

The Effect of Relaxation Exercises, and Concentration on Shooting Free Throw Results after Maximum Training on Basketball Team at Integrated Islamic Junior High School Bina Amal Semarang

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Abstract

This study aims to analyze the effect of relaxation exercises and concentration on the results of free-throw shooting. Relaxation exercises used by researchers are progressive relaxation exercises and autogenic relaxation exercises. This experimental study uses 2x2 factorial design. A total of 20 men's basketball athletes were selected as samples with a purposive sampling technique, then divided into four experimental groups. Data analysis techniques using ANOVA. The results of the study: there is a difference in effect between progressive relaxation exercises and autogenic relaxation on the results of free-throw shooting ($F_{\text{value}} = 8.471 > F_{\text{table}} = 3.59$), progressive relaxation exercises are better than autogenic relaxation exercises, there is a difference in effect between high and low category concentrations on free-throw shooting results, ($F_{\text{value}} = 8,471 > F_{\text{table}} = 3.59$), athletes with high category concentrations have more influence on free-throw shooting results, compared to athletes with low category concentrations, there is an interaction between relaxation training methods, and concentration on the results of free-throw shooting, ($F_{\text{value}} = 5.882 > F_{\text{table}} = 3.59$). Conclusions from the results of this study are there is a difference in the effect between relaxation exercises (progressive and autogenic) on the results of free-throw shooting on the Integrated Islamic Junior High School Bina Amal basketball team. There is a difference of effect between high and low category concentrations on free-throw shooting on the Bina Amal Integrated Islamic Junior High School basketball team. There is an interaction between relaxation training methods and concentration on free-throw shooting on the Integrated Islamic Junior High School Bina Amal basketball team. This research suggests that the results of the study of the effects of progressive relaxation exercises, and concentration on the results of free-throw shooting can be continued by researchers and other sports enthusiasts with different problem variables so that the research results are more complex and in-depth.

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INTRODUCTION

Basketball is a relatively simple game, which is a game between two teams where each team throws the ball into each other in the ring or basket of the opposing team to score or score (Agus Salim, 2008). The goal of each team is to score into the opponent's ring and prevent the opposing team from scoring. In playing basketball, there are basic techniques that must be mastered by every player. Some basic techniques in the game of basketball are throwing, passing, and catching the ball, dribbling the ball, shooting the ball into the basketball ring (Muhyi Faruq, 2009). Teaching technique is one of the components that influence the achievement of learning competence in basketball techniques. Teaching techniques determine the success of achieving basketball technique learning outcomes so that ultimately learning objectives can be achieved well (Satrio Andi Nugroho, 2019). Optimal achievement can only be achieved if an athlete has gone through very complex training stages (Bafirman HB, 2013).

One of the dominant techniques in basketball is shooting because victory is determined by getting the most numbers in the game. While basketball shots are divided into two, namely field shots and penalty shots. Field shots are shots that are carried out in an attack by a team in a game, whereas penalty shots are shots that are given to players, because opposing players make mistakes, and are decided by the referee to be subjected to free throws (Kurniawan, 2014). Shooting is the target of every attack. Mastery of this technique has a very important role in basketball, including free throw shots that often determine victory or defeat in a match (Margono, 2016). In the opinion of Setyobroto in Komarudin (2015), relaxation is a condition marked by inactivity and tension. Shows a basketball player has to relax if the player does not feel any pressure in the player. Appropriate relaxation exercises are progressive muscle relaxation and autogenic relaxation.

In progressive muscle relaxation techniques include the presence of systematic tension followed by relaxation in body muscle. Muscle tension during exercise is firm, which will result in a high level of relaxation in the muscle when the muscle is relaxed (Komarudin, 2015). Whereas in autogenic relaxation, Johannes Heinrich Schultz introduces this technique to train someone to do self-suggestion, so that he can change the condition of his health to control the emergence of emotions that are too turbulent. So, by doing autogenic training, an athlete can improve the condition of his fitness. Athletes can also regulate and control the emergence of emotions at the desired level (Gunarsa, 2008). When anxious, the athlete's muscles experience excessive tension, the ability to determine the rhythm, tempo, or timeliness of the reaction decreases and the function of the muscles becomes less coordinated (Monty in Ekawaldi, 2014). According to Navaneetan and Soundara (2010) that players during progressive relaxation exercises get better performances on anxiety. Relaxation, in addition to changing the mindset of individuals, this technique can also reduce anxiety, manage stress, and can increase concentration (Arizona, 2016).

