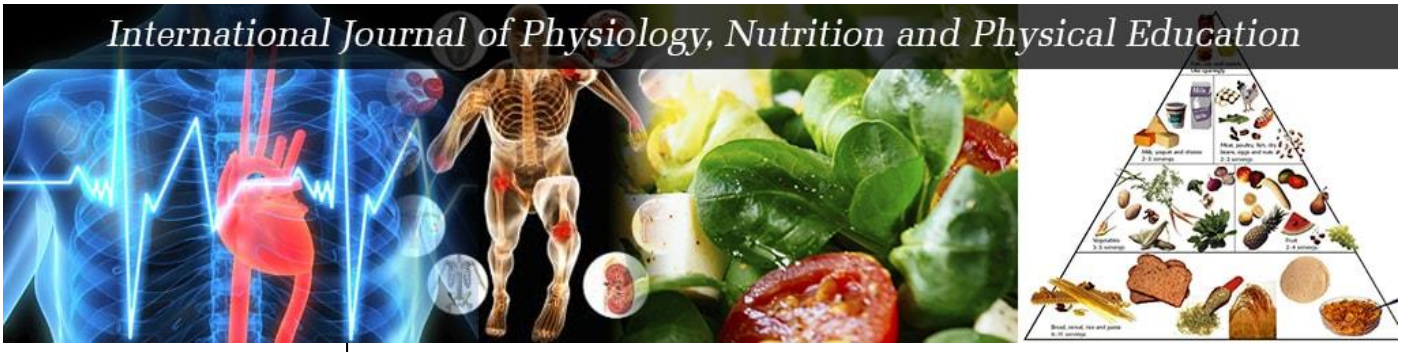

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To study the relationship between immersion and shooting performance

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Abstract
Background: Immersion includes a lack of awareness of time, a loss of awareness of the real world, involvement and a sense of being in the task environment and that Immersion has three levels engagement, engrossment and total immersion. Immersion is rare and rather fleeting experience.
Methods: The survey design study was conducted to determine the relationship among international shooters on the variables of immersion. The sample consists of 22 subjects in which 11 males and 11 female Indian rifle and pistol shooters.
Results: The results revealed that the all items showed significant and positive correlation with Total Immersion scale except challenge which is non-significant and negatively correlated with its items.
Conclusion: It has been concluded that if sports persons learn the techniques of immersion during training they will definitely improve their performance especially in sports where concentration plays very important role.

Keywords: Relationship, immersion, shooting performance

Introduction
Immersion includes a lack of awareness of time, a loss of awareness of the real world, involvement and a sense of being in the task environment and that Immersion has three levels engagement, engrossment and total immersion. Immersion is rare and rather fleeting experience. Players can be involved in a game on an engagement ‘or engrossment ‘level without transcending to the total immersion ‘level at all. We can also say that it is the deep mental involvement in something, to become completely involved I something or to involve oneself deeply in a particular activity. In the games like shooting the involvement of the players in their respective events varies every time.
Immersion is a powerful experience of deep involving the activity and has been stated by researchers alike as an important involvement of interaction. Though, when trying to understand immersion for transmission to another area, it is very difficult to find out what exactly is meant by immersion and indeed even whether the different research on immersion is talking about the same concept. Immersion is a twofold experience. It involves seeing things in a flat, marked surface. In the case of the video game with the spaceship the depicted object is a location in the spaceship and the flat surface is the computer screen with its constantly changing pixels. The experience is also governed by a standard of correctness, since you cannot only be wrong about what you see on your screen but also about your location in the represented space. When you claim to be in the control room whilst being in the engine room, you are mistaken.
Pictorial experience Immersive pictures, like photographs, evoke a special kind of twofold experience. In the case of non-immersive pictures, the viewer‘s is passive regarding the pictorial surface. She has no control over what, for example, a painting or a movie display. Of course, one can move around the room in an art gallery, which will show you the picture from a different perspective, but this does not bring about any change in the flat surface‘s properties. Immersive pictures, on the other, allow the user to influence the flat surface and hence what is seen in the surface. Geert Gooskens have already described how this influence on the flat surface works: via a represented body, we can perform actions in physical realities which bring about a change in the properties displayed on the screen. Immersion is therefore a special variety of pictorial experience. We can influence the picture‘s flat surface, and because we do

this via a represented body, this influencing brings about a sense of being spatially related to the depicted objects and therefore of being in the same space as these objects. **Geert Gooskens** argued that immersion – the feeling of being present in a represented space – is not an illusory or imaginary experience. Instead, he has argued it to be a special kind of pictorial experience. Immersion exhibits the main traits of this experience: twofold and a standard-of correctness. It is, however, a special kind of pictorial experience: viewers feel present in the pictorial space because they have a represented body which allows them to spatially relate to depicted objects and brings about the feeling of being in the represented space these objects are in.

