

Exploring Flow State in Indian Sport Context

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ABSTRACT

The aim of the study was to explore the importance of flow state in sport. The study was focused on enhancing the flow state and use of different imagery categories by the players. The study included total 21, male (n = 12) and female (n = 9), Fencing players between the age range of 13 -19 years, from NIS Patiala. It was found, in the study, that the mental imagery improved the use of different kinds of imagery in the Fencing players that in turn helped them to enhance their flow state.

INTRODUCTION

Positive experience and well-being can arise from enjoyment and successful performance in sport, in terms of winning or performing well. Athletes performing at their best, in competition, have characterized their optimal performance state as being totally absorbed in and focused on the task at hand, feeling confident and in control, while their body works effortlessly and automatically. Csikszentmihalyi (1975, 1988) called this state the optimal flow experience. In the present study, imagery was used as intervention method, because imagery has been found to be a very powerful technique to increase psychological variables and achieve optimal performance (Hall, 2001; Morris, Spittle & Watt, 2005). Csikszentmihalyi (1975) developed the concept of flow after examining 'autotelic' (from the Greek word auto = self and telos = goal), or self-motivating activities. An important aspect of the experience of flow, in an activity or a competition, is the perception of personal performance.

Imagery can be used to meet various purposes in sport. Mental imagery is a technique that generates an altered state, in which the mind is directed toward multi-sensory images that the body perceives as real, produces feeling of being in control and ultimately ends up delivering high level of performance. The objective of the present study was to examine the effect of mental imagery on different categories of imagery used by fencing players, to examine the effect of mental imagery on different dimensions of the flow state of Fencing players; and to examine the effect of mental imagery on the flow state of Fencing players.

METHODOLOGY

The present study included 21 male (n = 12) and female (n = 9) Fencing players between the age ranges of 13 – 19 from NIS Patiala. Pre-post experimental design was used to explore the effect of mental imagery on the flow state, dimensions of flow state, and different imagery categories of the Fencing players. The Fencing players were given mental imagery for 4 weeks duration along with relaxation training

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in the laboratory. Two psychometric tests namely the Flow State Scale (Jackson & Marsh, 1996) and the Sport Imagery Questionnaire (SIQ; Hall et al, 1998) were used and t – test was applied to analyze the data.

RESULTS & DISCUSSIONS

Participants were administered flow state scale and sports imagery questionnaire in pre-test condition and post-test condition following the imagery intervention programme. The t-test was applied and the findings are

mentioned in the following Tables.

Table 1 reflects mean, S.D., and t-ratio of female Fencing players on five categories of imagery. It was found that the mean scores for cognitive specific, cognitive general, motivational specific, motivational general mastery, and motivational general arousal imagery in pre-test condition were 26.67, 28.89, 35.22, 34.33 and 27.56, respectively; whereas, in the post test condition the means were 31.71, 33, 37, 34.86, and 32.86, respectively. The t-value for

Table-1: Mean, S.D., and t-ratio of female Fencing players on categories of imagery.

Categories of Imagery	Condition	Mean	S.D.	t-ratio
Cognitive Specific	Pre -test	26.67	4.55	1.95
	Post -test	31.71	7.55	
Cognitive General	Pre -test	28.89	6.03	3.16**
	Post -test	33	5.85	
Motivational Specific	Pre -test	35.22	4.55	1.22
	Post -test	37	3.35	
Motivational General Mastery	Pre -test	34.33	4.97	1.23
	Post -test	34.86	4.88	
Motivational General Arousal	Pre -test	27.56	7.11	2.25*
	Post -test	32.86	6.43	

cognitive specific imagery, ($df = 8$) $t = 1.95$, $p > 0.05$, cognitive general imagery, ($df = 8$) $t = 3.16$, $p < 0.01$, motivational specific imagery, ($df = 8$) $t = 1.22$, $p > 0.05$, motivational general mastery imagery, ($df = 8$) $t = 1.23$, $p > 0.05$, and motivational general arousal imagery, ($df = 8$) $t = 2.25$, $p < 0.05$, which indicated that only cognitive general and motivational general arousal imagery revealed statistically significant differences between pre-test and post-test condition.

