



Weight Training or Be a Burden

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ABSTRACT

Sarcopenia is a condition characterized by decreased muscle mass and strength, characterized by a decline in physical ability, beginning around the age of 40 due to the aging process. A significant number of residents of Bangetayu Wetan Village, 5,694 people, are over 40 years old and experience various physical complaints such as knee pain, back pain, fatigue, muscle and joint stiffness, physical weakness, obesity, high blood sugar, blood pressure, cholesterol, and so on. Residents of Bangetayu Wetan Village are unaware that one of the risk factors for these complaints is muscle mass loss, or sarcopenia. One effective way to prevent and manage sarcopenia is through regular weight training. This community service activity aims to provide knowledge about sarcopenia and how to manage it through weight training. The expected benefit of this activity is that residents of Bangetayu Wetan Village over 40 will be able to identify and address their health problems.

ABSTRAK

Sarkopenia adalah kondisi yang ditandai dengan penurunan massa dan kekuatan otot, ditandai dengan menurunnya kemampuan fisik, yang dimulai sekitar usia 40 tahun akibat proses penuaan. Sebagian besar penduduk Desa Bangetayu Wetan, yaitu 5.694 jiwa, berusia di atas 40 tahun, mengalami berbagai keluhan fisik seperti nyeri lutut, nyeri punggung, kelelahan, kekakuan otot dan sendi, kelemahan fisik, obesitas, gula darah tinggi, tekanan darah tinggi, kolesterol, dan sebagainya. Warga Desa Bangetayu Wetan belum menyadari bahwa salah satu faktor risiko keluhan tersebut adalah kehilangan massa otot, atau sarkopenia. Salah satu cara efektif untuk mencegah dan mengelola sarkopenia adalah melalui latihan beban secara teratur. Kegiatan pengabdian masyarakat ini bertujuan untuk memberikan pengetahuan tentang sarkopenia dan cara mengelolanya melalui latihan beban. Manfaat yang diharapkan dari kegiatan ini adalah warga Desa Bangetayu Wetan yang berusia di atas 40 tahun dapat mengidentifikasi dan mengatasi masalah kesehatan mereka.

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A. INTRODUCTION

Bangetayu Wetan Village is one of the villages in Genuk District, Semarang. Bangetayu Wetan Village is located on Wolter Monginsidi Street, RT 05 RW 01, Semarang. The area covers 185,285 hectares with the following boundaries:

- North: Sembungharjo Village
- East: Penggaron Lor Village
- South: Tlogomulyo Village
- West: Bangetayu Kulon Village

According to the Monograph Report, the population of Bangetayu Wetan Village as of December 31, 2024, was 15,932, with the following age groups:

Ages 0-4: 1,100

Ages 5-9: 1,444

Ages 10-14: 1,422

Ages 15-19: 1,302

Ages 20-24: 1,218

Ages 25-29: 1,196

Ages 30-34: 1,291

Ages 35-39: 1,265

Ages 40-44: 1,440

Ages 45-49: 1,230

Ages 50-54: 1,007

Ages 55-59: 798

Ages 60-64: 531

Ages 65-69: 313

Ages 70-74: 211

Ages 75 and Over: 164

According to the monograph report above, the number of residents of Bangetayu Wetan Village aged 40 and over is quite large, at 5,694. According to information obtained from village officials, the Head of the Community Health Forum, and the Head of Family Welfare Empowerment, a significant number of residents aged 40 and over experience various physical complaints, such as knee pain. Back pain, fatigue, muscle and joint stiffness, physical weakness, obesity, high blood sugar, blood pressure, cholesterol, and so on. They believe these complaints are normal due to aging. Efforts they have made so far include rest, massage, therapy, and medication. While these efforts may alleviate these symptoms, they do not effectively resolve the problem because they do not improve or improve their physical health, and instead, sooner or later, worsen their condition.

Our community service team has reported that no Bangetayu Wetan Village residents are aware that one of the risk factors for their various complaints or problems is muscle loss, or sarcopenia. A 2023 study by María del Carmen Carcelén-Fraile et al. found that metabolic risk factors such as Body Mass Index, systolic and diastolic blood pressure, glucose, cholesterol, or triglycerides are significantly associated with sarcopenia. There is evidence linking various metabolic risk factors to sarcopenia in adults over 65 years of age, necessitating research investigating strategies to reduce the incidence of sarcopenia and, consequently, the incidence of metabolic disease.

Dr. Luthfi Hidayat, Sp.OT., in 2023, in an educational article at the Gadjah Mada Orthopedic Clinic, Gadjah Mada University Academic Hospital, stated that sarcopenia is a condition characterized by wasting and loss of muscle mass, particularly in the knee joints,



with aging. The term sarcopenia comes from the Greek words "sarx," meaning flesh, and "penia," meaning lack. Sarcopenia is a serious problem faced by many older adults worldwide. This decrease in muscle mass can lead to various health problems, particularly knee pain, and a reduced quality of life for older adults. Sarcopenia can lead to a decreased quality of life for older adults due to physical limitations or reduced independence.