Different disciplines of shooting sports can be categorized by equipment, shooting distances, targets, time limits and degrees of athleticism involved. Shooting sports may involve both team and individual competition, and team performance is usually assessed by summing the scores of the individual team members. Due to the noise of shooting and the high and often lethal impact energy of the projectiles shooting sports are typically conducted at either designated permanent shooting ranges or temporary shooting fields in the area away from settlements. Various psychological parameters effects the performance of shooters but I want to see the relationship between immersion and shooting performance, that's why this study has been under taken.

Methodology

Design of the study: The design of the study was survey study and the nature of present study was psychological study. This study was conducted to determine the relationship among international shooters on the variables of immersion.

Selection of the Subjects The sample consist of 22 subjects in which 11 males and 11 female. The subjects were Indian rifle and pistol shooters who attended the camp at Dr. Karni Singh Shooting Ranges, New Delhi Through purposive sampling technique, the subjects were illustrated about the present study and the variables of immersion. The subjects voluntarily took part in this study with the consent of their coaches.

Results and discussion

Table 1: Comparison of Immersion between Indian male and female Shooters

	Gender	N	Mean	Std. Deviation	T-value	df	P-value
Cognitive Involvement	Male	11	49.18	7.40	-.226	20	.824
	Female	11	49.91	7.70			
Emotional Involvement	Male	11	29.73	4.52	-1.441	20	.165
	Female	11	32.82	5.49			
Real World Dissociation	Male	11	30.09	2.02	1.396	20	.178
	Female	11	28.64	2.80			
Control	Male	11	24.36	4.18	.737	20	.470
	Female	11	23.00	4.49			
Challenge	Male	11	16.64	2.06	-.189	20	.852
	Female	11	16.82	2.44			
Total Immersion	Male	11	131.55	15.28	-.516	20	.611
	Female	11	135.55	20.66			

It has been found that female have slightly higher mean for cognitive involvement as compared to male. But there is insignificant difference in cognitive involvement of male and female. It is evident from the results that female have higher mean for emotional involvement as compared to male. But there is no significant difference in emotional involvement of male and female. It can also be seen that male have higher mean for real world dissociation as compared to female. there is insignificant difference in real world dissociation of male and female. It can be seen that male have higher mean for control as compared to female. But there is insignificant difference in control of male and female. It is evident that female have slightly higher mean for challenge as compared to male. However there is insignificant difference in challenge of male and female. It has revealed that female have higher mean for total immersion as compared to male. The difference in mean values of total immersion has been tested for statistical significance with the help of independent sample t-test. As shown in the table, t-value -.516, p-value .611 has been found insignificant at .05 levels. Thus, there is insignificant difference in total immersion of male and female.

Findings regarding mean comparison among Indian male and female shooters of Immersion scale:

It was found (Table no.1) that females showed more scores than males on Immersion scale. Females also showed more mean score on cognitive involvement, emotional involvement, and challenge. Male showed more mean score on real world dissociation and control.

Table 2: correlation between immersion and its items

	Immersion	Cognitive involvement	Emotional Involvement	Real World Dissociation	Control	Challenge
Immersion	1	.887**	.809**	.265	.735**	-.032
Cognitive involvement	.887**	1	.490*	.108	.854**	-.037
Emotional Involvement	.809**	.490*	1	.155	.267	.007
real-world Dissociation	.265	.108	.155	1	.198	.122
Control	.735**	.854**	.267	.198	1	-.226
Challenge	-.032	-.037	.007	.122	-.226	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2 revealed the correlation between Immersion and its items of shooters. Significant correlation were obtained for cognitive involvement (r=0.89, $p<0.01$), emotional involvement (r=0.81, $p<0.01$), real world dissociation (r=0.26, $p<0.01$), control (r=0.73, $p<0.01$), challenge (r= -0.03, $p<0.01$). From above discussion we can see that all items showed significant and positive correlation with Total Immersion scale except challenge which is non-significant and negatively correlated with its items. Therefore, we concluded that Immersion of player increases with increases of their items except challenge which is decreases with immersion.

Discussion

The results revealed that the all items showed significant and positive correlation with Total Immersion scale except challenge which is non-significant and negatively correlated with its items. Therefore, we concluded that Immersion of player increases with increases of their items except challenge which is decreases with immersion. Present study has been supported by the study of Yeong-Gwon Jo1, Jong-Sik Lim2 and Chun-Ho Yang (2016) They examines the relationship among participation motivation, game immersion, and exercise performance for golf players. Frequency analysis, factor analysis, reliability verification, correlation analysis, and multiple regression analysis were conducted on 225 golf players. in this study, cognitive immersion and behavioural immersion from game immersion positively influence internal satisfaction, social recognition, and adding values. In addition, according to the identification of the influence of participation motivation on exercise performance, personal performance, team performance, and ability utilization positively influence internal satisfaction, social recognition, and adding values.

Conclusion

It has been concluded that Correlation based on immersion scale and its items: players showed significant and positive correlation between immersion and its items. Total immersion score of player increases with increases of items. It also revealed that if sports persons learn the techniques of immersion during training they will definitely improve their performance especially in sports where concentration plays very important role.

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