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Content Validity of Freediving Recreation (Without fins) Training to Improve Psychological Conditions and Physical Health

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ABSTRACT

The aim of this research is to construct a theoretical concept, theme "Recreational Freediving Program without fins" for beginners, which will be used to improve psychological conditions vital and lung capacity through an 8-week training program. The research participants were Yogyakarta State University students who were over 18 years old and had anxiety disorders as measured using the DASS-21 instrument. The reason for choosing a recreational freediving training program that does not use fins is because it is cost-effective and easy to do. Also, consider the recommended freediving training principles. This research uses mixed methods. This study combines two approaches, namely qualitative and quantitative. The seven experts' participation was determined by criteria of freediving, Sport aquatic expert, sport coaching expert and phycological expert. The qualitative stage for data collection uses the Delphi technique. This research was conducted with content validity with Aiken's V index. Based on the research Aiken's analysis results compared with the value of the V table in the evaluation using 7 expert judgments with 5 alternative scales at a significance and level of 5% is V Score (0.79 to 0.89) > V table 0,75, it mean the freediving recreational exercise program with no fins that conduct to increase phycological condition and lung capacity is valid. This finding underscores some of the essential skills that are necessary for a successful and safe freediving experience for beginners who have anxiety.

Keywords: Freediving Recreational; Psychological Conditions; Content Validity

INTRODUCTION

Health is a basic need for every individual. Apart from covering physical health, health also involves aspects of mental health. According to the World Health Organization (WHO), mental health is a state of well-being that includes physical, mental and social health (Hidayatullah et al., 2020). Based on Basic Health Research (Riskesdas) 2018, it shows that more than 19 million people aged over 15 years experience mental emotional disorders, and more than 12 million people aged over 15 years experience depression (Kemenkes, 2021). According to Chandratika et.al (2014), research results data in Indonesia shows that students often experience anxiety disorders, one of which is the result of psychosocial factors. Students respond inappropriately and inaccurately to stressors, for example new environmental situations. Anxiety disorders in students are caused by high levels of stress in students affected by lecture activities. Recreational exercise specifically with regard to physical activity prescription, leisure-time physical activity may increase opportunities for improved health. sports selection sports options on diving activity can be used as a multidimensional therapy in water that allows comprehensive stimulation of the human body (Compton et al., 1989), by combining aspects of the benefits of breathing exercises for heart health (Dan Brennan, 2021), also considering aspects of the benefits of mental imagery on psychological and physiological consequences effects associated with the internal simulation of a breathing body (Ferreira Dias Kanthack, Thiago, Aymeric Guillot, Damien Saboul, Ursula Debarnot, 2019). This makes the concept of a recreational freediving training program interesting to develop and is expected to have a positive impact on someone who experiences anxiety disorders to improve their quality of life.

Humans have a natural diving ability, both in terms of the length of time they can hold their breath and the depths they can reach underwater. Although this ability exists, for most people there is no need to actually go into the water. The ability breath-hold diving, also known as apnoea or freediving, is primarily practiced while hunting (Schagatay, 2014). Freediving is basically a swimming sport that is done by diving to the bottom of the water without using a breathing apparatus, sport where individuals dive freely by holding their breath in water (Neşe Alkan & Tolga Akış, 2013).

There are two main disciplines in freediving: competitive and non-competitive. Breath-hold competition diving probably has a much shallower history than ocean diving, with divers challenging each other to maximum depth. Schagatay (2011) points out, The characteristic of freediving, unlike most sports, is the absence of regular breathing (Mulder et al., 2021). Therefore, although freediving is quite popular, if done without proper supervision, education and training, it can be dangerous. It is only in the last 20 years that the sport has become a regular venue for world championships in apnoea diving, performed at maximum distances and depths using self-propelled dives. The six-discipline competition is sponsored by the Association Internationale pour le Développement de l'Apnée (AIDA), the official organization for apnoea competitions. No technical means of propulsion other than fins is allowed to achieve maximum distance or depth. These events are: These competition disciplines are: static apnoea for maximal duration (1), horizontal distance swimming in a pool, with (2) and without fins (3), deep diving with (4) and

without fins (5), and free immersion (6), where the diver descends and ascends by pulling along a rope (Schagatay, 2014).