Table 2 demonstrates mean, S.D., and t-ratio of female Fencing players on

nine dimensions of flow state and the overall flow state itself. In the pre-test the means for the nine dimensions of flow state (i.e. challenge-skills balance, action awareness merging, clear goals, unambiguous feedback, loss of self-consciousness, transformation of time autotelic experience, paradox of control, and concentration on the task at hand) were 14.11, 14.67, 14.44, 14.33, 12, 14.11, 15.22, 11.44, 15.78, respectively; which increased in the post test condition as 16.29, 15.86, 16.14, 15.86, 15.29, 15.14, 17.43, 14.43 and 16.71,

respectively; and the t-ratios indicated that challenge skills balance ($df=8$) $t = 2.73$, $p < 0.05$, action awareness merging ($df=8$) $t = 2.60$, $p < 0.05$, clear goals ($df=8$) $t = 2.44$, $p < 0.05$, unambiguous feedback ($df=8$) $t = 4$, $p < 0.01$, autotelic experience ($df=8$) $t = 2.42$, $p < 0.05$, paradox of control ($df=8$) $t = 2.57$, $p < 0.05$ revealed significant differences between the pre-test and post-test condition. But, loss of self-consciousness ($df = 8$) $t = 1.94$, $p > 0.05$, transformation of time ($df = 8$) $t = 1.07$, $p > 0.05$, and concentration on the task at hand ($df = 8$) $t = 1.38$, $p > 0.05$ dimensions of the flow state did not reach the statistically significant difference.

Moreover, the flow state was significantly higher in the post-test condition (mean = 143.14) as compared to the pre-test condition (mean = 126.11), as the t-ratio, ($df = 8$) $t = 4.24$, $p < 0.01$, revealed statistically significant difference.

Table 3 shows mean, S.D., and t-ratio of male Fencing players on five categories of imagery. The findings indicated that the mean scores for cognitive specific, cognitive general, motivational specific, motivational general mastery, and motivational general arousal imagery in pre-test condition were 33.36, 32.54, 33.45, 35.18 and 29.10, respectively; which

Table-2: Mean, S.D., and t-ratio of female Fencing players on flow state and dimensions of flow state.

Variable	Condition	Mean	S.D.	t-ratio
Challenge -skills balance	Pre -test	14.11	2.32	2.73*
	Post -test	16.29	1.39	
Action -awareness merging	Pre -test	14.67	3.91	2.60*
	Post -test	15.86	2.30	
Clear goals	Pre -test	14.44	1.33	2.44*
	Post -test	16.14	3.28	
Unambiguous feedback	Pre -test	14.33	2.50	4**
	Post -test	15.86	2.12	
Loss of self -consciousness	Pre -test	12	4.64	1.94
	Post -test	15.29	2.70	
Transformation of time	Pre -test	14.11	3.59	1.07
	Post -test	15.14	3.98	
Autotelic experience	Pre -test	15.22	3.63	2.42*
	Post -test	17.43	2.80	
Paradox of control	Pre -test	11.44	2.60	2.57*
	Post -test	14.43	4.06	
Concentration on the task at hand	Pre -test	15.78	2.33	1.38
	Post -test	16.71	2.28	
Flow State	Pre -test	126.11	13.19	4.24**
	Post -test	143.14	17.24	

were increased in the post test condition as 38.73, 37.54, 38.45, 38.27 and 37.82, respectively. The t-value for cognitive specific imagery, (df = 10) $t = 4.55$, $p < 0.01$, cognitive general imagery, (df=10) $t = 4.34$, $p < 0.01$, motivational specific imagery, (df = 10) $t = 3.37$, $p < 0.01$, motivational general arousal imagery, (df = 10) $t = 4.28$, $p < 0.01$ were found to be statistically significant which confirmed significant difference between pre-test and post-test condition. Only motivational general mastery imagery, (df = 10) $t = 2.20$, $p > 0.05$, failed to reach the statistically significant difference.

