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## Effect of guided music relaxation training on the shooting performance of district level school going children

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### Abstract

The current research work has been undertaken by the researcher to know the effects of guided music relaxation training on the shooting performance of district level school going children. The age of the participants who were selected for the experiments was  $13 \pm 2$  years. A total of 30 children were randomly selected and allocated to the experimental and control groups. The pre data from the participants was collected in advance prior to the training given. The parent consent was obtained. The training program included listening to meditative music at slow pace and volume for 20 minutes. For 3 days a week. The training program was carried out for 12 weeks. The results of the study are based on the analysis of covariance. All the assumptions which need to be fulfilled before employing this technique were fulfilled and tested in advance. Based on the results of the study the researcher has concluded that guided music relaxation technique has a positive impact on the shooting performance.

**Keywords:** Relaxation, music, training, shooting

### Introduction

The performance of shooters depends on wide array of factors ranging from physical, physiological and psychological. The physical factors may include strength, endurance, flexibility etc. that may be developed by regular training. The physiological factors may include the breathing rate, blood pressure, heart rate etc. but in shooting the psychological factors are of vital importance as the shooter at the time of execution need to be relaxed which is possible only possible after regular training and meditative practices. The researchers and scientists have trained many new methods of psychological training which may be used to enhance the psychological makeup and relaxation of the shooters. Many techniques such as meditation, mental imagery, progressive relaxation etc. have been used by the coaches to allow the shooters to stay calm and bring the body and mind in harmony for the competitions. Some of the researchers have also tried music also as a way of relaxation of the shooters and they argue that the when the music is heard by the shooters in a peaceful environment by the practitioners, the negative emotions and anxiety level goes down and accuracy while shooting increases. The attention is diverted from the negative aspects such as pressure of audience and opponents, fear of losing etc. The music practice may have also help in bringing many favorable physiological aspects also such as bringing the blood pressure to normal, decreasing anxiety and reducing the release of harmful hormones before the competitions. In shooting the unwanted movements in the body may result in the missing of the target at the last moment. The relaxation of mind is achieved when the nerve currents in the mind are settled and flowing in relaxed manner. The effect of relaxation practice through music is mostly investigated in the adults but there is a paucity of researches among younger shooters. But the players are needed to be introduced to these training strategies, so that they can learn the benefits of mental relaxation required for shooting performance.

The purpose of the study was to determine the effects of the guided music relaxation training on the young shooters performance.

### Methodology

For the purpose of study a total of 30 participants were selected and divided in the control

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(n=15) and experimental (n=15) group. The mean age of the participants was 12±2 years and they were selected randomly from district training academy. The participants voluntarily agreed to take part in the study. The parent consent was obtained. The training program included listening to meditative music at slow puce and volume for 20 minutes. For 3 days a week. The training program was carried out for 12 weeks. The design used in the study is pretest and posttest design. The design depicts that the pre-test for both the groups will be done before the initiation of the experimental protocol begins. After the cessation of treatment, the post- test data was recorded for all the selected dependent variables.

**Statistical technique**

The data was analyzed with the help of SPSS 20. Descriptive statistics i.e. mean and standard deviation was used to describe the nature of data. The significance of difference in the pre and posttest mean values was tested using dependent t test. The posttest mean values of control and experimental groups were compared by using independent t test. To test the significance if difference of mean values of control and experimental groups after eliminating the effect of covariates, ANCOVA was used. The level of significance was set at 0.05.

**Results**

The descriptive statistics for the data sets is presented in table 1.

**Table 1:** Descriptive statistics

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
E Pre-SS	15	38.00	57.00	49.7333	1.33619	5.17503
E Post-SS	15	66.00	82.00	74.2000	1.49984	5.80886
C Pre-SS	15	32.00	42.00	38.1333	.79801	3.09069
C Post-SS	15	33.00	40.00	36.0000	.49761	1.92725
Valid N (list wise)	15					

Table 1 shows the descriptive statistics of the pre and post shooting performance of the participants belongs to the experimental and control groups. The table shows that the mean and SD for E Pre-SS, E Post-SS, C Pre-SS and C Post-SS were found to be 49 (5.17), 74 (5.8), 38 (3.09) and 36

(1.92) respectively.

To test the normality of the data, the researcher has employed tests of normality and the same has been presented in the Table 2.

