Universitas Abdurrab

ABDURRAB INTERNATIONAL CONFERENCE COMPREHENSIVE GERIATRIC ASESMENT

"Integrating Promotive And Preventive In Health Care"

Universitas Abdurrab
Pekanbaru,Gedung Thariq Bin Ziyad
Tanggal 18-19 Januari 2023

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Indikator Keberhasilan Suatu Universitas Untuk Bersaing Dengan Perguruan Tinggi Lain, Baik Dalam Skala Regional, Nasional Maupun Internasional Merupakan Usaha Yang Berkesinambungan Yang Dilakukan Civitas Akademika Dalam Meningkatkan Sumberdaya, Fasilitas Dan Peralatan Yang Dimiliki. Salah Satu Indicator Keberhasilan Yang Dapat Dilihat Pada Meningkatnya Kualitas Dan Kuantitas Penelitian Dan Pengabdian Kepada Masyarakat.

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LPPM Universitas Abdurrab

DAFTAR ISI

Application Posyandu Q Prevents Stunting to Measure Toddler Nutrition

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Abstract

Indonesia ranks 5th in the world with the most child stunting. This shows how important it is to provide proper nutrition for the child. Meanwhile, in an all-digital era, many millennial mothers already use smartphones but are still not able to use these objects properly. Good nutritional intake is found in the four healthy and five perfect foods, namely staple foods, side dishes, vegetables, fruits and milk. The author uses the design thinking method because this method is suitable for detecting the nutritional value of a food based on the four healthy five perfect foods by utilizing the posyanduq mobile application. The purpose of this research is to realize the development of a mobile posyanduq application as an application for detecting nutritional value in children in the form of a design thinking model that will be used for millennial mothers today. This research produces a design model for detecting the nutritional value of a food. Thinking design is a design methodology that is based on finding solutions aimed at solving complex problems. The conclusion from this study is that the design model that has been made based on evaluation results from the audience using the Google form, which was distributed to the mothers participating in Posyandu Mekar Sari, Kampung Patin XIII Village Koto Kampar, received 27% improved response, and 73% continued to the implementation or implementation stage.

Keywords: Design thinking, applications, mobile posyandu, nutrition, stunting.

Introduction

Stunting is a condition in which a child experiences growth disturbances so that the child's height is lower or shorter. The emergence of symptoms of stunting in 2021 due to the impact of the spread of the corona virus and the lack of knowledge of the people of Pulau Gadang Village about stunting. Geographically, Pulau Gadang Village has an area of ± 128,635 KM 2, of which 60% is hilly land which is used by the community for rubber plantations, 30% of the land is used by the community as agricultural land and 10% is swamps used by the community as fishery land. (fish ponds), especially catfish, is a village located in the XIII Koto Kampar District, Kampar Regency, with a distance to the District Capital of 17 KM and a distance to the District Capital of 35 KM. Pulau Gadang Village is known for its catfish production. The latest data is that there are more than 780 ponds or the equivalent of

62 hectares. Before the covid 19 pandemic, the results of the catfish pond harvest were quite satisfying with an average harvest of up to 6 tons per day.

The results obtained were quite satisfying and profitable for the residents of Pulau Gadang Village so that it became an economic improvement for the residents of Pulau Gadang Village. The price received by the market is also quite tempting considering that catfish are not only sold alive, but are processed into processed smoked fish or known as salai, crackers, nuggets and fish balls. The Covid 19 pandemic which started in 2020 resulted in the economy in Pulau Gadang Village declining, this can be seen in the decrease in the yield of catfish ponds to less than 2 tons, so that several production units for making salai fish are not working, because the need for catfish is according to the size of fish production salt is not fulfilled. The economic downturn resulted in the neglect of the nutritional needs of children and pregnant women in Pulau Gadang Village.

Based on data collected by the posyandu cadre team, it was found that 27 percent of the toddlers and toddlers from the Pulau Gadang Village community experienced stunting symptoms, and 30 percent of pregnant women in Pulau Gadang Village experienced insufficient nutrition during pregnancy. The closure of Posyandu services from 2020 to 2021 (1) due to the spread of the Covid-19 pandemic has resulted in hampered child growth and development examination services, so that monitoring of child growth and development is disrupted. Based on interviews with the PKK in Pulau Gadang Village as the supervisor of the posyandu, the team found that the lack of knowledge from the people of Pulau Gadang Village about the symptoms of stunting and the dangers of stunting, this is one of the consequences of the temporary closure of the posyandu in 2020-2021 so that the community receives less counseling about the symptoms of stunting and the dangers of stunting. b. The lack of knowledge of the people of Pulau Gadang Village and posyandu cadres in processing healthy food to prevent stunting. Based on interviews with posyandu cadres and several residents of Pulau Gadang Village, it was concluded that the lack of knowledge of posyandu cadres and the community in developing healthy food to prevent stunting, while the availability of healthy food ingredients is quite large and easy to obtain in Pulau Gadang Village.

One source of calcium that is quite high is catfish bones(2), while catfish bones are wasted waste from the processing of meatballs and nuggets in Pulau Gadang Village. The lack of knowledge of the people of Pulau Gadang Village regarding clean and healthy living behavior (PHBS), especially the management of trash cans. The results of the team's field observation found a problem that the Gadang Island community did not understand clean and healthy living behavior (PHBS), this was indicated by the fact that trash was still found piled up in front of residents' homes. Clean and Healthy Lifestyle (PHBS) are all health behaviors that are carried out consciously so that family members or families can help themselves in the health sector and play an active role in community activities. One of the steps to prevent stunting is to implement Clean and Healthy Behavior (PHBS) by every household by increasing access to clean water and sanitation facilities, as well as keeping the environment clean(3). There are 5 pillars of sanitation to prevent stunting, wash hands with soap, manage household drinking and eating, stop open defecation, manage household waste, and manage household liquid waste. The unavailability of science and technology at Posyandu Merusari in recording the growth and development of children, starting from weight, height, and recording of child immunizations. Currently the recording of child growth and development, starting

from weight, height, and recording of child immunizations uses ledgers and KMS books. The problem that often occurs is that many people in Pulau Gadang Village do not bring their KMS books, and many even lose their KMS books.

Based on observations and interviews with Mekar Sari Posyandu cadres, the stunting measurement tool is not complete, currently the Merusari Posyandu only has digital scales, children's height (Stadiometer), special baby height (Infantometer), while Arm Circumference and Head Circumference Tapes (LILA) Posyandu Mekarsari does not yet have one. Designing, creating, and implementing the Posyandu Q Prevent Stunting mobile application, Notification of posyandu schedule every month, Information about stunting, dangers, and ways to prevent stunting, Records of child growth and development according to the stunting chart, and early detection of stunting using artificial intelligence based on child growth and development data, Records of pregnancy checks, Chat with the Posyandu Bloom Sari midwife, and control nutrion gizi balita with application mobile posyanduq. The posyandu mobile application Q Prevent Stunting can help cadres in recording child growth and development based on stunting charts, stored data makes it easy for Posyandu Mekarsari cadres to predict how many toddlers and toddlers will experience stunting symptoms, so the Pulau Gadang Village government quickly takes steps to solve the stunting problem. Posyandu mobile application Q:Prevent Stunting will make Pulau Gadang Village stunt-free in 2023.

Method

The problem in this study was how to detect nutritional value in children. To solve this problem the author uses the design thinking method. The advantages and disadvantages are used as the basis of the problem. Based on previous research (Rosyda & Sukoco, 2020) that this design thinking model can help sellers and buyers in carrying out the buying and selling process, they don't have to meet face to face, but by using smartphones they can interact well with each other so that it can be done anywhere and anytime. This design is easy for users to understand, making the buying and selling process more effective (Setiawan, 2016). Of course, this can answer that the design thinking model can be an alternative model and the right solution in the buying and selling process based on mobile E-commerce applications and is ready to be implemented (Batmetan, 2018). This design thinking is centered on human problems which will be used as an innovation taken from design tools for people's needs, technological possibilities, and business success requirements according to previous research (Lazuardi & Sukoco, 2019).

The weakness of this model is that the duration of working on a project takes time. which is quite long even though the target of this application is to answer user needs. Data Collection The data used in this study are primary and secondary data (Setiawan, 2016b). Primary data was obtained through interviews with Posyandu cadres in the form of a response questionnaire using the Google form to Sri Mersing Posyandu participants, Sidomulyo Barat kel, Handsome sub-district, Pekanbaru City, Indonesia. With this we can easily get data information without having to meet face to face. Meanwhile, secondary data was obtained from literature studies such as: books, journals, magazine articles, and others (Ratum, 2021Best Practice. The stages of the design thinking model can be seen in Figure 1 below: Figure 1. Design Thinking Model Design The explanation of the design model and design thinking can be seen as follows: 1. Empathize (understand) At this stage we will understand user needs in

the data retrieval process. Whether it's a questioner or observation. Users will tell their complaints so far by using the running system, the difficulty of understanding updates to new things, or the losses experienced, both material and time. The team will write it down in the form of a mind map. The following is a model of the perceived problems: Figure 2. Description of the Problem The explanation for the problem description of malnutrition is: 1. How many mothers work in Mekar Sari?, What are the intake of less nutritious foods that can affect children's nutrition? 3. How many children are affected by malnutrition in the West XII Koto Kampar sub-district environment? 4. How is the mother's knowledge about nutritional balance in growing up child development? 2. Define (explain the problem) Here the user will describe in detail about the problems that have been felt so far and this is where we analyze to determine the core of the problem that has been identified. 3. Ideate (solution) Here we will come up with ideas as a solution to solving the problem The solution based on the problem above is making an application to help and monitor children's food nutrition and prevent stunting so that parents can work well and children's nutrition is fulfilled. 4. Prototype (model) Prototype is a design model that will be addressed to users, and explained to complete user problems in. 5. Test (testing) This process aims to see the results of the design made by the team to the user so that it fits the user's needs or changes are needed again. 6. Implementation Implementation is a way to realize all the stages in the design thinking model, in order to achieve the expected solution.

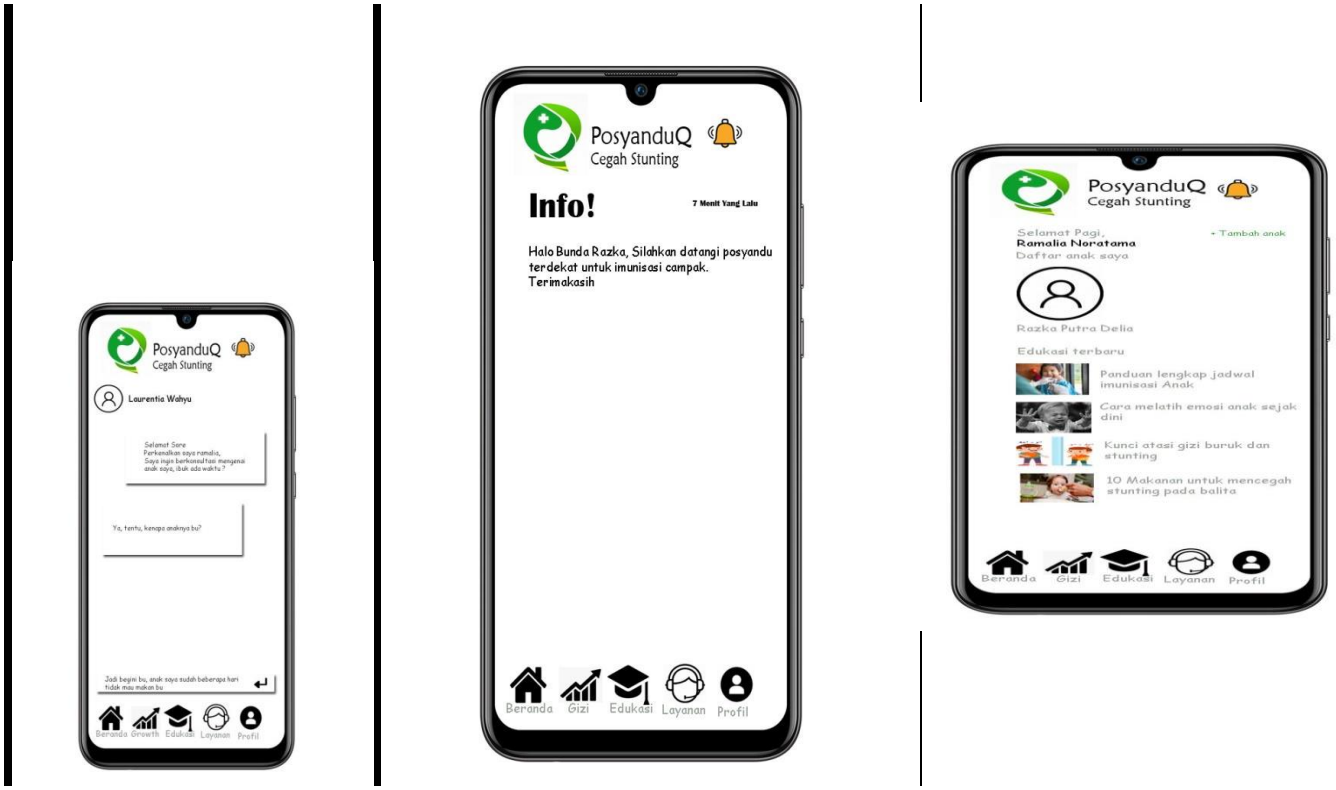
Results and Discussion

The Posyandu Mobile Application: Prevent Stunting which will be developed has 8 pages, while we can see the design appearance as follows.

Posyandu cadres bloom sari and Gadang Island Village Community

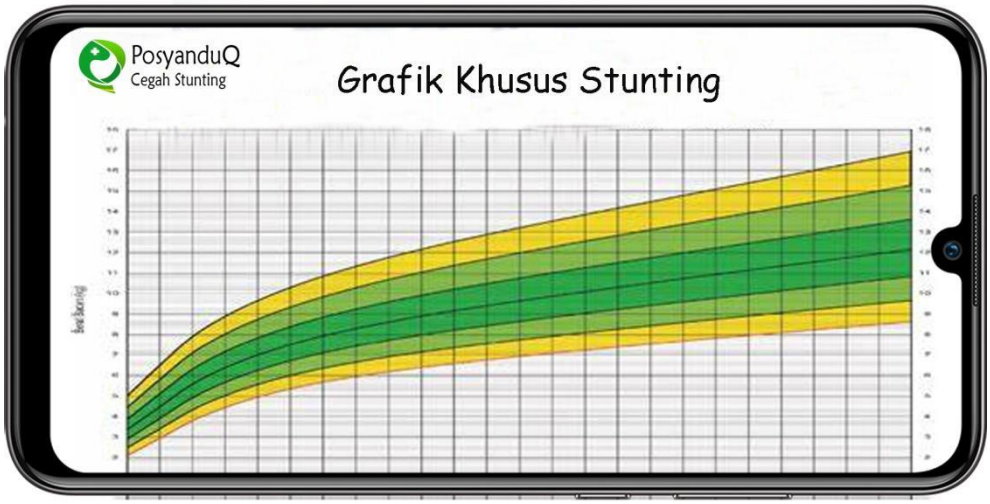
1. Register and Login page

2. Service Home page, and notifications



3. Imunitation page

4. Growth Child Page



Conclusions

The conclusion from this study is that design thinking can be used as a process for designing four healthy five perfect food applications to prevent stunting. Based on the results of previous research, this design thinking is very suitable for four healthy five perfect food applications because this design thinking is actually reviewed. first before the application will be used. Based on the evaluation results from the Mekar Sari-

district audience, Handsome District, Pekanbaru, 27% stated that this design was recommended to be improved and 73% suggested this design could be implemented. So based on the results of this evaluation the design thinking model is suitable for this application

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EFFECTIVENESS OF MANUAL TRACTION INTERVENTION IN THE LUMBAL AND MCKENZIE EXERCISES TO REDUCE LUMBA FUNCTIONAL DISABILITY IN HERNIA NUCLEUS PULPOSUS CASES

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Abstract

Diseases with low back pain that occur at the exit of the nucleus pulposus from the fibrous ring leads to a decrease in the content of the fibrous ring of the lumbar intervertebral disc in the spinal canal causing compression of the nerve elements, causing lumbar functional disability called HNP (hernia nucleus pulposus). The aim of this study was to analyze the effectiveness of manual lumbar traction and mc.kenzie exercises in reducing lumbar functional disability in cases of hernia nucleus pulposus (HNP) hernia. The research was conducted using a purely experimental method with randomized pretest and posttest. This research method was a pure mental experiment with randomized pretest and posttest. In this study, 17 respondents with a treatment group. Physiotherapy examination and functional disability reduction measurement were performed with the Oswestry Disability Index (ODI). The test results showed a decrease in functional disability with manual traction intervention on lumbar and mckenzie exercises before and after treatment in the group using a nonparametric test with Wilcoxon's signed ranks test because the value of normality of the data with a significant value P = 0.000 (P <05) with the mean value before 71.12 ± 12.041 and the mean value after 11.94 ± 4.423. this means that manual lumbar traction intervention and mc.kenzie exercises can reduce lumbar functional disability in cases of hernia nucleus pulposus (HNP).

