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The influence of mental health and a-riseba shooting practice on the performance of basketball shooting results in 16-18 years age group

La influencia de la salud mental y la práctica de tiro a-riseba en el rendimiento de los resultados de tiro en baloncesto en el grupo de edad de 16-18 años

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Abstract. Objective; testing the influence and differences in the effects of conventional A-riseba training (A1), A-riseba training with the involvement of parents and people closest to them during the exercise (A2), A-riseba training with the provision of Self-Manage Mental Health literacy during the exercise (A3) on the shooting performance of basketball athletes for players who are or are experiencing; anxiety (B1), eating disorders/disordered (B2), stress (B3), burnout (B4), kinesiophobia (B5), attention-deficit/hyperactivity disorder (B6). Method: The research employed an experimental method with a 3x6 factorial design where treatment was needed, the sampling technique used stratified random sampling so that 72 basketball athletes were selected. The Stroop Test is used to classify mental health disorders, measuring shooting performance using the Basketball Skills Test and BJSAT. Hypothesis testing uses Paired-samples t tests and Two way Anova. Results: There is an influence of A1 [t_{-count}-12.301>$t_{-table1}$.174, Sig.0.000<p0.05], A2 [t_{-count}-12.988>$t_{-table1}$.174, Sig.0.000<p0.05], and A3 [t_{-count}-12.245>$t_{-table1}$.174, Sig.0.000<p0.05] on improving the shooting performance of basketball athletes. There was no difference in the influence of A1, A2, and A3 on the shooting performance of B1, B2, B3, B4, B5, and B6 [P>0.05]. There was a significant gap between B1, B2, B3, B4, B5, and B6 (P<0.05), and there was an interaction between groups (A and B) (P<0.05). The effects of different mental health disorders produce different shooting performance. The Researchers recommend that optimal efforts should be carried out comprehensively, because it has been proven that efforts carried out separately do not have a significant difference in effect.
Keywords; Mental Health, A-riseba Shooting Practice, Basketball.

Resumen. Objetivo; probar la influencia y las diferencias en los efectos del entrenamiento A-riseba convencional (A1), el entrenamiento A-riseba con la participación de los padres y las personas más cercanas durante el ejercicio (A2), el entrenamiento A-riseba con la provisión de la alfabetización de Autogestión de la Salud Mental durante el ejercicio (A3) en el rendimiento de tiro de los atletas de baloncesto para los jugadores que son o están experimentando; ansiedad (B1), trastornos/desórdenes alimentarios (B2), estrés (B3), burnout (B4), kinesiofobia (B5), trastorno por déficit de atención/hiperactividad (B6). Método: La investigación empleó un método experimental con un diseño factorial 3x6 en el que fue necesario un tratamiento, la técnica de muestreo utilizó un muestreo aleatorio estratificado de forma que se seleccionaron 72 deportistas de baloncesto. Se utiliza el Test de Stroop para clasificar los trastornos de salud mental, midiendo el rendimiento en tiro mediante el Test de Habilidades en Baloncesto y el BJSAT. Las pruebas de hipótesis utilizan pruebas t de muestras pareadas y Anova de dos vías. Resultados: Existe influencia de A1 [t_{-count}-12.301>$t_{-table1}$.174, Sig.0.000<p0.05], A2 [t_{-count}-12.988>$t_{-table1}$.174, Sig.0.000<p0.05], y A3 [t_{-count}-12.245>$t_{-table1}$.174, Sig.0.000<p0.05] en la mejora del rendimiento en el tiro de los deportistas de baloncesto. No hubo diferencias en la influencia de A1, A2 y A3 en el rendimiento en el tiro de B1, B2, B3, B4, B5 y B6 [P>0,05]. Hubo una diferencia significativa entre B1, B2, B3, B4, B5 y B6 (P<0,05), y hubo una interacción entre los grupos (A y B) (P<0,05). Los efectos de los distintos trastornos mentales producen un rendimiento de tiro diferente. Los investigadores recomiendan que los esfuerzos óptimos se lleven a cabo de forma integral, ya que se ha demostrado que los esfuerzos realizados por separado no tienen una diferencia significativa en el efecto.
Palabras clave: Salud Mental, Práctica de Tiro A-riseba, Baloncesto.

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Introduction

Mental health disorders can happen to anyone, regardless of a person's age, level of education, social class and occupation, these conditions occur as a result of a person's inability to manage the stress and mental burdens in everyday life. The ideal mental condition is that a person is aware of the abilities or potential he has, and is confident that all external pressures received in his daily life can be managed well (Rahmah et al., 2024). In other words, the "mental" dimension is believed to be an important aspect of building human resources (Putra et al., 2024). Even mental health problems also affect sportsmen, who are seen by many parties as having jobs that match their hobbies or passions. Benefits in mental health and the behaviour of youth involved in sports activities (Roberto et al., 2023). For elite level athletes, symptoms of mental health problems are related to current career dissatisfaction and concerns about retirement (Oltmans et al., 2022). The National Collegiate Athletic Association (NCAA) is very intense and provides institutions to address and provide mental health services, considering the demanding career pressures for college athletes (Beasley & Hoffman, 2023). For school-aged athletes, one study found a high frequency of emotional symptoms (nervousness: boys = 46.6%, girls = 58.3%; irritability: boys = 37.9%, girls = 46.9 %; sadness: men = 38.7%, women = 53.2 %), sleep/arousal-related symptoms (difficulty sleeping: men = 50.4%, women = 55.1%; poor sleep than usual: men = 43.8%, women = 45.2%; and fatigue: men = 40.3%, women = 45.2%), headaches (men = 27.5% , women = 41.8%), and lack of attention (men = 47.8%, women = 46.9%), when approaching a sporting event (Iverson et al., 2020). This means that mental health disorders are found at al-

most all age levels of sports athlete development. In fact, it is well known that an athlete's performance will be closely related to their mental condition both on and off the field as well as when training and competing. The determining factors for sports performance are physical, technical, mental and tactical performance(Tangkudung & Wahyuningtyas, 2012; Balyi, Way, & Higgs, 2013; Bompa & Buzzichelli, 2019).