However, in today's world, freediving is pursued by various groups of people. They engage in freediving for non competitive sport or recreational purposes, considering it a natural extension of activities like swimming, taking showers, and find it to be an accessible form of diving (Schagatay, 2014). In freediving activities, both competitive and non-competitive, ability breathing exercises and mind control are important. Many characteristics play a role in determining a human diver's maximum capacity in terms of duration, distance, or depth (Schagatay, 2009). The more gas reserves available in a diver's body, the longer the duration of aerobic apnoea can be. There are several mechanisms for increasing human diving time, and free divers use a variety of methods to maximize their effectiveness, including increasing lung volume and diving response (de Bruijn et al., 2008)

The main concept in freediving recreational is to appreciate that respiratory activity is an important process that begins at birth and ends at death. Through breathing, all parts, organs, and cells of the body receive the necessary oxygen to sustain life. The rhythm of fear energy can be regulated through pranayama, resulting in a healthy body and mind. Ancient yogis developed numerous breathing techniques to maximize the effectiveness of breath-holding exercises. These techniques are also used in postural preparation and meditation to improve concentration and mental clarity and maximize the benefits of the practice (Singh et al., 2022). On the other hand, it is believed that freediving training can increase breathing efficiency. This exercise is performed by controlling your breathing and maintaining a steady heart rate, allowing you to hold your breath for a while to dive deeper and safely (Allen & Allen, 2022). What needs to be done is how to determine a recreational freediving exercise that is expected to provide physical and psychological health benefits with reference to the principle of freediving recreational exercise without fins. The reason for choosing a recreational freediving training program that does not use fins is because it is cost effective and easy to do. Also, consider the recommended freediving training principles

This study aims is to develop the content validity of freediving recreational exercise that is expected to provide physical and psychological health benefits with reference to the principle of freediving recreational exercise without fins and can be used as an option to develop water sports activities that are interesting and have benefits in the future.

METHOD

This study part of the general research based on theoretical project that focuses on experiment test the effect of recreational freediving training on psychological conditions and increasing vital lung capacity, and the training program will be tested on Yogyakarta State University students, using purposive sampling a sample of students who had anxiety disorders was selected through an initial anxiety test using the DASS-21 instrument (Lovibond & Lovibond, 1995; Zec et al., 2022). Recruitment subject participants undergo a medical examination by a doctor to determine their suitability as research subjects.

This study employs a mixed methods approach that combines both qualitative and quantitative methods to obtain comprehensive and valid data (Schoonenboom & Johnson, 2017). Mixed methods

research is an approach that combines both qualitative and quantitative research methods. It is considered the third paradigm of educational research as it integrates both quantitative and qualitative approaches. The quantitative paradigm is based on positivism, while the qualitative paradigm is influenced by hermeneutics, critical theory, and poststructuralism. The philosophical foundation of mixed methods research is pragmatism. By merging the strengths of both qualitative and quantitative research, educational researchers can gain numerous benefits from mixed methods research. It enables a more comprehensive comprehension of intricate educational phenomena by triangulating different types of data. Moreover, it provides the opportunity to explore research questions from different perspectives, resulting in more nuanced and robust findings. Mixed methods research is a versatile approach that can be adapted to fit various research contexts and questions (Zandvanian & Daryapoor, 2013) critical theory, and post-structuralism, but philosophical foundation for mixed methods research is pragmatism. Therefore, educational researchers can benefit from positive features of qualitative and quantitative research. In mixed methods, researchers collect, analyze and integrate qualitative and quantitative data. Since quantitative research takes statistical methods, experimental and quasi-experimental design, therefore its findings have the power of prediction and generalization. In contrast, qualitative research findings can understand the underlying layers of social phenomenon. Therefore, the supporters of mixed methods research are trying to design research that will have both precision and depth. In data collection, researchers must decide about the values of each quantitative and qualitative approach respectively (equal or dominant.

Alternatively, the study is examined in detail in a sequential or stepwise manner (Guest, 2013). The first stage of the research process requires a qualitative approach using literature review techniques, especially narrative review techniques. In this approach, researchers thoroughly and systematically review the existing literature on a topic of interest, then summarize and analyze the results to identify important themes, trends, and knowledge gaps. Narrative review methods involve a more subjective and interpretive approach to analyzing the literature, with an emphasis on developing a coherent narrative that integrates and contextualizes the available evidence. This phase is important for establishing a solid theoretical foundation for the study and identifying potential research questions and hypotheses that will be tested in the subsequent quantitative phase (Ferrari, 2015).The material added based on Association Internationale pour le Développement de l'Apnée (AIDA) (Schagatay, 2014). Materials tailored to research needs are used to develop concept assessment tools that are further validated through expert opinion (Nugroho, 2022).