Keywords: Manual lumbar traction, Mc.kenzie exercises, Functional disability, ODI, HNP.

Pendahuluan

The lumbar is the area of the body that bears the most weight when the body moves in terms of anatomy and function. This makes the spine very vulnerable to injury, so that the lumbar often experiences functional disorders (Tanderi et al 2017).

Pain disorder radiating from the lower back to the groin usually occurs as a result of the disc being compressed so that the nucleus pulposus comes out of the annulus fibrosus causing a decrease in the content of the annulus fibrosus of the lumbar intervertebral disc in the spinal canal or rupture of the annulus fibrosus with

pressure from the nucleus pulposus which causes compression of the nerve elements. thus causing lumbar functional disability (Widyasari & Wulandari, 2020).

Several factors cause functional disability, namely: ligament irritation, radix irritation, laxity of the ligament and spasm of the Quadratus lumborum, rectus abdominis, external oblique, and internal oblique muscles which result in pain and limited flexion and lateral flexion movements such as bending (Nugroho et al, 2018).

The prevalence of HNP is around 1-3% in Finland and Italy. The highest incidence of Hernia Nucleus Pulposus (HNP) is 5 out of 20 cases of low back pain per 100 adults each year, and is the most common in people in their 30s to 50s, the ratio of men to women is 2:1 (Dwi et al, 2020). Sensory abnormalities are found in 54% of patients with disc herniation. The positive predictive value (PPV) of sensory disturbance in the L5 dermatome as a sign of L4-5 disc herniation is 76% and the negative predictive value (NPV) is 55%. PPV sensory disturbance in S1 dermatomes as a sign of L5-S1 herniation was 50% and NPV 62%. Motor weakness was found in 54% of patients. The PPV of dorsiflexion paresis of the foot as a sign of a herniated disc at L4-5 was 69% and NPV 47%. PPV paresis of the lateral four toes as a sign of L4-5 herniated disc was calculated to be 76% and NPV to be 51% (Scott, 2012).

Hernia Nucleus Pulposus (HNP) classification is divided into: (1) protuted intervertebralis disc, namely protrusion of the nucleus pulposus in one direction without rupture of the annulus fibrosus (2) Protected intervertebral disc, namely the nucleus pulposus moves but has not left the ring of the annulus fibrosus (3) Intervertebral disc extrusion is a process that clearly comes out through the posterior longitudinal ligament (Nugroho & Maheswara, 2015). The classification of HNP that can be treated is HNP Grade 2, while Grade 3 requires surgery (Dwi et al, 2020).

Factors causing herniation include work factors lifting heavy objects in the wrong position, also the wrong sitting habit for a long time, falling in a sitting position, obesity, gender, smoking and around 20% of congenital lumbar hernias are associated with many anomalies. Congenital disease involving multiple organ systems of the body. It involves the ribs, spine, muscles, kidneys, and spinal meninges, occurring within the first 2 years of age. 12 boys and 2 girls. Everything is marked with swelling in the waist area. 13 unilateral and 1 bilateral, this case can only be treated with surgery. Fewer than 50 cases of congenital lumbar hernia associated with other congenital anomalies have been reported in the British literature making it a rare case (KN Rattan, 2016).

According to Herliana el al (2017) the main factor that causes HNP is age because the elasticity of the annulus fibrosus decreases, thus causing easy tearing of the annulus fibrosus due to pressure from the Nucleus pulposus which results in compression of the nerve elements resulting in lumbar functional disability and disruption of daily activities such as pain when bending. If this pain is left alone and not treated immediately, the pain will get worse.

Physiotherapy is a form of health service aimed at individuals and/or groups to develop, maintain and restore body movements and functions throughout the life

span by using manual handling, increased movement, equipment (physics, electrotherapeutic and mechanical), function training, and communication (PERMENKES No. .65 of 2015). The application of manual traction on the lumbar has a stretching effect on the disc surface and causes the annulus fibrosus to be stretched pushing the nucleus pulposus deep into the area, and reducing the compression of the nerve roots so that pain can be reduced, manual traction on the lumbar is usually applied for a few seconds or can be applied suddenly with quick push. Spinal traction is indicated for the treatment of herniated discs with lumbar functional disabilities. There is some evidence that protruding disc protrusions can be reduced and symptoms of spinal nerve root compression are reduced when spinal traction is applied (Duane, 2020).

Mc.Kenzie exercise is a technique of doing several movements as a therapy for HNP. The MC.kenzie exercise aims to maintain the position of the lumbar vertebrae in normal circumstances, namely the position of lordosis, if done routinely according to a planned program it will improve the position of the nucleus pulposus in the annulus fibrosus that is experiencing HNP and help reduce lumbar functional disability (Nugroho et al, 2018).

Based on the background above, the researcher is interested in raising the title about the Effectiveness of Manual Traction Intervention in the Lumbar and Mckenzie Exercise to Reduce Lumbar Functional Disability in Hernia Nucleus Pulposus (HNP) Cases. In the final evaluation, the authors used the Oswestry Disability Index (ODI) to obtain information about how the patient's low back pain can reduce lumbar functional disability.

The formulation of the problem to be studied is as follows: Can manual traction on the lumbar and McKenzi exercise reduce lumbar functional disability in cases of Hernia Nucleus Pulposus (HNP). The purpose of this research is to develop knowledge about cases of Hernia Nucleus Pulposus (HNP) before and after being applied to patients and can be used as a reference for those who need information related to this case.

Research Methods

This study was designed using an experimental method, namely randomized allocation pre-test and post-test group design. This research is a study that compares before and after intervention in one group consisting of 17 patients. Patients underwent physiotherapy examinations and pre-examination tests. The Oswestry Disability Index (ODI) lower back pain questionnaire was designed to help physiotherapists obtain information about how low back pain suffered by patients can reduce lumbar functional disability (Nugroho, 2015). In 1 treatment group was given Lumbar Traction intervention and exercise therapy. Place and time of research. Research conducted at the Clinic This research will be conducted at the FIT Sport & Rehabilitation Center.

Results and Discussion

Effectiveness of Lumbar Manual Traction Intervention and McKenzie Exercises to Reduce Lumbar Functional Disability in HNP Cases

A. Research Data Description

The results of the description of the characteristics of the research subjects are presented in the following tables.

Table 1

Sample Distribution Based on Descriptive Data in Treatment Groups

Data Deskiptif			
	N	Mean	Std. Deviation
Age	17	56.12	12.429
Weight	17	62.65	6.403
Height	17	154.94	14.368
Work	17	3.53	2.853

Table I describes the group of respondents based on age, weight, and occupation, height. In the treatment group, manual traction intervention was given to the lumbar and mckenzie exercises to reduce lumbar functional disability in HNP cases. In the treatment group with a sample size (n = 17) it was found that the average age was 56.12+ 12.429 in this study, the average age obtained was 56 years, in research (Ikhsanawati et al, 2015) Hernia Nucleus pulposus (HNP) can occur in areas cervical, lumbar and thoracic vertebrae, in the lumbar region L4-L5 or L5-S1, about 95% of the most common and most rarely occurs in the thoracic vertebral region L4 at the age of 55 years and over. The mean body weight was 62.65+6.403. The results of this study explained that the average sample weight was more than 62 kg. Being overweight in the study was a factor in the occurrence of HNP. The average height was 154.94+14.368. body weight 154 if related to the average body weight, the average sample is overweight. The average occupation is 3.53 + 2.853. This data explains the sample in this study. The average occurrence of HNP is classified in housewives because it could be household chores such as cleaning the house by lifting heavy objects in the wrong position, as well as the habit of sitting wrong for a long time, such as ironing clothes. , falling in a sitting position, obesity (KN Rattan, 2016).

Hypothesis Test on the Effectiveness of Manual Traction Intervention in the Lumbar and Mckenzie Exercises to Reduce Lumbar Functional Disability in Hernia Nucleus Pulposus (Hnp) Cases

This test is to determine whether there is an increase before and after treatment in the treatment group using the Wilcoxon Signed Ranks Test which is presented in the following table.

Table 3: Hypothesis Test

Variable (n=9)	Mean±SB	P
Before	71.12±12.041	0.000
After	11.94± 4.423	

Table III describes the results of the differences before and after the intervention in the treatment group with a significant value P = 0.000 (P <05) with a mean value before 71.12 ± 12.041 and a mean value after 11.94 ± 4.423. this means that manual traction intervention on the lumbar and mckenzie exercises can reduce lumbar functional disability in cases of herniated nucleus pulposus (HNP). This was explained in research (Duane, 2020) that manual traction is applied to the lumbar has a stretching effect on the surface of the disc and causes the annulus fibrosus to be stretched thereby pushing the nucleus pulposus to the inner area, and reducing compression of the nerve roots so that pain can be reduced. Spinal traction is indicated for the treatment of herniated discs with lumbar functional disabilities. There is some evidence that protruding disc protrusions can be reduced and symptoms of spinal nerve root compression are reduced when spinal traction is applied. Effects of Lumbar Manual Traction, Correctly performed traction can cause the following effects: 1) disruption or separation of the vertebral bodies; 2) a combination of distraction and sliding of the facet joints; 3) strain the ligamentous structures of the spinal segments; 4) widening of the intervertebral foramen; 5) straightening of spinal curves; and 6) stretching the spinal muscles (Creighton, 2017). Lumbar Manual Traction Technique. Lumbar manual technique: Patient position: Patient position supine with legs straight on the bed, Physiotherapist position: Stand behind the patient's ankle and tie the patient's ankle with a rope. execution technique: Gently and gradually begin to pull the Ankle directly towards the inferior/distal Continue to pull then mobilize backwards. Hold briefly for about 10 seconds then release. Repeat a total of four to five times (Muscolino, 2015).

MC Training App. Kenzie can reduce pain so that lumbar disability decreases and daily activities in patients can increase. Extension movements by providing resistance will relax the paraspinal muscles, stretching the abdominal muscles, activating the gluteal and hamstring muscles. The anterior ligament stretches so that it returns the spine to its extension position. This position can help push the disc posteriorly, thus increasing disc and corpus fluid which reduces the viscosity of the nucleus pulposus which will reduce irritation to the surrounding tissue (Sipayung et al, 2020).

Conclusion

Based on the results of the research and discussion, the conclusions that can be drawn are that manual traction intervention on the lumbar and m.c Kenzie exercises can reduce lumbar functional disability in cases of herniated nucleus pulposus (HNP).

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Genu Osteoarthritis (OA) In the Ederly With Intervention ultrasound, Forced Passive Exercise, Close Kinetic Chain *Exercise*

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Abstract

Genu Osteoarthitis is a degenerative joint disorder that occurs in the knee joint that holds body weight with a description picture of cartilage deterioration and the formation of new bones at the bone edges (osteophytes) as a result of biochemical, metabolic, physiological and pathological changes in joint cartilage and subchondral bone. Problems that cause Osteoarthritis Genu include joint pain, limitation of joint motion, morning stiffness, crepitus, deformity, asymmetrical swelling of the joint area, and changes in gait that reduce a person's functional activity. The purpose of this research was to see an increase in functional activity in patients with Genu Osteoarthritis after being given the intervention of Ultrasound, Forced Passive Exercise, and Closed Kinetic Chain Exercise for 2 times a week for 3 weeks. This research was conducted at Permata Hati Duri Hospital in April-May 2021 with a sample of 1 person. The measurement used in this research is the WOMAC index questionnaire. Prior to intervention, the patient obtained K = pain 11/10, stiffness 2/8, and difficulty with functional activities 39/68.After the intervention of Ultrasound, Forced Passive Exercise, and Closed Kinetic Chain Exercise, the 3rd therapy results were found at E1 = pain 10/20, stiffness 2/8, and functional activity difficulty 37/68. At the end of therapy E2 = pain 8/20, stiffness 1/8, and difficulty with functional activities 34/68. The conclusion of this research is that the intervention of Ultrasound, Forced Passive Exercise, and Closed Kinetic Chain Exercise to increase functional activity has proven to be effective in the condition of Genu Osteoarthritis.

Keywords: *Osteoarthritis Genu, ultrasound, Forced Passive Exercise, Close Kinetic GenuChain Exercise, questionnaire WOMAC index.*

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Introduction

Osteoarthritis (OA) Genu is something disease joints marked years _ by exists abnormality on bone cartilage (cartilage) of the knee to be caused bone rub one same else , there is erosion bone vulnerable joints knee and formation osteophytes on surface joints knee raises _ symptom form stiffness , pain , and restrictions movement on joints knees (Djawas & Isna , 2020). In Indonesia alone , the prevalence of OA is 11.9% of the total Indonesian population with number work highest on age over 75 years that is as much as 33%. For Osteoarthritis of the knee prevalence enough tall ie 15 ,5 % at woman and 12.7% on men (Djawas & Isna , 2020).

The primary cause of Osteoarthritis Genu remains not yet is known in a manner sure , but there is a number of factor risk namely : age , sex sex , genetics , weight body , and disease metabolic as well as factor other . Heavy body usually associated with trigger onset of osteoarthritis genu. Obesity increase burden joints increase so that resultant style will shift medially or _ varus . (Primary , 2019). Osteoarthritis Genu occurs because influence a number of factor risk that is heavy body , injured joint , genetic , type gender , age (aging process) and sport . increasing risk for the onset of Osteoarthritis Genu turns out to be related with heavy excess body . _ The more big burden body , increasingly big trauma on joints along walk time . Then , acute genu trauma including torn on ligament cruciate and meniscus is factor risk which then causes the usual Genu Osteoarthritis happen on group more age _ young as well as could causing old disability . Next , there is again predictable factor _ role also on incidence of Osteoarthritis Genu, ie genetic . Because Thing the related with abnormality code genetics for synthesis collagen which is lowered . After genetic , the incidence of Osteoarthritis Genu more tall on woman compared man . On woman increase in a manner drastic moment menoupose come . Then , maybe factor from connection Among age and Genu Osteoarthritis risk as well there . Among them damage oxidative , depletion cartilage , weakening resulting muscles _ there is stress mechanic on joints secondary , changes in proprioception and style changed walk . _ And the last that is sport , because athlete experienced sport _ clash hard on genes like football , running marathon and defend self own risk more big for suffering from Osteoarthritis Genu so causing weakness muscle quadriceps and reduction process stability absorbent joints _ Theory muscles (Primary , 2019).

Method

In this case, researchers used one sample with a case of Osteoarthritis Genu. The evaluation was given before the management of therapy, after giving intervention 3 times of therapy, and after giving intervention 6 times of therapy, 2 times a week for ± 3 weeks.

