

Developing Self Body Weight Training Methods to Improve Physical Fitness in the COVID-19 Era: Aiken Validity

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Abstract: The COVID-19 pandemic has shown no signs of stopping. On the other hand, the pandemic has negative impacts on human life, one of which is related to stress levels caused by an inactive lifestyle, leading to obesity, hypertension, and other health problems. Exercising is one way to overcome this. As a result, in the COVID-19 era, innovative methods are needed to improve physical fitness. The purpose of this study was to test the validity of the content of the self-body weight training exercise method. This research is developmental with qualitative and quantitative analysis. Participants were seven experts with doctor degrees who were competent in physical fitness and exercise programs. The data collection technique is Delphi and 1-5 Likert scale questionnaire, data analysis using Aiken Validity. The results showed that the 10 question items had a V value of 0.857 to 1,000, indicating that this method had a high validity of the content. In conclusion, the method of self-body weight training exercises can be feasible. In addition, the fragrance in this research is that the models and exercise programs compiled are easy to apply and adjust to the level of fatigue in adolescents to adults.

Keywords: weight training, physical fitness, COVID-19 era, Aiken validity.

在 新冠肺炎时代开发自我体重训练方法以提高体能：艾肯有效性

摘要：2019 冠狀病毒病大流行沒有顯示出任何停止的跡象。另一方面，大流行對人類生活產生了負面影響，其中之一與不活躍的生活方式引起的壓力水準有關，導致肥胖，高血壓和其他健康問題。鍛煉是克服這一點的一種方法。因此，在新冠肺炎時代，需要創新方法來改善身體素質。本研究的目的是檢驗自我體重訓練鍛煉方法內容的有效性。本研究是具有定性和定量分析的發展研究。受試者為七位具有醫生頭銜的專家，他們有能力進行身體健康和鍛煉計劃，數據收集技術是德爾福和李克特量表問卷 1-5，使用艾肯五世進行數據分析。結果表明，10 個問題項的 V 值為 0.857~1，000，表明該方法的內容具有較高的有效性。綜上所述，自我體重訓練的方法可以說是可行的，此外，本研究的亮點在於，編製的模型和鍛煉方案易於應用，並適應青少年到成人的疲勞程度。

关键词：重量训练、体能、新冠疫情、艾肯效度。

1. Introduction

The spread of the COVID-19 virus is accelerating, posing a global threat to public health. Based on available data, more than 15 million people died in 210

cities across the country, with nearly 600,000 death cases [1]. Recently, a new variant of the COVID-19 virus known as the omicron variant was discovered, which has spread faster and is more dangerous than the

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delta variant [2]. Furthermore, the COVID-19 virus is continuously spreading in Indonesia [3].

According to [3], there are three medical reasons for a person to be exposed to COVID-19: inadequate handling because the referral system is not conditioned, delays in checking the swab results of patients infected with the COVID-19 virus, and an insufficient number of ventilators in comparison to patients affected by the COVID-19 virus. In addition, the factors that cause a person to be exposed to the COVID-19 virus include a lack of awareness of implementing social distancing between individuals, a lack of use of masks as protection, and irregular healthy lifestyles such as a lack of hygiene, unbalanced nutrition, and not doing sports [4].

Based on the criteria outlined, the people should accept and obey the government's advice to implement a health routine. Efforts for self-awareness in keeping each other's health must also be optimized again, given that maintaining body immunity is one approach to avoiding the COVID-19 virus. According to prior research, the attempt to avoid exposure to the COVID-19 virus is to boost and maintain immunity [5]. This can be accomplished by increasing sports activity. The sport in question here is played in a large yard away from crowds. Exercise allows a person to maintain physical fitness, boosting the immune system. [6].