The most common forms of mental health disorders experienced by athletes are; anxiety, eating disorders/disordered, stress, burnout, kinesiophobia, attention-deficit/hyperactivity disorder (Muir & Munroe-Chandler, 2020; Herrero, Jejurikar, & Carter, 2021; Chang et al., 2020; Iverson et al., 2020). In responding to this, various studies have recommended the results of their research. It is recommended that coaches, parents and those closest to them be involved in the child's training development (Breslin et al., 2022). Recommended for institutions, coaches and/or trainers to provide understanding and literacy of mental problems (Self-Manage Mental Health) (Breslin et al., 2021). The need for regular screening (Cosh et al., 2024). A multi-layered and multi-system prevention approach with sports team doctors as the front guard (Mountjoy & Edwards, 2022). In connection with various existing explanations, both themed research; counseling, management, prevention, rehabilitation and healing. The Researchers have not seen any research that tries to describe and at the same time test sports training that incorporates the involvement of parents, those closest to them, and literacy of mental problems (Self-Manage Mental Health) in relation to improving the sports performance of school-aged athletes who have experience and are currently experiencing mental problems. The Researchersthen pushed this conception as one of the novelties in this research.

The sports performance that The Researcherswould like to this cover in this research is basketball shooting performance. Shooting is generally divided into four types, which are three point shoot, two point shoot, lay-up shoot and free throw shoot (Zhou, 2015; Tai et al., 2016; Drazan et al., 2015; Saichudin & Munawar, 2019; Kimble, 2021). The four basic shooting techniques have their own level of difficulty. Three-point shooting or making a 3-point shot requires athletes to have good focus, attention, courage and self-confidence because they have to try to score the ball from a distance of 6.75 meters. Two point shooting is considered easier and still requires focus, attention and courage. Likewise with the lay-up shoot, you have to pay attention to your footsteps while carrying the ball and passing through the opponent's defense until you are close to the ring to put the ball in. Free throw shoot or shoot freely without anyone's obstruction as part of the reward for an opponent's violation, but this situation requires the player to be the center of everyone's attention when doing it.Several studies have also discovered the influence of mental disorders on shooting performance. Mental fatigue negatively impacts basketball shooting performance in basketball players and it is recommended to reduce training that demands high cognitive abilities in the pre-competition phase (Daub et al., 2023; Bahrami, Moradi, & Etaati, 2020). Mental fatigue (MF) damages the technical abilities of basketball players, especially shooting techniques, as well as cognitive performance such as the take-the-first (TTF) heuristic and/or the ability to make decisions (Cao et al., 2022). Separately and/or together sleep restriction (SR) and mental fatigue (MF) influence basketball shooting performance (especially free throws) (Filipas et al., 2021). The state of mental fatigue is a key regulator of basketball players' technical performance and mental fatigue appears to modulate endocrine and autonomic responses (Moreira et al., 2018).This means that mental health is mandatory to produce maximum shooting.

Regarding the type of good shooting practice; similar to real match situations(Jeff Haefner & Haefner, 2008; USA basketball, 2014; Jones, 2015; Nunes et al., 2020). This is done with as many repetitions as possible, with regular and structured additions to the load (Kimble, 2021; Bompa & Buzzichelli, 2019). To help with the repetition in question, The Researchersalso use effective technology in the form of a ring sensor which has been proven capable of calculating automatically (Mulyono et al., 2019). It is hoped that this appropriate technology will be able to facilitate the course of basketball shooting training in this research, and replace verbal instructions which have been an additional task for coaches during repetitive shooting practice. To make this exercise more familiar, The Researchers termed it the "A-riseba" exercise, which is the researcher's initials. The Researchers then pushed this conception as one of the novelties in this research. The hypothesis The Researchers propose is; (1) There is an influence of conventional A-riseba training, (2) There is an influence of A-riseba training with the involvement of parents and people closest to you during the exercise, (3) There is an influence of A-riseba training with the provision of Self-Manage Mental literacy Health for athletes during training, (4) There are differences in the influence of the three A-riseba exercises on the shooting performance of basketball athletes who are and have experienced mental health problems (anxiety, eating disorders/disordered, stress, burnout, kinesiophobia, attention-deficit/hyperactivity disorders). The results of this research have two dimensions of usefulness, namely; Firstly, it is very useful as a source of information for coaches, coaches, sports institutions, as well as schools and physical education teachers, especially in counseling, overcoming, preventing, rehabilitating and healing athletes' mental health. The Researchers propose and include the involvement of parents and those closest to them as well as providing Self-Manage Mental Health literacy to athletes as treatment considering that The Researchers consider these two activities to be the earliest, easiest, and most adequate for access by sports development institutions,

especially those that have limited resources. Second, to test the effectiveness of the A-riseba training on the shooting performance of basketball athletes.