Measurement : WOMAC is a rating index shaped completed questionnaire _ used by power health professional for evaluate condition assessed knee and hip OA patients pain , stiffness , activity limitations of knee OA patients nor hip . WOMAC has validity and good reliability _ and para researcher looked that WOMAC is an

index of assessment that can used for OA measurement (Prime et al, 2020). WOMAC with questionnaire 5 questions pain , 2 questions stiffness physical , and 17 questions disturbance activity functional . With given value 0 (no any), 1 (mild), 2 (moderate), 3 (severe), and 4 (very Severe) in each

question . Then score the add up , more small value , the more getting better condition knee patient . Obtained WOMAC values , patient classified as risk low (score ≤ 60), risk moderate (score 60-80) and risk high (score ≥ 81). WOMAC score too stated as percentage and classified as risk low (≤ 70%) and risk high (> 70%). If 2 or more pain items , better stiffness items and 4 or more function items physical lost , response considered invalid and _ less subscale _ no entered in analysis (Sathiyanarayanan , 2017).

method :

1. ultrasound

   Ultrasound is wave voice frequency height which is not could detected by ear human . Medical ultrasound frequency in America Union is 500,000 Hz to with 5,000,000 Hz (0 .5 up to 5MHz). Ultrasound waves are generated by crystal ceramics installed piezoelectric _ on applicator or transmitting transducer _ wave the to patient . Ultrasound has ability reflection , refraction , penetration , and absorption . Absorption wave by various tissue in the body produce production hot when applied on network body human . Ability greatest absorption of ultrasound happens on the network with high protein and solid . Ability Ultrasound penetration is the greatest among _ all modality hot , with significant heating 5 cm below surface . Because ability reflection , warm up highest is at the interface network . Almost all reflected ultrasound waves by air . So ultrasound requires contact live and fill in the blank area in between skin and transducer in form the coupling medium for displacement energy to network more easy (Hayes & Hall, 2015).

   This mechanism provided by the US is effect wave sound that passes through the medium is believed electrify molecule network joints knee , probably increase exchange fluid network and affect mobility network joints so - called knee micromassage (Watson, 2015). Effect The thermal generated ultrasound includes , increasing Genre blood , increase metabolism in tissues the place hot absorbed , increase extensibility network tie so that therapy practice Becomes more effective , and increase speed delivery nerves (Hayes & Hall, 2015).

2. forced passive

   With position patients who have carry out Interventional Ultrasound (US), next patient will do practice movements base that is flex and Extension . Movement this is movements made _ with power or help from external and patient same very no there is power contraction in the muscles . Movement practice this on end movement the joints / ROM added a little pressure or forced with movement repeated 10 times with 5 counts (Pristianto , 2018).

3. Close Kinetic Chain exercise

a. First, Quadriceps Setting Exercise. Patient sit on a chair with back propped up , knees outstretched and heels on the floor . Patient then pasting heel they to floor and thighs on the chair Position detained for 10 counts after that participant relax .

Exercise that repeated with Dosage 10 times for 10 counts each . Exercise this conducted During study taking place (Olagbegi et al, 2016).

b. Then , Wall Slide. In position stand up , patient position his back to Wall with hips and knee bent until about 60º like currently ready for sit on a chair , then position detained for 10 seconds , after that participant return to position beginning and relax for 5 seconds . With dose 10 repetitions of wall slides done per session practice . From week 3, participants start Wall Slide with load on both hand (can dumbbells). This started with equivalent weight _ with its 10 RM and next with define 10 new RM at the beginning every week study (Olagbegi et al, 2016).

c. And finally , Step-up and step -down. Participant do forward , backward , and lateral step-up and step-down use beam wood sturdy 5cm high . Participant trunks guarded permanent upright and he ensure that his heels is the last leave floor and the last return for emphasize activity muscle thigh front . Participant do 10 repetitions for every component practice . Exercise this conducted only During therapy fifth research . From Therapy 6th , load tied to area participant 's ankle to step-up and step-down with load (Olagbegi et al, 2016).

Results and Discussion

Research Objectives To determine the effectiveness of giving Ultrasound (US), Forced Passive Exercise, and Closed Chain Kinetic Exercise in Osteoarthritis (OA) Genu to increase functional activity.

After the researchers conducted therapy on a patient named Mrs. Y, 68 years old, after 6 treatments with Ultrasound intervention, Forced Passive Exercise, and Closed Kinetic Chain Exercise, an increase in functional activity was obtained with a comparison of the first evaluation, the second evaluation, and the last evaluation seen from the WOMAC questionnaire measurements.

Based on the results of research on Bilateral Genu Osteoarthritis patients who were given physiotherapy care with Ultrasound intervention, Forced Passive Exercise, and Closed Kinetic Chain Exercise for 6 times of therapy, obtained WOMAC results before being carried out therapy for pain score 11/20, stiffness 2/8, and functional activity difficulty 39/68. Then in Evaluation 1 after the 3rd Therapy the results obtained for pain were 10/20, stiffness 2/8, and difficulty in functional activity 37/68. And on Evaluation 2 on the 6th day of therapy, the results obtained were pain 8/20, stiffness 1/8, and difficulty with functional activities 34/68. Shows the results of pain which is always reduced in each evaluation, stiffness which is reduced after the second evaluation, and the difficulty of functional activities which is reduced in each evaluation.

Therapy 1: At the first meeting the researcher introduced himself, asked for general information about the patient, and was assessed first. From the results of the assessment, it was found that he complained of motion pain, pain when standing and walking for a long time, when going up and down stairs, praying on both knees, and the patient also felt stiffness in the morning after waking up. Then a physical examination, measurements, and special examinations are carried out. On special examinations, namely the Fluctuation and Ballottement tests, the results were (+). After that, take the value of the index WOMAC questionnaire with a pain score of 11/20, stiffness 2/8, and difficulty with functional activity 39/68. Furthermore, therapy was carried out by administering Ultrasound for 16 minutes, then Forced Passive Exercise therapy for 5 minutes, and Closed Kinetic Chain Exercise for 20 minutes.

Therapy 2: At the second meeting the researcher continued the therapy by administering Ultrasound for 16 minutes, then Forced Passive Exercise therapy for 5 minutes, and Closed Kinetic Chain Exercise for 20 minutes.

Therapy 3: At the third meeting the researchers continued the therapy by administering Ultrasound for 16 minutes, then Forced Passive Exercise therapy for 5 minutes, and Closed Kinetic Chain Exercise for less than 20 minutes. Then the first evaluation value is taken from the index WOMAC questionnaire. The results showed that the pain score was reduced by 1 point, namely 10/20, the stiffness value was still the same, namely 2/8, and the value of the difficulty of functional activity was reduced by 2 to 37/68.

Therapy 4: At the fourth meeting the researcher continued the therapy by administering Ultrasound for 16 minutes, then Forced Passive Exercise therapy for 5 minutes, and Closed Kinetic Chain Exercise for less than 20 minutes.

Therapy 5: At the fifth meeting the researcher continued the therapy by administering Ultrasound for 16 minutes, then Forced Passive Exercise therapy for 5 minutes, and Closed Kinetic Chain Exercise for less than 20 minutes.

Therapy 6: At the sixth meeting, the researchers continued the last day's therapy by administering Ultrasound for 16 minutes, then Forced Passive Exercise therapy for 5 minutes, and Closed Kinetic Chain Exercise for 18 minutes. After the therapy was completed, the researcher took the 2nd or final evaluation with the WOMAC index questionnaire scores. The pain score was reduced by 2 points from the previous evaluation to 8/20, the stiffness score was reduced by 1 point from the previous evaluation, which was 1/8, and the difficulty of functional activity was also reduced by 3 points from the previous evaluation to 34/68.

Conclusions

The conclusion of this study is that the administration of Closed Kinetic Chain Exercise intervention for 2 times a week for 3 weeks to increase functional activity is proven to be effective in conditions of Genu Osteoarthritis.

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"FELDENKRAIS EDUCATION AND TRAINING MAY REDUCE PAIN CAUSED BY LOWER BACK PAIN (LBP) IN THE ELDERLY IN THE VILLAGE OF LULUT RT/RW 001/005 "

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Abstract

Low back pain is one of the musculoskeletal disorders as a result of the wrong ergonomic attitude. Low back pain is defined as pain located between the costal margin and the inferior gluteal fold that lasts for more than one day. Complaints of low back pain often arise related to a job and activity. The prevalence of low back pain in 1 year reaches 38% and most often occurs in the elderly. This can cause impaired physical capacity in the form of pain, muscle weakness and limited movement that causes functional disorders such as difficulty getting up from sitting to standing, walking and sitting for a long time in the elderly. Purpose: This community service aims to provide education and feldenkrais exercises to reduce pain due to low back pain in the elderly. Data collection was carried out with the observation method of health screening, providing intervention in the form of feldenkrais education and training to the community door to door in RT/RW 001/005 Lulut Village by involving cadres. Respondents totaling 8 people with the criteria of having non-specific low back pain complaints and were willing to participate in all activities. Pain measurements were carried out before and after the intervention 4 times for 4 days. Data on pain level measurements using NRS on 8 respondents before the intervention was given 62.5% mild pain, and 37.5% moderate pain, while after the intervention there was a decrease in pain level to 25% no pain, 62.5% mild pain and 12.5% moderate pain. Feldenkrais education and exercise can reduce pain in the elderly due to low back pain in the elderly in Lulut Village

Keywords : Elderly, low back pain, education, feldenkrais exercises

Introduction

Elderly or elderly is someone who is more than or equal to 55 years of age (WHO, 2013). Classification of the elderly, namely middle age (middle age) age group 45-54 years, elderly (elderly) age group 55-65 years, young elderly (young old) age group 66-74 years, old elderly (old) age group 75- 90 years, and very old (very old) age group over 90 years (WHO, 2013). Every individual experiences the aging process as seen from the gradual and unavoidable decline in body functions. This is influenced by certain conditions such as disease, physical and unhealthy environment or the influence of stress (Widyanto, 2014). As we get older, the body will naturally

experience changes in physical form and decrease in bodily functions so that the quality of life becomes disturbed

The purpose of community service is to provide education and counseling on how to reduce pain due to low back pain. While the benefits that the community gets from community service are increasing public insight and knowledge about health, especially physiotherapy and low back pain.

Low back pain (LBP) is a musculoskeletal disorder caused by an activity that is carried out in a bad way (Ricca & Terry, 2020). Low Back Pain (LBP) can also reduce human productivity, 50-80% of workers worldwide have experienced Low Back Pain (LBP) and it has even become the number two disease after influenza which causes a person to frequently go to the doctor so that it has a negative impact on social conditions. economy and reduced working days due to decreased productivity (Sahara & Pristya, 2020).

Low back pain is a musculoskeletal disorder resulting from wrong ergonomics. Low back pain is defined as pain located between the rib margins and the inferior gluteal folds that lasts for more than one day. Factors that can affect the incidence of low back pain include age, gender, body mass index, ergonomics, load, length of work, smoking habits, and activity factors or sports habits (Atika Rahmawati, 2021). Complaints of low back pain often arise related to a job and activity (Kusumaningrum D, 2019).

Most low back injuries are not the result of a single exposure to high force loads, but are instead due to cumulative trauma from sub-failure magnitude loads such as repetitive small loads (eg bending) or sustained loads (eg sitting). Mechanical factors such as lifting heavy loads, repetitive work , prolonged static postures and awkward postures. Non-mechanical psychosocial factors such as anxiety, depression, lack of job control and mental stress, were also found to be associated with low back pain (Supreet Bindra et al, 2015). Nonspecific low back pain is the most common type of diffuse pain that does not change in response to certain movements, is localized and does not spread (Manusov, E.G, 2012).

How much low back pain you feel can be measured using the NRS (Numeric Rating Scale) with an interpretation of the scale, namely 0 no pain, 1-3 mild pain, 4-6 moderate pain, and 7-10 severe pain. Pain reduction can be expressed as not going away at all, slightly reducing, moderately reducing, pain completely gone.

One of the roles of physiotherapy in dealing with low back pain is to provide the Feldenkrais exercise method. This method is an exercise that is carried out to increase relaxation and emphasize concentration of thoughts, emotions, vision and regulation of breathing patterns. Feldenkrais exercise is carried out to increase and activate the deep muscles of the lumbar and increase the stability of the tissues in it (Fonow et al. 2016). Community service carried out by Mohan (2016) states that training using feldenkraise can increase paralumbar muscle relaxation and provide activation to the deep extensor muscles so that it is very effective for myogenic low back pain

The implementation of the activity begins with examining the intensity of pain and continues to provide physiotherapy services using the feldenkrais exercise method. Stages of activity implementation: (1) Ask for permission and availability of

respondents to carry out physiotherapy management (2) Check pain intensity before being given physiotherapy interventions using a numerical rating scale pain scale examination and interviews (3) Provide interventions with the Feldenkrais method (4) Provide education for do the exercises independently for the next 3 days.

Feldenkrais exercise has many types of movements. In this community service the movements applied are as follows.

1. Pelvic tilt

Respondents were instructed to lie on their backs, with their knees bent and their feet touching the floor. Respondents should flatten their lower back to the floor. Ask the respondent to move the hip area (pelvic) forward and then backward slowly without lifting other areas. Instruct the respondent to do this movement for 5 repetitions, 3 sets with 5 seconds of rest per set.

2**. Tilting Legs**

Respondents were instructed to lie on their backs, with their knees bent and their feet touching the floor. Actively direct the respondent to cross their legs, and the sole of the other foot touches the floor. Then ask the respondent to move their feet to the right and left slowly, smoothly and comfortably. Perform this movement for 10 repetitions for 3 sets with a rest in each set of 5 seconds, doing each side of the crossed leg. While explaining to the respondent to regulate their breathing by inhaling while bending their knees, and exhaling while bringing the knees back to the center.

3. Spine Like a Chain

Instruct the respondent to lie down with their legs bent and the soles of their feet touching the floor. Ask the respondent to press their lower back to the floor. Hold this position for 8 seconds, 10 reps and 5 sets.

The education provided is in the form of suggestions to carry out Feldenkrais exercises independently at home in 2 sessions per day for 4 times a week. Respondents were also advised to pay attention to ergonomics, reduce carrying too much weight, and stretch diligently during activities.

Results and Discussion

The number of elderly population is 30 people, respondents who participated in screening activities Initially 20 people with the result that 10 people experienced non-specific low back pain and that 8 people are willing to take part in the activity until it's finished.

Table 1. General Complaint Screening Results

painful	Frequency	Percent (%)
neck	1	5
Shoulder	5	25
Lower Back	10	50
Knee	4	20
Total	20	100

Table 1 shows the data from the screening results of complaints experienced by the elderly in RT01/05 Village Knee with dominant problems, namely as many as 10 people have complaints of pain lower back.

Table 2. Distribution of Respondents by Gender

Gender	Frequency	Percent (%)
Male	2	25
Woman	6	75
Total	8	100

Table 2 shows the total population based on gender of the 8 respondents, namely female respondents with a percentage of 75% (6 people) and male respondents with percentage of 25% (2 people).

Table 3. Distribution of Respondents by Age

Age	Frequency	Percent (%)
55 Years	3	37,5
58 Years	1	12,5
60 Years	2	25
71 Years	1	12,5
83 Years	1	12m5
Total	8	100

Table 3 shows the number of population based on age at 8 respondents, namely Respondents aged 55 years were more dominant with a percentage of 37.5% (3 people), followed by those aged 60 years with a percentage of 25% (2 people). Then, the ages of 58, 71, and 83 years have the same percentage of 12.5% (1 person).

Table 4. Distribution of Respondents by Occupation

Age	Frequency	Percent (%)
House Wife	4	50
Farmer	2	25
Retired	1	12,5
Employee	1	12,5
Total	8	100

Table 4 shows the distribution of the total population by type of work at 8 respondent. The most dominating occupation is housewives with a percentage 50% (4 people). Then farmers 25% (2 people), retirees 12.5% (1 person), and employees 12.5% (1 person).

Table 5. Pain Levels Before and After Intervention

Pain Level (NRS)	Before (%)	After (%)
Non (0)	0	25
Mild (1-3)	62,5	62,5
Moderate (4-6)	37,5	12,5

Severe (7-10)	0	0

Table 5 shows the level of pain using NRS in the 8 respondents before The Feldenkrais exercises were dominated with a mild level of 62.5%. Happen change in pain level from mild to none by 25% and from the level of moderate (moderate) to mild (mild) by 25%. Based on the results above, it can be concluded that there is a difference between the pain scale before and after it is given intervention with Feldenkrais Exercise and education.

These results are in line with previous research conducted by Manognad in 2021. This study aims to look at the effectiveness of feldenkrais exercises and core stability exercises to reduce pain and disability due to non-specific mechanical low back pain among housewives. Intervention was given 3 days a week for 4 weeks with each movement being repeated for 10 repetitions (Manogna & Sciences, 2021).