Sports have evolved into a vital necessity in today's society. In reality, there are many examples when someone who frequently exercises and gets infected with the COVID-19 virus has a stronger immune system. The infection with the COVID-19 virus becomes more severe due to the stronger immune system. When a person recovers and is reintroduced to the COVID-19 virus, the symptoms he or she experiences will be milder [2]. Based on these findings, the sport has the potential to be a bulwark against the COVID-19 virus. Another study also states that in the COVID-19 era, course, obesity, diabetes, and hypertension are prone to occur due to lack of physical activity and unbalanced eating arrangements; therefore, to reduce and stop these negative factors, one can do regular sports activities [7].

The sorts of exercises performed throughout the COVID-19 era were anaerobic and aerobic exercises [8]. Aerobic exercise is unquestionably linked to human lung capacity. According to the research analysis, aerobic exercise is a physical activity that causes an increase in heart rate and respiratory volume to meet oxygen needs [9]. Aerobic exercise includes walking, jogging, cycling, rowing, and swimming. Furthermore, anaerobic exercise is distinguished by rapid and explosive motions in a short period. However, as sports activists and members of the general public, they must know the amount and forms of exercise that can be done in the era of the COVID-19 epidemic so that exercise becomes a constructive solution rather than a negative impact. According to

research, good aerobic exercise must consider physiological, psychological, intensity, and volume of exercise. As stated in [10], at least 20 minutes of low to moderate-intensity aerobic exercise benefits health. Other literature confirms that exercise in the COVID-19 era must pay attention to frequency, intensity, time, and type of exercise [11].

However, expectations and reality are not always in sync with field practice. Individuals who exercise frequently fail to follow the principles of frequency, intensity, time, and type. They are more concerned with feeling pleased than their physical condition when participating in sports. Much evidence suggests that unexpected mortality due to a heart attack while exercising occurs frequently. According to [12], sports activities are connected with sudden cardiac death. According to his findings, cardiac mortality affects 1 in 917.00 to 1 in 3000 athletes annually. Furthermore, research shows that incidences of sudden cardiac death occur at a rate of 1:40,000 to 1:80,000.

The above description can be used as the basis that the dosage of exercise for general public health must be adjusted. The exercise dose is analogous to the dose of drug administration to the patient. When the exercise dose is minimal, the exercise will most likely not create an increase. However, an excessive exercise dose that disregards the principle of exercise will almost certainly have a detrimental impact on one's health. According to certain literature, when performing exercises, one must consider training concepts such as personality, exercise loading, and level of regularity [13].

As a result, we need a strategy to practice sports that assist in maintaining and enhancing physical fitness as a preventative effort for things that are not desirable when exercising. Gymnastics, running, and bodyweight training can be done independently in this instance, but pay attention to the dose of exercise. Researchers thus will provide a solution, which is to develop a method of self-bodyweight training. Self-bodyweight training is strength training with its weight by combining movements from the upper extremities to the lower extremities [14].

This research confirmed the study on physical activity recommendations during the COVID-19 pandemic [15]. However, this study falls under the narrative review category, and the recommendations for the exercises provided do not contain the programs validated by experts. As a result, the research on this stretcher was not extensively disseminated. Furthermore, some studies conducted only experimental research, for example, the study of the effectiveness of upper extremity exercises and breathing exercises in the COVID-19 era [16] and the research on the effects of physical exercise on the brain during the COVID-19 pandemic [17].

These publications become the basis for developing a method of self-bodyweight training. Furthermore,

packaged exercise models are also available in sports magazines and electronic media. However, the innovation presented in the program is based on the self-body weight training approach because the self-body weight approach is associated with programs to enhance physical fitness, which not everyone understands how to set up. Experts emphasized that in the twenty-first century, a desire to participate in sports must be supported with expertise in creating and compiling a suitable exercise program. In this scenario, the first step in establishing an exercise regimen is to validate it.

Validity is an integral part of a development process. The design has three types of validity to develop: construct validity, criterion validity, and content validity [18]. In the first stage, the validity development used is content validity which aims to analyze the extent to which the items related to the conceptual design are contained in it [18]. Based on the description above, this study aims to test the content validity of the self-body weight training method to improve physical fitness in the COVID-19 era.

