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An assessment of achievement motivation and mental rehearsal among swimmers, cyclists and runners

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Abstract

The presented study was to assess achievement motivation and mental rehearsal among swimmers, cyclists and runners. In the study total ninety male subjects were taken (30 swimmers, 30 cyclists and 30 runners) all were national players from different states of India. Their age ranging from 17yr to 33yr. The data were assessed through Psychological skills inventory (PSI) Wheaton, 1998. And the collected data were from swimming, cycling and running national/all India intervarsity tournament held in India 2021-22. The collected data was analyzed by computing the descriptive statistics and one – way ANOVA analysis to find out mean, standard deviation and variance among swimmers, cyclists and runners. For testing the hypothesis, the degree of significance was set at 0.05. Statistical analysis was conducted by using statistical packages for social science (IBM SPSS 20 Version). As a result the findings states that the F-value in one way ANOVA is significant because P-value < 0.05 of Achievement motivation and Mental rehearsal, thus the null hypothesis of equality of variance may not be accepted and it is concluded that the significant difference occurred between swimmers, cyclist and runners in Achievement motivation and Mental rehearsal.

Keywords: Achievement motivation, mental rehearsal, swimmers, cyclists, runners

Introduction

The study of how psychological elements impact sports, athletic performance, exercise, and physical activity is known as sports psychology. Sports psychologists look at how sports may improve one's health and well-being. Athletes may also use psychology to improve their physical performance and mental health. (<https://www.verywellmind.com/what-is-sports-psychology-2794906>). Sports psychology is an important aspect of every cyclist's preparation since it affects their performance. The study of behaviour and mental processes which is scientific might be classified as sports psychology. Educational, vocational, health, and clinical psychology are only a few of the applied disciplines of psychology. One of these applied fields is sports psychology, which is a science that applies the ideas of mainstream psychology to a sport situation, such as cycling. The scientifically studied of individuals and their behaviour in exercise and sport environments is known as sports psychology. Sports psychologists use their expertise and skills to assist athletes in changing their behaviour in order to improve their performance. Imagery, accomplishment motivation, positive self-talk, mental rehearsal, relaxation methods, goal planning, and hypnosis are some of the mental skills strategies that sports psychologists can employ to help riders make good changes. Most riders will employ one or more mental skills as part of their pre- or post-performance routine. (https://www.britishcycling.org.uk/coaching/article/coa20090928_CPD_October). Everyone's behaviours are based on achievement-related goals and emotions, and motion is the driving force behind them. Achievement motivation is a phrase used in social psychology to describe when people feel motivated, inspired, or excited by their achievements. Achievement drive motivates some people to be high achievers who want to succeed but are afraid of failing in the profession. (<https://www.indeed.com/career-advice/career-development/achievement-motivation>) the driving force behind everyone's actions based on achievement-related goals and emotions is Motion. (<http://www.wright.edu/~scott.williams/LeaderLetter/rehearsal>) To improve swimming performance, swimmers can benefit from sport psychology by studying and using mental skill approaches such as goal planning, visualisation, confidence, focus, and relaxation. These mental abilities are also transportable and applicable to school and life performance.

Anaerobic performance was linked to psychological characteristics (less stress and more fatigue awareness), whereas aerobic performance was linked to physiological characteristics (high parasympathetic modulation). Every runner's motivation for success will be different. Participating in an individual game in a group context is something that all runners have in common. On the courses and highways, runners may be alone in their thoughts, yet they are collected as a community with a single goal: successfully finishing each run. Some people are driven to create personal records (internal motivation), while others are enthusiast to outperform their opponents (external motivation) (external motivation). therefore, the purpose of this study is to examine swimmers, cyclists, and runners in terms of accomplishment motivation and mental rehearsal.

Procedure and methodology

For the study there is total ninety male subjects were taken (30 swimmers, 30 cyclists and 30 runners) all were national players from different states of India. Their age ranging from 17yr to 33yr. The study purpose was explained to all the subjects. Each participant provided consent form before participation in testing procedures. The study selected the following psychological variables namely Achievement motivation and Mental rehearsal. The data were assessed through Psychological skills inventory (psi) Wheaton, 1998. And the collected data were from swimming, cycling and running national/all India intervarsity tournament held in India 2021-22.

Data analysis and interpretation

The collected data was analyzed by computing the descriptive statistics and one way ANOVA analysis to find

out mean, standard deviation and variance among swimmers, cyclist and runners. For testing the hypothesis, the degree of significance was set at 0.05. Statistical analysis was conducted by using statistical packages for social science (IBM SPSS 20 Version). The findings are presented in table 1, 2, 3, 4 and table 5 and the graphical representation of the standard deviation and mean value is presented in figure 1.