In this community service, it was found that the Feldenkrais exercise was effective in reducing pain in the lower back with a training period of 4 days a week because the intensity of pain experienced by respondents was mostly at a mild intensity and coupled with providing education to respondents to consistently do independent exercises, maintain good posture. ergonomics, reducing the carrying of heavy loads and diligently stretching.

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"PHYSIOTHERAPY CARE POST-OPERATED TOTAL HIP REPLACEMENT(THR) MIDDLE AGE 45-59 YEARS OLD USING *AAROM EXERCISE* METHODS AND *CORE EXERCISE* TO IMPROVE INDEPENDENT WALK WITHOUT USING WALKER"

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ABSTRACT

*Total Hip Replacement (THR) is a surgical procedure in which the hip joint is replaced with an implant, which replaces the head of the femur with a ball-shaped prosthesis and replaces the accetabulum with a prosthesis shaped like a bowl. Factors that cause Total Hip Replacement (THR) in the elderly which resulted in a fracture of the neck femoris that is not only an accident / trauma can be caused by osteoarthritis, rheumatoid arthritis, avascular necrosis, osteoporosis, and trauma. But it can also be caused by an accident that results in a hard impact. Hip replacement surgery usually causes a decrease in walking independence. In patients with Total Hip Replacement (THR) is to provide AAROM Exercise and Core Exercise interventions**.** *The purpose of this intervention is to increase the ability to walk independently, increase LGS, increase muscle strength in the hip area. 1 patient Total Hip Replacement (THR).The purpose of the research was to determine the results and benefits of the AAROM Exercise and Core Exercise interventions to improve the ability to walk independently. The time and place of the research was carried out at the Ibnu Sina Hospital Pekanbaru on March 17, 2021 to April 06, 2021. The treatment of the research subjects was given the intervention of AAROM Exercise and Core Exercise using Foot and Ankle Disability (FADI). The study was carried out for 8 times of therapy (T1-T8**).** The final: result is that at the beginning of therapy the patient only received a score category of 45% (severe level of difficulty), after being treated for 8 times the patient was able to achieve Score 69% (moderate difficulty). Conclusion: AAROM Exercise interventions and Core Exercise are very effective in the case of Total Hip Replacement (THR) with these two treatments being able to increase walking independence.*

***References**: 19 references (2015-2020)*
***Keywords**: AAROM Exercise, Core Exercise, Foot and Ankle Disability (FADI).*

Introduction

Everyone will experience the process of growing old, old age itself is part of the process of growth and development, in which humans do not suddenly grow old but develop from babies, children, adults and eventually grow old. This is normal, where everyone will experience the process of growing old in life. As one gets older, a person will be more susceptible to various health problems which will experience a

decrease in bone density and strength, changes both physiological, mental, social gradually. (Kadek oka Aryana., et all 2013).

One of the most common incidents in the elderly (elderly) is a hip fracture which is a major health problem in Europe and in the United States. The incidence of bone fractures each year continues to increase with age. In the United States hip fractures range from 0.2% -2.5% of which occur in women. In Europe, the incidence of hip fractures in women ranges from 0.5% to 1.6% per year. In Indonesia, to be precise, in the city of Manado at Prof.Dr. R. D. Kandou Manado in 2017-2018 there were 32 cases of hip fractures in elderly patients aged 65 and over. (Tio G.L. Thadius, Et., all, 2020).

Total Hip Replacement (THR) is a replacement of the two outer parts of the joint where the existing hip is degenerated. Which means the joint is replaced (convecial) or trimmed and covered with metal (re-plating). which is the problem that most often arises after surgery from THR, namely pain, differences in leg length, decreased motion in joints and muscle strength (Khairunnisa, et al., 2020).

The research objective was to determine the effect of the AAROM Exercise and Core Exercise interventions to increase the ability to walk independently.

The problems caused by postoperative THR that affect the independence of walking in patients are caused by postoperative THR pain, a decrease in the patient's ROM, weakness in the muscles in the hip area, and disturbances in balance and postural stability in patients (Kisner & Colby, 2012 in Amin, et., all, 2018).

An examination to measure walking independence in Total Hip Replacement patients is by using Foot and Ankle Disability (FADI), the aim of which is to measure and evaluate the ability to walk activities. The method of measurement is using Foot and Ankle Disability (FADI), in which the patient is asked to choose one of the statements by marking N/A in the box provided. Each item is on a scale of 0-4 and results are 0 (able to do), 1 (slightly difficult), 2 (moderate difficulty), 3 (somewhat difficult), 4 (not able to do at all). 4 pain items from FADI which scored 0 (no pain) to 4 (unbearable pain) Foot and Ankle Disability (FADI) were used to assess daily activities (Kuswandi., et, all, 2018).

Research Methods

Information :
K=Total Hip Replacement Conditions
T1=Therapy 1
T8=Therapy 8
E1=First Evaluation
E2=Second Evaluation

This research process took place 8 times of therapy, starting from March 17 to March 20, 2021 with the provision of 2 treatments in 1 day within 4 days.

Results and Discussion

After the researchers carried out therapy using the AAROM Exercise and Core Exercise methods on Ny. E, 59 years old, with a frequency of exercise of 8 times therapy within 4 days, and 8-10 repetitions in each movement, the result was an increase in walking independence in patients, where at first the patient walked for only 5 minutes and had to depend on the walker after being carried out 8 times therapy the patient is able to walk up to 10 minutes is no longer dependent on the walker but still has to use it when needed.

With the evaluation of increasing independence in walking based on Foot and Ankle Disability (FADI) to assess daily activities, the results of walking independence in the first therapy were obtained, where the score was 45% (severe level of difficulty) and after the 8th therapy, a score of 69% was obtained. (medium difficulty). The AAROM Exercise and Core Exercise methods have achieved success in increasing walking independence because at the beginning of therapy the patient only received a Score category of 45% (severe difficulty), but after 8 treatments the patient was able to achieve a score of 69% (difficulty) moderate) using Foot and Ankle Disability (FADI).

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Combination Of Red Ginger Extract (*Zingiber Officinale Var.Rubrum*) And Acasia Honey (*Apis Trigona Laevicheps*) On Reducing Levels Fasting Blood Sugar In Male White Rats (*Rattus Norvegicus*) That Alloxan Induced

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Abstract
Diabetes mellitus (DM) is a chronic disease that occurs when blood sugar levels increase because the body cannot produce enough insulin or use insulin effectively. Indonesia is ranked 7th in the world with the highest prevalence of diabetes mellitus. Red ginger and honey are known to have anti-diabetic effects. Red ginger contains gingerol which can lower blood sugar levels with its ability to have a protective effect on pancreatic -βcells and restore plasma insulin levels. Honey contains flavonoid compounds that can lower blood sugar levels through its ability to prevent glucose absorption or improve glucose tolerance. This study aims to determine the combination of red ginger extract and acacia honey in reducing blood sugar levels in male white rats induced by alloxan. This research method is an experimental study with a pre and post test design with a control group. The sample consisted of 42 male white rats which were divided into 7 groups, including normal control, negative control, positive control given metformin, then treatment groups 1, 2, 3, and 4 were given red ginger extract and honey with a dose of each treatment group. namely 500mg/kgBW and 1ml/kgBW, 500mg/kgBW and 2ml/kgBW, 1000mg/kgBW and 1ml/kgBW, 1000mg/kgBW and 2ml/kgBW for 14 days. After 14 days, the rats' blood sugar was measured using a blood glucose test meter. The results of data analysis using one way ANOVA test between all groups obtained $p < 0.05$. Bonferroni's post hoc test results showed a significant difference between the positive control group and the treatment groups 2, 3, and 4 with p value of <0.05.

Keywords

Diabetes mellitus, red ginger, extract, hyperglycemia, acacia honey

1. Introduction

Diabetes mellitus (DM) is a chronic condition that occurs when levels of glucose in the blood increases because the body cannot produce sufficient insulin hormones or using insulin effectively. Insulin is a hormone produced by pancreas which has an important role for the body [3]. International Diabetes Federation (IDF) forecast in 2019 there are 463 million people aged 20-79years worldwide suffer from DM or equivalent to a prevalence rate of 9.3% of the total population at the age same. Indonesia is ranked 7th in the world with diabetes prevalence the highest mellitus [4]. So far, the pharmacological therapy of DM still using drugs made from chemistry, one of the first lines is with the administration of metformin

as a drug antidiabetic if blood glucose with lifestyle interventions that do not controlled.

Metformin as a drugFirst-line oral antidiabetic often cause side effects in one times its use is a nuisance.gastrointestinal disorders such as diarrhea, nausea, vomiting, and flatulence. This incident reported in relation to the use of metformin without food intake. It was reported that risk factors related to the effect of side effects of metformin use mainly gastrointestinal disturbances influenced by age, drinking drug, and dose of metformin [9]. This condition encourages the use of natural ingredients as a source of alternative medicine for DM therapy. Currently herbal medicine as well as the extract has a lot used, even though the composition or biologically active ingredients it contains still unknown. World Health Organization (WHO) has allowed use of medicinal plants or herbs to treat various diseases, including DM [10].

The herbal plant used in this study was red ginger, which was combined with honey. In an in vitro study, red ginger extract was shown to increase insulin release in rat pancreatic -cells. Glucose tolerance tests further confirmed that this red ginger extract also increased plasma insulin levels, thereby reducing blood sugar levels. One of the most important components of ginger for lowering blood sugar levels is gingerol, which has a protective effect on pancreatic -cells in DM rats and restores plasma insulin levels. On the other hand, honey can lower blood sugar levels by increasing serum insulin levels and decreasing serum glucose and fructosamine concentrations. The combination of anti-diabetic drugs and honey can increase antioxidant defense and reduce oxidative damage to the kidneys and pancreas in DM rat model [7]. Honey is known to contain antioxidants that play an important role in DM, one of which is flavonoids through its ability to avoid glucose absorption or improve glucose tolerance. In addition, flavonoids stimulate glucose uptake in peripheral tissues, regulate the activity and expression of enzymes involved in carbohydrate metabolism pathways, and act like insulin, by influencing insulin signaling mechanisms [2].
Based on the above background, the researchers wanted to scientifically prove the effect of the combination of red ginger extract (Zingiber officinale var.rubrum) and acacia honey (Apis trigona laevicheps) on reducing blood sugar levels in male white rats (Rattus norvegicus) induced by alloxan.

2. Materials and Methods

This research is an experimental study that uses a pre and post test design with a control group on rats. The study was conducted from February to March 2022. The study was conducted at the Animal House, Faculty of Medicine, University of Abdurrab Pekanbaru in order to intervene on rats. The independent variable in this study was a combination of red ginger extract and honey in various doses and the dependent variable was fasting blood glucose levels.

The research sample used 42 male white rats (Rattus norvegicus) Wistar strain. The experimental animals were obtained from the wistar white rat farm in Agam Regency, Bukittinggi. White rats (Rattus norvegicus) were chosen because their metabolism was similar to humans and male sex was chosen to avoid the influence of the hormone estrogen, namely the menstrual cycle and pregnancy, and the condition of male rats was more stable than female rats.

Mice were kept and placed in cages. During the study, rats were given food and drink as needed (ad libitum). Mice were adapted for 7 days and then grouped randomly.
Induction of diabetes was done by intraperitoneal injection of alloxan monohydrate (30mg/200gBW rats) dissolved in distilled water. Confirmation of hyperglycemia was carried out after 3 days of induction by checking blood sugar levels, after the rats had been fasted for 12 hours beforehand. Rats were considered hyperglycemic if blood sugar levels were >125 mg/dL.
The basic ingredients of red ginger extract are made using 12 kg of red ginger which is dried and then mashed to form a dry simplicia powder. The dry simplicia powder was then added with 96% ethanol solvent and macerated for 3 days. After 3 days of maceration, the mixture of red ginger simplicia powder and 96% ethanol was filtered to obtain the filtrate and separate it from the dregs. Then the results of the liquid extract that can be concentrated using a rotatory evaporator to obtain a thick extract.
The 42 mice used were divided into 7 groups, where each group consisted of normal control, negative control, positive control, and treatment (1, 2, 3, and 4). The adapted mice were then treated for 14 days with a combination of red ginger extract and honey according to the dosage in the table.
Table 1. Treatment of rats

Kelompok	Perlakuan
Kontrol normal /K1	-
Kontrol negatif /K2	-
Kontrol positif /K3	Metformin 10mg/hari
Perlakuan 1 /K4	Ekstrak jahe merah 500mg/kgBB dan madu 1ml/kgBB
Perlakuan 2 /K5	Ekstrak jahe merah 500mg/kgBB dan madu 2ml kg/kgBB
Perlakuan 3 /K6	Ekstrak jahe merah 1000mg/kgBB dan madu 1ml/kgBB
Perlakuan 4 /K7	Ekstrak jahe merah 1000mg/kgBB dan madu 2ml/kgBB

One group that was not induced by alloxan was a normal control group (K1), the other 6 groups were induced by alloxan; K2 is a negative control given alloxan without treatment, K3 is given metformin 10mg, K4 is treated with 500mg/kgBW red ginger extract and 1ml/kgBW honey, K5 is treated with 500mg/kgBW red ginger extract and 2ml/kgBW honey, K6 is treated with ginger extract. 1000mg/kgBW red and 1ml/kgBW honey, and K7 were treated with 1000mg/kgBW red ginger extract and 2ml/kgBW honey. The treatment was carried out using a gastric probe for 14 days.

3. Results

Table 4. Descriptive analysis of rat blood glucose levels before and after treatment

Kelompok perlakuan	*Mean* ± SD Sebelum	*Mean* ± SD Setelah	*Mean* ± SD Selisih
Kelompok normal	112.50±6.07	116.75±2.98	-4.50±6.02
Kelompok negatif	206.50±12.12	184.25±5.31	22.00±6.97
Kelompok positif	199.75±4.27	138.75±4.99	61.00±8.28
Perlakuan 1	213.25±15.17	127.00±4.08	86.25±15.77
Perlakuan 2	220.00±21.43	117.00±9.41	103.00±18.23
Perlakuan 3	213.00±18.01	112.75±6.70	100.25±21.71
Perlakuan 4	212.75±6.07	105.00±4.16	107.75±8.26

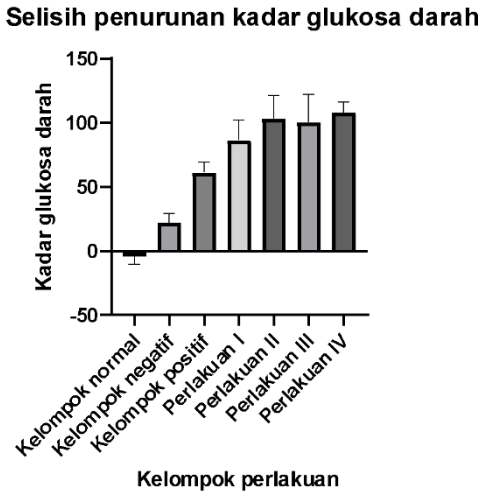

Figure 1. The difference in the decrease in blood glucose levels

Based on table 4, it can be seen that the value of blood glucose levels after being given a combination of red ginger and honey extracts in the treatment group (1, 2, 3, and 4) experienced a decrease in blood glucose levels compared to the negative control group. The results showed that the largest decrease was in the treatment group

4. Discussion

The results of the data normality test using Shapiro-wilk obtained $p>0.05$ in all groups, which means the data is normally distributed. In the homogeneity test using the Levene test, the p value> 0.05, this indicates that the data is homogeneous. One way ANOVA test obtained $p <0.05$, this means that there are differences between groups of data being compared. Bonferroni's post hoc test was found to be $p<0.05$.

Based on the results of the post hoc Bonferroni test, it showed that the normal control group with positive control and treatment (1, 2, 3, and 4) showed a p value <0.05, which had a significant difference. The negative control group and the positive control group, and treatments (1, 2, 3, and 4) obtained $p<0.05$, so they had a significant difference. In the positive control group with treatment (2, 3, and 4), the results were $p <0.05$, while the

treatment 1 had a p value> 0.05 which had no significant difference with the positive control group.