The phase construct validation involves six experts' judgment with qualifications: an internationally certified freediving instructor, one freediving practician, one aquatics lecturer, one professor on sport coaching, one lecture with gymnastic specialization, one lecture with physical training specialization, and one practicing psychology expert. Seven experts were asked for their opinion regarding the design of the instrument developed using the Delphi method (Hsu & Sandford, 2007). The process typically starts with an open-ended questionnaire or survey, where experts are asked to provide their views and ideas on the topic. The responses are then analyzed, and a second round of questions is created, based on the responses from the first round. The experts are then asked to rate the items in the second round, and the results are analyzed again. This process is

repeated until a consensus is reached on the topic being studied. The Delphi technique is often used in fields such as healthcare, business, and education to gather expert opinions and make informed decisions based on those opinions. The process continues until the group reaches a consensus or a predetermined level of agreement. In this case, it appears that the Delphi technique was used to assess the construction design of a freediving recreational exercise program with no fins that are conducted to increase psychological condition and lung capacity by obtaining the opinions of multiple experts separately (Green, 2014).

The rating scale used in the questionnaire ranged from 1 to 5 and included indicators such as Very Good, Fine, Enough, Less, and Very Fewer. The input from expert judgment was analyzed and revised until no further improvements were needed. This process was part of the qualitative analysis stage (Jack R. Fraenkel et al., 2012). The instrument items are arranged to measure the achievement of diving skills mastered by students after being given teaching materials (Nugroho, 2022). The item instrument used as an observation guide will be tested for validity.

One of the main procedures used in the validation of measuring instruments is using content validity. Content validity is carried out from the beginning of the preparation of the test, not after the test is designed. Validity pertains to the degree to which the test items accurately represent the content area components that are being measured, as well as the extent to which the items align with the behavioral indicators of the attributes that are being measured (Azwar, 2012). Just as an item is determined by the results of the assessment carried out by the expert/appraiser based on the logic of this Judgment, it can increase its objectivity if it is carried out by many people.

This research used content validity, which was assessed using Aiken's V Index. These methods rely on expert judgments to evaluate the extent to which each item accurately represents the construct being measured. Aiken described these methods in his 1985 paper titled „Three Coefficients for Analyzing the Reliability and Validity of Ratings", explained the formula for calculating the validity coefficient of Aiken's V (Solikhin et al., 2023; Octafia et al., 2021).

$$V=\sum\frac{(r-lo)}{n\,(c-1)}$$

lo: very low number of validity assessments (in this case 1)
c: the highest number of validity assessments (in this case 5)
r: the score given by the assessor

RESULTS

This research was conducted in the Indonesia region and the first result of the qualitative approach was the freediving recreational exercise program with no fins that was conducted to increase psychological condition and lung capacity, with the following aspects:

1. Recreational Freediving Training Program with guided practice and considers training without the use of fins and all training must be accompanied by an experienced trainer
2. Program Recreational Freediving set for 16 stage/sessions in eight week

3. Each session is preceded by a warm-up, and core exercises and ends with a cool-down
4. In this exercise the dose of moderate exercise intensity is 64-76%
5. The interval between sets is used 3 x the duration of holding the breath, to give the CO2 level in the body time to break down and the oxygen level to find its balance..

Table 1. Training stage and assessment criteria

No.	Training Stages		Assessment Criteria	
			Target Stages 1	**Target Stages 2**
1	Week 1 training stages (2x meetings) (Induction training) Induction basic concepts of Recreational Freediving Deep Talk Warm up and Flexibility Training Basic Breathing Techniques Exercise Freediving Recreational Freediving Dry Static Swimming Freediving Static Apnoea Freediving Dynamic Apnoea Cool down and Meditation	Participants understand the basic concepts of Recreational Freediving and practice participants understand the periodization of training and Knowledge and Techniques in freediving Building interpersonal communication, exploring experiences between participant and coaches Do warm-up movements and flexibility exercises Do basic breathing techniques for Recreational Freediving Practice swimming without fins on the target surface without stopping, gradually to reach the final goal of 200 meters Do dry static breath-holding exercises Freediving gradually (to reach the best goal Do Static Apnoea Freediving breath-holding exercises gradually to reach the best goal Perform Dynamic Free Diving Without Fins, diving a horizontal distance in a pool gradually to reach the best goal Practice cooling relaxation and meditation with guided imagery in every practice season	Build good interpersonal communication to explore experiences and psychological aspects of participantsDry static breath target exercise reps 1 (15 sec) reps 2 (20 sec) reps 3 (30 sec) Static apnoea target exercise reps 1 (15 sec) reps 2 (20 sec) reps 3 (30 sec) DNF target exercise reps 1 (2 meter) reps 2 (3 meter) reps 3 (4 meter) Swimming target exercise 5 meter Meditation with guided imagery	Build good interpersonal communication to explore experiences and psychological aspects of participantsDry static breath target exercise reps 1 (30 sec) reps 2 (35 sec) reps 3 (40 sec) c. Static apnoea target exercise reps 1 (30 sec) reps 2 (35 sec) reps 3 (40 sec) d. DNF target exercise reps 1 (4 meter) reps 2 (5 meter) reps 3 (6 meter) e. Swimming target exercise 10 meter f. Meditation with guided imagery