Table 1: Descriptive statistics for achievement motivation and mental rehearsal of selected sports group

Variables	Group	N	Mean	Std. Deviation
Achievement motivation	Swimmers	30	27.87	4.99
	Cyclist	30	33.43	5.41
	Runners	30	32.30	4.31
	Total	90	31.20	5.44
Mental rehearsal	Swimmers	30	27.40	4.69
	Cyclist	30	30.60	4.13
	Runners	30	31.63	4.27
	Total	90	29.88	4.69

The table reveals that the values of mean and standard deviation for swimmers, cyclist and runners of achievement motivation and mental rehearsal are shown in table 1. The mean score of achievement motivation is 31.20±5.44 and mental rehearsal is 29.88±4.69. The swimmers, cyclists and runners mean value of Achievement motivation is 27.87±4.99, 33.43±5.41 and 32.30±4.31 respectively whereas mean value of mental rehearsal in swimmers, cyclists and runners is 27.40±4.69, 30.60±4.13 and 31.63±4.27 respectively.

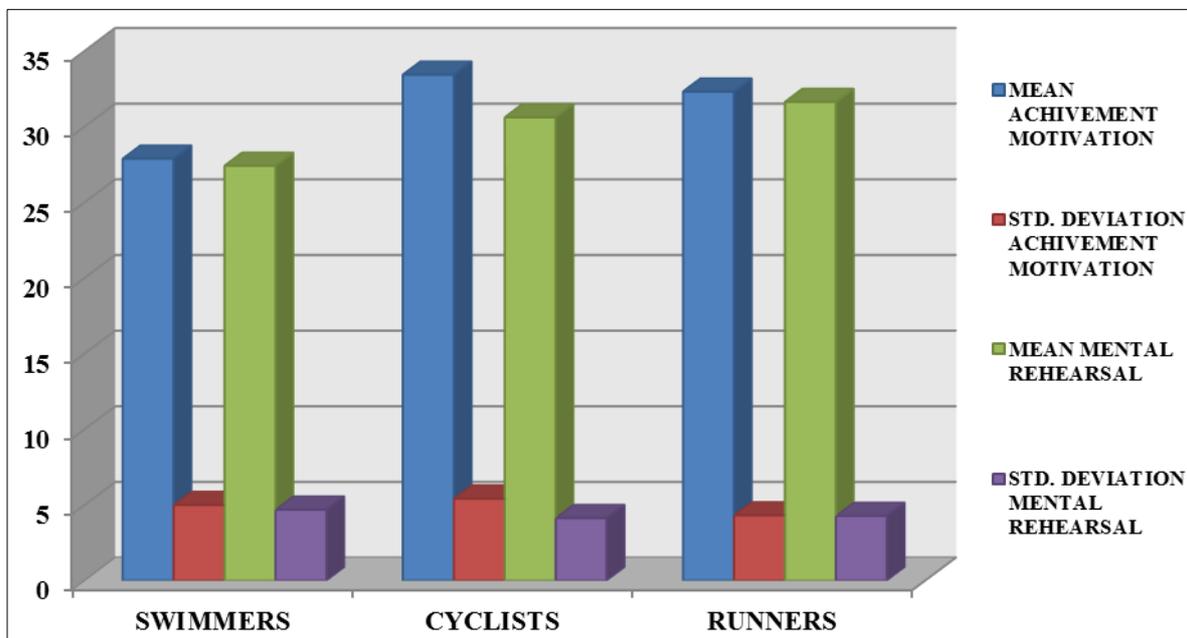


Fig 1: Graphical representation of mean score and std. deviation of achievement motivation and mental rehearsal of swimmers, cyclists and runners.

Table 2: Summary of One-Way ANOVA of Achievement motivation scores among selected sports groups.

	Sum of squares	Df	Mean square	F-Value	Sig.(p-Value)
Between groups	519.27	2	259.63	10.70**	0.000
Within groups	2111.13	87	24.27		
Total	2630.40	89			

**significant at 0.01 level, * significant at 0.05 level

The table of One-way ANOVA indicated a significant difference in Achievement Motivation among swimmers, cyclist and runners between groups as, $f(2,87) = 10.70$, $p < 0.01$. It means the mean value of Achievement Motivation in sports swimming, cycling and running differ significantly. So, group of sports influence the Achievement Motivation of players. Thus, the null hypothesis that there is

no significant influence of group of sports on Achievement Motivation is not accepted. To find out the significant difference in the mean scores of Achievement Motivation among the selected sports groups, pairwise comparison test was employed and results have been shown in the table no-3.

