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Zumba Exercise Training to Train Motor Movement & *VO2 Max*

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ABSTRAK

Tujuan dari pelatihan ini, untuk meningkatkan gerak motorik dan berolahraga khususnya untuk senam Zumba. Bagi kesehatan dan untuk meningkatkan daya minat masyarakat karena dengan olahraga senam Zumba dapat meningkatkan kemampuan gerak motorik. Pelatihan ini diharapkan mampu menambah pengetahuan ke masyarakat tentang pentingnya kebugaran jasmani serta senam menambah *VO2 Max*. Pelatihan yang dilakukan merupakan pelatihan tatap muka dengan pendekatan deskriptif. Untuk mencapai gerak motorik, *VO2 Max*, maka pelatihan ini menggunakan metode penelitian deskriptif kuantitatif dimana peneliti terlibat langsung secara aktif menemui, mengamati, serta menganalisis data partisipan mengenai nilai senam Zumba dan gerak motorik saat sebelum melakukan senam Zumba dan saat sesudah melakukan senam Zumba. Hasil kegiatan ini menunjukkan adanya peningkatan sebesar 54,29% berdasarkan pre-test dan post-test. Komponen yang mempengaruhi peningkatan tersebut antara lain manfaat gerak motorik, denyut jantung, kalori yang terbakar, nilai *VO2 Max*, dan manfaatnya bagi tubuh. Melalui senam Zumba yang enerjik dapat mendorong gerakan motorik yang selanjutnya dapat meningkatkan nilai *VO2 Max*. Nilai *VO2 Max* menjadi salah satu indikator kebugaran jasmani dan efektivitas latihan yang dilakukan.

Keywords: *motoric movement; physical fitness;* zumba *exercise*

ABSTRACT

This training aims to improve motoric movements and exercise, especially Zumba *exercises, for health and to increase people's interest because* Zumba *exercise can improve motor skills. It is hoped that this training will increase public knowledge about the importance of physical fitness and exercise in increasing VO2 Max. The training carried out is face-to-face training with a descriptive approach. To achieve motor movement, VO2 Max, this training uses quantitative descriptive research methods where researchers are directly involved in actively meeting, observing, and analyzing participant data regarding the value of* Zumba *exercise and motor movement before doing* Zumba *exercise and after*

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doing Zumba *exercise. The results of this activity showed an increase of 54.29% based on the pre-test and post-test. Components that influence this increase include the benefits of motoric movements, heart rate, calories burned, VO2 Max value, and its benefits for the body. Through energetic* Zumba *gymnastics, it can encourage motoric movements which can then increase the VO2 Max value. The VO2 Max value is one of the indicators of physical fitness and the effectiveness of the exercise performed.*

INTRODUCTION

The pandemic that occurred at the end of 2019 resulted in a decrease in some people's physical activity. Everyone needs an excellent physical condition because this excellent condition can be useful for reducing the risk of disease. One of the prime conditions is the adequacy of oxygen in the body. The adequacy of oxygen in the body can be known by the oxygen saturation value. For this reason, it is important to know the value of oxygen saturation (Rafandi, 2015). Aerobic endurance related to the cardiorespiratory system can be observed through the VO2 Max value. VO2 Max is the maximum oxygen capacity, which reflects a person's ability to consume oxygen to the fullest during physical activity (Nesra Barus, 2020).

Exercise is essential in a healthy lifestyle approach. Regular exercise can improve and enhance the function of various organs, especially the heart and lungs. With this stick gymnastics, in addition to increasing the ability of motor movements as well, the community will experience physical fitness and is expected to achieve excellent condition. The benefits of exercise conveyed by Daniel Landers (1997), Professor of Sports Education from Arizona State University are to increase endurance, improve brain function, reduce stress, lower blood pressure, burn calories, improve flexibility, and speed up recovery time after illness or injury. Physical fitness can be assessed based on physical activity, lifestyle, and exercise habits (Prayoga & Susanto, 2020).

Physical fitness is a necessity for everyone, which can be achieved through regular exercise. One important parameter of physical condition in sports is cardiovascular endurance or maximal oxygen uptake (VO2 Max). VO2 Max is an indicator used to determine the maximum amount of oxygen the body can use during exercise. The VO2 Max value can be used to measure the efficiency and how optimally the heart, lungs, and muscles use oxygen present in the bloodstream. VO2 Max is measured in milliliters of oxygen per kilogram of body weight per minute (ml/kg/min). The higher the VO2 Max value, the more efficient the body is at utilizing oxygen during exercise. Sports physiologists have stated that VO2 Max is a quantitative measure of aerobic capacity, considered one of the reliable indicators of cardiorespiratory fitness and overall physical fitness of an individual (Srivastava et al., 2024).