Concentration is the ability to focus attention on tasks without being interrupted and influenced by external and internal stimuli (Wilson in Komarudin, 2015). Concentration is concerned with the focus of activities, and there are objects that are considered, have a certain period of time, and have the opportunity to influence the process, and the results of behavior (Naimatul Jamaliah, 2015). In basketball, this concentration is needed by a player to be able to win a match or score points. The technique of shooting free throw relaxation and concentration of both is a massive influence for players in the match or during practice. A coach must provide an understanding of the importance of concentration in the activities carried out by the players, because all activities require a high level of concentration to complete tasks quickly, and precisely (Yusuf Muttaqin, 2019).

Doing free throw shots other than proper technique requires a high level of calm and

concentration. If the player can combine calmness, concentration, and is supported by proper technique, the ball will be easy to enter the ring, and the team will get extra points. When doing free throws, the free shooters generally do the preparation and concentration. This makes the free-throw done smoothly (Oliver, 2007).

Therefore concentration, and relaxation or calm are very necessary in free throw in basketball, because both are one of the factors that influence the success in free throw shooting.

Researchers conducted observations by conducting a free throw shooting test to all extracurricular participants in Integrated Islamic Junior High School Bina Amal Semarang on January 14, 2017. Of the 20 samples tested, ten times free-throw was produced excellent (9-10 balls into the basket) 0%, good (7-8 balls in the basket) 5%, enough (5-6 balls entered the basket)

0%, less (3-4 balls in the basket) 45% and less (1-2 balls in the basket) 50%. From these data, the author concludes the free throw shooting capability of the basketball team at Integrated Islamic Junior High School Bina Amal Semarang is lacking.

From the statement above, the authors are interested in researching with the title Effect of Relaxation Exercises, and Concentration on Shooting Free Throw Results after Maximum Training on the Basketball Team at Integrated Islamic Junior High School Bina Amal Semarang.

METHODS

This study uses an experimental research method with a quantitative approach, as well as a 2x2 factorial research design.

Table 1. Factorial Research Design

Concentration (B)	Relaxation (A)	
	Progressive (A1)	Autogenic (A2)
High (B1)	A1B1	A2B1
Low (B2)	A1B2	A2B2

Information:

- A₁B₁ : progressive relaxation treatment with a high concentration level
- A₁B₂ : progressive relaxation treatment with a low concentration level
- A₂B₁ : autogenic relaxation treatment with a high level of concentration
- A₂B₂ : autogenic relaxation treatment with a low concentration level

The design of this study illustrates that one group was given progressive relaxation treatment, and another group was given autogenic relaxation treatment. Still, before being treated, a pre-test was first performed in the form of a free throw shooting skill test. After being given a pre-test and known the results, they were then given progressive and autogenic relaxation treatment for 12 meetings. After giving treatment, the sample is given a final test (post-test) in the form of a free throw throwing skills test again. Thus the results of the treatment can be known more accurately because it can be compared with the situation before being given treatment and after being given treatment.

The population in this study were all extracurricular basketball participants in the age group 13-15 in Integrated Islamic Junior High

School Bina Amal Semarang in 2017 as many as 35 athletes. The sample of this study was the male athlete of the Bina Amal Semarang basketball team aged 13-15 years. In this study, the number of researchers who joined the basketball team extracurricular activity at the Integrated Islamic Junior High School Bina Amal Semarang amounted to 35 athletes. The sampling technique in this study was purposive sampling, which is a sampling technique that is based on the characteristics or objectives set by the researcher. Where the conditions for becoming a sample are as follows:

1. Male students aged 13-15 years
2. Have followed basketball extracurricular for at least one year
3. Able to do basic shooting correctly and adequately

4. Physically and mentally healthy and willing to be a sample

In determining the sample of this study, the researchers divided the sample into groups based on the measurement of the concentration test using the grid concentration test, which is a high concentration with scores obtained above number 20 and above. While the low concentration with scores below 20. A sample of twenty athletes was divided into two groups, namely, experiment 1 with ten athletes with progressive relaxation treatment and experimental group 2 with ten athletes with autogenic relaxation treatments. The experimental group 1 consisted of ten athletes who had high levels of concentration trained with progressive relaxation treatments, and ten athletes who had low levels of concentration were trained with autogenic relaxation treatments. The experimental group 2 consisted of ten athletes who had a high concentration level, and ten athletes had a low concentration level. For details, it can be seen in Table 2.