No.	Training Stages	Assessment Criteria	Target Stages 3	Target Stages 4
2	Week 2 training stages (2x meetings) Deep Talk Warm up and Flexibility Training Basic Breathing Techniques Exercise Freediving Recreational Freediving Dry Static Swimming Freediving Static Apnoea Freediving Dynamic Apnoea Cool down and Meditation	Building interpersonal communication, exploring experiences between participant and coaches Do warm-up movements and flexibility exercises Do basic breathing techniques for Recreational Freediving Practice swimming without fins on the target surface without stopping, gradually to reach the final goal of 200 meters Do dry static breath-holding exercises Freediving gradually (to reach the best goal Do Static Apnoea Freediving breath-holding exercises gradually to reach the best goal Perform Dynamic Free Diving Without Fins, diving a horizontal distance in a pool gradually to reach the best goal Practice cooling relaxation and meditation with guided imagery in every practice season	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Dry static breath target exercise reps 1 (40 sec) reps 2 (45 sec) reps 3 (50 sec) c. Static apnoea target exercise reps 1 (40 sec) reps 2 (45 sec) reps 3 (50 sec) d. DNF target exercise reps 1 (6 meter) reps 2 (7 meter) reps 3 (8 meter) e. Swimming target exercise 15 meter f. Meditation with guided imagery	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Dry static breath target exercise reps 1 (60 sec) reps 2 (1 min 10sec) reps 3 (1 min 15sec) c. Static apnoea target exercise reps 1 (60 sec) reps 2 (1 min 10sec) reps 3 (1 min 15sec) d. DNF target exercise reps 1 (8 meter) reps 2 (9 meter) reps 3 (10 meter) e. Swimming target exercise 20 meter f. Meditation with guided imagery

No.	Training Stages	Assessment Criteria	Target Stages 5	Target Stages 6
3	Week 3 training stages (2x meetings) Deep Talk Warm up and Flexibility Training Basic Breathing Techniques Exercise Freediving Recreational Freediving Dry Static Swimming Freediving Static Apnoea Freediving Dynamic Apnoea Cool down and Meditation	Building interpersonal communication, exploring experiences between participant and coaches Do warm-up movements and flexibility exercises Do basic breathing techniques for Recreational Freediving Practice swimming without fins on the target surface without stopping, gradually to reach the final goal of 200 meters Do dry static breath-holding exercises Freediving gradually (to reach the best goal Do Static Apnoea Freediving breath-holding exercises gradually to reach the best goal Perform Dynamic Free Diving Without Fins, diving a horizontal distance in a pool gradually to reach the best goal Practice cooling relaxation and meditation with guided imagery in every practice season	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Dry static breath target exercise reps 1 (1 min 15sec) reps 2 (1 min 20sec) reps 3 (1 min 25sec) c. Static apnoea target exercise reps 1 (1 min 15sec) reps 2 (1 min 20sec) reps 3 (1 min 25sec) d. DNF target exercise reps 1 (10 meter) reps 2 (11 meter) reps 3 (12 meter) e. Swimming target exercise 30 meter f. Meditation with guided imagery	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Dry static breath target exercise reps 1 (1 min 25sec) reps 2 (1 min 30sec) reps 3 (1 min 35sec) c. Static apnoea target exercise reps 1 (1 min 25sec) reps 2 (1 min 30sec) reps 3 (1 min 35sec) d. DNF target exercise reps 1 (12 meter) reps 2 (13 meter) reps 3 (14 meter) e. Swimming target exercise 35 meter f. Meditation with guided imagery