2. Material and Method

This study is a type of development research. Development research attempts to validate and develop an existing product or discover a new product to provide a solution. Development research has a systematic approach for generating a product in which trials and product feasibility testing about product validity will be carried out to make a good product. The researcher employed research and development procedures since they are appropriate for the objective of this study, which is to conduct expert feasibility tests relating to the model to be developed. In this case, the model creates an innovative form of self-body weight training to improve physical fitness in the COVID-19 era. In essence, this research validates the methods developed to get the best method and can be justified for its feasibility. The research method used was an analysis, development, implementation, and evaluation model, often abbreviated as ADDIE [19]. The rationale for using the ADDIE model was that the procedures and research steps were practical, making it suitable in the current COVID-19 era. In carrying out this research, qualitative and quantitative analysis was used, where the research was conducted research simultaneously or sequentially to obtain more in-depth results [18].

The following are the stages of this development research: (1) conducting a goal analysis in which the self-body weight training model aims to improve physical fitness in the twenty-first century. This stage is completed by analyzing the subject's characteristics. In this case, the exercise model developed is intended for use by the general public with various characteristics, but it is not recommended for children or the elderly. (2) The method designs were conducted

based on analyzing ebooks, textbooks, and journal articles to design self-body weight training methods. (3) The self-body weight training method, consisting of 12 exercises, was developed. An exercise program and the program content model were also prepared at this stage. Concurrently with the method's development, the researcher created an instrument in the form of a Likert scale questionnaire 1 to 5 with content tailored to aspects and indicators in the self-body weight training exercise method. When the method and instrument in the form of a questionnaire are completed, the method will be validated by seven material experts in the field of physical fitness and exercise program planning who hold Doctoral degrees. The Delphi technique was used to collect data, in which the researcher met with each of the seven experts one by one until a consensus was reached; (4) The fourth stage is the implementation stage; and (5) The last stage is the evaluation. However, stages 4 and 5 were not carried out in this study, considering that this research focuses on developing models and validating the methods that have been developed.

2.1. Research Subjects and Instruments

Seven experts and documents were used as research subjects. Seven experts are Doctoral lecturers who have academic and practical knowledge of planning a fitness exercise program and frequently promote a healthy lifestyle. A questionnaire was used to collect data for the study. A structured questionnaire with a Likert scale of 1-5 was used. The research instrument was an assessment sheet distributed to the seven experts. This assessment sheet was used to review the content of the model and exercise program, including (1) clarity of targets, (2) clarity of exercise dosage, (3) suitability of the method with needs, (4) how much benefit the method has in helping facilitate training, (5) ease of applying the method, (6) level of attractiveness of the method compiled, (7) the ease of understanding the guide, (8) the method can help to improve fitness, (9) the safety of the method and its flexibility for use by beginners and trained people.

2.2. Data Analysis

In this study, the data analysis used is the Aiken formula. Aiken's analysis aims to see the validity of the content of the developed model. The Aiken formula [20] was used to analyze the content of self-body weight training methods.

$$V = \sum s / [n(c-1)]$$

$$S = r - lo$$

Lo - the lowest value of the validity rating (eg 1)

C - the highest validity rating score (eg 5)

R - number given by rater

3. Results

Delphi technique according to the input and suggestions from seven material experts are given in Table 1.