Table 2. The Distribution of Samples into Each Treatment Group

Group	Treatment	Total
A ₁ B ₁	A group of athletes who have a high level of concentration using progressive relaxation treatment	5
A ₁ B ₂	A group of athletes who have low levels of concentration using progressive relaxation treatments	5
A ₂ B ₁	A group of athletes who have a high level of concentration using autogenic relaxation treatments	5
A ₂ B ₂	A group of athletes who have low levels of concentration using autogenic relaxation treatments	5

The independent variable in this study is the relaxation exercise method, which is divided into two types, namely the progressive relaxation exercise method and autogenic relaxation. The attribute variables in this study are the high and low concentration categories. The dependent variable in this study is the result of free-throw shooting. Concentration gave a substantial contribution to the results of shooting under basketball and contributed 47% (Puput Wicaksono, 2013). The exercise was carried out in 14 meetings, namely one pre-test meeting, twelve treatment meetings with the given training method, and one post-test meeting.

RESULTS AND DISCUSSION

Table 3. Free Throw Pre-Test and Post-Test Data

Relaxation	Concentration	Statistics	Data source		Difference
			Pre-test	Post-test	
Progressive (A1)	High (B1)	Average	4.4	7.2	2.8
		Total	22	36	14
	Low (B2)	Average	2.8	5	2.2
		Total	14	25	11
Autogenic (A2)	High (B1)	Average	2.6	5	2.4
		Total	13	25	12
	Low (B2)	Average	2.8	4.8	2
		Total	14	24	10

Table 4. Normality Test

Group		Kolmogorov-smirnova		
		Statistic	df	Sig.
Results	A1B1	0.231	5	0.200*
Shooting	A1B2	0.300	5	0.161
Free throw	A2B1	0.300	5	0.161
	A2B2	0.231	5	0.200*

The data normality test of table 4 shows that the A₁B₁, A₁B₂, A₂B₁, and A₂B₂ groups are samples that come from normally distributed populations because the significance value is higher than 0.05.

Table 5. Homogeneity

Levene statistic	df1	df2	Sig.
0.395	3	16	0.758

The homogeneity test showed a significance value higher than 0.05 (Sig 0.592 > 0.05) on the swimming speed variable so that the sample activities were homogeneous. Samples come from populations that are normally distributed and are homogeneous, followed by analytical tests using parametric tests.

The research hypothesis testing is based on the results of data analysis and variance analysis interaction. Anava summary results show a significant difference.

Table 6. Anava Summary Results

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	19.400 ^a	3	6.467	7.608	.002
Intercept	605.000	1	605.000	711.765	.000
Relaxation exercises	7.200	1	7.200	8.471	.010
Concentration level	7.200	1	7.200	8.471	.010
Relaxation exercises * Level of concentration	5.000	1	5.000	5.882	.027
Error	13.600	16	.850		
Total	638.000	20			
Corrected total	33.000	19			

a. R squared = 0.,588 (Adjusted R squared = 0.511)

Based on the results of data analysis table 6, hypothesis testing can be performed as follows:

Table 7. Estimated Marginal Mean

Relaxation exercise	Mean	Std. Error	95% confidence interval	
			Lower bound	Upper bound
Progressive	6.100	.292	5.482	6.718
Autogenic	4.900	.292	4.282	5.518

The first hypothesis which states there is a difference effect between progressive relaxation exercises and autogenic relaxation on improving the results of free-throw shooting on the basketball team at the Integrated Islamic Junior High School Bina Amal which was tested using the Anova test obtained $F_{value} = 8.471$ with a significance value of 0.005. The results of this calculation are consulted with table F with the numerator $dk = 1 (b-1)$ and the denominator $dk (kb (n-1))$, with a significance level of 0.005 obtained $F_{table} = 3.59$, because $F_{value} = 10.664 > F_{table} = 3.59$, with a significance level $0.010 <$

0.05 , then H_a which reads that there is a difference in effect between progressive relaxation exercises and autogenic relaxation on the improvement of free throw shooting results on the basketball team at the Integrated Islamic Junior High School Bina Amal is accepted.