Materials & Methods

Study design

The research employed an experimental method with a 3 x 6 factorial design where treatment was needed. This research received approval from the Ethics Committee of the State University of Semarang.

Participants

The sample came from athletes/students at the academy/basketball club aged 16-18 years (average age; 16.8, training age 6.7, height; 171.2, weight 66.3) in Central Java, Indonesia. Academy/club and parents sign consent form. The sample was determined using stratified random sampling with the condition that the athlete/student had a history of or had experienced; anxiety (B1), eating disorders/disordered (B2), stress (B3), burnout (B4), kinesiophobia (B5), attention-deficit/hyperactivity disorder (B6). Of the 120 players/students who were willing and stated that they had experienced or were currently experiencing symptoms of mental disorders, 72 samples were selected using the Hamilton Anxiety Rating Scale (HARS),Rating Clinician-rated administration time 10–15 minutes. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). A number of samples were then distributed into 3 x 6 factorial design groups, the complete details can be seen in table 1.

Table 1.
Factorial Design

Shooting practice model (A)	Currently and/or have experienced mental problems (B)												Total n
	Anxiety (B1)	N	Eating disorders/ disordered (B2)	N	Stress (B3)	n	Burnout (B4)	n	Kinesiophobia (B5)	n	Attention-deficit/hyperactivity disorder (B6)	n	
A-riseba exercise 1 (A1)	A1B1	4	A1B2	4	A1B3	4	A1B4	4	A1B5	4	A1B6	4	24
A-riseba exercise 2 (A2)	A2B1	4	A2B2	4	A2B3	4	A2B4	4	A2B5	4	A2B6	4	24
A-riseba exercise 3 (A3)	A3B1	4	A3B2	4	A3B3	4	A3B4	4	A3B5	4	A2B6	4	24
Total	B1	12	B2	12	B3	12	B4	12	B5	12	B6	12	72

Legend: Devendent Variable C (Basketball shooting performance), anxiety (B1), eating disorders/disordered (B2), stress (B3), burnout (B4), kinesiophobia (B5), attention-deficit/hyperactivity disorder (B6).

Procedures

Training groups A1B1, A1B2, A1B3, A1B4, A1B5, A1B6 underwent conventional A-riseba training (A1). Training groups A2B1, A2B2, A2B3, A2B4, A2B5, A2B6 underwent A-riseba training (treatment) with the involvement of parents and people closest to them during the training (A2). Training groups A3B1, A3B2, A3B3, A3B4, A3B5, A3B6 underwent A-riseba training (treatment) by providing Self-Manage Mental Health literacy to athletes during training (A3). For A1, no mental health treatment is applied. For A2, parents and/or those closest to them are expected to be present at training to provide encouragement, support and hear the players/students' concerns. For A3, the trainer at the beginning and end of the training session spends time providing an understanding of Self-Manage Mental Health literacy. The forms of A-riseba training can be seen in table 2. The training program (treatment) can be seen in table 3.

Table 2.
A-riseba form of exercise

Exercise	Types of exercise	Implementation illustration
ExerciseA-riseba (treatment)/ Meeting	Free throw shooting practice	https://youtu.be/v83LFIq6a18 https://youtu.be/d6ky3a-0ZMs
	Two point shooting practice using set shoots and jump shoots	https://youtu.be/ujTfy4HclQc; https://youtu.be/PNKaSLx9vl8 https://youtu.be/BqPrZ9jkNzw https://youtu.be/hd4WWgtK-Oo
	Lay-up shooting practice	https://youtu.be/s6JoWFUbQxk https://youtu.be/mq4u7xhXeNM
	Three point shooting practice using set and jump shoots	https://youtu.be/rL9SEPbpC6Q https://youtu.be/6A_0Y-pUUtU

Table 3.
Training program

Pre-test		
Week	Meeting	Stages
1	1-3	Stage I, Learning. Repetition; 1RM applies, Set; 3-4, Intervals; long
2	4-6	Stage II, Strength development. Repetition; 1RM applies, Set; 2-3, Intervals; currently
3	7-8	Stage III, Speed development. Repetition; 1RM applies, Set; 1-2, Intervals; fast
4	9-12	Stage IV, Speed endurance development. Repetition; 1RM applies, Set; 3-4, Intervals; fast
5	13-15	Stage IV, Maintenance. Repetition; 1RM applies, Set; 1-2, Intervals; currently
Post-test		

Legend: One Repetition Maximum (1RM)

Before (pre-test) and after (post-test) the treatment (exercise) performance tests were carried out using shooting results; Basketball Skills Test Based on Shooting Techniques for Sport Sciences Students developed by(Wiyaka,

Hasibuan, & Adhikahriani, 2020)to measure free throw and lay-up shooting performance. The conditions for implementing free throws using this test are quite simple, namely by doing as many free throws as possible within 1 minute (the 10 second rule applies), as well as lay-up shots from any direction within 1 minute. To measure two point and three point shooting performance using the Basketball Jump Shooting Accuracy Test (BJSAT) developed by(Boddington et al., 2019). It is recommended that the BJSAT test be carried out on a wooden basketball court or hard cement floor. Testers are given the opportunity to take the BJSAT for a maximum of 2 minutes. Testers are required to warm up according to good and correct heating standards. The test begins with the testeer standing at the starting point (see Figure 1), then running to the designated point in the correct order and if not, he is instructed verbally to follow the sequence. At the point where the tester will shoot, a shooting area is provided (60 cm x 60 cm). When the tester is not standing exactly in that area, the test committee will give instructions to adjust and repeat the shooting. Points are not counted when the points are in the wrong order and are not in the shooting area.