3.1. Qualitative Analysis Results

The findings of the qualitative analysis using the

Table 1 Feedback and suggestions from seven material experts

Expert	Feedback and Suggestions
Expert 1	The model in the image should be local and taken directly rather than from a photograph or an example of an existing foreign model.
Expert 2	The program created is good, but more clarity on the intensity of the exercise and how much MHR can be added. The training model is good, but variations to the back exercises are required. Because many people work virtually and sit a lot, there is a lot of back pain, so back exercises, such as backups or deadlifts, are also necessary. The muscle targets described are good, but the "lower body" (thighs, buttocks, or calves) needs to be explained in greater detail. Variation naming should be synchronized with either a foreign language or Indonesian.
Expert 3	It is better to modify the lateral plyo squat movement into squats or reduce the number of repetitions considering that people who have not been trained/are overweight will have difficulty. Include rest times between circuits. Include the rhythm of the exercise in doing the movement
Expert 4	The Product Development of the Self Body Weight Training Method is good and useful for the general public, especially during the pandemic, to maintain body fitness and health. The training model is good. However, is there any explanation regarding the model before doing the warm-up and cool-down exercise guide in this manual for the general public? Is it possible to add which muscles contract to each Self Body Weight Training movement? For example, in the Plank movement, the contract muscles include the abdominal muscles, back, shoulders, and legs (Transverse abdominis, Pelvic floor, Hip flexors, Erector spinae, Gluteus medius, Gluteus maximus, Multifidus, Quadratus lumborum). Is there an explanation in the draft guide for someone with obesity who wants to practice the Self Body Weight Training method? Dosage of exercise may be added notes the definitions of sets, repetitions, and rest (explanation of terms in the exercise will make it easier for the general public to understand in doing the exercise). Is it possible for motion pictures to use self-documentation instead of existing data (images) because of concerns that the source of these images will be questioned?
Expert 5	This is a very innovative method and deserves to be developed, considering that public sports facilities are still limited during this pandemic. However, of course, the need for innovation is flexible, safe, easy, and useful so that the video guide can be taken from the actual video.
Expert 6	Add a dose of FITT to the next training program. The self-bodyweight training method is feasible to be implemented.
Expert 7	It would be better to add the method of exercise and the frequency of exercise used so that the method becomes more complete. For example, if we use the circuit training method, we will see the movement at each post.

The table above summarizes the opinions and recommendations of seven experts. The researchers made revisions based on the suggestions and inputs received so that the model and program of self-body weight training could be arranged. The revised model and exercise program will be presented after

quantitative analysis.

3.2. Quantitative Analysis Results

This quantitative result is obtained from Aiken's analysis which aims to see the validity of the content of the self-body weight training exercise model.

Table 2 Aiken's analysis results

No.	Question	Assessment														Σ	n*(c - 1)	V=S/(n*(c-1))
		1	2	3	4	5	6	7	1	2	3	4	5	6	7			
1	Clarity of targets for the self-bodyweight training method to improve physical fitness during the COVID 19 pandemic	5	5	5	5	5	5	5	4	4	4	4	4	4	4	28	28	1.000
2	Clarity of the exercise dose for the self-bodyweight training method	5	5	4	5	4	4	4	4	4	3	4	3	3	3	24	28	0.857
3	The self-body weight training method was created in response to the needs	5	4	5	4	5	5	5	4	3	4	3	4	4	4	26	28	0.929
4	The self-body weight training method developed can help and facilitate exercise in improving physical fitness during the COVID-19 pandemic	5	5	5	5	5	5	5	4	4	4	4	4	4	4	28	28	1.000
5	The self-body weight training method developed is easy to do	5	5	5	4	4	5	5	4	4	4	3	3	4	4	26	28	0.929
6	The self-body weight training method developed is interesting	4	4	5	5	5	5	5	3	3	4	4	4	4	4	26	28	0.929
7	The information presented in the guide to the development of the self-bodyweight training method is easy to understand	5	5	4	4	5	5	4	4	4	3	3	4	4	3	25	28	0.893
8	The self-body weight training method developed helps the target to do exercises to improve physical fitness during the COVID-19 pandemic	5	4	5	5	5	4	5	4	3	4	4	4	3	4	26	28	0.929
9	The self-body weight training method developed is safe to do	5	5	5	5	5	5	5	4	4	4	4	4	4	4	28	28	1.000
10	The self-body weight training method can be used for beginners and already trained	4	5	4	4	5	5	4	3	4	3	3	4	4	3	24	28	0.857

The table above shows the results of the validity calculation using the Aiken formula, where the lowest

score obtained out of ten question items is 0.857, and the highest score is 1,000. The Aiken formula analysis

aimed to identify whether the item is valid or not by comparing the calculated V score to the V table value. The value of the V table for items evaluated by seven experts using five alternative scales at a significance level of 5% yielded a V table value of 0.750. As a result, all items have a V score greater than the V table, which is 0.750, indicating that all items and the exercise model's contents are valid.

