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Superstitions Behavior and Decision Making in Collegiate Athletes: An Illogical Phenomenon

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This study examined the superstitious behavior and decision making among individual, dual and team sport groups. To obtain required data, the investigators had selected Ninety (N = 90) male intercollege level athletes of 19 to 25 years of age to act as subjects. They were divided into three groups; Thirty (n_1 = 30) Individual Sports, Thirty (n_2 = 30) Dual Sports and Thirty (n_3 = 30) Team Sports athletes of various games and sport. The purposive sampling technique was used to select the subjects. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study. To measure the level of superstitions behaviors of the subjects, the superstitions beliefs and behaviour scale constructed by Buhramann et al. (2004) were administered and to measure the level of decision making, decision making questionnaire prepared by French et al. (1993) was applied. One way Analysis of Variance (ANOVA) was employed to find out the intra-group differences. To test the hypothesis, the level of significance was set at .05. The results revealed significant intra-group differences among individual, dual and team sports on the variable superstitious behavior and decision making. It is concluded that the individual sport group has low superstitious belief and better decision making level as compared to their counterpart dual and team sport.

Keywords: Superstitious; Behavior; Decision Making

Introduction

Humans seek explanations between cause and effect and have tendencies to acquire beliefs in something that cannot be scientifically proven. People tend to assume causation between behaviors and events that are not correlated; this was defined as superstitious behavior by B.F Skinner in 1948 (Chance, 2009).

It is a common occurrence in the sports world for an athlete to engage in superstitious behaviors that may seem odd to others. Society seems to mock athletes and believe that their behaviors are absurd; however, each superstition serves a purpose in which the sportsperson is found to be beneficial to their performance. NBA sensation, Michael Jordan, would wear his college uniform shorts underneath his Chicago bulls uniform (Cox, 2010). In fact, it is said that he is the reason for the trend of long shorts in the sport of basketball because he would wear extra-large uniform bottoms to hide his University of North Carolina shorts.

Some top class athletes believe that their superstitions enhance their performance and alter the outcome of the competition, but in fact, practice and confidence is the key to success in athletics (Mayberry, 2010). Sports psychologists identify superstitions as a coping mechanism because they give athletes a sense of control, which in turn lowers anxiety and increases confidence. The positive side of superstitions is that an athlete's confidence will rise as long as they feel they are in control of the situation during competition. Superstitions give athletes confidence that their rituals and routines are gaining them success.

Many sport psychologists view superstitions as nothing more than reactions that begin with conditioning and boosting a placebo effect (Roenigk, 2010). Some believe that superstitions and rituals are an attempt to manipulate fate and act as a psychological placebo to athletes (Robson, 2005). Many athletes cling to superstitions to help navigate the numerous events that require high levels of performance because a little psychological edge can be beneficial in concentration and focus. The most negative consequence that can occur from superstitions and rituals would be if the athlete were to abandon them; doubt, anxiety, and worry might escalate and performance may significantly suffer. In reality, if an athlete is unable to follow their rituals or superstitions, their focus may be hindered (Fogelman, 2012).

Decision making is an integral part of everyday life and level of self confidence is related to the time it takes to make a decision. Myers (1962) indicated that a person's decision making process depends to a significant degree on their cognitive style;

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as in most decision-making situations, an individual faces different degrees of uncertainty. In probabilistic terms, this situation is called ambiguity. Decision making is the process of sufficiently reducing uncertainty and doubt about alternatives to allow a reasonable choice to be made from them. Lopez (1977) has defined a decision as a judgment, a final resolution of a conflict of needs, means or goals; and a commitment to action made in face of uncertainly, complexity and even irrationally. Therefore decision making is an important part of all science-based professions, where specialists apply their knowledge in a given area to making informed decisions. The present study aimed to determine the difference in superstitious behavior and decision making among individual, dual and team sport groups.

Methods

Subjects

To obtain data, the investigators had selected Ninety (N = 90) male intercollege level athletes of 19 to 25 years of age to act as subjects. They were divided into three groups; Thirty (n_1 = 30) Individual Sports, Thirty (n_2 = 30) Dual Sports and Thirty (n_3 = 30) Team Sports athletes of various games and sports. The purposive sampling technique was used to select the subjects. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study.

A break-up of selected sample is their consent and volunteered to participate in this study (as shown in Table 1).

Tools

To measure the level of superstitions behaviors of the subjects, the superstitions beliefs and behaviour scale constructed by Buhramann et al. (2004) was administered.

To measure the level of decision making was measured by applying decision making questionnaire prepared by French et al. (1993).

Instrumentation

Superstitions Behaviors questionnaire consists of forty two (N= 42) questions. These questions were to be answered by a tick mark in the respective boxes given next to each question. The questionnaire was arranged in a logical order and each question was worded clearly to enable the subjects to understand and answer those questions without much difficulty. The responses to the questions were “Agree”, “Dis-Agree” and “Not Aware”.