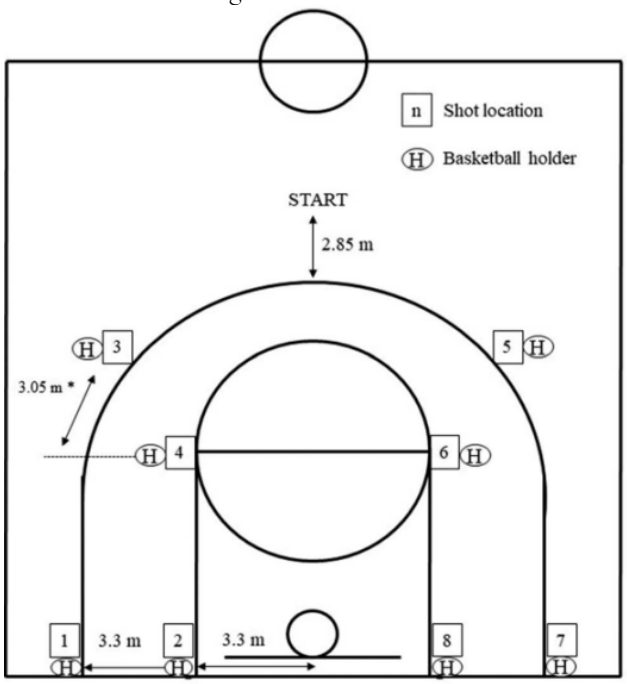

Figure 1. Layout of the Basketball Jump Shooting Accuracy Test. Source(Boddington et al., 2019)

Moving from one point to another shooting point must be done quickly, after shooting there is no need to wait and see the results of the shooting. Each tester gets four opportunities to do the BJSAT (all results are accumulated), passive rest between test opportunities is 2 minutes. There is no time limit, but verbal instructions guide the test to be carried out quickly and precisely, estimated for each tester taking 28.1 ± 2.7 seconds. Male testers used a standard size 7 basketball (Wilson Solution; Wilson; NSW, Australia) and female testers used a standard size 6 basketball (TF-1000 Legacy; Spalding; KY, United States), in this study only male testers were used. In this scoring process, The Researchers completely do not use the BJSAT scoring process and only count balls entered and not entered, and accumulate using a two point and three point system. To help the process of calculating basketball shooting performance results automatically, appropriate technology in the form of a ring sensor is used.

Statistical analysis

The data analysis technique for testing the first, second and third hypotheses uses Paired-samples t tests ($P < 0.005$). Testing the fourth hypothesis uses Two way Anova with the Tukey HSD test ($P < 0.005$). The prereq-uisite tests are the normality test using the Shapiro–Wilk Test ($P > 0.005$) and the homogeneity test using Levene statistics ($P > 0.005$). Overall statistical analysis using SPSS 22.

Results

The research results show the average score and standard deviation of basketball shooting results for the pre-testand The average score and standard deviation of basketball shooting results for the post-test. The complete results of the descriptive analysis can be seen in table 4.

Table 4.
Basketball shooting performance for all groups

Group	N	Min	Max	M±SD
Pre_A1	24	36.00	85.00	61.50±12,10
Pre_A2	24	48.00	77.00	61.62±8.28
Pre_A3	24	50.00	71.00	62.33±6.48
Post_A1	24	39.00	87.00	63.58±11.99
Post_A2	24	49.00	80.00	63.83±8.33
Post_A3	24	52.00	73.00	64.45±6.16
Pre_B1	12	38.00	68.00	54.75±8.05
Pre_B2	12	36.00	66.00	56.83±8.25
Pre_B3	12	54.00	77.00	63.41±6.51
Pre_B4	12	52.00	83.00	63.58±9,10
Pre_B5	12	51.00	73.00	65.83±7.18
Pre_B6	12	52.00	85.00	66.50±9.98
Post_B1	12	40.00	69.00	56.91±7.97
Post_B2	12	39.00	68.00	59±8.09
Post_B3	12	57.00	79.00	65.75±6.22
Post_B4	12	54.00	86.00	65.25±9.19
Post_B5	12	53.00	75.00	67.75±6.82
Post_B6	12	55.00	87.00	69.08±9.85
Pre_A1B1	4	38.00	55.00	49±8.04
Pre_A1B2	4	36.00	60.00	51.75±11.08
Pre_A1B3	4	54.00	66.00	60.75±5.12
Pre_A1B4	4	52.00	83.00	66.25±12.97
Pre_A1B5	4	56.00	72.00	66.75±7.54
Pre_A1B6	4	69.00	85.00	74.50±7.54
Pre_A2B1	4	48.00	62.00	54.25±6.44
Pre_A2B2	4	53.00	64.00	58.75±4.50
Pre_A2B3	4	57.00	77.00	68.25±8.38
Pre_A2B4	4	53.00	65.00	58±5.59
Pre_A2B5	4	61.00	73.00	68.50±5.25
Pre_A2B6	4	54.00	77.00	62±10.61
Pre_A3B1	4	54.00	68.00	61±5.94
Pre_A3B2	4	50.00	66.00	60±7.34
Pre_A3B3	4	57.00	65.00	61.25±3.50
Pre_A3B4	4	57.00	71.00	66.50±6.45
Pre_A3B5	4	51.00	71.00	62.25±8.77
Pre_A3B6	4	52.00	71.00	63±8.20
Post_A1B1	4	40.00	58.00	51.75±8.50
Post_A1B2	4	39.00	62.00	53.50±10.40
Post_A1B3	4	57.00	67.00	62.75±4.34
Post_A1B4	4	54.00	86.00	68.25±13.52
Post_A1B5	4	59.00	74.00	68.50±6.85
Post_A1B6	4	70.00	87.00	76.75±7.63
Post_A2B1	4	49.00	64.00	55.75±6.65
Post_A2B2	4	56.00	67.00	61.50±4.50
Post_A2B3	4	60.00	79.00	70.50±7.85