3.3. The Results of the Self-body Weight Training Model

At this stage, the researcher presents the model and program that has been revised. The self-body weight training model consists of 12 models and is equipped with an exercise program that is presented as follows:



Fig. 1 Shoulder tapping push up

Procedures:

- Get into a standard push-up position with the arms slightly wider than shoulder-width apart. Ensure the body forms a straight line from the shoulders to the ankles.
- Bend the elbows to lower the upper body to the floor, pause, then push yourself back up to the starting position. After that, touch one shoulder with the hand on the opposite side.



Fig. 2 Upward facing plank pose

Procedures:

- Start in a sitting position with your feet together and extending in front.
- Place the hands behind your back, fingers pointing towards the body. Press into the palms as you lift the hips high. Keep the big toes together, and reach the whole foot on the floor.
- Lift through the chest and let the head fall back if that feels natural for the neck. Breathe in this position for at least three deep breaths.



Fig. 3 Reclining circle

Procedures:

- Sit on the floor with the knees bent 90 degrees and feet flat on the floor in front of you. Lean back where the weight rests on the elbows with palms facing down.
- Tighten the abs and lift the feet off the floor. Without changing the position of the knees, form a circle with the legs in one direction. Pause for a moment, then form a circle with the legs in the opposite direction.



Fig. 4 Reclining triceps press

Procedures:

- Start by sitting on the floor with the knees bent and heels resting on the floor. Then, with the palms flat on the floor and fingers pointing toward the body, lean back and lower the body to the elbows, keeping the back straight and abs tight.
- Hold this position, then push through the hands and flex your triceps to lift yourself off the floor. Pause briefly, then return to the starting position.



Fig. 5 Lateral plyo squat

Procedures:

- Stand straight with feet together and shoulders back. Step outside with the right foot (about hip-width apart), bend your knees, and lower yourself into a squat position, extending your arms in front of the body.
- Push yourself up by stomping your feet while jumping up and to one side and swinging your arms behind you. Land slowly and immediately sits down to do another squat. Then, push yourself back up to a standing position and repeat, jumping up and to the other side.



Fig. 6 Floor inverted shoulder press

Procedures:

a. Place both hands on the floor about shoulder-width apart in a push-up position. The sole of the front foot should be flat on the floor. Lift the hips to form a triangle with the torso, legs, and arms fully extended. Your body will form a straight line from the hips to ankles and from the hips to hands. This is your starting position.

b. Bend your elbows at a 90-degree angle and lower your torso toward the floor. Pause just before the head hits the floor, keep the back straight, and push back up to the starting position.



Fig. 7 Plank exercises with leg lifts

Procedures:

- a. Start in the Plank position, lift your right leg and lower it to the floor.
- b. Lift your left leg, then lower it to the floor.
- c. Pull your right knee toward your chest, bringing your right leg back to meet your left.
- d. Pull your left knee toward your chest, bringing your left leg back to meet the right leg.
- e. Pull right knee to left elbow, bringing your right leg to left leg.
- f. Pull the left leg to the right elbow, bringing your left leg to the right foot.



Fig. 8 Reverse crunch

Procedures:

a. Lie on your back with your knees together, and your feet bent 90 degrees flat on the floor. Place your palms face down on the floor for support.

b. Tighten your abs to lift your hips off the floor as you crunch your knees inward toward your chest. Pause at the top of the movement, lower your back without arching it and lift it off the floor.



