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The Ergonomic Elderly Gym Improving Physical Fitness and Increasing The Bone Mass of The Elderly

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ABSTRACT

The public is increasingly aware of the importance of exercise for the elderly because exercise is an option to reduce complaints due to setbacks and improve the health of the elderly. In fact, the implementation in the field is often wrong as in *Banjar Benaya* which implements routine exercises only once a week with a duration less than 30 minutes, does not pay attention to nutritional needs, does not use sports clothing, and displays that are not clear. The measurement of elderly physical fitness is still relatively low. Based on these problems, improvements were made to the application of ergonomic elderly gymnastics due to improve the elderly's physical fitness and increase the bone mass. This study used treatment by subject design conducted in April 2017 – August 2018. The target population was all elderly in Denpasar and the affordable population was determined by multistage random sampling then selected *Banjaya Benaya* Peguyangan Village with a sample of 20 people who met the inclusion criteria. The data collections were physical fitness and bone mass. The difference in treatment effects was analyzed using a Paired Sample t-Test with α = 0.05 for data with normal distribution and Wilcoxon test, α = 0.05 for data with the abnormal distribution. Data showed that there were differences in physical fitness improvement in Period I and Period II after 8 weeks of gymnastics at 43.43% with very bad categories being bad, the difference in the increase in whole-body bone mass was 16.76% and leg bone mass 68.67%. Analysis of Paired Sample-t-Test physical fitness data and Wilcoxon test for bone mass data in Period I and Period II after gymnastics for 8 weeks, found that there was a significant difference (p <0.05). It can be concluded that ergonomic elderly gym can significantly improve physical fitness and increase the bone mass of the elderly. It is recommended that the elderly continue to exercise with a duration of 30 – 45 minutes, the frequency of three times a week to maintain the elderly's physical fitness.

Keywords: Ergonomic Elderly Gymnastics, Physical Fitness, Bone Mass.

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1. INTRODUCTION

Aging is a natural process and a challenge that must be encountered as it is interpreted to be deteriorating work performance and decreasing physical capacity. Physical changes often result in psychological disorders for the elderly, pessimistic feelings, the emergence of feelings of insecurity and anxiety, mental disorder, feeling threatened by an illness, fear of being abandoned because they feel useless, less capable and tend to be introverted. Dealing with old age to be healthy and prosperous, this situation needs to be managed properly.

The elderly population in Indonesia is among the top five in the world, and according to the 2010 population census, the number of elderly in Indonesia is 18.1 million (7.6% of the total population), while the elderly population of Denpasar City is higher than the national percentage 9.8% (Sunaryo et al., 2016). The population of the elderly is expected to continue to

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