Table 4 reflected mean, S.D., and t-ratio of male Fencing players on nine dimensions of flow state and the overall flow state scores. In the pre-test, the means for the nine dimensions of flow state (i.e. challenge-skills balance, action awareness merging, clear goals, unambiguous feedback, loss of self-consciousness, transformation of time autotelic experience, paradox of control, and concentration on the task at hand) were 16.27, 13.54, 15.82, 15.09, 11.45,

13.64, 14.91, 14.45, & 15.45, respectively; which increased in the post test condition as 17.36, 16.54, 17.36, 17.09, 15.39, 16.91, 15.54, 18.18, & 17.82, respectively; and the t-ratios action awareness merging (df=10) $t = 2.94$, $p < 0.05$, unambiguous feedback (df=10) $t = 2.47$, $p < 0.05$, loss of self-consciousness (df=10) $t = 3.22$, $p < 0.01$, transformation of time (df=10) $t = 5.28$, $p < 0.01$, paradox of control (df=10) $t = 2.63$, $p < 0.01$ and concentration on the task at hand (df=10) $t = 3.30$, $p < 0.01$ revealed significant differences between the pre-test and post-test condition. But, challenge skills balance (df=10) $t = 1.10$, $p > 0.05$, clear goals (df=10) $t = 1.66$, $p > 0.05$ and autotelic experience (df=10) $t = 1.59$, $p > 0.05$, dimensions of the flow state did not reach to the statistically significant difference. It was also found that the t-value for flow state, (df=10) $t = 5.82$, $p < 0.01$, indicated significant difference as the flow state mean score enhanced to 153.27 in the post-test condition as compared to the score of 130.54 in pre-test condition.

Table-3: Mean, S.D., and t-ratio of male Fencing players on categories of imagery.

Categories of Imagery	Condition	Mean	S.D.	t-ratio
Cognitive Specific	Pre -test	33.36	5.20	4.55**
	Post -test	38.73	5.57	
Cognitive General	Pre -test	32.54	4.11	4.34**
	Post -test	37.54	3.42	
Motivational Specific	Pre -test	33.45	7.95	3.37**
	Post -test	38.45	4.70	
Motivational General Mastery	Pre -test	35.18	5.99	2.20
	Post -test	38.27	2.40	
Motivational General Arousal	Pre -test	29.10	6.44	4.28**
	Post -test	37.82	2.04	

Table-4: Mean, S.D., and t-ratio of male Fencing players on flow state and dimensions of flow state.

Variable	Condition	Mean	S.D.	t-ratio
Challenge -skills balance	Pre -test	16.27	2.69	1.10
	Post -test	17.36	2.11	
Action -awareness merging	Pre -test	13.54	3.11	2.94*
	Post -test	16.54	1.81	
Clear goals	Pre -test	15.82	2.09	1.66
	Post -test	17.09	2.17	
Unambiguous feedback	Pre -test	15.09	2.39	2.47*
	Post -test	17.09	2.17	
Loss of self -consciousness	Pre -test	11.45	3.86	3.22**
	Post -test	15.39	3.30	
Transformation of time	Pre -test	13.64	1.69	5.28**
	Post -test	16.91	2.17	
Autotelic experience	Pre -test	14.91	3.05	1.59
	Post -test	15.54	1.92	
Paradox of control	Pre -test	14.45	2.58	5.63**
	Post -test	18.18	1.25	
Concentration on the task at hand	Pre -test	15.45	2.16	3.30**
	Post -test	17.82	1.17	
Flow State	Pre -test	130.54	15.15	5.82**
	Post -test	153.27	10.79	

Cognitive general imagery and motivational general arousal imagery increased significantly in post-test condition for female Fencing players. Cognitive specific imagery, cognitive general imagery, motivational specific imagery, and motivational general arousal imagery increased significantly for male Fencing players.

Challenge-skills balance, action-awareness merging, clear goals, unambiguous feedback, auto telic experience, and paradox of control dimensions of flow state increased significantly for female Fencing players. For male Fencing players there was increase in action-awareness

merging, unambiguous feedback, loss of self-consciousness, transformation of time, paradox of control, and concentration, on the task at hand.

Finally, both the female and male Fencing players' data showed significant increase in flow state in the post-test condition, as compared to the pre-test condition.

The findings have been discussed within the frame work of model by Csikszentmihalyi, (1975), flow model proposed by Kimiecik and Stein (1992) and studies related to imagery use for facilitating flow experience.

CONCLUSION

It was found, in the study, that the mental imagery improved the use of different kinds of imagery in the Fencing players that in turn helped them to enhance their flow state as also

evident from the increase in various dimensions of the flow state. Thus, mental imagery provided the players with conducive state of mind which ultimately facilitated their performance.

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