Fig. 9 Single-leg dip

Procedures:

a. Sit on the floor with your knees bent and your feet flat on the floor. Place the hands on the floor behind you. Lift the hips, then center your body on your hands and feet. Lift one leg off the floor.

b. Bend the elbows and lower the body towards the floor. Touch the floor with your glutes, push back up and extend the arms, and return to the starting position. Repeat the movement on the other leg.

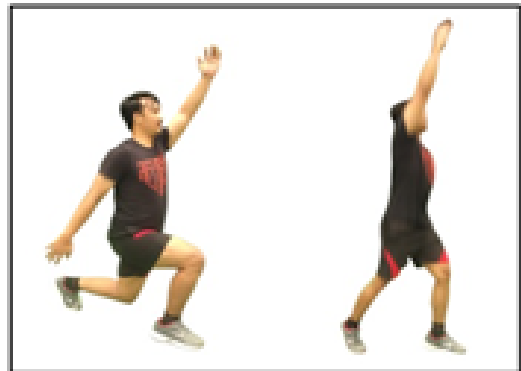


Fig. 10 Split jack

Procedures:

a. Stand straight with one leg in front in a lunge and arms by your side.

b. Jump and change the position of the leg so that the other leg is in front, raising the arm on the opposite side above the head as you jump. Then, return to the starting position.



Fig. 11 Straight-arm plank and raise

Procedures:

a. Get into a push-up position on the floor with the arms directly under the shoulders while the hips form a straight line from shoulders to feet.

b. Extend one arm in front of you without moving the body until it is parallel to the floor. Pause for a moment, then slowly lower the hands back to the floor.



Fig. 12 Windmill switches

Procedures:

- a. Standing with the legs stretched beyond shoulder width
- b. Jump and stretch the left leg back in a split position while bending down and grabbing the back of the right leg with the left hand simultaneously, rotate the upper body, and lift the right arm.
- c. Jump, switch foot positions, and land with left foot in front, right hand extended down.

3.4. Self-Body Weight Training Program Results

A revision was made to improve the initial draft of the self-bodyweight training method based on input and advice from experts. Improvements made by researchers are consistent with what experts recommend. The following are the findings from the first draft revision of the self-body weight training method.

Table 3 Self-body weight training exercise program

Exercise Method	Exercise Dosage	Type of Exercise
Self-Body Weight Training	Frequency: 3 times/week	Shoulder Tapping Push Up
	Intensity: 60 -70 % MHR	Upward Facing Plank Pose
	Reps: 12 -15 times	Reclining Circle
	Sets: 2-3	Reclining Triceps Press
	Recovery: 20 seconds between posts and 120 seconds between sets	Lateral Plyo Squat
	Rhythm: Fast	Floor Inverted Shoulder Press
	Type: circuit training	Plank Exercises with Leg Lifts
	Number of posts: 12	Reverse Crunch
		Single-Leg Dip
		Split Jack
		Straight-arm Plank and Raise
		Windmill Switches

The revision of the first draft of Self Body Weight Training resulted in a clearer exercise program that includes the amount, the type, and the purpose of the exercise. With FITT and a more detailed description, the exercise dose is clarified.

Table 4 Training of 1-8 sessions for self-body weight training

No.	Type of Exercise	Target of Exercise	Dose
1.	Shoulder Tapping Push Up	Chest	Sets: 2 Repetition: 12 times
2.	Inchworm to Side Plank	Core	Recovery between posts: 20 seconds
3.	Reclining Circle	Stomach	Recovery between sets: 120 seconds
4.	Reclining Triceps Press	Arms	
5.	Lateral Plyo Squat	Limbs	
6.	Slide Out	Back	
7.	Floor Inverted Shoulder Press	Shoulders	
8.	Plank with Leg Lift	Core	
9.	Reverse Crunch	Stomach	
10.	Single-Leg Dip	Arms	
11.	Split Jacks	Limbs	
12.	Back Extension with Opposite Arm and Leg Reach	Back	

The initial revision of the self-bodyweight training draft resulted in 1-8 training sessions with clearer doses of set training, repetitions, breaks between posts, and breaks between sets, making self-bodyweight training easier to follow.