Decision making questionnaire consisted of twenty one (N = 21) items measuring the decision making. The respondents were required to record their responses in six categories, very infrequently or never, infrequently, quite infrequently, quite frequently, frequently and very frequently or always. The scoring of each of the items was as follows; very infrequently or never = 1, infrequently = 2, quite infrequently = 3, quite frequently = 4, frequently and very frequently or always = 6. There was no right or wrong answers in this questionnaire. There was none allocated for the completion of both the questionnaires but the subjects were instructed not taken too much time over any questions. The questionnaires were distributed to the respondents along with the writing material. After the completion of the questionnaires, questionnaires were collected and checked that no response was left unanswered.

Table 1.
A break-up of selected sample.

Sr. No	Individual Sports		Dual Sports		Team Sports	
1.	Archery	10	Chess	10	Basketball	10
2.	Shooting	10	Tennis	10	Handball	10
3.	Fencing	10	Badminton	10	Football	10
	Total	**(N_1 = 30)**	**Total**	**(N_2 = 30)**	**Total**	**(N_3 = 30)**

Statistical Analysis

One way Analysis of Variance (ANOVA) was employed to find out the intra-group differences. To test the hypothesis, the level of significance was set at .05.

Results

It is evident from Table 2 that results of Analysis of Variance (ANOVA) among various sport groups (archery, shooting and fencing) with regard to individual sports athletes on the variable superstitious behavior were found statistically insignificant (P > .05). Since “F” ratio was not found statistically significant, therefore, there is no need to apply the post hoc test.

It is evident from Table 3 that results of Analysis of Variance (ANOVA) among various sport groups (Chess, Tennis and Badminton) with regard to dual sports athletes on the variable superstitious behavior were found statistically insignificant (P > .05). Since “F” ratio was not found statistically significant, therefore, there is no need to apply the post hoc test.

It is evident from Table 4 that results of Analysis of Variance (ANOVA) among various Team Sports (Basketball, Handball and Football) with regard to dual sports athletes on the variable superstitious behavior were found statistically insignificant (P > .05). Since “F” ratio was not found statistically

Table 2.
Analysis of Variance (ANOVA) results with regard to superstitious behavior among Individual Sports (Archery, Shooting and Fencing).

Source of variance	Sum of Squares	df	Mean Square	F-ratio	Sig.
Between Groups	7.46	2	3.73	.35	.70
Within Groups	285.90	27	10.58		
Total	293.36	29			

F .05 (2, 27).

Table 3.
Analysis of Variance (ANOVA) results with regard to superstitious behavior among Dual Sports (Chess, Tennis and Badminton).

Source of variance	Sum of Squares	df	Mean Square	F-ratio	Sig.
Between Groups	150.46	2	75.23	1.448	.253
Within Groups	1403.00	27	51.96		
Total	1553.46	29			

F .05 (2, 27).

significant, therefore, there is no need to apply the post hoc test.

It is evident from Table 5 that results of Analysis of Variance (ANOVA) among various sport groups (individual, dual and team sports) with regard to superstitious behavior were found statistically significant (P < .05). Since the obtained F-ratio 281.33* was found statistically significant, therefore, Post-hoc test (LSD) was applied to find out the degree and direction of differences between paired means among various sport groups (individual, dual and team sports) with regard to superstitious behavior. The results of Post-hoc test have been presented in Table 6 below.

A glance at Table 6 showed that the mean value of individual sports group was 49.43 whereas dual sports had mean value as 71.53 and the mean difference between both the groups was found 22.10. The p-value sig .000 shows that the individual sport group had demonstrated significantly better on superstitious behavior than their counterpart's dual sport group. The mean difference between individual and team sport group was found 39.30. The p-value sig .000 revealed that the individual sport group had exhibited significantly better on superstitious behavior than their counterpart's team sport group. The mean difference between team and dual sport group was found 17.20. The p-value sig .000 showed that the dual sport group had demonstrated better significantly better on superstitious behavior than their counterpart's team sport group.

It is evident from Table 7 that results of Analysis of Variance (ANOVA) among various sport groups (archery, shooting and fencing) with regard to individual sports athletes on the variable decision making were found statistically insignificant (P > .05). Since "F" ratio was not found statistically significant, therefore, there is no need to apply the post hoc test.

It can be seen from Table 8 that results of Analysis of Variance (ANOVA) among various sport groups (chess, tennis and badminton) with regard to dual sports athletes on the variable decision making were found statistically insignificant (P > .05). Since "F" ratio was not found statistically significant, therefore, there is no need to apply the post hoc test.

It can be observed from Table 9 that results of Analysis of Variance (ANOVA) among various sport groups (basketball, handball and football) with regard to team sports athletes on the variable decision making were found statistically insignificant (P > .05). Since "F" ratio was not found statistically significant, therefore, there is no need to apply the post hoc test.