No.	Training Stages	Assessment Criteria	Target Stages 7	Target Stages 8
4	Week 4 training stages (2x meetings) Deep Talk Warm up and Flexibility Training Basic Breathing Techniques Exercise Freediving Recreational Freediving Dry Static Swimming Freediving Static Apnoea Freediving Dynamic Apnoea Cool down and Meditation	Building interpersonal communication, exploring experiences between participant and coaches Do warm-up movements and flexibility exercises Do basic breathing techniques for Recreational Freediving Practice swimming without fins on the target surface without stopping, gradually to reach the final goal of 200 meters Do dry static breath-holding exercises Freediving gradually (to reach the best goal Do Static Apnoea Freediving breath-holding exercises gradually to reach the best goal Perform Dynamic Free Diving Without Fins, diving a horizontal distance in a pool gradually to reach the best goal Practice cooling relaxation and meditation with guided imagery in every practice season	a. Build a good interpersonal communication to explore experiences and psychological aspects of participants b. Dry static breath target exercise reps 1 (1 min 45sec) reps 2 (1 min 50sec) reps 3 (2 min) c. Static apnoea target exercise reps 1 (1 min 45sec) reps 2 (1 min 50sec) reps 3 (2 min) d. DNF target exercise reps 1 (14 meter) reps 2 (15 meter) reps 3 (16 meter) e. Swimming target exercise 40 meter f. Meditation with guided imagery	a. Build a good interpersonal communication to explore experiences and psychological aspects of participants b. Dry static breath target exercise reps 1 (2 min) reps 2 (2 min 05 sec) reps 3 (2 min 10 sec) c. Static apnoea target exercise reps 1 (2 min) reps 2 (2 min 05 sec) reps 3 (2 min 10 sec) d. DNF target exercise reps 1 (16 meter) reps 2 (17 meter) reps 3 (18 meter) e. Swimming target exercise 45 meter f. Meditation with guided imagery

No.	Training Stages	Assessment Criteria	Target Stages 9	Target Stages 10
5	Week 5 training stages (2x meetings) Deep Talk Warm up and Flexibility Training Basic Breathing Techniques Exercise Freediving Recreational Freediving Dry Static Swimming Freediving Static Apnoea Freediving Dynamic Apnoea Cool down and Meditation	Building interpersonal communication, exploring experiences between participant and coaches Do warm-up movements and flexibility exercises Do basic breathing techniques for Recreational Freediving Practice swimming without fins on the target surface without stopping, gradually to reach the final goal of 200 meters Do dry static breath-holding exercises Freediving gradually (to reach the best goal Do Static Apnoea Freediving breath-holding exercises gradually to reach the best goal Perform Dynamic Free Diving Without Fins, diving a horizontal distance in a pool gradually to reach the best goal Practice cooling relaxation and meditation with guided imagery in every practice season	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Dry static breath target exercise reps 1 (2 min 10sec) reps 2 (2 min 15sec) reps 3 (2 min 20sec) c. Static apnoea target exercise reps 1 (2 min 10sec) reps 2 (2 min 15sec) reps 3 (2 min 20sec) d. DNF target exercise reps 1 (19 meter) reps 2 (20 meter) reps 3 (21 meter) e. Swimming target exercise 50 meter f. Meditation with guided imagery	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Dry static breath target exercise reps 1 (2 min 20sec) reps 2 (2 min 25sec) reps 3 (2 min30sec) c. Static apnoea target exercise reps 1 (2 min 20sec) reps 2 (2 min 25sec) reps 3 (2 min30sec) d. DNF target exercise reps 1 (22 meter) reps 2 (23 meter) reps 3 (25 meter) e. Swimming target exercise 60 meter f. Meditation with guided imagery

No.	Training Stages	Assessment Criteria	Target Stages 11	Target Stages 12
6	Week 6 training stages (2x meetings) Deep Talk Warm up and Flexibility Training Basic Breathing Techniques Exercise Freediving Recreational Freediving Dry Static Swimming Freediving Static Apnoea Freediving Dynamic Apnoea Gradually. In weeks 6 to 8, challenges of facing depth Equalizing exercise Induction Free Immersion and Constant Weight Cool down and Meditation	Building interpersonal communication, exploring experiences between participant and coaches Do warm-up movements and flexibility exercises Do basic breathing techniques for Recreational Freediving Practice swimming without fins on the target surface without stopping, gradually to reach the final goal of 200 meters Do Dry Static Freediving breath-holding exercises gradually to reach the best goal Do Static Apnoea Freediving breath-holding exercises gradually to reach the best goal Perform Dynamic Free Diving Without Fins, diving a horizontal distance in a pool gradually to reach the best goal Do Equalizing exercise Induction Free Immersion and Constant Weight Practice cooling relaxation and meditation with guided imagery in every practice season	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Dry Static 1 attempt as top base (maximum) c. Static apnoea 1 attempt as top base (maximum) c. DNF target exercise 1 attempt as top base (maximum) d. Swimming target exercise 80 meter e. Do Equalizing exercises safely f. Induction Free Immersion and Constant Weight Training (CWT) e. Meditation with guided imagery	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Dry Static 1 attempt as top base (maximum) c. Static apnoea 1 attempt as top base (maximum) c. DNF target exercise 1 attempt as top base (maximum) d. Swimming target exercise 100 meter e Free Immersion reps 1 (1 meter) reps 2 (1,5 meter) reps 3 (2 meter) f. Constant Weight Training (CWT) reps 1 (1 meter) reps 2 (1,5 meter) reps 3 (2 meter) g. Meditation with guided imagery