Table 5 Training of 9-16 sessions for self-body weight training

No.	Type of Exercise	Target of Exercise	Dose
1.	Shoulder Tapping Push Up	Chest	Sets: 3 Repetition: 15 times
2.	Inchworm to Side Plank	Core	Recovery between posts: 20 seconds
3.	Reclining Circle	Stomach	Recovery between sets: 120 seconds
4.	Reclining Triceps Press	Arms	
5.	Lateral Plyo Squat	Limbs	
6.	Slide Out	Back	
7.	Floor Inverted Shoulder Press	Shoulders	
8.	Plank with Leg Lift	Core	
9.	Reverse Crunch	Stomach	
10.	Single-Leg Dip	Shoulders	
11.	Split Jacks	Limbs	
12.	Back Extension with Opposite Arm and Leg Reach	Back	

The preliminary revision of the self-body weight training draft resulted in 9-16 training sessions as a continuation of training sessions 1-9 with increased doses of set training, repetitions, rest between posts, and rest between sets.

4. Discussion

Sports activities are now considered a basic necessity, particularly in the era of COVID-19. This is demonstrated by the numerous slogans encouraging the public to maintain immunity through sports. In the twenty-first century, an active lifestyle is essential. However, some people continue to disregard health precautions, which becomes a problem when someone wants to maintain immunity but does not follow the

health protocol. According to previous studies, the government has ordered approximately 3 billion people worldwide to implement social distancing measures such as travel bans, cultural events, and social gatherings to reduce the impact of the increasingly prevalent COVID-19 virus [21]. Therefore, the community must comply with the recommendations of the government.

In fact, efforts to prevent the spread of the COVID-19 virus, such as isolation and movement restrictions, have an impact on human psychology, such as anxiety and stress, which may be one of the causes of declining health levels. According to recent research, COVID-19 can impact physical health by causing negative emotions, cognitive stress, aggressiveness, and decreased sleep comfort [22]. Another study confirms that staying at home harms people's physical activity because the amount of free time and time spent watching television leads to a decrease in an active lifestyle, causing body health to deteriorate over time [15].

The COVID-19 pandemic raises many questions about improving one's immune system through an active lifestyle and exercise. There have been no scientific findings regarding how exercise can boost the body's immune response to COVID-19 [23]. Having a high level of fitness through exercise by adhering to the principles of exercise frequency, intensity, time, and type of exercise, on the other hand, can increase immunity to vaccination, as well as increase immunity markers in disease states such as HIV, cancer, cognitive impairment, obesity, diabetes, and cardiovascular disorders [24]. Other studies have found that exercising regularly can help a person achieve a healthy [24].

According to [25], regular physical activity can help people improve their bodies physically, physiologically, and psychologically. As a result, in the COVID-19 era, appropriate physical exercise methods are required. For example, previous research found that a physical exercise program was required during the COVID-19 pandemic to reduce negative psychological and psychological impacts [15]. Thus, researchers in the COVID-19 era devised a self-body weight training method to improve physical fitness.

Self-body weight training is an exercise technique that relies solely on one's body weight rather than using additional weights such as dumbbells, barbells, or machines. Every person can do self-body weight training anywhere and at any time. However, for beginners, it is strongly advised to perform exercises under the supervision of a trainer to ensure that the implementation of self-body weight training follows the training objectives and avoids the risk of injury. Although no external loads are used in self-body weight training, they can be used to improve a variety of fitness components such as strength, speed, endurance, and explosive power. Self-weight training

can also help with coordination, balance, and flexibility [26], [30]. Because it allows the muscles of the body to work as a whole, self-body weight training is recognized as a functional movement training modality.