Post_A2B4	4	55.00	66.00	59.75±4.85
Post_A2B5	4	64.00	75.00	70.75±4.99
Post_A2B6	4	57.00	80.00	64.75±10.84
Post_A3B1	4	57.00	69.00	63.25±5.05
Post_A3B2	4	52.00	68.00	62±7.11
Post_A3B3	4	59.00	68.00	64±3.91
Post_A3B4	4	58.00	72.00	67.75±6.55
Post_A3B5	4	53.00	72.00	64±8.20
Post_A3B6	4	55.00	73.00	65.75±7.88

Legend: The dependent variable is the result of basketball shooting, "A1" is conventional A-riseba training, "A2" is A-riseba training with the involvement of parents and people closest to them during training, "A3" is A-riseba training with providing Self-Manage Mental Health literacy to athletes during training. Moderate variables are players/athletes who are currently or have experienced; anxiety (B1), eating disorders/disordered (B2), stress (B3), burnout (B4), kinesiophobia (B5), attention-deficit/hyperactivity disorder (B6).

The results of the normality and homogeneity tests in table 5 show that the overall data is normal and homogeneous, so the analysis can be continued with hypothesis testing.

Table 5.
Normality and homogeneity testing

Test	Normality test						Homogeneity test		
	Kolmogorov-Smirnov			Shapiro-Wilk			Levene's		
	Statistics	df	Sig.	Statistics	df	Sig.	df1	df2	P
Pre-test	,054	72	,200*	,985	72	,565	2	69	,054
Post-test	,051	72	,200*	,986	72	,585	2	69	,066

Legend: Data is normally distributed and homogeneous (P>0.05).

The results of the hypothesis test in table 6 show that the first hypothesis is accepted, namely that there is an influence of conventional A-riseba training on the shooting performance of basketball athletes who are or have experienced mental health problems (anxiety, eating disorders/disordered, stress, burnout, kinesiophobia, attention-deficit/hyperactivity disorder) seen from Pre A1 - Post A1 witht-count value-12,301>t-table1.174, Sig value. 0.000< p value 0.05. The second hypothesis is accepted, namelyThere isThe influence of A-riseba training with the involvement of parents and people closest to them during training on the shooting performance of basketball athletes who are or have experienced mental health problems (anxiety, eating disorders/disordered, stress, burnout, kinesiophobia, attention-deficit/hyperactivity disorder) seen fromPre A2 - Post A2 witht-count value-12,988>t-table1.174, Sig value. 0.000< p value 0.05. The third hypothesis is accepted, namelyThere is influenceA-riseba training by providing Self-Manage Mental Health literacy to athletes during training on the shooting performance of basketball athletes who are or have experienced mental health problems (anxiety, eating disorders/disordered, stress, burnout, kinesiophobia, attention-deficit/hyperactivity disorder) seen fromPre A3 - Post A3 witht-count value-12,245 > t-table1.174, Sig value. 0.000< p value 0.05.

Table 6.
Results of paired-samples t tests

Group	t-table	t-count	df	Sig. (2-tailed)
Pre A1 - Post A1	1,174	-12,301	23	0,000
Pre A2 - Post A2	1,174	-12,988	23	0,000
Post A3 - Post A3	1,174	-12,245	23	0,000

Legend: there is a significant effect if P < 0.005

Table 7 displays the results of the two-way ANOVA test. The table shows that there is no significant difference between the three training groups A1, A2, and A3 (P>0.05). Meanwhile, there was a significant gap between groups B1, B2, B3, B4, B5, and B6 (P<0.05). In addition, the analysis results confirmed that there was an interaction between groups A and B (P<0.05). Consequently, further statistical analysis using Tukey's test was not performed due to the lack of interaction between groups.

Table 7.
Two-way factorial ANOVA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ariseba	33,422	2	16,711	,340	,713
Mental_Healt	1655,450	5	331,090	6,738	,000
Ariseba * Mental_Healt	1366,283	10	136,628	2,781	,007

Legend: There are differences and gaps if P < 0.005.
Further tests can be used if all three sources have P < 005.