No.	Training Stages	Assessment Criteria	Target Stages 13	Target Stages 14
7	Week 7 training stages (2x meetings) Deep Talk Warm up and Flexibility Training Basic Breathing Techniques Exercise Freediving Recreational Freediving Dry Static Swimming Freediving Static Apnoea Freediving Dynamic Apnoea Gradually. In weeks 6 to 8, challenges of facing depth Equalizing exercise Free Immersion and Constant Weight j) Cool down and Meditation	Building interpersonal communication, exploring experiences between participant and coaches Do warm-up movements and flexibility exercises Do basic breathing techniques for Recreational Freediving Practice swimming without fins on the target surface without stopping, gradually to reach the final goal of 200 meters Do Static Apnoea Freediving breath-holding exercises gradually to reach the best goal Perform Dynamic Free Diving Without Fins, diving a horizontal distance in a pool gradually to reach the best goal Do Equalizing exercise Do Free Immersion Do Constant Weight Training Practice cooling relaxation and meditation with guided imagery in every practice season	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Static apnoea 1 attempt as top base (maximum) c. DNF target exercise 1 attempt as top base (maximum) d. Swimming target exercise 120 meter e Free Immersion reps 1 (1 meter) reps 2 (1,5 meter) reps 3 (2 meter) f. Constant Weight Training (CWT) reps 1 (1 meter) reps 2 (1,5 meter) reps 3 (2 meter) g. Meditation with guided imagery	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Static apnoea 1 attempt as top base (maximum) c. DNF target exercise 1 attempt as top base (maximum) d. Swimming target exercise 150 meter e Free Immersion reps 1 (2 meter) reps 2 (2,5 meter) reps 3 (3 meter) f. Constant Weight Training (CWT) reps 1 (2 meter) reps 2 (2,5 meter) reps 3 (3 meter) g. Meditation with guided imagery

No.	Training Stages	Assessment Criteria	Target Stages 15	Target Stages 16
8	Week 8 training stages (2x meetings) Deep Talk Warm up and Flexibility Training Basic Breathing Techniques Exercise Freediving Recreational Freediving Dry Static Swimming Freediving Static Apnoea Freediving Dynamic Apnoea Gradually. In weeks 6 to 8, challenges of facing depth Free Immersion Constant Weight Cool down and Meditation	Building interpersonal communication, exploring experiences between participant and coaches Do warm-up movements and flexibility exercises Do basic breathing techniques for Recreational Freediving Practice swimming without fins on the target surface without stopping, gradually to reach the final goal of 200 meters Do Static Apnoea Freediving breath-holding exercises gradually to reach the best goal Perform Dynamic Free Diving Without Fins, diving a horizontal distance in a pool gradually to reach the best goal Do Equalizing exercise Do Free Immersion Do Constant Weight Training Practice cooling relaxation and meditation with guided imagery in every practice season	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Static apnoea 1 attempt as top base (maximum) c. DNF target exercise 1 attempt as top base (maximum) d. Swimming target exercise 180 meter e Free Immersion reps 1 (3 meter) reps 2 (4,5 meter) reps 3 (5 meter) f. Constant Weight Training (CWT) reps 1 (3 meter) reps 2 (4,5 meter) reps 3 (5 meter) g. Meditation with guided imagery	a. Build good interpersonal communication to motivate, evaluate, and positively psychological support b. Static apnoea 1 attempt as top base (maximum) c. DNF target exercise 1 attempt as top base (maximum) d. Swimming target exercise 200 meter e Free Immersion reps 1 (5 meter) reps 2 (5 meter) reps 3 (5 meter) f. Constant Weight Training (CWT) reps 1 (5 meter) reps 2 (5 meter) reps 3 (5 meter) g. Meditation with guided imagery

Validity test as stated by Aiken with Aiken's V index compared with the value of the V table with 5 alternative scales at a significance level of 5% , which means that in this study the chance of error is set at 5%.