While the COVID-19 epidemic is not over, efforts to promote body health through self-body weight training are a good innovation for the community. Self-body weight training has become a popular sport among youths and adults. However, the topic of how to build an appropriate program must be addressed immediately to achieve a solution for successful and safe exercise. Previous studies claimed that stomach workouts, push-ups, Pilates, and squats were the recommended sorts of self-body weight training in the COVID-19 era [27]. This, of course, is dependent on the variety, population, and frequency. Adults should do it two to three times per week, while youngsters should do it three times per week. Furthermore, the dose-volume-response exercise settings ranged from 1-2 sets, 2-4 sets, or 5 sets but 5 repetitions, 8-12 repetitions, 10-15 repetitions, and 8-20 repetitions. In this scenario, recommendations for intensity are based on individual body weight and training levels [28].

Aerobic exercise frequently recommended includes stair climbing, running, walking, and using a stationary bike or treadmill [28]. The intensity and volume settings must be changed, with the recommendation for teens being 2-3 times per week for 150 minutes to 300 minutes per week with low to moderate intensity. The intensity and volume settings must be adjusted, with the recommendation for teens being 2-3 times per week for 150 minutes to 300 minutes per week with low to moderate intensity [28]. On closer investigation, the self-body weight training approach stresses muscle strength training, despite the benefits of cardiorespiratory fitness being minimal when performing these motions. Circuits or moving posts are efficient for implementing the self-body weight training method. For example, in the first post, a person can do push-ups, while in the second post, they can do sit-ups, and so on.

Strength training combined with a circuit training program has been demonstrated in studies to improve cardiorespiratory fitness, weight loss, and muscle building [29]. According to past studies, exercising with a circuit program can be paired with other types of exercise and has a favorable effect [29]. Other studies have found that combining weight training with circuit training can improve muscle endurance, cardiorespiratory endurance, agility, power, flexibility, and balance and help with weight loss. Based on the facts provided, the researchers will build a self-body weight training method to increase physical fitness during the COVID-19 period. However, the approach developed must first pass expert validation before it can be claimed to be practicable.

The quantitative analysis results in table one have

been revised, and the revised results are shown in model exercises 1 to 12, as well as the program in tables three, four, and five. Furthermore, the findings of Aiken's examination of ten question items yielded the lowest score of 0.857 and the highest score of 1,000. The analysis using the Aiken formula aims to conclude whether the item is valid or not by comparing the calculated V score with the V table value. The value of V table for items assessed by seven experts with five alternative scales at a significance level of 5% is 0.750. Therefore, all items have a V score greater than the V table, 0.750. This means that all items and the contents of the exercise model can be declared valid. In line with expert opinion, a coefficient value of > 0.78 Aiken value can be good, while a coefficient value of 0.81 to 1.00 is said to be high [18]. Thus, the self-bodyweight training method has high content validity, so it can be said that it is feasible.

5. Conclusion

Based on the results and discussions related to the self-body weight training method that has been compiled by researchers, it has been tested for the validity of the contents using the Aiken formula can be said to have high validity and feasible. It can be proven that the value of the Aiken coefficient ranges from 0.857 to 1,000, so this research can be continued at a later stage. The goal and researchers' expectations to develop a self-body weight training method are to provide information and offer a solution that physical activity is important in the current COVID-19 era. Applying the self-body weight training method can be a solution to maintain body health, given that not all people understand the regulation of exercise doses that are by the norms of exercise. Therefore, the exercise program content has been adjusted to the norms and goals of good exercise. The fragrance in this study is an exercise model arranged by the norms of exercise, starting from the favor of large muscles to small muscles so that they get muscle harmonization. The strength of the individual muscles becomes trained and strong. In addition, another fragrance is to use the training circuit method, considering that the training circuit method is not only to increase strength but improve the cardiorespiratory system. Thus, muscle fitness and system cardiorespiratory become trained simultaneously. Then the program offered by the level of individual clarity is for the community, from teenagers to adults. However, the limitation of this study is that researchers only validate the contents that have not been done at the trial stage. This will be carried out at the next stage to be the perfect research.

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