Based on the results of the descriptive test in table 2 from the data on the blood glucose levels of rats before treatment, it shows that after 3 days of alloxan injection can increase fasting blood sugar levels above normal values (> 125 mg/dL), except in the normal group who were not given alloxan. This is in accordance with the study of Pratama et al (2020) where alloxan can damage pancreatic -cells so that they cannot produce insulin [8]. Research by Yasroh et al (2021) also showed an average increase in blood glucose levels in rats after administration of alloxan for 3 days of 208.25

mg/dL. This proves that the administration of alloxan for 3 days can increase blood glucose levels in rats.

In Tables 3 and 4, the results of descriptive tests on rat blood glucose levels after treatment, from the average value there was a decrease in blood glucose levels in the positive control group and the treatment group (1, 2, 3, and 4). In the positive control group, metformin at a dose of 9mg/200gBW rounded up to 10mg/200gBW for 14 days succeeded in reducing blood glucose levels in rats by an average of 61mg/dL. Research by Prasetyo et al (2016) also showed a decrease in blood glucose levels in rats with metformin at a dose of 63mg/kgBW or 12.6g/200gBW, which showed an average decrease in blood glucose levels in rats of 270.2mg/dL. In the treatment group (1, 2 , 3, and 4) there is a decrease in blood glucose levels in rats, this is because red ginger and honey extracts contain flavonoids that work as antioxidants that can help lower blood glucose levels [7].

Effect of various doses of red ginger and honey extract compared to negative control in lowering blood glucose levels

The results of the post hoc Bonferroni test showed that there were significant differences in all groups of DM rats given red ginger extract (Zingiber officinale var.rubrum) and honey at all doses against the statistically negative control group ($p<0.05$). The difference in mean decline in treatment group 1 was 86.25±15.77, in treatment group 2 was 103.00±18.23, in treatment group 3 was 100.25±21.71 and in treatment group 4 was 107 ,75±8.26. This means that extracts of red ginger (Zingiber officinale var.rubrum) and honey in various doses can lower the blood sugar of rats compared to negative controls.
The research of Yanto et al (2016) showed a decrease in rat blood glucose when given red ginger extract at a dose of 1g/kgBW and 3g/kgBW. Research by Arsyad et al (2018) also showed a decrease in rat blood glucose levels when given honey at a dose of 0.5g/kgBW. In addition, research by Abdulrazaq et al (2011) also showed a decrease in blood glucose in rats given red ginger extract at doses of 100mg/kgBW, 300mg/kgBW, and 500mg/kgBW a day with the average result of a decrease in blood glucose levels after treatment of 138.37mg. /dL, 186.84mg/dL, and 200.36mg/dL, while the negative control group was 13.51mg/dL. Then, the results of the research by Arsyad et al (2018) also showed a decrease in blood glucose levels of rats on the administration of honey at a dose of 0.5g/kgBW a day with an average result of a decrease in blood glucose levels after treatment of 125.44mg/dL, while in the control group negative at 2.44 mg/dL [1]. The decrease in blood glucose levels in rats was due to the presence of phenol and flavonoids in ginger extract and the presence of flavonoids in honey [11].

The results of the negative control group in this study showed that there was no decrease in blood glucose levels from day to day, this is in accordance with the research of Abdulrazaq et al (2011) and Arsyad et al (2018) because distilled water has no effect on lowering blood glucose levels.

The effect of various doses of red ginger and honey extract on lowering blood glucose levels in several doses with positive control
The results of the post hoc Bonferroni test showed that there was a significant difference between the groups given metformin and the treatment groups 2, 3, and 4

($p<0.05$), while the treatment group 1 had no significant difference ($p>0.05$). From the research data, it can be concluded that red ginger and honey extracts with various doses have more antidiabetic effects compared to metformin, because ginger has the potential to produce significant effects on metabolic processes, such as satiety, thermogenesis, and fat oxidation, thereby accelerating metabolic processes and preventing obesity [5].].

Wicaksono et al (2014) revealed that the mechanism of metformin which belongs to the biguanide group in lowering blood glucose is to reduce insulin resistance, especially in the liver and muscles. This way of working is the same as the content of ginger extract and honey. The content of gingerol in red ginger extract can suppress the increase in blood glucose levels and improve glucose intolerance in rats. Gingerol regulates hepatic gene expression of enzymes related to glucose metabolism, it decreases gluconeogenesis and glycogenolysis and increases glycogenesis, thereby reducing hepatic glucose production and blood glucose levels [6]. The flavonoids contained in honey also stimulate glucose uptake in peripheral tissues, regulate the activity and expression of enzymes involved in carbohydrate metabolism pathways and can act like insulin, by influencing the insulin signaling mechanism [2].

4. Conclusion

The combination of red ginger extract and honey can reduce blood glucose levels in rats. This is evidenced by the decrease in blood glucose levels from various doses of red ginger extract and honey. One way ANOVA test obtained $p <0.05$, this means that there are differences between groups of data being compared. Bonferroni's post hoc test showed significant differences between the treatment groups (2, 3, and 4), namely red ginger extract 500mg/kgBB and honey 2ml/kgBB, red ginger 1000mg/kgBB and honey 1ml/kgBB, red ginger 1000mg/kgBB and honey 2ml /kgBW with a positive control group in lowering blood glucose levels.

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DESCRIPTION OF STRESS AND THE ROLE OF MOTHERS IN ACCEPTING ELEMENTARY SCHOOL CHILDREN IN LEARNING ONLINE PANDEMI TIME IN TASIK SERA VILLAGE, TALANG MUANDAU SUB-DISTRICT

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Abstract

The world is being shaken by the presence of Covid-19 (Corona Virus Desease). This has an impact on various activities including teaching and learning activities. The government has established a policy of learning from home. Therefore, the role that is usually carried out by the education unit, has now changed the function in the family unit, however, if all activities are only carried out at home, it can also cause psychosomatic disorders, namely physical disturbances caused by factors psychiatric The purpose of this study was to determine the description of stress and the role of parents in accompanying elementary school children in online learning during the pandemic in Tasik Serai village. This type of research is quantitative descriptive research. The population of this study is 80 housewives who have elementary school children. Sampling technique in this study This is purposive sampling. The research instrument uses a questionnaire. It is known that the description of the stress of parents in accompanying elementary school children with a total of 38 respondents (57.5%) and the description of the role in accompanying elementary school children in online learning in the pandemic era with a total of 43 respondents (65, 2%). Expected All mothers can play a role in accompanying children in online learning and are able to control the stress levels that mothers experience while accompanying children in online learning

Keywords: Role of Parents, Stress, Online Learning, Pandemic

Introduction

The world is being shaken by the presence of the corona virus or what is now called Covid-19 (Corona Virus Disease). It was stated that this virus first originated in the city of Wuhan, China since December 2019 (Lee, 2020). Based on data up to March 2, 2020, the worldwide mortality rate is 2.3% while specifically in the city of Wuhan is 4.9%, and in Hubai province 3.1%, this figure in other provinces in China is 0.16%. 8.9 Based on a study of the first 41 patients in Wuhan, 6 people died (5 patients in ICU and 1 patient non-ICU).(Huang, et.al. 2020). Many cases of death were in the elderly and with companions. The first case of death was a male patient aged 61 years with co-morbid intra-abdominal tumors and abnormalities in the liver (The StraitsTime 2020)

March 22, 2020, the Mayor of Pekanbaru, Firdaus, declared the status of Pekanbaru City to be a Covid-19 Emergency Response (Albertus,A.2020). After this

case, a few days later there was a significant increase in the number of people suspected of being infected with Covid-19 in Duri including a doctor among the five patients who were confirmed positive for death. Data released by the Riau Provincial Health Office, Saturday 3-10-2020. 177 positive patients have been recorded who have died in Riau province. Meanwhile, in the records quoted from the Riau Pos, the number of deaths reached 100 people released on Sunday (20-9-2020). Currently, there are 1 PDP patient being treated and 4 PDP patients. who died The total number of PDP in the city of Duri is 39 people.

Online learning set by the government is aimed at all levels of education from kindergarten to tertiary institutions. This alternative was chosen due to the development of the industrial revolution 4.0. The development of the industrial revolution greatly supports the implementation of online learning from home, because online learning is learning that eliminates time and distance with the help of internet-based digital platforms that are able to support learning to be carried out without physical interaction between educators and students (Putra & Irwansyah, 2020), so that today's technological sophistication is expected to be able to support these online activities. However, at the kindergarten education level, online learning requires direct parental involvement in its implementation.

During the Covid-19 pandemic, online learning has been carried out in almost all corners of the world, but so far online learning has never been carried out simultaneously (Sun et al. 2020). So that in this online learning process, all elements of education are asked to be able to provide learning facilities so that they remain active even though it is carried out without face-to-face meetings. Mothers are required to be able to guide their children to learn from home and be able to replace teachers at school, so that the mother's role in achieving online learning goals and guiding children while studying at home becomes very important. (Sun et al. 2020).

With the government's policy to study at home online, the role that was usually carried out by the education unit has now changed its function to the family unit. This means that now the house is the center of activity for all family members. This could have a positive impact, because the center of activity returns to its origin, namely the house. However, if all activities are only carried out at home, this will also cause psychosomatics, namely physical disorders caused by psychological factors and emotional piles that can cause shocks in a person in society, such as anxiety, stress, the social environment which influences negative thoughts a lot, such as because of hoax news and so on (Sari et al. 2020).

Based on the results of research on the sub-variable of assisting children to learn very well with a percentage of 82.59%. This shows that the role of mothers when accompanying children to learn can be said to be very important (Abtokhi 2012) and the results of research on the sub-variable stress during online learning is 40, 9% of this shows that few of the children who do online learning have stress levels. carried out by Saesti, who stated that the involvement of mothers in children's learning was mostly carried out with teachers at school, for example outing class activities, mini trips, and market days (Prabhawani, 2016).

The initial survey was conducted by researchers in Tasik Serai Village, Talang Muandau District, by conducting interviews with 10 mothers. the results of the interviews that the researchers got were, Out of 10 mothers there were 5 mothers who

had difficulties accompanying elementary school children during online learning, such as difficulties in understanding the material given to teachers, difficulties in applying gadgets, and having network difficulties . Based on the background above, the problem formulation can be described regarding the description of stress and the role of mothers in assisting elementary school children in online learning

Method

This research method is a descriptive research design with the aim of knowing the description of stress and the role of parents in assisting children in online learning. This research was conducted in Tasik Serai Village, Talang Muandau District. The population in this study was the Tasik Serai Village Community, Talang Muandau District, with a total of 80 housewives. The sampling technique in this study was purposive sampling. Purposive sampling is a technique for taking samples of data sources with certain considerations. The inclusion criteria for this study were mothers who had elementary school children.

The questionnaire used in this study was a closed questionnaire, namely a questionnaire whose answers had been provided so that the respondents only had to choose. The types of questions used in this questionnaire concern descriptions of stress and the role of mothers in assisting elementary school children to learn online. The number of statements is 15 for stress description statements with positive statements if answered agree the value is 1 and for disagree the value is 0, while for negative statements if answered agree the value is 0 and disagree the value is 1. With criteria: Severe stress if the score obtained by the median > 10.50 Moderate stress if the score obtained is the median <10.50, and the number of statements is 15 for statements describing the role of parents in accompanying children to learn online with positive statements if answered agree the value is 1 and for disagree the value is 0, while for negative statements if answered agree the value is 0 and disagree the value is 1. With the Results criteria Play a role if the score obtained is median> 10.00 and Do not play a role if the score obtained is < 10.00.

This questionnaire has been used in previous research by Wiwin Yulianingsih (2020). With the title "mother's involvement in accompanying elementary school children's learning during the pandemic in the people of Surabaya". So this questionnaire is used in this study. The questionnaire is divided into two parts.

Results and Discussion

Results

Research results regarding the Description of Stress and the Role of Mothers in Accompanying Elementary School Children in Online Learning During the Pandemic in Tasik Serai Village, Talang Muandau District, Bengkalis Regency

1. Age

Table 1.1
Frequency Distribution of Respondents Based on Community Age in Tasik Serai Village in 2020

NO	Age	Frequency	Percentage

1.	16-25 Years	35	53,0%
2.	35-36 Years	23	34,8%
3.	36-45 Years	8	12,1%
	Total	66	100,0%

From Table 1 the data shows that the majority of people aged 16-25 years are 35 people (53.0%)

2 Tribe

No	Tribe	Frequency	Percentage %
1.	Java	35	53,0%
2.	Malay	9	13,6%
3.	Batak	22	33,3%
	Total	66	100,0%

From table 2 the data can be seen that the majority ethnic group is Javanese with a total of 35 people (53.0%)

3 Mother's Role

Table 3
Frequency Distribution of Respondents' Role of Community Mothers in Tasik Serai Village in 2020

No	Role	Frequency	Percentage
1.	Does not play a role	23	34,8%
2.	Playing a role	43	65,2%
	Total	66	100,0%

From table 3 the data can be seen that a mother played a role in assisting elementary school children in online learning during a pandemic in Tasik Serai Village, the majority played a role 43 people (65.2%)

4. Description of Stress

Table 4
Frequency Distribution of Respondents Description of Community Stress in Tasik Serai Village in 2020

No	Stress	Frequency	Percentage
1.	Mild stress	21	32,7%
2.	Severe Stress	45	67,3%

	Total	**66**	**100,0%**

From table 5 the data can be seen that a mother has a high level of stress in accompanying elementary school children in online learning during a pandemic in Tasik Serai Village, the majority being moderate stress 38 people (57.5%).

Discussion

Based on the results of the research on the Description of the Role of Mothers in Accompanying Elementary School Children in Online Learning During the Pandemic, it was found that mothers in Tasik Serai Village, Talang Muandai District, in 2021, tend to play more roles in accompanying children to learn online 43 (65.2%). Compared with not playing a role 23 (34.8%).

The results of this study are also in line with the results of other studies which state that many parents have helped and motivated their children while studying from home because of the government's appeal regarding Covid-19 (Haerudin 2020). This is also what has made many parents spare time it's time to accompany children to study online, many of the parents agree that during online learning, parents also help with assignments given by the teacher, although not a few of these things become additional parental activities besides doing household chores, in this case accompanying children learning from home can strengthen the relationship between children and parents feel that through learning at home they can see the development of children in learning. It can be seen that in this case parents have a very big role during online learning activities.

According to the research assumptions, the majority of Tasik Serai village mothers only work as housewives so they have a lot of free time to accompany their children to learn online during a pandemic, and the researchers conclude that the role of parents in accompanying children can strengthen the relationship between parents and children, the role the family, especially both parents, also greatly influences the growth and development of children, the role of parents is very important in online learning, especially in terms of providing facilities, such as making the home atmosphere as comfortable as possible for learning, and providing media in online learning.

Based on the results of the Maternal Stress Gamabaran in Accompanying Elementary School Children in Online Learning During the Pandemic, it was found that mothers in Tasik Serai Village, Talang Muandai District, in 2021, tend to experience more severe stress levels of 45 (67.3%). Compared to mild stress levels 21 (32.7%). Stress is a physical and psychological reaction to a demand that creates tension and can disrupt the stability of life and affect the body's hormonal system (Sunaryo, 2013).

The results of this study are also in line with the results of research by Santrock (2003) there are various factors that can affect the level of stress. These factors are the strategies that influence the stress level, namely the coping strategies used, environmental factors, and cognitive factors. These factors make it not in the high stress category. The results of this study are also in line with the results of research by Abdilah, J.N (2016) parents experience obstacles during online learning such as the difficulty of dividing time with homework, lack of understanding of parents towards

children's material who are less obedient to parents. This is what makes parents experience stress.