Both the indications in the evaluation table of the training stage and these assessment criteria are based on the results of an expert panel of 7 people on the assessment of freediving recreational exercise program with no fins that conduct to increase phycological condition and lung capacity and the extent to which the items represent constructs with the following results:

Table 2. Analysis of Aiken's Freediving Recreational no fins program

Aspect Validation	**item**	**V1**	**V2**	**V3**	**V4**	**V5**	**V6**	**V7**	$\sum(r-lo)$	**n (c-1)**	**V=∑** $V=\sum\frac{(r-lo)}{n*(c-1)}$
First stages training (2x meetings)	Item 8	4	5	4	5	4	5	5	25	28	0.89
	item 7	4	5	4	5	4	4	5	24	28	0.86
	Item 6	4	5	4	5	4	4	5	24	28	0.86
	Item 5	4	5	4	5	4	4	5	24	28	0.86
	Item 4	4	5	4	5	4	4	5	24	28	0.86
	item 3	4	5	4	5	4	4	5	24	28	0.86
	Item 2	3	5	4	5	4	4	5	23	28	0.82
	Item 1	4	5	4	5	4	5	5	25	28	0.89
Second stages training (2x meetings)	Item 6	4	5	3	5	3	5	5	23	28	0.82
	item 5	4	5	4	5	4	4	5	24	28	0.86
	item 4	4	5	4	5	4	4	5	24	28	0.86
	Item 3	4	5	4	5	4	4	5	24	28	0.86
	Item 2	3	5	4	5	3	4	5	22	28	0.79
	Item 1	4	5	4	5	4	5	5	25	28	0.89
Third stages training (2x meetings)	Item 6	4	5	3	5	4	5	5	24	28	0.86
	Item 5	4	5	4	5	4	4	5	24	28	0.86
	item 4	4	5	4	5	4	4	5	24	28	0.86
	Item 3	4	5	4	5	4	4	5	24	28	0.86
	Item 2	3	5	4	5	4	4	5	23	28	0.82
	Item 1	4	5	4	5	4	5	5	25	28	0.89
Forth stages training (2x meetings)	Item 6	4	5	3	5	4	5	5	24	28	0.86
	Item 5	4	5	4	5	4	4	5	24	28	0.86
	item 4	4	5	4	5	4	4	5	24	28	0.86
	Item 3	4	5	4	5	4	4	5	24	28	0.86
	Item 2	3	5	4	5	4	4	5	23	28	0.82
	Item 1	4	5	4	5	4	5	5	25	28	0.89
Fifth stages training (2x meetings)	Item 6	4	5	3	5	4	5	5	24	28	0.86
	Item 5	4	5	4	5	4	4	5	24	28	0.86
	item 4	3	5	3	5	4	4	5	22	28	0.79
	Item 3	4	5	4	5	4	4	5	24	28	0.86
	Item 2	3	5	4	5	4	4	5	23	28	0.82
	Item 1	4	5	4	5	4	5	5	25	28	0.89
Sixth stages training (2x meetings)	Item 7	4	5	4	5	4	4	5	24	28	0.86
	item 6	4	5	4	5	4	4	5	24	28	0.86
	Item 5	4	5	4	5	4	4	5	24	28	0.86
	Item 4	4	5	5	5	4	4	5	25	28	0.89
	item 3	4	5	5	5	4	4	5	24	28	0.86
	Item 2	4	5	4	5	4	4	5	25	28	0.89
	Item 1	4	5	5	5	4	4	5	24	28	0.86

Seventh stages training (2x meetings)	item 6	4	5	4	5	4	4	5	24	28	0.86
	Item 5	4	5	4	5	4	4	5	24	28	0.86
	Item 4	4	5	5	5	4	4	5	25	28	0.89
	item 3	4	5	5	5	4	4	5	25	28	0.89
	Item 2	4	5	4	5	4	4	5	24	28	0.86
	Item 1	4	5	5	5	4	4	5	25	28	0.89
Eighth stages training (2x meetings)	Item 7	4	5	4	5	4	5	5	25	28	0.89
	item 6	4	5	5	5	4	4	5	25	28	0.89
	Item 5	4	5	5	5	4	4	5	25	28	0.89
	Item 4	4	5	4	5	4	4	5	24	28	0.86
	item 3	4	5	4	5	4	4	5	24	28	0.86
	Item 2	4	5	4	5	4	4	5	24	28	0.86
	Item 1	4	5	4	5	4	5	5	25	28	0.89

From Aiken's analysis results on the freediving recreational exercise program with no fins that conduct to increase psychological condition and lung capacity, compared with the value of the V table in the evaluation using 7 expert judgments with 5 alternative scales at a significance and level of 5%, the lowest score is 0.79 and the highest is 0.89 with an average value 0.83

To assess the validity of the test items assessed, the results of the V score must be compared with the value of the V table in the evaluation using 7 expert judgments with 5 alternative scales at a significance level of 5%., Aiken Result shows V Score (0.79 to 0.89) > V table 0,75, it means the lowest score is 0.79 and the highest is 0.89 with an average value 0.83, it can be stated the developing recreational freediving exercise program with no fins that conduct to increase phycological condition and lung capacity compiled is valid.