In his YouTube video on October 9, 2024, Dr. Hendry Suhendra, SpOT, stated that weight training becomes increasingly necessary as people age. Without it, seniors lose muscle mass, bone mass, and metabolism, leading to falls. The various research findings and explanations from health experts mentioned above are not yet known or understood by residents of Bangetayu Wetan Village. Therefore, the community service team focused on this issue and conducted a socialization campaign titled "Weight Training or Becoming a Burden (Fighting Sarcopenia)" for Bangetayu Wetan residents aged 40 and over.

B. METHODS

Method implementation activity devotion public is with give socialization in which applied education And training . Stages activity can seen on Table below This :

Table 1 Stages Activity Devotion Public

Stage	Activity	Executor And Partners
1	Licensing , surveys and observation	PKM Team, sir Village Head , Chair of FKK and PKK
2	Coordination For preparation implementation activity	PKM Team, sir Village Head , Chair of FKK and PKK
3	Pre-test	PKM Team, FKK and participant
4	Training Health Knee	PKM Team, FKK and participant
5	Post Test	PKM Team, FKK and participant

Participation partners in activity devotion Public This is agree , prepare participants , facilities And infrastructure (hall , tables , chairs , projector) And monitor screen).Pre-test And post test used namely a knowledge test about Sarcopenia , causes And method prevention For know effectiveness from activity devotion This .Sustainability of this program is more training intense or even need held research so that society more strong his understanding about problem health knee This And aware How method prevent or overcome it .

C. RESULTS AND DISCUSSION

Implementation

The initial step of this community service activity was to coordinate preparations between the Community Service Team (PKM) and the Bangetayu Wetan Village Head, several village officials, and the Family Welfare Movement (PKK) Management, including the Chairperson and Secretary. Coordination included obtaining verbal permission, written permission from the LPPM USM (National Student Empowerment and Family Welfare Research Institute), coordinating the implementation time, venue, equipment, meals, and invited participants.

This Community Service activity was held on Saturday, May 24, 2025, from 3:30 PM to 6:30 PM at the Bangetayu Wetan Village Hall, Genuk District, Semarang. Sixty-one participants, aged 24-74, attended, but mostly between 45 and 60 years old. These included the Village Head, several village officials, FKK (Family Welfare Movement) management,



PKK management, Posyandu management, and residents. The activity began with remarks from the village head and an introduction of the USM Community Service Team. This was followed by a verbal pre-test on participants' knowledge of sarcopenia (muscle wasting). It turned out that no one knew much about it, let alone the series of adverse and dangerous effects that could occur.

The next activity was a presentation on sarcopenia and its series of adverse and dangerous effects. The material was presented using a projector for approximately 60 minutes. Following this, there was a 60-minute exercise session to strengthen the body's muscles, including the legs, back, shoulders, and abdominals. The exercises included music and chairs, a combination of sitting and standing movements. This encouraged participants who already experienced symptoms of sarcopenia (muscle weakness) with knee or back pain to avoid prolonged standing or sitting, as this would exacerbate the pain.

The participants' enthusiasm for the activity was evident. Throughout the approximately 60-minute presentation, all participants appeared focused and engaged, as the speaker used simple visual aids, including two bottles of mineral water, and delivered interactively. During the 60-minute exercise training, all participants appeared happy, cheerful, and eager to participate. At the end of the event, a verbal post-test was administered on sarcopenia. The results showed that all participants understood sarcopenia, its potential adverse effects, and how to manage it.

Activity Results

The Community Service Program (PKM) activity resulted in increased knowledge about sarcopenia among all participants from Bangetayu Wetan Village and motivated them to participate in these exercises regularly. This is evident in the ongoing weekly exercise training sessions, which aims to strengthen muscles. The results of this PkM activity have been effective to date. Village officials and residents have been motivated to make this knee exercise training a regular weekly event. Residents have experienced improved knee and body comfort.

D. CONCLUSION

The Community Service activities carried out by the PkM team were very well received by the residents of Bangetayu Wetan Village. Residents became aware of sarcopenia (muscle wasting) and how to overcome it. The suggestions we can give are related health institutions, government agencies related to health or organizations in the health sector, health experts really need to take the initiative and be proactive in educating the public, holding training or creating training programs to overcome the dangers of sarcopenia.

E. ACKNOWLEDGEMENTS

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F. AUTHOR CONTRIBUTIONS

In the Community Service Report Program, Metta Christiana observed community health conditions, identified health problems, planned activities, consulted with expert guests, and coordinated with the Community Service Program team and partners for implementation. Ahmad Muhaimin assisted with implementation and online publication. Wahyu Puspitasari assisted with activity preparation (snacks and souvenirs) and



implementation (presence and village administration). And Shinta Eka Kartika assisted with implementation (presence and village administration) and financial reporting of the community service activities. Thanks to strong teamwork, the team successfully increased their strength training (or weight training) (counteracting sarcopenia).

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