Zumba is a physical exercise that combines salsa dancing with fun aerobic movements. The movements in Zumba focus on full-body motions that actively follow

the rhythm of the music. With Zumba movements that blend various types of dance or body movements, the body becomes more active, stimulating blood pressure control, heart health, and overall fitness. Aerobic exercise encourages students to stay physically fit (Sukendro & Santoso, 2019). Zumba fitness exercises can be considered an effective type of physical activity that improves aerobic capacity, as evidenced by positive impacts, particularly on muscle strength and flexibility (Vendramin et al., 2016).

The aim of this activity is to improve motor skills and exercise, especially through Zumba. Actively moving through Zumba, helps enhance motor movements and increase VO2 Max, which can encourage more people to engage in regular exercise.

LITERATURE REVIEW

Sports can be divided into two, namely aerobic sports and anaerobic sports. Aerobic sports are sports that use oxygen, while anaerobic sports are sports without using aerobics, for example sprinting. The appropriate exercise to maintain body fitness or physical condition is aerobic exercise. Aerobic exercise is currently growing in the community. Aerobic exercise consists of various types including aerobic low-impact, medium-impact, high-impact, etc. (Asnaldi, 2019). The mixed-impact aerobic exercise is perceived to have a more significant impact compared to low-impact aerobic exercise on physical fitness levels (Indrawathi, 2015). Both low-impact and mixed-impact aerobic exercises can be beneficial for burning body fat when combined with a specific dietary pattern, leading to positive effects on health (Nawawi, 2014), (Palar, Wongkar, Ticoalu, 2015).

One of the efforts that can be made to achieve physical fitness is regular aerobic exercise. Armade and Manurizal (2019) state that stick gymnastics is a sport that offers many benefits, not only improving physical fitness but also making the body healthier. The Sello Aerobic gymnastics model can enhance aerobic skills (Ovalia et al., 2019). Stick gymnastics is performed in a structured and organized manner, aiming to improve physical fitness. To enhance physical fitness, Zumba exercise can be an effective option. There is a connection between the type of exercise and physical fitness through the increase in VO2 Max values (Ruqayyah and Rahadianti, 2022). A high VO2 Max value is strongly linked to stamina, which directly affects physical condition (Indrayana & Yuliawan, 2019).

Cardiorespiratory fitness can be supported by regular exercise (Sumarsono, 2017). The research by Gunawan, Polii, & Pangemanan (2015) states that Zumba exercise has an impact on cardiorespiratory fitness, measured using the *VO2 Max* parameter. Zumba can stimulate high-intensity physical movement, which encourages the heart and lungs to absorb and utilize oxygen during the activity. Arsy, Multazam, and Marufa (2023) compared the effects of Zumba and yoga exercises on the increase in *VO2 Max* values. Zumba has been proven to improve *VO2 Max* scores in dance communities, measured through a one-sample test with pre-test and post-test stages (Jamaludin, Suryo Putro, & Anwar, 2024). The research results in the Zumba group

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show that Zumba exercise significantly affects the increase in *VO2 Max* and the decrease in body mass index and body fat percentage (Hasan, Ramania, & Bahri, 2017).

Based on the background of these issues, an effort is needed to reduce fatigue, lethargy, and lack of enthusiasm. To address this, we propose an idea in the form of Zumba Gymnastics Training, aimed at improving motor movement and VO2 Max ability, as part of our PKM Community Service International project. The Zumba sessions will be held offline, face-to-face, at the Studio Minizize community. The training will be conducted in four sessions, beginning and ending with pre- and post-tests focused on Zumba exercises. If the participants are unable to perform Zumba gymnastics with agility and proper technique, guidance will be provided through a YouTube link. This training is intended to be beneficial for the community, enhancing physical fitness, VO2 Max, and motor movement skills.

METHODS

The methods that will be implemented to address the problems encountered are as follows (Figure 1):

a. Problem identification

This stage involves conducting an online survey of the Minizize studio, followed by discussions with Zumba members. From these discussions, it was found that while Zumba gymnastics is used as a training medium, its potential to improve motor skills has not been fully maximized. Additionally, there is limited access to information through websites or links related to Zumba gymnastics.