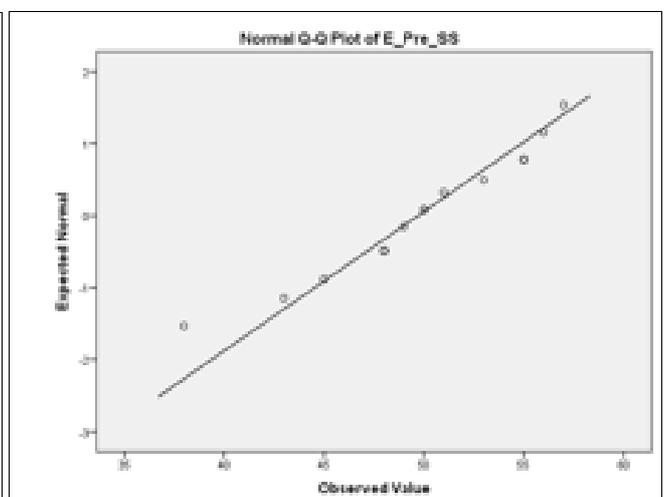
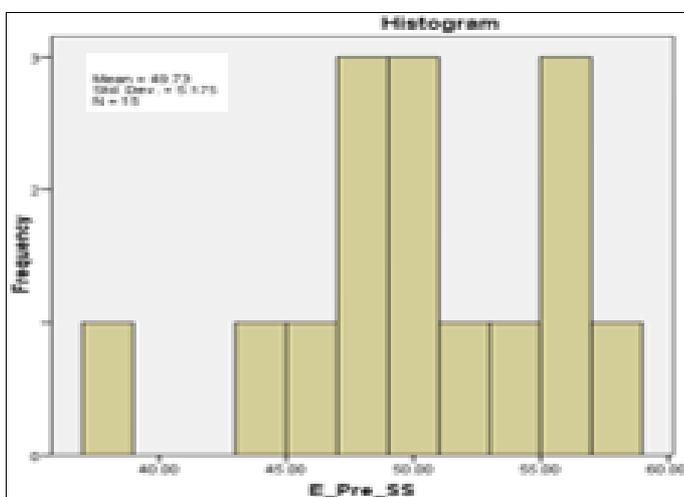
**Table 2:** Tests of normality

	Kolmogorov-S mirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	DF	Sig.	Statistic	DF	Sig.
E Pre-SS	.169	15	.200*	.950	15	.530
E Post-SS	.152	15	.200*	.909	15	.132
C Pre-SS	.283	15	.002	.829	15	.009
C Post-SS	.300	15	.001	.866	15	.029

\*This is a lower bound of the true significance. (A). Lilliefors Significance Correction

Table 2 shows the values of Shapiro-Wilk statistics and their significance value. Insignificance of these statistics will fulfill the assumption for the quantitative statistics. It is evident that the significance value of first two data sets is more than 0.05 which means that these are insignificant. But, last two data sets were found to be significant as the sig. value is less than

0.05. Due to the less sig. value in last two data sets, the results of the study might include some errors in them. The researcher has presented histograms and Q-Q Plots to understand the nature of the data and the same has been presented in figure 1-8.



**Fig 1 and 2:** Histogram and q-q plots for the experimental group pre data on shooting performance

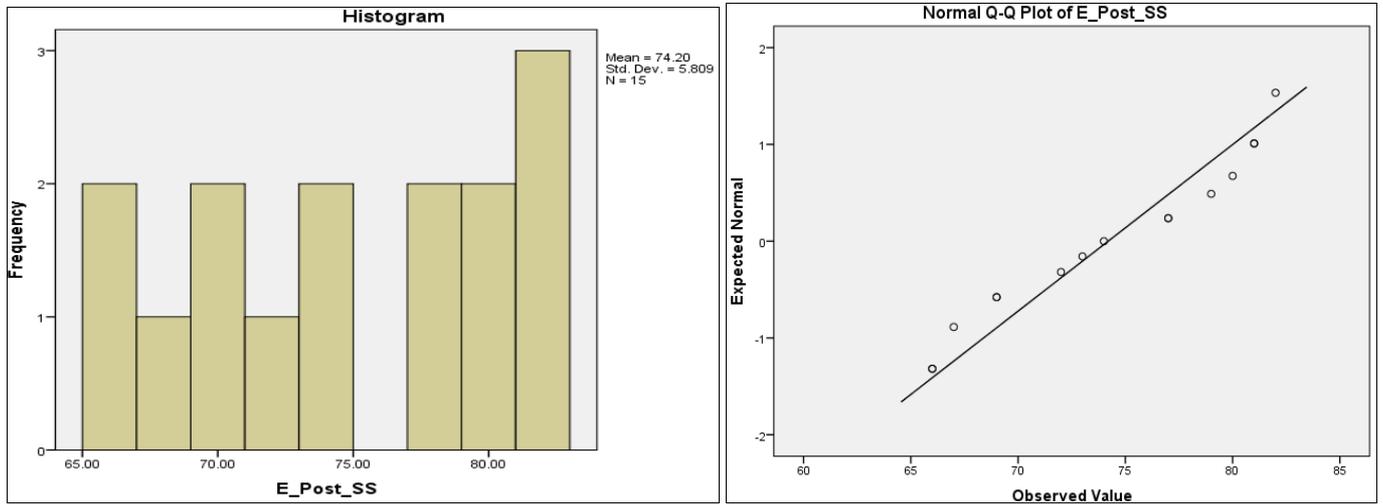


Fig 3 and 4: Histogram and q-q plots for the experimental group post data on shooting performance