Discussion

The research results showed that the three A-riseba training groups had a significant effect on the shooting performance of basketball athletes who were or had experienced mental health problems (anxiety, eating disorders/disordered, stress, burnout, kinesiophobia, attention-deficit/hyperactivity disorder). These results certainly further emphasize the usefulness of basketball shooting training using repetitions with increasing and continuous work. Training using repetition helps athletes' physical performance to adapt to tasks on the field (Coratella, 2022). Training with repetitions is an effort to adjust physical abilities to the workload that must be carried out during sports activities (Graham & Cleather, 2021). Repeated exposure to information, knowledge and work practices over a certain period of time will produce long-term memories related to information, knowledge and work practices (Souza & Oberauer, 2022). Task repetition has become an important method and has proven its usefulness in improving a person's ability to learn a particular skill (Cui & Luo, 2024). As well as shooting practice which can provide an atmosphere similar to a real match. Presenting or stimulating training to match actual competition helps athletes adapt their physical, technical and mental abilities in one series of training (Correia da Silva at al., 2019). Training that is similar to real match situations helps athletes not to stutter and get nervous during real matches (Dahlan, Hidayat, & Syahruddin, 2020). As well as shooting practice activities which are made easier by the use and/or utilization of technology. The use of technology in sports has driven success in the sports industry (represented by sports clubs), especially ingenerate and disseminate knowledge related to training and competition monitoring, sports performance enhancement, and health, recovery and injury management (Badescu et al., 2022). Various important problems in sports science are starting to be solved through the use of technology, one of which is in decision making, such as only determining training that suits the characteristics of athletes, determining training locations, recruiting coaches and coaching players (Yunchao, Mengyao, & Xingman, 2023).

The new findings from our research results are that the training group still experienced a significant increase in influence on shooting performance whether using or not using mental health countermeasures. These findings are also confirmed by the results of testing the fourth hypothesis that there is no difference in the influence between the three training groups on the shooting performance of current and experienced athletes/basketball players; anxiety, eating disorders/disordered, stress, burnout, kinesiophobia, attention-deficit/hyperactivity disorder. In connection with the fourth hypothesis, there are several important points that can be proposed for prediction. Since there are no significant differences between the three training groups (A1, A2, and A3), The Researchers predict that optimal efforts should be carried out comprehensively starting from involving parents and those closest to them, providing understanding and literacy of mental problems (Self-Manage Mental Health), coupled with regular screening (Cosh et al., 2024), utilizing infographics as a mental health promotion tool (Muir & Munroe-Chandler, 2020b), multi-layered and multi-system prevention with sports team doctors as the front guard (Mountjoy & Edwards, 2022). As well as being intensive and providing institutions to address and provide mental health services to school age athletes (Beasley & Hoffman, 2023). Meanwhile, there is a significant gap between groups (B1, B2, B3, B4, B5, and B6), and the results of the analysis confirm that there is an interaction between groups (A and B). Thus, the effects of mental health disorders will have different influences on the shooting performance of basketball athletes. Further efforts are needed to understand each mental problem faced by an athlete. A tiered approach is needed to further explore athletes' mental problems, monitoring, identifying individual fluctuations, and then carrying out clinical follow-up if important cases occur that need to be implemented(Meidl et al., 2024). For this reason, sports development institutions are required to improve by providing expert staff, mechanisms, regulations, and vehicles for education, management, prevention, rehabilitation, and healing of athletes' mental health.

Of course, this research still has various technical and non-technical shortcomings, therefore it is recommended for future research to minimize these errors so that the results obtained can be truly generalized. The technical problem is the minimum number of samples compared to the moderate variables proposed. This is important not to do in future research by increasing the number of samples. Non-technical, for example involving parents and those closest to them to attend and provide encouragement and motivation, in fact in some meetings sometimes they are not carried out optimally due to the absence of these elements for personal reasons, even though at the start of the research there was a written agreement. Apart from that, providing Self-Manage Mental Health literacy at the beginning of the research is borne by the trainer, of course with FGDs to refresh the trainer's understanding regarding Self-Manage Mental Health literacy before the research takes place, but for one reason or another the trainers think that it is better to involve mental experts. health so that in the middle of carrying out research this activity is borne by experts. Even though at the beginning there was some awkwardness for the players/students to get involved and interact, the rest went smoothly.

Conclusion

There is an influence of conventional A-riseba training, there is an influence of A-riseba training with the involvement of parents and people closest to them during training, there is an influence of A-riseba training with the provision of Self-Manage Mental Health literacy to athletes during training, there is no difference The influence of the three A-riseba exercises on the shooting performance of basketball athletes who are and have experienced mental health problems (anxiety, eating disorders/disordered, stress, burnout, kinesiophobia, attention-deficit/hyperactivity disorder). The Researchers predict that optimal efforts should be carried out comprehensively, because it has been proven that efforts carried out separately do not have significant differences in influence. The effects of mental health disorders will vary in their influence on the shooting performance of basketball athletes, so further efforts are needed to understand each mental problem faced by an athlete. Objectively, The Researchers realize that this study has a very minimal sample size compared to the number of moderate variables, so that the results of our study can be questioned when generalized, so The Researchers recommend that future research use a much larger sample. The lack of resources that The Researchers have also makes it difficult for us to monitor the presence of external influences, therefore future research should be prepared carefully to anticipate external influences that could influence the performance of the sample.

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Conflict of interest

All authors have no conflict of interest regarding this article.

References

Badescu, D., Zaharie, N., Stoian, I., Badescu, M., & Stanciu, C. (2022). A Narrative Review of the Link between Sport and Technology. *Sustainability (Switzerland)*, *14*(23). https://doi.org/10.3390/su142316265

Bahrami, A., Moradi, J., & Etaati, Z. (2020). The Effect of

Mental Fatigue on Three-Point Shot Performance in Skilled Basketball Players. *International Journal of Motor Control and Learning*, *2*(4), 4–10. https://doi.org/10.29252/ijmcl.2.4.4

Balyi, I., Way, R., & Higgs, C. (2013). Long-Term Athlete Development. In *Human Kinetics*. https://doi.org/10.1249/jsr.0b013e3181fe3c44

Beasley, L., & Hoffman, S. (2023). A Descriptive Look at the Mental Health Literacy of Student-Athletes. *Journal of Sport and Social Issues*, *47*(3), 256–276. https://doi.org/10.1177/01937235231171369

Boddington, B. J., Cripps, A. J., Scanlan, A. T., & Spiteri, T. (2019). The validity and reliability of the Basketball Jump Shooting Accuracy Test. *Journal of Sports Sciences*, *37*(14), 1648–1654. https://doi.org/10.1080/02640414.2019.1582138

Bompa, T. O., & Buzzichelli, C. A. (2019). Peridization: Theory and Methodology of Training. In *Journal of Chemical Information and Modeling* (Vol. 6).

