

## **Effect of Competitive Anxiety on Heart Rate and Shooting Efficiency of Female Air Pistol Shooters (10 Mts)**

**Jogbinder Singh Soodan, Sandeep Kaur and Ashok Kumar**

### **Abstract**

**Aim:** To find out the correlation between competitive anxiety, heart rate and shooting efficiency of female national shooters. **Material & Methods:** The study was conducted on 35 female shooters and their age ranged 15 to 23 years. All subjects, which have been selected for sampling, participated in National or International level competitions and have been selected from SAI centre Badal, District Shri Mukatsar Sahib (Punjab). **Result:** It was found that the shooting efficiency of pistol shooters is insignificant and negatively related with competitive anxiety. **Conclusion:** The results showed that heart rate before and during competition (Max. HR) and competitive anxiety negatively correlated with each other but competitive anxiety insignificantly related with heart rate of the national pistol shooters of 10M range.

#### **Jogbinder Singh Soodan**

Assistant Professor  
Akal College of Physical Education  
Mastuana Sahib, Sangrur (Punjab) India  
E-mail: jogbinder.jb@gmail.com

#### **Sandeep Kaur**

Research scholar  
Akal College of Physical Education  
Mastuana Sahib, Sangrur (Punjab) India  
E-mail: shootersandeepkaur@gmail.com

#### **Ashok Kumar**

Associate Professor  
Department of Sports Science  
Punjabi University Patiala (Punjab) India

**Key Words:** Pistol shooters, SCAT, Anxiety, Shooting Efficiency

**DOI:** 10.18376/jesp/2017/v13/i1/111273

### **Introduction**

Shooting is considered as one of the sports that can be taken up by any individual or participant regardless of age and sex for recreation and professional involvement. Anxiety is a common word, which we used in daily life. It is not about the particular job, work, gender, age difference and department. It is an Emotion about each and every person. Sometimes people considered it as fear, Anxiety is different from fear. Anxiety plays an important role to do any work on the other hand higher level Anxiety destroy the focus of person in particular work. Sports differ from one another so all sports generate different amount and different type of Anxiety which affect the performance of sportsperson negatively or positively totally depends on the level of Anxiety and type of sport. Anxiety is an Emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure. Heart rate is the speed of Heart Beat. Heart Rate is evaluated by the number of contraction of the heart per minute. Heart Rate is different from body to body and condition to condition. It depends on physiological needs of the person. Environment plays important role for the Heart Rate. At High Altitude, Sea level and underground Heart is vary in every condition. Heart Rate is different during training, before competition, during competition after competition. We can say that, Heart rate depends on many factors that factors effects the Heart Rate at different type of levels. Efficiency is an ability to do any work successfully and well mannered with comfortable feel. This word often use in every field to do things in right way with

their possible efforts. Shooting efficiency is related with the ability of pistol shooters regarding shoot on the target.

### **Material & Methods**

The female pistol shooters numbering about 35 have been selected as a subject for the conduct of present study. All the female shooters are in the age group of 15-23 years, who have participated at national and international level. Evaluate the psychological factors of the shooters, a Sports Competitive Anxiety Test (SCAT) was used for the sports competition anxiety before and during and after the competition. Resting heart rate of the subject investigated with the help of Heart Rate monitor. Efficiency of pistol shooting investigated by used 10 bullets hit in the target. Pistol Shooters (10M) were selected for the sample and data gathered from SAI Training Centre Pistol & Rifle Shooting Range, Village Badal district Mukatsar Sahib (Punjab). Following steps have been taken in procedure for tools for measurement of desired Psychological & Physiological variables in materials & methodology.

**Table 1. Psychological Variables used for the measurement of Shooting Efficiency**

<b>Variables</b>	<b>Test items</b>	<b>Unit of measurement</b>
<b>Efficiency</b>	10 shots hit in target	1 TO 10 NUMBER
<b>Psychological measurement</b>	SCAT	HIGH ,MOD, LOW
<b>Before competiton heart rate</b>	Heart rate monitor	BPM
<b>Maximum heart rate</b>	Heart rate monitor	BPM

For the purpose of study, the Competitive Anxiety in shooting was evaluated with the help of a questionnaire given to the participants of 10 M Pistol shooting after the competition and they are asked to fill it independently. The demonstration have been given before the filling of a questionnaire i.e Sports and Competitive Anxiety Test (SCAT). Resting heart rate of the subject investigated with the help of Heart Rate monitor. Efficiency of pistol shooting investigated by used 10 bullets hit in the target hitting no. (1-10) by the shooter considered as scoring.

### **Result and Discussion**

In analysis part the Mean and SD of Efficiency in shooting was found to be 6.9 and 1.62, whereas in case of Competitive Anxiety score the mean and SD was observed to be 18.43 and 3.78 respectively. Mean maximum heart rate and standard deviation (S.D) is  $82.20 \pm 5.73$ , Mean resting heart rate and standard deviation (S.D) is  $77.03 \pm 6.30$  respectively as shown in Table 2.

In Case of Correlation, the efficiency in shooting has been co -related with the state of anxiety (SCAT) of the female shooters. The Pearson's Co-relation was used to find out the co relation one parameter on the two parameters. It has been seen that the Shooting Efficiency of pistol shooters negatively and insignificantly co related with competitive Anxiety. It has been also shows that Heart rate (Before competition & MAX. H.R.) and competitive Anxiety negatively correlated with each other but competitive Anxiety insignificantly related with Heart Rate of the national pistol shooters of 10M range in between the age group of 15-23 years.

**Table 2. Mean ±SD of psychological variables of national female shooters aged between 15 to 23 years**

Psychological parameters	Mean	S.D.
Efficiency	6.29	1.62
SCAT	18.43	3.78
Before competition Heart Rate	77.03	6.30
During Competition Heart Rate	82.20	5.73

**Table 3. Correlation of Shooting Efficiency, Competitive Anxiety & Heart Rate (Before & Maximum)**

Variables	SCAT	Before Competition Heart Rate	Maximum heart rate
Efficiency	-.377*	-.021	-.219
SCAT	-	-.237	.094
Before Competition heart rate		-	.399*

### Conclusion

It is concluded from the results of the present study that the Shooting efficiency of 10M female Pistol Shooters is negatively related with the anxiety, which reveals that if the competitive anxiety is more the performance of shooting will be less and if the state of anxiety is less then, there will be the chances of enhanced performance of 10M female national shooters. It was also found that heart rate (before competition & maximum heart rate) and competitive Anxiety negatively correlated with each other but competitive Anxiety insignificantly related with Heart Rate of the national pistol shooters of 10M range.

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Conflict of Interest: None declared