The results support content validity regarding clarity and accuracy by experts and professionals, which were high and positive, justifying appraiser objectivity. According to Bajpai & Bajpai,(2014), a tool used to measure assessment is considered effective if it has validity values. This allows educators to promptly consider a standard freediving exercise with no fins that is used for increased health benefits.

DISCUSSION

Based on the research that has been done and the discussion that has been described, the developing recreational freediving exercise program with no fins that are conducted to increase psychological condition and lung capacity is valid between expert judgment. A measuring tool used for assessment can be deemed effective if it possesses values of validity (Bajpai & Bajpai, 2014). The content validity of modified freediving recreational exercise demonstrated in research findings can serve as a valuable exercise to increase health benefits. Sections of stage content validity of the freediving recreational program, developed consider the safety aspect and sports injuries consider more aspects related to leisure and consider how to stage exercise to gain benefit health. This work led to the development considers its multidimensional nature and can be applied in various sports contexts (Belley-Ranger et al., 2022) certain behaviours may contravene the physical integrity and well-being of participants, notably through sports injuries. Several endogenous (sensation seeking, risk perception, psycho- affective aspects, substance consumption, age.

One such study was authored by Fernandez, showing significant results both before and after training. Including physical activity in apnoea training led to increased vital capacity (VC) and maximal oxygen uptake (VO_2max) in breath-hold divers (Fernandez & Martin-Martin, 2019). Another study authored Praveen Bhardwaj shows There was a significant increase in peak expiratory flow rate (PEFR) and breath-holding time (BHT) after 1 month of diaphragmatic breathing maneuvers which illustrates the benefits of diaphragmatic breathing on lung function (Bhardwaj et al., 2021). Other research conducted by Praveen Bhardwaj in 2021, shows the effect of adding congruent and incongruent MI (mental imagery) training provide maximum breath-holding performance compared to those not given mental imagery treatment (Bhardwaj et al., 2021). Related to the results of research conducted by Martin J Barwood in 2006, report that Psychological influences intervention comprising 4 interlinked training sessions covering goal-setting, arousal regulation, mental imagery, and positive self-talk; may account for a significant amount of the variability in the respiratory responses (Barwood et al., 2006).

In a recent study in freediving injuries, medical report on a series of 11 cases of perilymphatic fistula following ear barotrauma between 2003 and 2015, the onset of cochleovestibular symptoms (hearing loss, dizziness or instability, tinnitus) after a breath-hold diving its need warrants an emergency and has investigated the possibility of the development of decompression sickness with a view to hyperbaric oxygen treatment of bubble-induced inner-ear damage (Morvan et al., 2016). Other studies described in the literature were found in the following bodily systems: ophthalmological, ear, nose, and throat (ENT), pulmonary, and neurological, and within each system, the mechanisms through which fatalities have occurred (Allen & Allen, 2022). This finding underscores some of the essential skills and training stages that are necessary for a successful and safe freediving experience, so no matter if a beginner or an experienced diver is able to refine technique and get the most benefit of recreational free dives.

CONCLUSION

Based on expert opinion and validated measurement tools, the development of a finless recreational freediving exercise program shows promising potential to improve mental health and lung capacity. The findings highlight the practical relevance of modified freediving exercises and highlight their effectiveness in promoting health benefits. Safety, prevention of sports injuries, and the overall design of the exercise greatly contribute to its effectiveness.

A study by Fernandes and Praveen Bhardwaj showed significant results in increases in vital capacity, peak oxygen uptake, peak expiratory flow, and breath-hold time, and these improvements were associated with physical activity, diaphragmatic breathing, and mental health. This is thought to be due to the introduction of visual image training. However, there are potential risks associated with freediving, such as perilymph fistula, and various complications in body systems such as ophthalmology, ENT, pulmonary, and neurological areas. These highlight the need for appropriate skills, training, and safety measures to ensure a safe and successful freediving experience for both beginners and experienced divers.

Recreational freediving exercise programs have the potential to improve physical and psychological aspects, but caution and comprehensive training are essential to reduce the associated risks and ensure participant safety.

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