Breslin, G., Shannon, S., Cummings, M., & Leavey, G. (2022). An updated systematic review of interventions to increase awareness of mental health and well-being in athletes, coaches, officials and parents. *Systematic Reviews*, *11*(1). https://doi.org/10.1186/s13643-022-01932-5

Breslin, G., Shannon, S., Haughey, T., Sarju, N., Neill, D., Leavey, G., & Lawlor, M. (2021). Athlete and Nonathlete Intentions to Self-Manage Mental Health: Applying the Integrated Behavior Change Model to the State of Mind Program. *Journal of Applied Sport Psychology*, *33*(1), 83–97. https://doi.org/10.1080/10413200.2019.1629547

Cao, S., Geok, S. K., Roslan, S., Sun, H., Lam, S. K., & Qian, S. (2022). Mental Fatigue and Basketball Performance: A Systematic Review. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.819081

Chang, C. J., Putukian, M., Aerni, G., Diamond, A. B., Hong, E. S., Ingram, Y. M., … Wolanin, A. T. (2020). American Medical Society for Sports Medicine Position Statement: Mental Health Issues and Psychological Factors in Athletes: Detection, Management, Effect on Performance, and Prevention-Executive Summary. *Clinical Journal of Sport Medicine*, *30*(2), 91–95. https://doi.org/10.1097/JSM.0000000000000799

Coratella, G. (2022). Appropriate Reporting of Exercise Variables in Resistance Training Protocols: Much more than Load and Number of Repetitions. *Sports Medicine - Open*, *8*(1). https://doi.org/10.1186/s40798-022-00492-1

Correia da Silva, D., Teoldo da Costa, V., Casanova, F., Manuel Clemente, F., & Teoldo, I. (2019). Comparison between teams of different ranks in small-sided and conditioned games tournaments. *International Journal of Performance Analysis in Sport*, *19*(4), 608–623. https://doi.org/10.1080/24748668.2019.1643598

Cui, Y., & Luo, S. (2024). "writing-To-learn": The influence of task repetition on CSL writers' attention to form. *Applied Linguistics Review*, *15*(3), 793–820. https://doi.org/10.1515/applirev-2022-0001

Dahlan, F., Hidayat, R., & Syahruddin, S. (2020). Pengaruh komponen fisik dan motivasi latihan terhadap keterampilan bermain sepakbola. *Jurnal Keolahragaan*. Retrieved from https://journal.uny.ac.id/index.php/jolahraga/article/view/32833

Daub, B. D., McLean, B. D., Heishman, A. D., Peak, K. M., & Coutts, A. J. (2023). Impacts of mental fatigue and sport specific film sessions on basketball shooting tasks. *European Journal of Sport Science*, *23*(8), 1500–1508. https://doi.org/10.1080/17461391.2022.2161421

Drazan, J. F., D'Amato, A. R., Winkelman, M. A., Littlejohn, A. J., Johnson, C., Ledet, E. H., & Eglash, R. (2015). Experimental and credentialing capital: An adaptable framework for facilitating science outreach for underrepresented youth. *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS*, *2015-Novem*, 3691–3694. https://doi.org/10.1109/EMBC.2015.7319194

Filipas, L., Ferioli, D., Banfi, G., Torre, A. La, & Vitale, J. A. (2021). Single and combined effect of acute sleep restriction and mental fatigue on basketball free-throw performance. *International Journal of Sports Physiology and Performance*, *16*, 415–420. https://doi.org/10.1123/IJSPP.2020-0142

Graham, T., & Cleather, D. J. (2021). Autoregulation by "repetitions in reserve" leads to greater improvements in strength over a 12-week training program than fixed loading. *Journal of Strength and Conditioning Research*, *35*(9), 2451–2456. https://doi.org/10.1519/JSC.0000000000003164

Herrero, C. P., Jejurikar, N., & Carter, C. W. (2021). The psychology of the female athlete: How mental health and wellness mediate sports performance, injury and recovery. *Annals of Joint*, *6*. https://doi.org/10.21037/AOJ-20-53

Iverson, G. L., Jones, P. J., Karr, J. E., Maxwell, B., Zafonte, R., Berkner, P. D., & McNally, R. J. (2020). Architecture of Physical, Cognitive, and Emotional Symptoms at Preseason Baseline in Adolescent Student Athletes With a History of Mental Health Problems. *Frontiers in Neurology*, *11*. https://doi.org/10.3389/fneur.2020.00175

Jeff Haefner, & Haefner, J. (2008). *How to Make Basketball Practice Fun : 60 Fun Youth Basketball Drills & Games*. USA: www.BreakthroughBasketball.com.

Jones, T. (2015). *Point guard play*. Conway: NBN Basketball.

Kimble, J. (2021). *The complete basketball coaches guide to footwork, balance, and pivoting*. Monterey: Presswire Coaches Choice.