The second hypothesis, which states there is a difference in effect between the high and low category concentrations on the basketball team at the Integrated Islamic Junior High School Bina Amal, was tested using the Anava test and obtained $F_{value} = 8.471$ with a significance value of 0.010. The results of this calculation are

consulted with table F with the numerator dk = 1 (b-1), and the denominator (kb (n-1)), with a significance level of 0.005 obtained $F_{table} = 3.59$, because $F_{value} = 5.882 > F_{table} = 3.59$, with a significance level of $0.010 < 0.05$, the H_a that

reads there is a difference in the influence of high and low concentrations on the results of the free-throw shooting at Integrated Islamic Junior High School Bina Amal Bina Amal is accepted.

Table 8. Estimated Marginal Mean Concentration

Category concentration	Mean	Std. Error	95% confidence interval	
			Lower bound	Upper bound
High	6.100	.292	5.482	6.718
Low	4.900	.292	4.282	5.518

Thus seen from the average value of athletes who have high concentrations have more effect on free-throw shooting results compared to athletes who have low concentrations.

throw, concentration has a significant contribution so that athletes can focus releasing the ball into the ring. Vo2max basketball plays an essential role in maintaining the stability of players so that athletes don't always feel tired when in the field.

Athletes who have high levels of concentration can affect the emotional stability of athletes when shooting free throws, and this is in line with the findings found by Puput Wicaksono (2013) which states that there is a relationship between concentration on the results of shooting under basketball with a contribution of 47% in which athletes having a high concentration is certainly better than having a low concentration. In shooting a free

Mylsidayu (2014) concentration is the ability of individuals to focus or focus attention on one stimulus (object) in a certain period. Concentration is the ability to maintain focus on the activities that exist in an environment or atmosphere when the environment changes rapidly to thoughts about the past or the future that causes unrelated cues often make a chaotic appearance.

Table 9. Estimated Marginal Mean Interaction Of Relaxation Exercises and Concentration On The Results Of Free-Throw Shooting

Relaxation exercises	Level of concentration	Mean	Std. Error	95% confidence interval	
				Lower bound	Upper bound
Progressive relaxation	High	7.200	.412	6.326	8.074
	Low	5.000	.412	4.126	5.874
Autogenic relaxation	High	5.000	.412	4.126	5.874
	Low	4.800	.412	3.926	5.674

There is an interaction between relaxation training methods and concentration on the results of free-throw shooting in basketball athletes at Integrated Islamic Junior High School Bina Amal is accepted. using the Anava test obtained $F_{value} = 8.471$ with a significance value of 0.027. The results of F_{table} with the numerator dk = 1 (b-1) and the denominator dk (kb (n-1)). with a significance level of 0.005 obtained $F_{table} = 3.59$. because $F_{value} = 5.882 > F_{table} = 3.59$. with a significance level of $0.027 < 0.05$. So H_a . there is an interaction between

relaxation training methods and concentration on the results of free-throw shooting on the basketball team at Integrated Islamic Junior High School Bina Amal can be accepted.

CONCLUSION

The conclusion from the results of this study is that there are differences effect between Relaxation exercises (progressive and autogenic) on the results of free-throw shooting on the basketball team at Integrated Islamic Junior

High School Bina Amal. There is a difference effect between high and low category concentration on free-throw shooting on the basketball team at Integrated Islamic Junior High School Bina Amal. There is an interaction between relaxation training methods and concentration on free-throw shooting on the basketball team at Integrated Islamic Junior High School Bina Amal. This research proves the application of relaxation training programs (progressive and autogenic) can improve good self-control ability so that it can be used to improve the ability of free-throw shooting on the basketball team at Integrated Islamic Junior High School Bina Amal

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