According to the research assumptions, the researchers concluded that the factors that could affect the stress level were environmental factors, the difficulty of dividing time with homework and the lack of understanding of parents about the material provided. The women of Tasik Serai village also experienced symptoms of stress as said by the mother. y "My appetite is reduced, I like to be angry' it is not clear to people who are at home, sometimes I also feel sad, and I also feel that my head hurts more often because I think about how my child's school is during this pandemic. because mothers are very difficult to explain back the material given by the teacher to their children. a demand that creates tension and can disrupt the stability of life and affect the body's hormonal system

Conclusions

Based on research conducted in December 2020 on 66 respondents regarding "Description of Stress and the Role of Mothers When Accompanying Elementary School Children in Online Learning During the Pandemic in Tasik Serai Village, Talang Muandau District in 2021", it can be concluded that mothers in Tasik Serai Village tend to play more roles in accompanying children learning online 43 (65.2%) and not playing a role 23 (34.8%), and while the level of heavy stress on mothers in accompanying children learning online 45 (67.3%) compared to the level mild stress 21 (32.7%).

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PHYSIOTHERAPY CARE IN CASE IN CASE OF CERVICAL ROOT SYNDROME WITH TRANSCUTANEUS ELECTRICAL NERVE STIMULATION (TENS) MODALITY AND CERVICAL SPINE MOBILIZATION TECHNIQUES TO IMPROVE NECK FUNCTIONAL CAPABILITIES

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Abstract
Cervical root syndrome (CRS) refers to a set of disorders usually caused by changes in the cervical spine and surrounding soft tissues with pain a the predominant symptom. Pain
sensations include increasd muscle tension in the neck, limited movement and vegetative disturbances in the head area such as ringing in the ears, blurred vision, headaches, fatigue. The research subjects consisted of 1 patient with Cervical Root Syndrome with Transcutaneus Electrical Nerve Stimulation (Tens) and Cervical Spine Mobilization Techniques intervention. The study was conducted 9 times of therapy (T1-79) at Ibnu Sina Hospital Pekanbaru. The measuring instrument used was the Neck Disability Index (NDI) to determine the score for improving the functional ability of the neck. After being given
9 times therapy with Transcutaneus Electrical Nerve Stimulation (Tens) and Cervical Spine Mobilization Techniques, the results were obtained at the beginning but the number of scores was 28 = 56% (Severe Disability) and the end of the total 17 34% (Moderate Disability). The results of this study indicate that the intervention of Transcutaneus Electrical Nerve Stimulation (Tens) and Cervical Spine Mobilization Techniques is effective in improving the functional ability of the neck in Cervical Root Syndrome (CRS).
Keywords: *Cervical Root Syndrome* (CRS), *Transcutaneus Electrical Nerve Stimulation* (TENS), *Cervical Spine Mobilization Techniques*,

Introduction

In everyday life, humans carry out various activities to meet their needs, be it physical, mental, spiritual, sports, social activities, worship, and others. Excessive activity will have effects, such as complaints on the muscular system

(musculoskeletal), pain, soreness, aches and others (Haryatno et al., 2016).

The neck (cervical bone) is the upper limb that has many functions. The neck has the function of supporting the head, protecting the spinal cord and part of the torso or spine (Wahyuningsih et al.,
2016). The neck has a very important role in the process of innervation from the brain to the whole body. The neck plays a role in the performance of blood vessels leading to the brain. The neck has very complex joint movements. The movement of the neck is quite extensive and has very many functions, the neck has a very high risk of musculoskeletal injury, especially neck pain (Dewantari et al., 2017).

Cervical root syndrome refers to a set of disorders usually caused by changes in the cervical spine and surrounding soft tissues, with pain as the predominant symptom. Pain sensations include increased muscle tension in the neck, limited movement and vegetative disturbances in the head area such as ringing in the ears, blurred vision, headaches, fatigue (Kasumovic et al., 2013).

Cervical root syndrome is neck pain that occurs due to compression or irritation of the cervical spinal nerve roots which can be accompanied by motor, sensory or reflex weakness. Symptoms experienced can be pain, numbness, tingling, and weakness (Becker, 2018).

The World Health Organization (WHO) reports the annual reported incidence of cervical root syndrome is 83.2/100,000 people, while the reported prevalence is 3.5/1000 people. Gender preference varies among individuals most commonly affected in the 5th and 6th decades of life. Physical activity or trauma at onset is rare. involving less than 15%. A causal relationship with car accidents ranges from 3-23%(WHO, 2015).

Annual reported cervical root syndrome (CRS) events was 83.2/100,000 people, while the reported prevalence was 3.5/1,000 people. Gender prevalence varies. Incidence rate reached 107 per 100,000 men and 64 per 100,000 women. Most widely occurs in people aged 50 to 54 years (Health & Medicine, 2016). In Indonesia, every year about 16.6% of the adult population complaining of a bad feeling in the neck, even 0.6% comes from taste discomfort in the neck to severe neck pain. Incidence of pain increases with age, which is more common women than men with a ratio of 1.67:1 (Prayoga, 2014).

Causes of decreased functional ability of the neck at Cervical Root Syndrome is caused by work with a static body position and neck position bent too long like a job that uses laptop with long enough time can cause stiffness, limited range of motion and pain in the neck. This can resulting in decreased functional ability in the neck (Wahyuningsih, 2017).

Physiotherapy is a form of health service aimed at individuals or groups to develop, maintain, restore movement and body function throughout the life span with using manual
handling, increased motion, equipment (physical, electrotherapeutic and mechanical) function and communication training (PERMENKES, No. 65 of 2015).

Transcutaneous electrical nerve stimulation (TENS) is an electrotherapeutic device to stimulate the nervous system via a surface skin (Khariyono, 2013). This transcutaneous electrical nerve stimulation provide electrical current to nerves and generate heat to reduce stiffness, improve functional ability and able relieve pain (Wibawaet, al 2014).

Cervical spine mobilization techniques are a technique that can improve joint mobility which is
limited and can reduce harmful effects associated with joint immobilization and contractures joint
capsule. Local tissue effects associated with direct mechanical stimulation to the skin, fascia, muscles, tendons, ligaments, and capsules ligaments (Haussler, 2017).

Method

The sample in this study were moderate patients undergoing therapy at RSI Ibnu Sina, the patient is a house employee Avicenna's illness is 52 years old and female conditions Cervical Root Syndrome (CRS). This sample is only taken 1 person with special and complete inspection. The research process is ongoing for 3 weeks starting from 12 May 2022 to 25 May 2022. After the examination is carried out, the researcher enforces it diagnosis and provide intervention Transcutaneous Electrical Nerve Stimulation (TENS) and Cervical Spine Mobilization Techniques for improve the functional ability of the neck by using a measuring device Neck Disability Index (NDI).

Special Inspection and Measurement

1. Spurling's Test

The Spurling's test is performed by neck positioning extended and the head rotated to one side then apply downward pressure on the top of the head. If at the time of examination found any pain that felt by the patient along the side of the neck being performed pressing up to the arm indicates a positive result There is radicular pain in the ipsilateral extremity area according to the direction of head rotation (Mardjono M et al., 2012).

2. Head Distraction Test

Distraction of the head serves to relieve pain caused by compression of the nerve roots. This matter can be seen if there is suspicion of more nerve root irritation provide symptoms with a head compression test though other causes cannot be ruled out (Mardjono M et al., 2012).

Results and Discussion

Neck Disability Index (NDI) is a questionnaire that made to measure disability in the neck. In the questionnaire It contains 10 questions regarding pain intensity and daily activities include self-care, lifting, reading, headaches, concentration, work, driving, sleep and recreation. In this questionnaire there are questions specifically how severe the disability suffered at the time perform certain activities (Wahyuningsih et al., 2017).

Table 1. Evaluation *Neck Disability Indeks* (NDI)

Evaluation	Category
Minimum *disability* (0-20%)	Can perform most daily activities
Moderat *disability* (20-40%)	Feeling more severe pain and having trouble lifting things
Severe *Disability* (40-60%)	The main problem is pain, personal care, lifting things, reading, concentration, disturbed work
Crippled (60-80%)	Pain interferes with all aspects of the patient's life
80-100%	Awfully

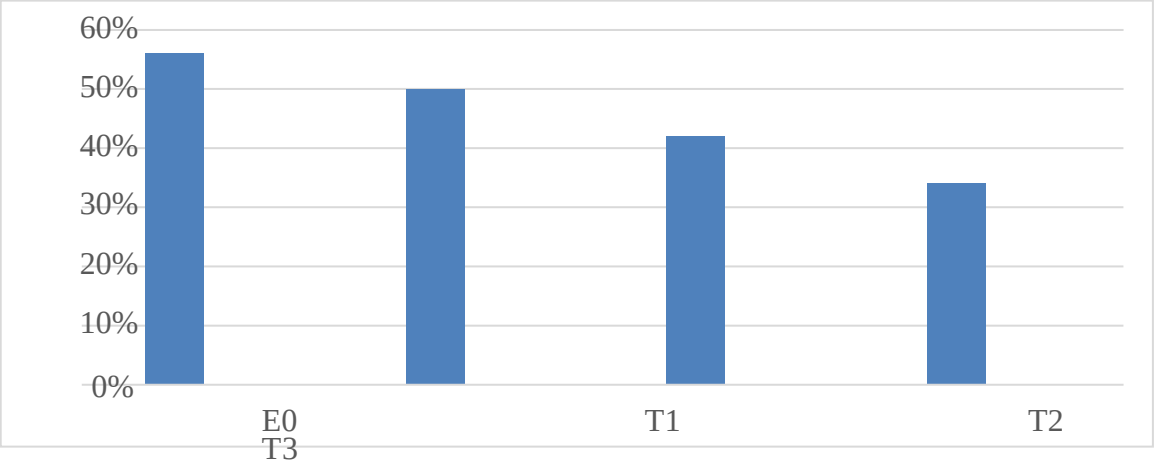
By using Transcutaneous Electrical Nerve intervention Stimulation (TENS) and Cervical Spine Mobilization Techniques measurements Neck Disability Index (NDI) to improve functional ability neck
results:

Table 2. Evaluation Questionnaire *Neck Disability Indeks* (NDI)

NO.	Assessment Aspect	E0	E1	E2	E3
1	Pain Intensity	3	3	2	2
2	Personal Care	2	2	2	2
3	Lift	4	3	3	2
4	Reading	2	2	2	1
5	Headache	4	3	3	3
6	Concentration	2	2	2	1
7	Work	2	2	1	1
8	Drive	4	4	3	3
9	Sleep	3	2	2	1
10	Recreation	2	2	1	1
	Total	28	25	21	17

Based on the evaluation table above, it was found that there was an increase functional ability of the neck using the Neck Disability measurement tool Index (NDI) which was carried out 9 times for 3 times a week and evaluation was carried out 3 times, at E0 with a total score of 28 = 56% .(Severe disability), E1 (T3) total score 25 = 50% (Severe disability), E2 (T6) 21 = 42% (Severe disability), and E3 (T9) with a total score of 17 = 34% (Moderate disabilities).

Grafik Final Evaluation of Neck Functional Improvement



Based on the graph above, the results of the ability increase are obtained functional neck using the
Neck Disability Index (NDI) measurement tool. in EO with a total of 56% (Severe disability), E1 (T3) a
total of 50% (Severe disability), E2 (T6) 21 = 42% (Severe disability), and E3 (T9) with a total score of 17
34% (Moderate disability)

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Physiotherapy Management In Elderly Using Otago Exercis Programe Intervention To Improve Dynamic Balance

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Abstract

Elderly is an advanced stage of a life process which is marked by a decrease in the ability of various organs, functions and body systems that are natural/physiological. Impaired balance in the elderly is caused by degenerative processes and decreased sensory and musculoskeletal functions which will affect the body's center of gravity on the fulcrum. The Otago Exercise Program is an exercise that aims to re-teach the body how to maintain balance so that it makes it easier to perform functional movements so that you don't fall easily while moving. When the elderly do the Otago Exercise Program, the nervous system will activate the muscles to contract, so that the more muscle fibers that activate, the greater the force produced by the muscles. The purpose of this research is to determine the effectiveness of the Otago Exercise Program to improve dynamic balance in elderly as measured by the Berg Balance Scale (BBS). The research method is a single case study with pre and post test design in 63 years old woman with balance disorder. Otago Exercise Program was carried out for 30 minutes, three times a week for four weeks. The measurements used in this study used Berg Balance Scale (BBS) to evaluate the

dynamic balance in elderly. The results showed an increase in dynamic balance from pre intervention obtained E1=38 (moderate fall risk) and after the twelfth

therapy E2= 52 (low fall risk). From the research it can be concluded that the Otago Exercise Program can improve dynamic balance in the elderly.
Keywords: Elderly, Balance disorder, Otago Exercise Program, Berg Balance Scale

Introduction

The process of human growth and development begins with infants, children, adolescents, adults and the elderly (elderly). Elderly is a stage that will be passed by every individual. Every human aging process will always be marked by a decrease in the anatomy and physiology of the body, as well as psychological abilities. Elderly is an advanced stage of a life process which is marked by a decrease in the ability of various organs, functions and body systems that are natural/physiological. The elderly group according to the World Health Organization (WHO) includes Middle Age (45–49 years), Elderly (60–74 years), Old (75–79 years), Very Old (over 90 years) (Pramita, 2018).

According to the World Health Organization, the number of elderly people in 2008 was 629 million people, in 2025 it is estimated that the elderly will reach 1.2 billion. According to the World Health Organization (WHO), the Southeast Asian region has 8% of the elderly population, with 142 million people. Indonesia is the highest country in the growth of the elderly population. The results of the 2010 Population Census showed that the elderly population in Indonesia was 18.57 million, an increase of around 7.93 in 2000. It is estimated that the number of elderly people in Indonesia will continue to increase by 450,000 people per year. In 2025 it is estimated that the number of elderly people in Indonesia will increase by around 34.22 million people (Jehaman, 2021).

Based on the results of the 2015 World Health Organization (WHO) in Italy, there were 22% of the elderly population (65 years) affected by balance disorders due to low physical activity and is expected to increase by 33% in 2065 (Covotta et al., 2018). In Indonesia in 2012 the number of elderly female population was 54% (10,046,073 people) while the male elderly population was

46% (8,538,832 people), the increase in the elderly population is expected to increase threefold in 2050 accompanied by an increased risk of injury due to falls and balance disorders (Riskesdas, and

National Health Profile Information data, 2018). According to the Indonesian Ministry of Health, the prevalence of balance disorders in the elderly is around 63.8% –68.7% (Faidah, 2020).

In the elderly who have a lot of decline in the physiology of the body, especially those that affect balance control such as decreased muscle strength, decreased proprioception, decreased visual. If this happens, it will result in poor balance control resulting in a balance disorder (Munawwarah, 2015). Balance disorders appear with several implications, one of which is falling. According to the World Health Organization (WHO), the prevalence of falls at the age of 65 and over is around 28–35% and at the age of 70 and over is around 32–42%. Balance disorders in the elderly are very closely related to dynamic balance, where dynamic balance is the most important component when moving and is fundamental to daily activities (Suadnyana, 2015).

Balance is the body's ability to maintain the center of body mass by maintaining the stability limits determined by the basic center of support. Balance consists of two kinds of static and dynamic balance. Static balance maintains a position that does not move or change, while dynamic balance involves body control because the body moves (Supriyono, 2015). The purpose of the body to maintain balance is to support the body against gravity, external factors, maintain the center of mass of the body so that it is parallel and balanced with the fulcrum, and stabilize body parts when other body parts move. The ability to balance body mass with the fulcrum will enable humans to move effectively and efficiently (Syapitri, 2016).

Balance disorders in the elderly can occur due to changes in the sensory system, namely a decrease in sensory perception in each sense such as sight, hearing, touch, taste, smell which is due to the aging process (Nasri, 2020). The elderly also often experience loss of sensation and perception of information that regulates body movement and position as well as loss of sensory fibers, vibration receptors and touch from the lower extremities which results in a reduced ability

to correct movements resulting in body imbalance (Nuraini, 2017). Changes in the musculoskeletal system of the elderly include bones, muscles and joints. The decline in the musculoskeletal system occurs due to a decrease in the number and size of muscle fibers resulting in a decrease in lower extremity strength and a decrease in balance. In addition, a decrease in muscle fibers can cause short steps, feet cannot tread firmly, and decreased mobility in the elderly (Nasri, 2020).

