



## CORRELATION BETWEEN RESTING PULSE RATE AND ANXIETY AMONG KHO-KHO, KABADDI AND BADMINTON PLAYERS OF CHITWAN DISTRICT

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### Abstract

Anxiety and resting heart rate are inter-related psycho-physiological variables and they have adverse effects in sports performance. The purpose of the present study is to find out if there was any relationship existed in the resting pulse rate and anxiety profile of different games players. Total sixty (N=60) intervarsity players twenty Kho-Kho [n=20], twenty Kabaddi [n=20] and twenty Badminton [n=20] were selected as the subjects of the present study. The age of subjects was ranged from 18 to 25 years. Sports competitive anxiety test (SCAT) developed by Martin (1977) was employed on the subjects. Heart rate was measured by pulse palpation. The pulse rate is measured by counting the heart beats in a set period of time. Pearson product moment correlation was applied to determine the relationship between the anxiety and resting pulse rate. The result of the present study revealed that there was no significant relationship was found between resting heart rate and anxiety profile among selected three games players.

**Keywords:** Anxiety, Resting Heart Rate, Kho-Kho, Kabaddi and Badminton.

### Introduction

Today's modern era of sports, psychological aspects of the player play a major role in

training and giving high performance (Yamada, Kawata, Nakajima, & Hirose, 2012). Anxiety is always present in sports. In simple words it is a type of emotional disturbance. The level of anxiety and pulse rate may differ from individual to individual even among the players of different games (Cervantes-Blásquez, Rodas-Font, & Capdevila-Ortís, 2009). Anxiety may be motivating force or it may interfere with successful athletic performance (De, Debnath, Roy, & Murthy, 1990). As a positive motivating force it can be instrumental in motivating the athletes to work harder to find new and to help to set goals. As a negative motivation anxiety may interface with productive as well as constructive thinking. Athletes may attempt to handle anxiety by denying mistakes, denying their weakness and thus denying working hard (Delextrat, & Kraiem, 2013). This can lead to the development of poor work habits, or athletic technique. These often lead to failure and in turn, lack of confidence and increased anxiety.

When an athlete is anxious, the heart rate increases; the blood pressure becomes elevated and the breathing becomes more rapid and oxygen consumption increases (Buchheit, Mendez-Villanueva, Quod, Poulos, & Bourdon, 2010). He/she has feeling of fatigue or weakness etc., even he/she may yawn frequently, begin to tremble or engage in nervous activity (bite his/her nails wriggle



his/her leg twin his/her hair act.) or he/she may sweat profusely, urinate frequently etc. The anxiety level of different people to the similar situation is entirely different (Chauhan, & Haider, 2012). Different researches are conducted by contemporary researchers on such topic (Buchheit, et al., 2010; Yamada, et al., 2012)). But, few things are remain uncertain like is there any relationship existed between resting heart rate and anxiety, thus this work is undertaken with the objective to find out if there was any relationship existed in the resting pulse rate and anxiety of different game players.

## Methodology

### Subjects

Total sixty (N=60) intervarsity players were selected as the subjects of the present study. Among the selected subjects there were twenty Kho-Kho (n=20), twenty Kabaddi (n=20) and twenty Badminton (n=20). The age of the subjects was ranged from 18 to 25 years.

### Tool

Sports competitive anxiety test (SCAT) developed by Martin (1977) was employed on all the subjects. Heart rate was measured by pulse palpation. The pulse rate is measured by counting the beats in a set period of time.

### Data Collection

Data on the selected variables were collected during respective intervarsity competition held at different parts of the country. Before the data collection researchers met with team coaches and players and explained their objective of the work, after acquiring their consent questionnaire were administered on the selected subjects simultaneously their pulse rate was measured.

### Statistical Analysis

Pearson's product moment correlation was applied to determine the relationship between the anxiety and resting pulse rate, the level of significant was set at 0.05 with 58 degree of freedom.

## Results

TABLE1  
CORRELATION AMONG THE GAME PLAYERS ON ANXIETY  
WITH RESTING HEART RATE

	Resting Heart Rate		
	Kho-Kho(r)	Badminton (r)	Kabaddi (r)
Kho-kho(r)	0.14		
Badminton (r)		-0.01	
Kabaddi (r)			0.21

Tab. r (0.05) 58= 0.25

Table 1 illustrates that the obtained correlation values between the anxiety level of Kho-Kho players with the resting heart rate is 0.14 which is very less to bring the significant relation ( $p>0.05$ ). The obtained correlation values between the anxiety level of badminton players with the resting heart rate is -0.01 which is also very less to bring the significant relation ( $p>0.05$ ). The obtained correlation values between the anxiety level of Kabaddi players with the resting heart rate is 0.21, that is also very less to bring the significant relation ( $p>0.05$ ).