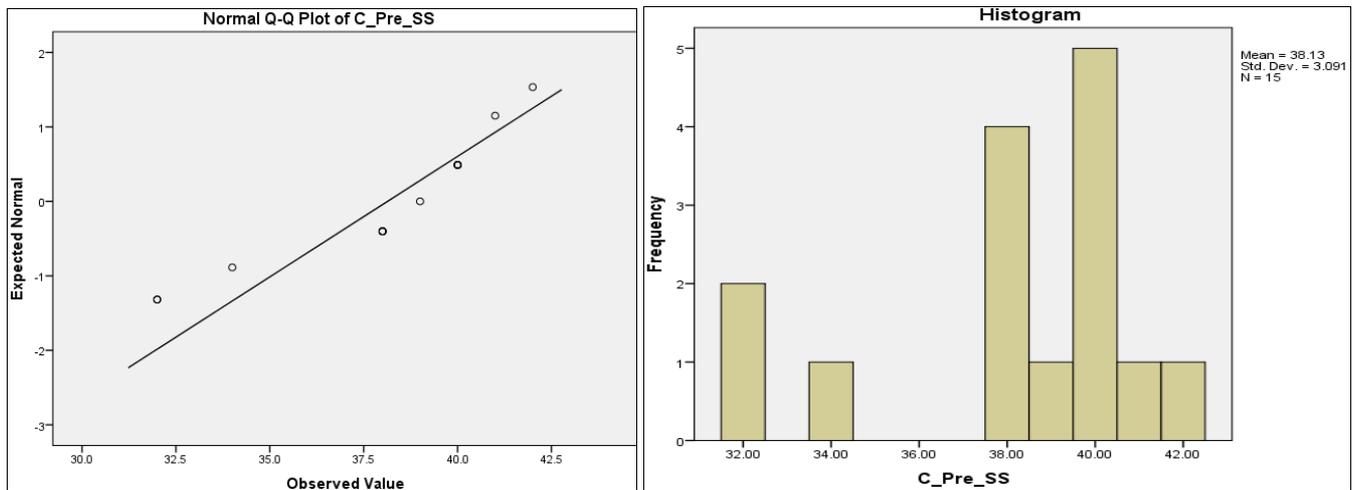


Fig 5 and 6: Histogram and q-q plots for the control group pre data on shooting performance