Components that play a role in balance in the elderly are sensory information systems (including visual, vestibular, and somatosensory), synergistic postural muscle responses, muscle strength, adaptive systems, and range of motion of the joints. If these components are weakened, it can increase the risk of falling in the elderly, requiring physiotherapy measures to increase postural control in order to improve dynamic balance (Segita, 2021).

Physiotherapy is a form of health service aimed at individuals or groups to develop, maintain and restore body movement and function throughout the life span by using manual handling, increasing movement, function training equipment and communication (PERMENKES RI, 2015).

One form of physiotherapy service is to provide regular and targeted exercises to improve balance in the elderly. Exercises that can be given are the Otago Excersice Program, which is an exercise program designed to reduce the risk of falling in the elderly by combining balance exercises, strengthening exercises, and walking programs (Mahendra, 2016).

Based on the results of research at the Faculty of Medicine, University of Otago, New Zealand, led by Professor John Campbell, actions performed using the Otago Exercise Program have been shown to result in greater improvement in people with balance disorders. The Otago Exercise Program is a cost-effective program to reduce falls in people aged 80 and over. This individually tailored program consists of a 30-minute program of balance and leg strengthening exercises performed at home at least 3 times per week and supplemented by a walking plan (Kisner and Colby, 2017).

Based on the background above, the author is interested in raising the topic and conducting research in the form of a scientific paper with the title "Physiotherapy Management in the Elderly Using Otago Exercise Program Intervention to Improve Dynamic Balance".

Metode

This research will be conducted at the Tampan Psychiatric Hospital in Pekanbaru. Case studies conducted from April to May 2022. The method used is a case study. Case studies are carried out by examining a problem through a case that consists of one unit. The single unit here means one person who is affected by a problem and is

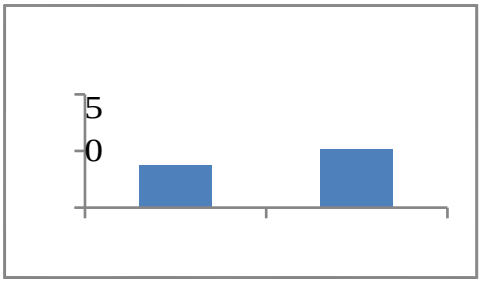
analyzed in depth both in terms of the circumstances of the case, the causal factors that arise in connection with the case, as well as the actions and reactions of the perpetrators. case for treatment for a particular presentation. In this case study, researchers used a sample of elderly people who represent a population of patients with balance disorders.

According to research conducted by Jin Lee in 2017, administering the Otago Exercise Program intervention to the elderly 3x per week for 4 weeks showed results in increasing dynamic balance.

Examination actions for the elderly with balance disorders in addition to information from the medical department, therapy also requires information from the patient's family to be able to find out the patient's condition so that it will facilitate treatment.

Results and Discussion

After the researchers carried out therapy using the Otago Exercise Programe training method with a frequency of 12 times of therapy for 4 weeks, the results showed an increase in dynamic balance. Before treatment with a score of 38 (medium risk of falling), and after the twelfth
therapy the result was 52 (low risk of falling).



Picture 1. Evaluation of Dynamic Balance by BBS Measurement

The sample in this case study is one person with the characteristics of suffering from balance disorders in the elderly. This sample is a patient who lives on Jl. Karya 1 Simpang Tiga, Pekanbaru, with a 63-year-old female. Patients have agreed to cooperate with research to maintain health and improve health. After conducting research, examining and managing the Otago Exercise Program, it was found that the Otago

Exercise Program could improve balance in patients.

This study lasted for 4 weeks, it was found that the patient experienced

balance disorders by carrying out the Berg Balance Exercise (BBS) examination. After the researchers conducted the examination, the researchers made a diagnosis and intervened using the Otago Exercise Program method to improve balance in the elderly.

Impaired balance is the main cause that often results in an elderly person falling easily. Balance disorders in the elderly can occur due to changes in the sensory system, namely a decrease in sensory perception in each sense such as sight, hearing, touch, taste, smell which is due to the aging process (Nasri, 2020). Balance disorders in the elderly are very closely related to dynamic balance, where dynamic balance is the most important component when moving and is fundamental to daily activities (Suadnyana, 2015).

The Otago Exercise Program is an exercise that aims to re-teach the body how to maintain balance so that it makes it easier to perform functional movements so that you don't fall easily while moving. When the elderly do the Otago Exercise Program, the nervous system will activate the muscles to contract, so that the more muscle fibers that are activated, the greater the strength generated by the muscles. Muscle strength can be described as the ability of the muscles to withstand both external and internal loads. The Otago Exercise Program is given starting from a warm-up in the form of stretching in every joint of the body, warming up is done to prepare the body so that it is not injured during the exercise. Movement in this warm-up also
aims to maintain flexibility in the elderly. Strengthening exercises aim to maintain bone and muscle health so that they can walk and carry out daily activities independently (Segita, 2021).

The main focus in strengthening exercises is on the lower extremity muscles, namely the knee flexors, knee extensors, and hip abductors which are an important part of functional movement and walking. The dorsiflexion of the ankle and plantar flexion of the ankle are an important part of improving balance, besides that the Otago Exercise Program can also adapt to daily functional movements so that it can optimize the ability of the elderly to carry out their functional activities and maintain balance (Segita, 2021).

Conclusion

Based on the results of research, we can be conclude that Otago Exercise Programe intervention can improve dynamic balance in the elderly with balance disorders.

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Description of Elderly Depression Levels at Panti Sosial Tresna Werdha Budi Mulia during the Covid-19 Pandemic

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Abstract

Background: Depression is a description of a group of people who have psychiatric disorders with marked sad moods or irritability Symptoms of depression in the elderly are often seen by physical symptoms. Depression in the elderly is influenced by various factors such as biology, psychology and social. Depression can further reduce the quality of life in the elderly. Purpose: This study aims to describe the level of depression in the elderly at Panti Sosial Tresna Werdha Budi Mulia during the COVID-19 pandemic. **Method:** This research is an observational study that is descriptive in nature. Observation of 76 subjects was carried out on December 15, 2022. **Results:** In the study, it was found that the research subjects consisted of 32 men (42.1%) and 44 women (57.9%). The average age of the subjects was 60-74 years. In the study, it was found that 19.7% of the elderly experienced mild depression. **Conclusion:** 80.3% of the elderly do not experience depression. The level of depression experienced was mild depression (19.7%) and severe depression (0%).

Key Words : Depression, Elderly

Introduction

The outbreak of a new virus at the beginning of 2020 shocked the world because this virus is highly contagious, the type of disease it causes is called Coronavirus disease 2019, abbreviated as COVID-19. (Otálora, 2020)**),** this COVID-19 pandemic has an impact on the economy, livelihoods, physical and mental well-being people around the world. (Liang et al., 2021)**.** Thus, triggering a massive quarantine by the government which has an impact on mental health. (Gloster et al., 2020)**.** Strong social restraint, social distancing and quarantine measures to prevent the spread of COVID-19 have raised concerns for the mental health of the elderly(Lee et al., 2020)**).** The current COVID-19 pandemic is a challenge for everyone, one of which is from a psychological perspective. Depression arises because of fears for one's own health and that of loved ones, uncertainty about work, changes in eating and sleeping patterns (Choi et al., 2020).

Depression is a common disease that often occurs in adults and it is estimated that as many as 280 million people are affected by depression, including 5.7% of adults older than 60 years (WHO, n.d.)In the world there are around 8-15% and survey results from various countries in the world show that the average depression in the

elderly is 13.5%, where women are twice as likely as men, with a ratio of 14.1: 8, 6. (Agung Akbar et al., 2022)**).** The risk of depression in the elderly can increase due to several disorders such as chronic disorders, specific sensory disturbances, and significant limited functional abilities. Depression among the elderly often goes undetected due to decreased executive function and is seen as part of the aging process which results in deteriorating health status and lower quality of life (Suastika et al., 2020)**.**

Various research results conducted by Callow D et al (2020) in North America during the COVID-19 pandemic found that out of 848 elderly people, 25.5% were categorized as having mild depression, 63.1% of the elderly were experiencing moderate depression, and 11.4% Elderly is categorized as major depression. Depressive disorders are also experienced by the elderly in China, where around 30.8% experience them(Liang et al., 2021)**.** The highest prevalence of depressive disorders is among the elderly who have a history of illness, 15.2%(Das et al., 2021)**.** Fear of infection, due to perceived susceptibility to disease, plays an important role in the development of psychological symptoms in the elderly that affect fear. Elderly in China also experience depressive disorders with a prevalence of 53.8% (Maggi et al., 2021).

Method

This research is an observational study that is descriptive in nature on 76 elderly who live in the Panti Sosial Tresna Werdha Budi Mulia on December 15 2022. The level of depression is assessed by conducting interviews based on the Geriatric Depression Scale (GDS) instrument. GDS assessment results in the form of normal, mild depression and major depression.

The population is all elderly living at Panti Sosial Tresna Werdha Budi Mulia on December 15 2022. The reachable population is all elderly living at Panti Sosial Tresna Werdha Budi Mulia on December 15 2022. Sampling was done by consecutive sampling. The inclusion criteria for this study were elderly aged > 60 years and willing to participate in the study (informed consent)

Result and Discussion

A. Result

The research was conducted on 76 elderly who were at PSTW Budi Mulia on December 15 2022.

1. Demographic Characteristics of Research Subjects

The demographic characteristics of the research subjects can be seen in Table 1

Table 1. Demographic Characteristics of Research Subject

Characteritics	F	(%)
Gender		
Man		
Woman	32	42,1%

	44	57,9%
Age		
Elderly (60 – 74)		
Old (75 – 90)	60	78,9%
Very Old > 90	14	18,4%
	2	2,6%

In the study, it was found that the research subjects who experienced depression consisted of 32 men (42.1%) and 44 women (57.9%). Meanwhile, at the age level of the research subjects were Elderly as many as 60 people (78.9%), Old 14 people (18.4%), and Very Old 2 people (2.6%)

2. Level of Depression in Research Subjects

Table 2. Characteristics of Depression Levels in Research Subjects

Level Depression	F	%
Normal	61	80,3%
Mild Depression	15	19,7%
Heavy Depression	0	0%

In the study, it was found that 19.7% of the elderly experienced mild depression and 80.3% who did not experience depression

B. Discussion

Based on the research, it was found that 76 elderly people consisted of 32 men and 44 women. The respondents obtained 80.3% did not experience depression and 19.7% experienced depression. This is in accordance with research conducted by Kartika Sari at the PSTW Budi Mulia, East Jakarta(Sari, n.d.), namely 40.6% of respondents experienced depression.

The cause of depressive disorders is multifactorial, namely contributions from biology, psychology and social. From a biological perspective, changes in brain neurotransmitters include norepinephrine, serotonin, and dopamine. Psychological factors can be influenced by personality, mindset, stress, and environment. While the influence of social factors due to feelings of loneliness, a sense of uselessness or social support.(Sarkhel, 2009)

Based on gender, the number of elderly who experience depression is more experienced in elderly women by 57.9%. These results differ from Anissa's study in Padang, where men and women experience the same depression. This is estimated

because the sample of elderly women has a higher level of anxiety about death than elderly men.(Anissa et al., 2019)

Depression that many respondents experienced was mild depression (19.7%). The results of this study are in accordance with research conducted by Relang Rizki Mulyadi et al (2016) which found 68.1% aged 60-74 years experienced mild depression and 77.4% who experienced depression were elderly women.(Mulyadi et al., 2016)

Conclusion

In the study, it was found that 19.7% of the elderly experienced depression with the level of depression that was most commonly experienced was mild depression. The limitations of the study were the sample which was less cooperative and did not want to be interviewed. The researcher's suggestion is that the research was conducted by looking for risk factors associated with depression in the elderly at PSTW Budi Mulia

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RELATIONSHIP HISTORY OF EXCLUSIVE BREAST FEEDING AND INTAKE CALCIUM IN TODDLERS AGED 24-60 MONTHS WITH EVENTS STUNTING IN PEKANBARU

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Abstract

One of the causes of stunting is delayed development caused by suboptimal nutrition, infectious diseases, and psychosocial problems. Stunting, known as short stature, is defined as a height lower than -2 standard deviations. The prevalence of stunting in Riau Province in 2013 was 36.8% and the prevalence of stunting in Riau Province in 2018 was 27.4%. Stunting is a linear growth problem caused by developmental disorders caused by malnutrition, infectious diseases, and inadequate psychosocial simulation. The purpose of this study was to determine the relationship between history of exclusive breastfeeding and calcium intake in toddlers aged 24-60 months with the incidence of stunting in Pekanbaru. This type of research is an observational study with a cross sectional approach. The sample is 74 toddlers. The sampling technique uses non-probability sampling using the consecutive sampling method. Metode pengumpulan data menggunakan kuesioner dan wawancara formulir SQ-FF. Hasil penelitian menunjukkan bahwa balita yang ASI Eksklusif lebih tinggi mengalami stunting sebanyak 23 (63,9%) balita, berdasarkan asupan kalsium kejadian stunting tertinggi pada balita dengan asupan kalsium yang kurang sebanyak 24 (64,9%). Based on the Chi Square test, the history of exclusive breastfeeding and the incidence of stunting obtained a value (p = 0.020; RR 95% CI 1.743 (1.069-2.812), while between calcium intake and the incidence of stunting obtained a value (p = 0.011; RR 95% CI 1.846 (1.122-3.037). From the research that has been done, it can be concluded that toddlers with stunting conditions get exclusive breastfeeding significantly than toddlers who don't get exclusive breastfeeding and there is a significant relationship between calcium intake and the incidence of stunting. From the research that has been carried out, it is necessary to increase information through counseling regarding the fulfillment of high-calcium food sources and the provision of an adequate MP-ASI program for mothers of toddlers.

Keywords: exclusive breastfeeding, calcium intake, stunting

Introduction

Stunting is a physical growth disorder in the form of a linear decrease in growth rate so that children fail to grow to reach optimal height potential. Stunting, known as short stature, is defined as a height lower than -2 standard deviations. The prevalence of stunting in Riau Province in 2013 was 36.8% and the prevalence of stunting in Riau Province in 2018 was 27.4%. According to the 2019 Indonesian Toddler Nutrition Status Survey (SSGBI) data, the prevalence of stunting in Riau Province was 23.95% and the 2021 Indonesian Nutrition Status Study (SSGI) data showed that the prevalence of stunting in Riau Province in 2021 was 22.3%. The toddler period is a vulnerable group with stunting. Stunting is a linear growth problem

caused by developmental disorders caused by malnutrition, infectious diseases, and inadequate psychosocial simulation (WHO, 2020).

Stunting has enormous consequences such as delays in children's mental development, decreased cognitive and motor functions, poor learning processes in schools, decreased children's knowledge capacity which results in national economic productivity. children under two years old. The growth of stunting that occurs at the age of 0-2 years can continue and the risk of short growth or stunting in adolescence (Ni Ketut., et al, 2017).

Breast milk is a liquid formed from fat and water which comes from a solution of protein, lactose and inorganic salts which functions as baby food. Exclusive breastfeeding is breastfeeding until the age of 6 months. Exclusive breastfeeding for babies is especially important for the growth and development of these babies. Exclusive breastfeeding is given for 6 months, after the age of more than 6 months, the baby may be given complementary food with regular breast milk until the age of 2 years or more (WHO, 2019).

Children who do not get exclusive breastfeeding are at risk for malnutrition needed for the growth process and toddlers who do not get exclusive breastfeeding will easily get infectious diseases such as diarrhea and ARI. Formula milk does not contain antibodies as well as breast milk, so this can trigger infectious diseases in toddlers. This is in line with Anita's research. et al (2020). In addition to breast milk, inadequate intake of nutrients and energy is one of the factors that have a role in the incidence of stunting. Calcium deficiency is one of the most common nutritional problems currently occurring. Indonesian children aged 2-12 years consuming food sources of calcium are still relatively low, namely 37% per capita per day compared to the nutritional adequacy rate. (Mikhail et al, 2013). Imperfect bone structure is caused by not consuming calcium in the long term. This causes growth disturbances in toddlers (Chairunnisa et al, 2018).