Figure 2: Correlation of anxiety level of badminton players with their resting heart rate

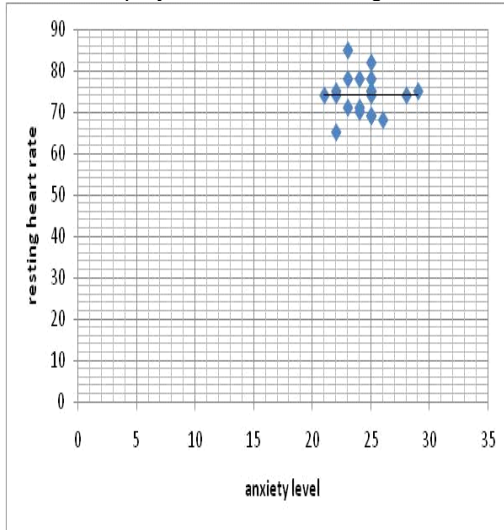
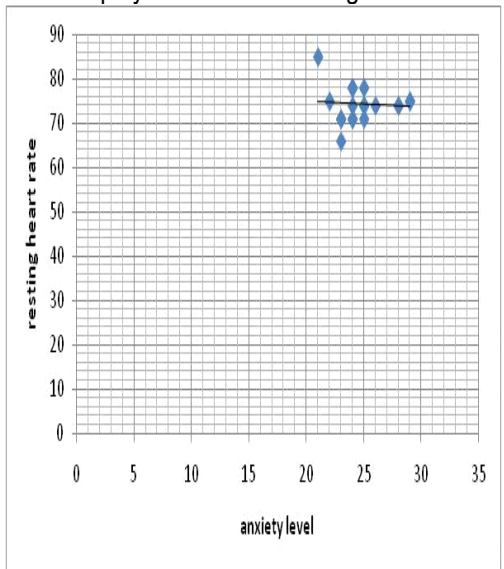


Figure 3: Correlation of anxiety level of Kabaddi players with their resting heart rate



## Discussion

The study was carried out with the aim to compare the selected psychophysiological variables among the different games' players. The selected games were Kho-Kho, badminton and Kabaddi whereas; the variables were anxiety and resting heart rate. The previous studies revealed that players with lower resting heart rate were able to perform well in the competition due to their control on cognitive ability (Lambert, Mbambo, Gibson, 1998; Pradeep, Ajeesh, & Nair, 2012). Where ever players feel highly tense or nerves his/her heart rate increase dynamicity which is having negative effects on the performance and similar vice-versa were found (Parfitt, & Hardy, 1993; Deutsch, Maw, Jenkins, & Reaburn, 1998). Further, to find out the relationship between the selected with the different games players reflected that there is no significant relationship existed between anxieties and resting heart rate among different games players. The causes for not getting statistical significance difference in between the psychological variables and physiological variables were that, all the selected elite games players were district level participators. Playing at national level is that standard level where difference between the psychological and physiological variables could be seen.

## Conclusions

Under the conditions of the present results of the study following conclusions can be made: No significant relationship was found between anxiety and resting heart rate among intervarsity Kho-Kho players. No significant relationship was found between anxiety and resting heart rate among intervarsity



badminton players. No significant relationship was found between anxiety and resting heart rate among intervarsity Kabaddi players.

### References:

- Buchheit, M., Mendez-Villanueva, A., Quod, M.J., Poulos, N., & Bourdon, P. (2010). Determinants of the variability of heart rate measures during a competitive period in young soccer players. *European Journal of Applied Physiology*, 109(5), 869-878.
- Cervantes-Blásquez, J.C., Rodas-Font, G., & Capdevila-Ortís, L. (2009). Heart-rate variability and precompetitive anxiety in swimmers. *Psicothema*, 21(4), 531-536.
- Chauhan, S.S., & Haider, Z., (2012). A study of sports competition anxiety among different level volleyball players. *International Journal of Physical Education Health & Sciences*, 1(1), 59-62.
- De, A.K, Debnath, P.K., Roy, A.S., & Murthy, C.R. (1990). Pulse rate, precompetition tension and performance in 10,000 meter elite runners of both sexes. *Journal of Postgraduate Medicine*, 36(3), 164-166.
- Delextrat, A. & Kraiem, S., (2013). Heart-rate responses by playing position during ball drills in basketball. *International Journal of Sports Physiology and Performance*, 8, 410-418
- Deutsch, M.U., Maw, G.J., Jenkins, D., & Reaburn, P. (1998). Heart rate, blood lactate and kinematic data of elite colts (under-19) rugby union players during competition. *Journal of Sports Science*, 16(6), 561-570.
- Lambert, M.I., Mbambo, Z.H., Gibson, A. (1998). Heart rate during training and competition for long-distance running. *Journal of Sports Science*, 16(S), S85-90.
- Martens, R. (1977). Sport competition anxiety test. Champaign, IL: Human Kinetics.
- Parfitt, G., & Hardy, L. (1993). The effects of competitive anxiety on memory span and rebound shooting tasks in basketball players. *Journal of Sports Science*, 11(6), 517-524.
- Pradeep, C. S, Ajeesh, P.T, & Nair, A. C. (2012). Anxiety among high, medium and low level achievers of men and women volleyball and basketball players. *International Journal of Physical Education Health & Sports Sciences*, 1(1), 39-48.
- Yamada, K., Kawata, Y., Nakajima, N., & Hirose, M. (2012). Relationship between state anxiety and success rate in game performance, coach's evaluation among Japanese university volleyball players. *Work*, 41(S1), 5764-5766.