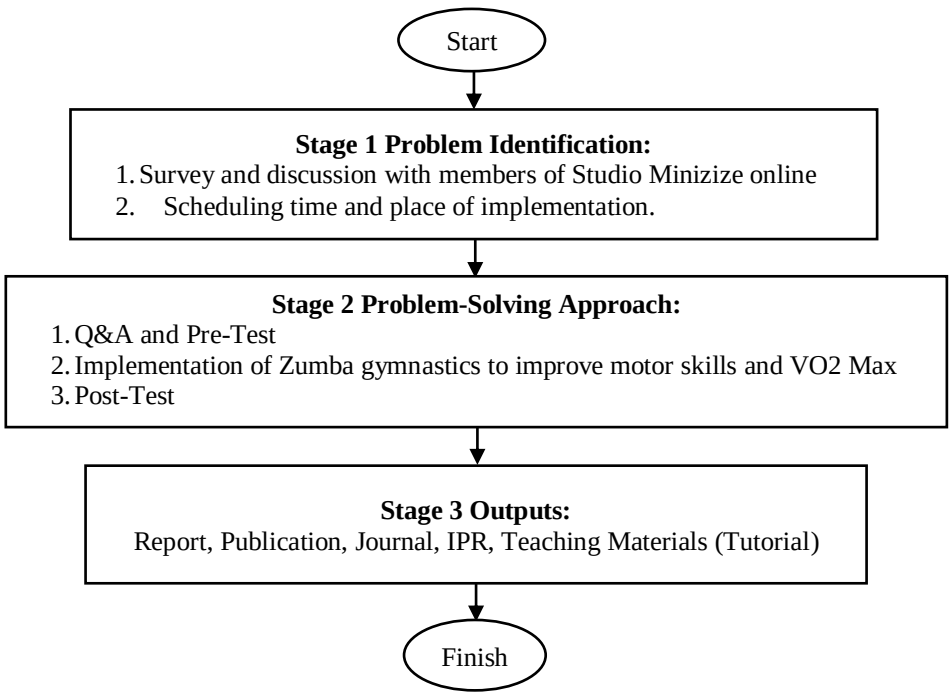

Figure 1. Stages of Implementation of PkM Activities

b. Problem-solving approach
One solution to this issue is to provide training for the members of the Minizize studio. The goal is to promote Zumba exercises as an alternative workout to improve motor movement skills and VO2 Max.

RESULT AND DISCUSSION

The results of the community service that has been carried out are: this International Community Service activity that has been carried out was attended by 14 enthusiastic and active participants. The seriousness and active participants in the question and answer session and the implementation of Zumba gymnastics became one of the indicators of the assessment of the smoothness of the activity.

Other indicators used in assessing the success of international community service activities are the results of the pre-test and post-test. The pre-test and post-test that have been answered by the participants on the form, were then recapitulated to get the assessment weight. The results of the pre-test and post-test are shown in Table 1 and Figure 2 below.

Table 1. Pre-Test and Post-Test Results

Question No.	*Pre-Test* Number of Correct Answers	*Post-Test* Number of Correct Answers
1	3	14
2	7	13
3	6	14
4	6	14
5	9	14
Average (%)	**44.29**	**98.57**

Figure 2. Documentation of the Implementation of PkM Activities in Penang KJRI

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Based on Table 1, it is shown that through this community service activity, there was an increase in participants' knowledge based on 5 questions in the post-test phase. The pre-test results indicated that 44.29% of participants understood the importance of motoric movement for physical fitness. After the socialization and practice sessions, a post-test was conducted, with 98.57% of participants demonstrating an understanding of the theory and practice provided. This represents an improvement of 54.29% based on the difference between the pre-test and post-test.

The components that influenced this improvement include the benefits of motoric movement, heart rate, calories burned, *VO2 Max* value, and its benefits for the body. Through the Zumba exercise that was practiced, motoric movement is enhanced, which in turn can lead to an increase in *VO2 Max* by boosting the intensity of the heart and lung activity related to the oxygen intake and its optimal use by the body within a safe limit. This *VO2 Max* value can serve as an indicator of physical fitness and the effectiveness of the exercise performed.

CONCLUSION

Based on their level of understanding, participants were in the moderate to good category, as indicated by the pre-test results, with a percentage of 44.29%. This result was caused by participants not yet knowing much about the benefits of Zumba training in increasing VO2 Max and motor skills. After the activity, participants' understanding increased to be in the good to very good category with a percentage above 98%. This shows a real increase in participants' understanding.

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