Method

This research is an observational study with a cross sectional approach. The population in this study were stunted and non-stunted toddlers aged 24-60 months and male and female and their mothers who live in the city of Pekanbaru. The minimum sample size was calculated using a hypothesis test and obtained 54 toddlers, consisting of 27 stunted toddlers and 27 non-stunted toddlers. The sampling technique in this study was carried out using non-probability sampling using the consecutive sampling method based on predetermined characteristics. The type of data in this study was quantitative, consisting of a history of exclusive breastfeeding and calcium intake in toddlers with stunting. The data used in this study are primary data and secondary data.

Results and Discussion

A total of 54 toddlers consisting of 27 stunted toddlers and 27 non-stunted toddlers aged 24-60 months participated in this study. Characteristics of toddlers in this study, namely age, gender, stunting, history of exclusive breastfeeding and calcium intake which can be seen in table 1. Most of the toddlers in this

study were in the age group of 23-36 months (45.9%) , male sex (54.1%), incidence of stunting (50%), not exclusive breastfeeding (51.4%), and insufficient calcium intake (62.2%).

Table 1. Characteristics of Toddlers

Characteristics	Category	Frequency (n)	Persentase (%)
Toddler Age	24-36	15	27,7
	37-48	19	35,1
	49-60	22	40,7
	Total	54	100
Gender	Male	31	57,4
	Female	23	42,6
	Total	54	100
Incidence of Stunting Toddlers	Stunting	27	50,0
	Non Stunting	27	50,0
	Total	54	100
Exclusive breastfeeding	Exclusive breastfeeding	32	59,2
	Not Exclusive	22	40,7
	Total	54	100
Calcium Intake	Enough	24	44,4
	Not enough	31	66,6
	Total	54	100

Based on table 1. It was found that the majority of respondents were in the age group 49-360 months (40.7%). Optimal growth and development occurs at the age of 2-5 years. The majority of respondents in this study were male (57.4%). A study by Hamal et al. (2021) which stated that the male respondents were higher than the female respondents, namely 37 toddlers (13.6%). According to (Hidayat and Pinatih, 2017) states that boys need more intake of nutrients because they have a larger body posture and higher metabolism compared to girls. The percentage of stunting (50%) from the total sample aged 24-60 months. Characteristics based on a history of exclusive breastfeeding are the majority of toddlers who do not get exclusive breastfeeding (59.2%). A study by Sampe et al. (2020) which shows that as many respondents in the stunting category did not receive exclusive breastfeeding (91.7%) compared to exclusive breastfeeding (8.3%). There were quite a lot of respondents in this study who had less calcium intake (66.6%). This result is in line with the study of Sudiarmanto and Sumarmi (2020) which states that calcium intake is less by 92.6% compared to sufficient calcium intake (7.4%)

Table 2. Characteristics of Mothers

Characteristics	Category	Frequency (n)	Persentase (%)
Age	20-35	37	68,5
	> 35	17	31,5
	Total	54	100
Education	Tall	29	53,7
	Low	25	46,3
	Total	54	100
Job	Work	19	35,2

Doesn't work	35	64,8
Total	54	100

Of the 54 respondents who were mothers of toddlers who participated in this study. Characteristics of mothers under five consisted of mother's age, mother's education, and mother's occupation which can be seen in table 2. Most of the mothers who participated in this study were aged 20-35 years (68.5%), highly educated (53.7%) and did not work (64.8%). Table 2 shows the characteristics of mothers under five who participated in this study. It shows that the majority of the mothers who were respondents were 20-35 years old (68.5%). The results of this study are in line with Dewi et al. (2016) which explains that the age of the mother with the most toddlers as respondents is the age of 20-35 years (46.6%) of 58 respondents. The majority of respondents in this study had higher education (53.7%). A study by Yustianingrum and Andriani (2017) stated that all respondents had further education (62.2%). In this study, mothers who did not work had the highest percentage (64.8%). This result is in line with Ramli's research, (2020) which states that if (73.7%) mothers choose not to work and become housewives.

Table 3. Relationship between a history of exclusive breastfeeding and stunting

ASI Exclusive	Stunting events				Total		P value	OR 95% CI
	Stunting		Non *Stunting*		n	%		
	n	%	n	%				
Not Exclusive Breastfeeding	12	44,4%	17	62,9%	29	100	0,018	1,743 (1,069-2,812)
Exclusive breastfeeding	15	55,6%	10	37,1%	25	100		

Based on Table 2, the results showed that out of 27 stunted toddlers, 12 (44.4%) toddlers did not get exclusive breastfeeding and the remaining 15 (55.6%) toddlers got exclusive breastfeeding. The results of the study using the Chi-Square test showed a p value of 0.018 (p <0.05) which means that toddlers with stunting conditions get exclusive breastfeeding significantly than those who do not get exclusive breastfeeding. The RR value was 1.743 and the value was 95% CI (1.069-2.812) which means that children

under five who do not get exclusive breastfeeding have a 1.743 times higher risk of experiencing stunting and exclusive breastfeeding is not a risk factor for stunting.

The RR value was 1.743 and the value was 95% CI (1.069-2.812), which means that children under five who do not get exclusive breastfeeding have a 1.743 times higher risk of experiencing stunting and exclusive breastfeeding is not a risk factor for stunting. Based on the history of exclusive breastfeeding, it can be seen if stunting occurs in toddlers who get exclusive breastfeeding. These results are in line with Pangkong's study (2017) on children aged 12-36 months in the Working Area of the Sonder Health Center, which stated that there was no significant relationship between exclusive breastfeeding and the incidence of stunting. In this study, it was shown that stunting toddlers who received exclusive breastfeeding were 20.7%, while stunted toddlers who did not get exclusive breastfeeding were 26.6%. This result is different from the research by Dewi and Mu'minah (2020) on children aged 1-3 years in the

working area of the Sumbang 1 Health Center, which also shows that toddlers who get exclusive breastfeeding experience more stunting by 36.4% of toddlers compared to toddlers who don't. get exclusive breastfeeding by 23.1%.

Table 4. Relationship between calcium intake and stunting

Calcium Intake	Kejadian *Stunting*				Total		P value	RR 95% CI
	Stunting		Non *Stunting*					
	n	%	n	%	n	%		
Not enough	17	62,9%	9	33,3%	26	100	0,010	1,846 (1,122-3.037)
Enough	10	37,1%	18	66,7%	18	100		

In this study, calcium intake was divided into 2 categories, namely insufficient, if calcium intake for toddlers aged 24-36 months <650 mg per day (<80% RDA) and for toddlers aged 37-60 months <1000 mg per day (<80% RDA) and is said to be sufficient if the calcium intake for toddlers aged 24-36 months is ≥650 mg per day (≥80% RDA) and for toddlers aged 37-60 months ≥ 1000 mg per day (≥ 80% RDA). Based on Table 3. The results showed that out of 27 stunted toddlers, 10 (37.1%) toddlers had sufficient calcium intake and the remaining 17 (62.9%) toddlers received insufficient calcium intake. The results of the study using the Chi-Square test showed a p value of 0.010 (p <0.05) so that there was a significant relationship between calcium intake and the incidence of stunting in toddlers aged 24-60 months in Pekanbaru.

The RR value was 1.846 and the 95% CI value (1.122-23.037) which means that children under five who do not get enough calcium intake have a 1.846 times higher risk of experiencing stunting and calcium intake is a risk factor for stunting. In the research conducted by Aridiyah et al. (2015) with the title "Factors Influencing Stunting Incidence in Under-five Children in Rural and Urban Areas" there is a significant relationship between protein and calcium levels and the incidence of stunting in rural areas with less calcium adequacy category of 83.9% but the results are different for urban areas there is no significant relationship between protein and calcium levels with the incidence of stunting with a yield of 60%. This result is in line with the research of Endah et al. (2016) in children aged 24-59 months, which showed a significant relationship between calcium intake and the incidence of stunting compared to children who were not stunted. According to research conducted by Chairunnisa E., et al. (2018) in Semarang City with children aged 12-24 months explained that low intake of calcium, vitamin D, and

phosphorus in children aged 12-24 months also contributed to the incidence of stunting, so from this study it could be shown that calcium deficiency is one of the factors for stunting in toddlers.

Conclusions

Based on the results of data analysis, it was concluded that toddlers with stunting and exclusive breastfeeding were significantly different from those who did not get exclusive breastfeeding and there was a significant relationship between calcium intake in toddlers aged 24-60 months and the incidence of stunting in Pekanbaru. For health workers, nutrition education can be a means of information about increasing adequate food intake and high-

calcium food ingredients to the public. The existence of this program is expected to reduce the value of stunting in Pekanbaru

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Utilization Of Cucumber (*Cucumis sativus* L) Infused Water to Reduce Total Cholesterol Levels

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Abstract

Hypercholesterol is a condition in which cholesterol levels exceed normal < 200 mg/dL which has a risk of death of coronary heart disease. The cucumber (*Cucumis sativus* L) is a fruit-a fruit that is rich in one of the benefits of lowering total cholesterol in the blood. A substance found inside the cucumber (*Cucumis sativus* L) is steroids, turderoids, alkaloids, phenolic, saponin and flavonoid. The study aims to identify the effects of inducing cucumber water through pre-and post test research methods. The results of test t-test statistics are averaged - the average cholesterol level before treatment of 220.85 mg/dL with a deviation of 2.387 and total cholesterol after treatment of 214.85 mg/dL with a standard deviation of 13.716. This means that there is a difference in the results of total cholesterol levels before and after consuming the cucumber infused water. Thus, it can be concluded that there is a significant (meaningful) impact on the inducing of cucumber infused water to the decline of total cholesterol.

Keywords: Hypercholesterol, Cholesterol, Cucumber.

Introduction

Indonesia, whose territory has a tropical climate type, almost all types of horticultural crops can be developed at any time. The development of various types or varieties of hybrid and non-hybrid cucumbers can support the diversity (diversification) of cucumber products for both domestic and foreign consumption. As for the benefits of consuming cucumber fruit, besides being able to add to the taste of food, it also contains high enough nutrition for the health of the body. In addition, this type of cucumber is often used for beauty, maintaining a healthy body, and treating several types of diseases (Amin, 2015). Cucumber has active compounds, namely steroids, terpenoids, alkaloids, phenolics, saponins and flavonoids. Compounds that can reduce total blood cholesterol are flavonoids by inhibiting the activity of the HMG CoA reductase enzyme and acting as cofactors for the cholesterol esterase enzyme and inhibitors of cholesterol absorption (Rusmini et al., 2019).

Hypercholesterolemia is a condition in which cholesterol levels in the body exceed the normal limit of <200 mg/dL. Hypercholesterolemia can increase the risk of atherosclerosis, coronary heart disease, pancreatitis (inflammation of the pancreas), diabetes mellitus, thyroid disorders, liver disease, and kidney disease. Factors that cause hypercholesterolemia are consuming high-fat foods, heredity, lack of exercise, and smoking habits. Therapeutic Lifestyle Changes (TLC) include reducing intake of saturated fat and cholesterol, choosing foodstuffs that can reduce Low Density Lipoprotein (LDL) levels, losing weight and increasing regular physical activity, lifestyle change points are heavily influenced by self-motivation and a positive environment. requires good and sustainable nutrition counseling (Yani, 2015).

Research by Rusmini, et al (2019), stated that the lowest total blood cholesterol in mice was mice given a flavanoid dose of P1 = 0.02 mg, which was 73.2 mg/dL. Meanwhile, the highest reduction in total blood cholesterol levels in mice was in mice given a flavanoid dose of P2 = 2 mg, which was 23.8 mg/dL, so based on the results it showed that the greater the dose of flavanoids given, the greater the reduction in total blood cholesterol levels in mice.

Method

Making Cucumber Infusion

Prepare the tools and materials to be used, then wash the cucumbers using clean water, then cut the cucumbers into several pieces, then weigh 100 grams of cucumbers. After weighing, put the cucumbers in a glass containing 200 mL of water, then wait 4 hours (Haitami et al. ., 2017)

Capillary Blood Sampling and Cholesterol Examination

The sample in this study were 20 respondents with hypercholesterolemia aged 30-60 years. Prepare the necessary tools and materials. Before the GCU Easy Touch tool is turned on and the cholesterol strip is used, clean the fingertip that will be pricked using 70% alcohol cotton and wait until it dries. Holding the part of the finger to be pricked, prick the finger with a sterile lancet. The puncture must be deep so that blood can easily come out, then press the finger that has been pricked. Remove the first drop of blood using a sterile cotton swab. Next, let the Easy Touch GCU tool suck up the drops of blood that come out, then wait for the results to come out (Gandosoebrata, 2011). Data was analyzed by t dependent test.

Results and Discussion

Examination of cholesterol levels was carried out before and after administration of cucumber infused water given for 2 weeks. The results of the examination can be seen in table 1..

Tabel 1 Total cholesterol levels of responden

No	Respondent Code	Total Cholesterol Level Before (mg/dL)	Total Cholesterol Level After (mg/dL)
1	NN	217	213
2	TA	206	193
3	TN	228	220
4	RH	243	240
5	SW	240	237
6	YA	219	222
7	HY	229	232

8	CT	229	219
9	RH	227	217
10	RT	219	214
11	WS	206	193
12	TN	214	209
13	NT	221	218
14	SN	204	194
15	RY	207	196
16	YS	224	221
17	IS	218	212
18	ES	215	204
19	LD	224	219
20	MA	227	224
Mean		**220,84**	**214,85**

Table 1 shows the average value of cholesterol levels before administration of boiled water infused water cucumber 220.085 mg/dL. The average value of cholesterol levels after administration of cucumber infused water for 2 weeks was 214.85 mg/dL. Judging from the two data above, there is a difference. Whether the difference is significant or not, it is necessary to perform statistical calculations using a paired t-test.

Respondent's T dependent test analysis included cholesterol levels before treatment and after treatment for 2 weeks intensively.

Tabel 2 Dependent T Test Analysis

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Total Cholesterol_Before - Total Cholesterol_After	6.00000	4.66792	1.04378	3.81535	8.18465	5.748	19	.000

Tabel 2 showed that p value of dependent t test is 0.00. it can be stated that total cholesterol levels before and after consuming cucumber infusion have a significant difference.

In this study before administration of cucumber infused water, total cholesterol level of respondent was obtained more than normal. Measurement of total cholesterol levels was carried out to determine the effect before and after giving cucumber infused water for 2 weeks. Total cholesterol levels increase as a result of excretion of cholesterol into the intestine through bile acids or increased production of cholesterol in the liver. Cholesterol tends to increase in people who are overweight, lack of exercise, do not maintain their diet, and are heavy smokers (Harti, 2014).

Measurement of total cholesterol levels after administration of cucumber infused water was carried out by administering 1 time a day for 2 consecutive weeks, the results showed that the total cholesterol level of 18 people decreased and 2 people did not decrease. This is because the respondents did not maintain their diet and rarely exercised. The average value of total cholesterol levels obtained after giving cucumber infused water was 214.85 mg/dL. It can be concluded that after administration of cucumber infused water there was a decrease in total cholesterol levels, it can be seen from the average difference in total cholesterol levels

before and after administration of cucumber infused water. Decreased cholesterol levels can occur due to factors that decrease the outflow of cholesterol from the cell membrane to lipoproteins by HDL due to the presence of the enzyme lecithin cholesterol acyl transferase (LCAT), the activity of the cholesterol esterification process by the enzyme acyl CoA cholesterol acyl transferase (ACAT) and the use of cholesterol for the synthesis of other steroids. , for example certain hormones and bile acids in the liver (Harti, 2014).

A study by Rusmini et al (2019) stated that cucumber contains flavanoids which can block the oxidation reaction of low density lipoprotein (LDL) by acting as an antioxidant and preventing deposition of oxidized LDL in endothelial cells. Thus the results of this study indicate that the flavanoids in cucumber extract have a large effect on reducing total blood cholesterol levels of male Mus musculus mice who are hypercholesterolemia after consuming fast food.

Conclusions

Based on the results of research on the benefits of cucumber infused water to reduce total cholesterol levels, it can be concluded that before and after administration of cucumber infused water, cholesterol levels decreased significantly. This proves that there is a significant effect on the administration of cucumber infused water on total cholesterol levels in respondents.

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