Meidl, V., Dallmann, P., Leonhart, R., Bretthauer, B., Busch, A., Kubosch, E. J., … Hirschmüller, A. (2024). Validation of the Patient Health Questionnaire-4 for longitudinal mental health evaluation in elite Para athletes. *PM and R*, *16*(2), 141–149. https://doi.org/10.1002/pmrj.13011

Moreira, A., Aoki, M. S., Franchini, E., da Silva Machado, D. G., Paludo, A. C., & Okano, A. H. (2018). Mental fatigue impairs technical performance and alters neuroendocrine and autonomic responses in elite young basketball players. *Physiology and Behavior*, *196*, 112–118. https://doi.org/10.1016/j.physbeh.2018.08.015

Mountjoy, M., & Edwards, C. (2022). Athlete Mental Health Impacts of Harassment and Abuse in Sport. *Mental Health Care for Elite Athletes*, 153–163. https://doi.org/10.1007/978-3-031-08364-8_16

Muir, I. L., & Munroe-Chandler, K. J. (2020a). Using Infographics to Promote Athletes? Mental Health: Recommendations for Sport Psychology Consultants. *Journal of Sport Psychology in Action*.

Muir, I. L., & Munroe-Chandler, K. J. (2020b). Using Infographics to Promote Athletes' Mental Health: Recommendations for Sport Psychology Consultants. *Journal of Sport Psychology in Action*, *11*(3), 143–164. https://doi.org/10.1080/21520704.2020.1738607

Mulyono, A., Farida, L. A., Irawan, R., & Wijayanti, D. G. S.

(2019). Single Operator Application for Table Official on Basketball Game. *5th International Conference on Physical Education, Sport, and Health (ACPES 2019)*, *362*(Acpes), 183–186. https://doi.org/10.2991/acpes-19.2019.41

Nunes, N. A., Gonçalves, B., Coutinho, D., & Travassos, B. (2020). How Numerical Unbalance Constraints Physical and Tactical Individual Demands of Ball Possession Small-Sided Soccer Games. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.01464

Oltmans, E., Confectioner, K., Jonkers, R., Kerkhoffs, G. M. M. J., Moen, M., Verhagen, E., … Gouttebarge, V. (2022). A 12-month prospective cohort study on symptoms of mental health disorders among Dutch former elite athletes. *Physician and Sportsmedicine*, *50*(2), 123–131. https://doi.org/10.1080/00913847.2020.1868276

Putra, M. F. P., Kurdi, Syahruddin, S., Hasibuan, S., Sinulingga, A., Kamaruddin, I., … Ridwan, M. (2024). An Indonesian Version of Mental Toughness Index: Testing Psychometric Properties in Athletes and Non-athletes. *Retos*, *55*, 816–824. https://doi.org/10.47197/retos.v55.106086

Rahmah, R. H., Indrawati, F., & Palaniandy, V. (2024). Analyzing Utilization of Mental Health Services for National Health Insurance Participants in Indonesia. *Unnes Journal of Public Health*, *13*(1), 1–9. https://doi.org/10.15294/ujph.v13i1.68905

Roberto Pelicer, F., Carlos Lopes, J., de Oliveira Santos Miyazaki, M. C., Lopes Verardi, C. E., & Kawano Nagamine, K. (2023). Behavioural Profile of Young Soccer Players in Social Projects. *Retos*, *50*, 913–917. https://doi.org/10.47197/retos.v50.97823

S.M. Cosh, D.G. McNeil, A. Jeffreys, L. Clark, & P.J. Tully. (2024). Athlete mental health help-seeking: A systematic review and meta-analysis of rates, barriers and facilitators. *Psychology of Sport and Exercise*, *71*. Retrieved from https://www.sciencedirect.com/science/article/pii/S1469029223002108#sec4

Saichudin, & Munawar, S. A. R. (2019). *Buku Ajar Bolabasket*. Malang: Wineka Media.

Souza, A. S., & Oberauer, K. (2022). Promoting Visual Long-Term Memories: When Do We Learn From Repetitions of Visuospatial Arrays? *Journal of Experimental Psychology: General*, *151*(12), 3114–3133. https://doi.org/10.1037/xge0001236

Tai, W.-H., Lo, S.-L., YU, C.-F., Wang, M.-H., SONG, C.-Y., & Peng, H.-T. (2016). Influence of approach speed and distance on biomechanics during single-legged running vertical jump. *34 International Conference on Biomechanics in Sports, Tsukuba, Japan*, 18–22.

Tangkudung, J., & Wahyuningtyas, P. (2012). Sports Coaching" Sports Performance Coaching. *Jakarta, Smart Jaya*.

USA basketball. (2014). *Usa Basketball Youth Development*. Colorado: USA basketball.

Wiyaka, I., Hasibuan, N., & Adhikahriani. (2020). Development of Basketball Skills Test Based on Shooting Techniques for Sport Sciences Students. *Proceedings of the 1st Unimed International Conference on Sport Science (UnICoSS 2019)*. https://doi.org/10.2991/ahsr.k.200305.028

Yunchao, M., Mengyao, R., & Xingman, L. (2023). Application of virtual simulation technology in sports decision training: a systematic review. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1164117

Zhou, D. (2015). Biomechanical Analysis of Dunks Technology. *The Open Cybernetics & Systemics Journal*, *9*(1), 1783–1789. https://doi.org/10.2174/1874110x01509011783

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