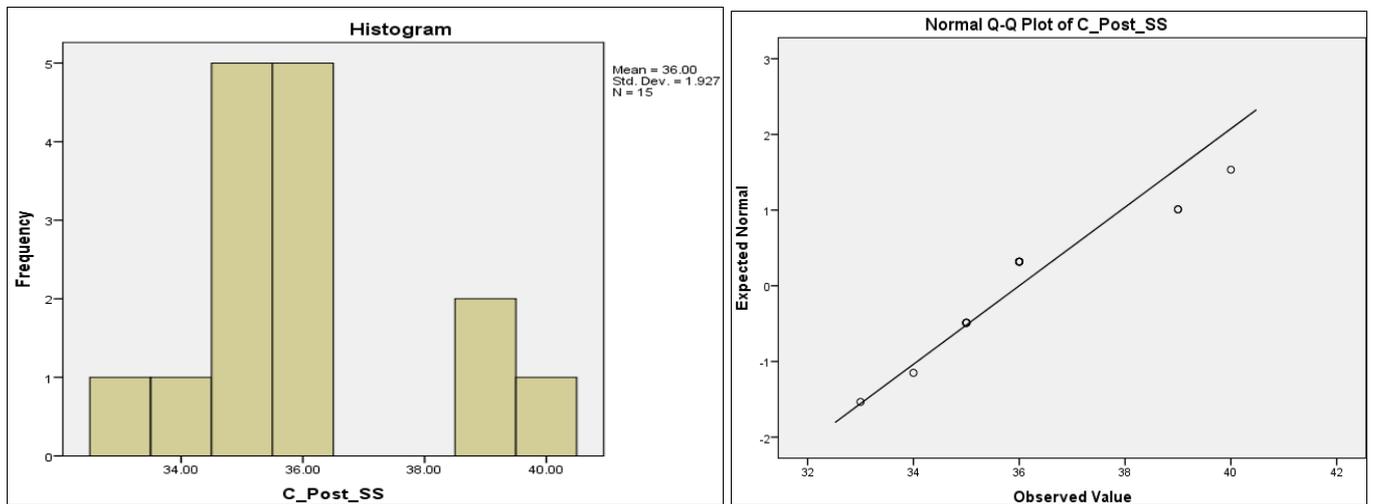


Fig 7 and 8: Histogram and q-q plots for the control group pre data on shooting performance

The researcher has applied dependent t-test to check the effectiveness of the treatment and the same have been presented in table 3.

Table 3: Paired samples test

		Paired Differences				t	DF	Sig. (2 tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	E Pre SS - E Post-SS	-24.46667	8.20163	2.11765	-29.008	-19.92	-11.5	14	.000
Pair 2	C Pre-SS – C post-SS	2.13333	3.46135	.89372	.21650	4.05	2.387	14	.032

Table 3 is showing the results of the dependent t-test which has been applied to the data set of experimental group pre-post and control group pre-post. The 2-tailed sig. value for pair 1 shows that the t value (-11.5) is significant as its corresponding sig. value is less than 0.05. Since, the t value is significant it is evident that the treatment to the experimental group was effective in improving the shooting performance.

The same results can be seen in case of pair 2 also. But, since the second group did not get any training, this change in the performance might be attributed because of the internal variation or the reliability of the test.

The analysis of covariance on the post data of shooting scores of experimental and control group is presented in table 4.

**Table 4:** Analysis of covariance on the post data of control and experimental group

Dependent Variable: Post-SS					
Source	Type III Sum of Squares	DF	Mean Square	F	Sig.
Pre-SS	2.869	1	2.869	.149	.703
Treatment	3836.835	1	3836.835	198.635	.000
Error	521.531	27	19.316		
Total	102549.000	30			
Corrected Total	11468.700	29			

(A). R Squared = .955 (Adjusted R Squared = .951)

Table 4 shows that the pre data of sports performance was not different in both the groups as the corresponding sig. value (0.703) of Pre-SS is more than 0.05. As far as the sig. value of treatment is concerned, it was found significant as its corresponding sig. value (0.000) is less than 0.05. These results shows that the training was effective.

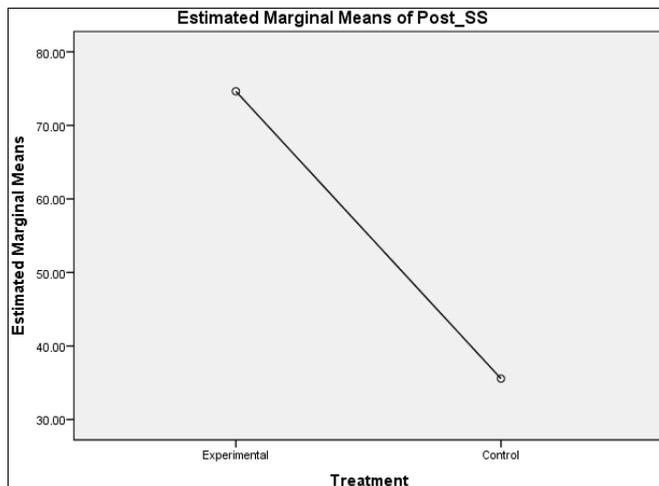
might have been affected or moderates and the factors like anxiety, stress etc. could have been reduced significantly due to the training protocol.

**Conclusion**

On the basis of the results of the study it might be concluded that the guided music relaxation training has a positive and significant impact on shooting performance.

**References**

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**Fig 9:** Graphical representation of the scores of post shooting performance of control and experimental group

**Discussion of findings**

The study was undertaken with an idea to explore the probability of change in the shooting performance due to the administration of guided music relaxation training protocol. The results of the study indicated that the shooting performance could be positively improved by the administration of systematically designed guided music relaxation training protocol. The earlier researches conducted to investigate the effect of music relaxation techniques on the sports performance in various sports has contributed positively in the literature. Although the children have short attentive span in any of the techniques used for relaxation and the researchers face difficulties in administration but in the present study it was noted that the children patiently participated in this training and they were noted to be relaxed and focused in their training sessions of shooting. The participants were also asked to focus on their shooting technique while listening to the music. Hence, the anxiety level got reduced while the students assume themselves training for shooting.

The electrical current flowing in the nerves of the participants