



EFFECT OF DIURNAL VARIATION ON BASKETBALL PLAYERS' REACTION TIME

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ABSTRACT

This study was undertaken with the purpose to determine the impact of duration variation on the reaction time of basketball players of Jhansi region. Thirty Jhansi area female basketball players aged between 17-20 years were selected as a subject for the research. The electronic reaction timer was used to calculate regular fluctuations in reaction time. The study of variance (ANOVA) was used to classify the significant differences in diurnal variations in reaction times of basketball players in the Jhansi zone, and it was evident that there was no significant difference in mean reaction time of the right and left hands.

KEY WORDS: Reaction Time, Duration Variation, Basketball.

INTRODUCTION

Climates, seasons and weather exert such an influence on physical activities and sports that a sub area, bioclimatic of sports appears justified within the field of sport medicine. The physical, physiological and psychological reactions of man are dependent on environmental conditions. Temperature, seasonal variation, the solar radiation and other environmental factors may have a positive or negative influence on the human organism. As the general state of health can be affected so will the efficiency and capacity of physical performance and the susceptibility to fatigue vary with extreme change in environmental conditions. The seasons of the year are characterized by typical metrological and climatologically phenomenon that are directly related to physical performance, training and sport.

The other aspect of the fluctuation of performance efficiency lies in the internal mechanism called biological clock. The qualitative study of this biological phenomena reveals that biological clock has division of hours, minutes and seconds as a regular clock and also division measurement of days, weeks, months and years. It also exhibits biological periodicity representing a "strategy" where by the living organism attempts to maintain consistency and stability of the living process.

But as throughout the world periodic function take place in response to periodic changes in the environment, biological clock also exhibit periodic assibilation ranging from milliseconds to hours, days, years or longer and influence the physiological functions which in turn influence the day to day ability. (Faria et al 1980)

In all such situations the organism must adjust to



a set of conditions that tends to alter normal physiology in significant to the rigors of the environment his performance may be impaired. The body has a remarkable ability to compensate either wholly or partially to environmental conditions if given the opportunity. This does not mean that complete success will always be experienced, while it might be argued scientifically that a slight impairment may not be particularly significant to the athlete in competition it might well be the difference between winning and losing a contest. Moreover, there may be an additive effect when the performer competes in extended running, swimming, cycling, or the like, as compared with shorter events. Thus, the potential length of exposure is an important factor when considering the effects of adverse environmental conditions. (Clarke 1975)

Depending on the season or climate, if an athlete is subjected to various climatic conditions during his participation, it will have a major impact on his results. The aim of the study was to determine the impact of regular variation on the reaction time of basketball players. The research was performed by female basketball players in the area of Jhansi. It was speculated that there might be a substantial difference in the mean output of the reaction time on selected subjects to ensure literature is the scholar's own understanding.

METHODOLOGY

Thirty Jhansi area female basketball players were selected as subject and their age ranged from 17 to 20 years. Testing methods were explained to them in depth before conducting the selected test. At various times of the day, the appropriate information on the selected variables of right and left hand movement was collected. Anand 's Electronic Reaction Time chronoscope was used for data collection to calculate the reaction time. The reaction time test protocol was clarified and shown to all the subjects before it was administered. There was no motivating strategy used and three trials were given for each subject and the reaction time score was the average of the three concerned. One way variance analysis (F test) was applied to investigate the importance of the disparity in the diurnal variation on the reaction time of leg movement. The assumption was checked at a degree of significance of .05.

FINDINGS

TABLE 1
ANALYSIS OF VARIANCE OF REACTION TIME OF RIGHT HAND

Source of Variance	df	SS	M.S.S.	F-ratio
Between the Group	2	0.0027	0.00135	2.27
Within the Group	87	0.0517	0.00059	

* Significant at 0.05 level of confidence.

$$Tab F_{.05}(2,87) = 3.10$$

It was evident from the table 1 that there was on significant difference on reaction time of right hand as the obtained value was found to be 2.27 which was less than the tabulated value.

TABLE 2
ANALYSIS OF VARIANCE OF REACTION TIME OF LEFT HAND

Source of Variance	df	SS	M.S.S.	F-ratio
Between the Group	2	0.0014	0.000686	1.025
Within the Group	87	0.0583	0.000669	

* Significant at 0.05 level of confidence.

$$F_{.05}(2,27) = 3.10$$

It was also evident from the table 2 that there was no significant difference on reaction time of left hand as the obtained value was found to be 1.025 which was less than the tabulated value.

CONCLUSION

The analysis of data reveals that there is no significant difference in the reaction time of right hand and left hand. The insignificant difference may be due to the type of test selected. Usually Basketball players employ different movement while taking part in a game whereas the test employed different movement. On a visual stimulus insignificant difference were obtained between the reaction time of right and left hand. Small number of samples size could be one the factor for such type of findings. Based upon the findings of the study the hypothesis with the respect to reaction time of right hand and left hand is rejected.

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