that often arises in pain back below is neuropathic pain (Wahyuni, 2012).

This is influenced by the effect of *William Flexion Exercise, which* gives a *stretching effect*. *Stretching* is a general term used to describe or describe several therapeutic maneuvers aimed at

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lengthening pathologically shortened soft tissue structures and increasing range of motion (LGS). This stretching can also mean stretching or stretching (Sugiarto in Priyambodo, 2008). The purpose of the *William Flexion Exercise* is to build lower torso stability by Activating the abdominal muscles, gluteus maximus and hamstring muscles, Passively stretching the hip flexor muscles and lower back so as to produce a balance between the postural flexor muscles and the extensor muscles Postural Reducing the position of lordosis of the lumbar vertebrae thereby reducing pressure on the posterior structures of the lumbar vertebrae and strengthening the abdominal and gluteus maximus muscles. Movements on *William Flexion* can also open the intervertebral foramen and stretch the ligament structures (Wahyuni, 2012). *William Flexion's* movements function to strengthen the supporting muscles around the lower back, especially the abdominal and gluteus maximus muscles, and stretch the back extensor muscle groups. By stretching the exterior back muscles, it will cause the elasticity in the muscle tissue and have a relaxing effect on the muscles so that the muscles are relaxed enough to move because the more relaxed and not tense the muscles are, the muscles can move fully without feeling pain (Luklukaningsih, 2019).
Research conducted by Andryanto (2014) shows results that occur decline pain in the elderly with lumbar spondylosis with given intervention *William flexion exercise* for three months. Giving practice reduce painful lower back with the method of strengthening abdominal muscles and gluteus maximus, as well stall muscle extensor back, as for form practice form flex lumbosacral. Stretching of the muscle's lower back occurs enhancement temperature Locally, increasing the cellular metabolism of muscle. So that metabolites easy transported. Strengthening abdominal muscles as servant crutch bone back so that the alignment of the bones behind permanent straight.

CONCLUSION

This case report reports on an elderly patient with Lumbar Spondylosis who is 65 years old. Combination exercise aims to reduce pain, increase the range of motion of the joints and increase functional activity in the elderly.

AUTHOR CONTRIBUTION

Article content, Arial; 10pt; font color black; with alignment justified; line spacing 1.15.All parties involved in the preparation of this article can be written in the author's contribution, optional

CONFLICT OF INTEREST

Article content, Arial; 10pt; font color black; with alignment justified; line spacing 1.15. Association with a sponsor or potential conflict of interest, if any, it must be declared here. If there are none, it should be written as “There are no conflicts of interest” or “The authors declare that the study was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest”.

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Article content, Arial; 10pt; font color black; with alignment justified; line spacing 1.15. Should be included at the end of the text and not in footnotes. Personal acknowledgements should precede those of institutions or agencies; include any grant numbers where appropriate.

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