Table 3: Pairwise comparison of achievement motivation scores among selected sports group.

(I)Group	(J)group	Mean difference(I-J)	Std. error	p-value
Swimming	Cycling	-5.57**	1.272	0.000
	Running	-4.43**	1.272	0.001
Cycling	Running	1.13	1.272	0.375

**significant at 0.01 level, * significant at 0.05 level

In table 3 it shows that A LSD post HOC test reveals that there is a significant difference between swimmers with cyclists and runners. The achievement motivation of the cyclists was statistically higher with high mean value ($m =$

33.43) than the runners ($m = 32.30$), and then the swimming players ($m = 27.87$). However it also shows that the cyclists and runners are same.

Table 4: Summary of One-Way ANOVA of mental rehearsal scores among different selected sports groups.

	Sum of squares	Df	Mean square	F-Value	Sig.(p-Value)
Between groups	292.29	2	146.14	7.65**	0.001
Within groups	1661.37	87	19.10		
Total	1953.66	89			

**significant at 0.01 level, * significant at 0.05 level

The table of One-way ANOVA indicated a significant difference in mental rehearsal among swimmers, cyclist and runners between groups as, $f(2,87) = 7.65$, $p < 0.01$. It means the mean value of mental rehearsal in sports swimming, cycling and running differ significantly. So, group of sports influence the mental rehearsal of players. Thus, the null

hypothesis that there is no significant influence of group of sports on mental rehearsal is not accepted. To find out the significant difference in the mean scores of mental rehearsal among the selected sports groups, pairwise comparison test was employed and results have been shown in the table no-5.

Table 5: Pairwise comparison of Mental rehearsal scores among selected sports group.

(I)Group	(J)group	Mean difference(I-J)	Std. error	p-value
Swimming	Cycling	-3.20*	1.128	0.006
	Running	-4.23**	1.128	0.000
Cycling	Running	-1.03	1.128	0.362

**significant at 0.01 level, * significant at 0.05 level

In table 5 it shows that A LSD post HOC test reveals that there is a significant difference between swimmers with cyclists and runners. The mental rehearsal of the runners was statistically higher with high mean value ($m = 31.63$) than the cyclists ($m = 30.60$), and then the swimming players ($m = 27.40$). However it also shows that the cyclists and runners are same.

Discussion and Conclusion

As a result the findings states that the F-value in one way ANOVA is significant because P value is less than 0.05 of Achievement motivation and Mental rehearsal, thus the null hypothesis of equality of variance may not be accepted and it is concluded that there is a significant difference between swimmers, cyclist and runners in Achievement motivation and Mental rehearsal. However cyclists and runners do not differ significantly in both achievement motivation and mental rehearsal. This is may be because of the same nature of sport and the training whereas swimming is quite different in nature of environment. Few authors related to our study say that for athletes with low task/low ego orientation, gender had a substantial influence on cognitive imaging capacity; female athletes regarded their mental

imagery viewpoint as clearer and more vivid. When sport type was taken into account, cluster membership had a substantial multivariate influence on motivational imagery capacity. Goal orientations have a link to motivational imagery ability, but the similar link was not seen with cognitive imagery ability. When compared to athletes with low task/high ego or low task/low ego goal orientations, athletes with high task/high ego or high task/low ego goal orientations scored much better on their capacity to sense emotions and their ease of forming motivated general-mastery imagery. Motivational general-arousal imagery skill did not differ between goal orientation clusters Melanie J.Gregg *et al.*, (2016) ^[1] Intrateam studies indicated that high-accuracy GST (goal setting training) swimmers had more optimum cognitions and performance than their low-accuracy colleagues, indicating that GST efficacy is mediated by goal setting ability Damon Burton (1989) ^[2]. It was suggested that because females had a poorer dart-throwing talent, mental rehearsal may have been distracting for certain individuals, resulting in larger improvement variability in the mental rehearsal group. Conclusions were drawn on the concept of the negative relationship and imaginal style between the proclivity and motor

performance to employ external images Martha L. Epstein (1980) [3]. Therefore our study concluded that achievement motivation and mental rehearsal affects the sports performance and due to different nature of sports' outside environment and surface swimming is differ from cycling and running whereas cycling and running are same in both selected variables because of same cyclic nature and outside environment.

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