It is evident from Table 10 that results of Analysis of Variance (ANOVA) among various sport groups (individual, dual and team sports) with regard to decision making were found statistically significant (P < .05). Since the obtained F-ratio 127.63 was found statistically significant, therefore, Post-hoc

Table 4.
Analysis of Variance (ANOVA) results with regard to superstitious behavior among Team Sports (Basketball, Handball and Football).

Source of variance	Sum of Squares	df	Mean Square	F-ratio	Sig.
Between Groups	80.86	2	40.43	.653	.529
Within Groups	1673.00	27	61.96		
Total	1753.86	29			

F .05 (2, 27).

Table 5.
Analysis of Variance (ANOVA) results with regard to superstitious behavior among Various Sport Groups (Individual, Dual and Team Sports).

Source of variance	Sum of Squares	df	Mean Square	F-ratio	Sig.
Between Groups	23287.40	2	11643.70	281.33*	.000
Within Groups	3600.70	87	41.38		
Total	26888.10	89			

F .05 (2, 87).

Table 6.
Comparison of Mean Values of Post-hoc test (LSD) among various Sport Groups (Individual, Dual and Team Sports) with regard to superstitious behaviour.

Group (A)	Group (B)	Mean Difference (A-B)	Sig.
Individual Sports (Mean = 49.43)	Dual	−22.10*	.00
	Team	−39.30*	.00
Dual Sports (Mean = 71.53)	Individual	22.10*	.00
	Team	−17.20*	.00
Team Sports (Mean = 88.73)	Individual	39.30*	.00
	Dual	17.20*	.00

Table 7.
Analysis of Variance (ANOVA) results with regard to decision making among Individual Sports (Archery, Shooting and Fencing).

Source of variance	Sum of Squares	df	Mean Square	F-ratio	Sig.
Between Groups	25.40	2	12.70	.972	.391
Within Groups	352.90	27	13.07		
Total	378.30	29			

F .05 (2, 27).

Table 8.
Analysis of Variance (ANOVA) results with regard to decision making among Dual Sports (Chess, Tennis and Badminton).

Source of variance	Sum of Squares	df	Mean Square	F-ratio	Sig.
Between Groups	.46	2	.23	.017	.983
Within Groups	369.00	27	13.66		
Total	369.46	29			

F .05 (2, 27).

Table 9.
Analysis of Variance (ANOVA) results with regard to decision making among Team Sports (Basketball, Handball and Football).

Source of variance	Sum of Squares	df	Mean Square	F-ratio	Sig.
Between Groups	7.46	2	3.73	.353	.706
Within Groups	285.90	27	10.58		
Total	293.36	29			

F .05 (2, 27).

test (LSD) was applied to find out the degree and direction of differences between paired means among various sport groups (individual, dual and team sports) with regard to decision making. The results of Post-hoc test have been presented in **Table 11** below.

A glance at **Table 11** showed that the mean value of individual sports group was 63.70 whereas dual sports had mean value as 58.86 and the mean difference between both the groups was found 6.83. The p-value sig .000 shows that the individual sport group had demonstrated significantly better on decision making than their counterpart's dual sport group. The mean difference between individual and team sport group was found 14.26. The p-value sig .000 revealed that the individual sport group had exhibited significantly better on decision making than their counterpart's team sport group. The mean difference between team and dual sport group was found 7.43. The p-value sig .000 showed that the dual sport group had demonstrated better significantly better on decision making than their counterpart's team sport group.

Discussion

A perusal at Analysis of Variance (ANOVA) **Tables 2-4** with regard to superstitious behavior of individual sport (archery, shooting and fencing), Dual Sports (Chess, Tennis and Badminton) and Team Sports (Basketball, Handball and Football) group revealed insignificant differences among various sport groups. But when we find out the intra-group difference between individual, dual and team sports it is revealed significant differences between these groups.

The findings of Analysis of variance (ANOVA) **Tables 5** and **6** with regard to superstitious behaviour individual, Dual and Team Sports revealed significant differences among sport groups. The outcome of the above results might be due to the impact of stress, and increased task persistence constitutes one means by which self-efficacy, enhanced by superstition, improves performance.

Therefore, Post-hoc test (LSD) was applied to find out the degree and direction of differences between paired means among various sport groups (individual, dual and team sports) with regard to superstitious behaviour. After the analysis it can safely be reviewed that individual sport group has lower superstitious behaviour as compare to their counterpart dual and team sport. If evidence from past research is valid, then superstitious beliefs and behavior in collegiate athletes is a result of the individual's decision making. Performing more studies and exploring a variety of variables would yield a greater insight to more possible causes and reasoning behind superstition. Learning more about superstitions could assist sport psychologists, coaches, and players in understanding how individual athletes view the sport and effectively find strategies that can further enhance performance.

One may wonder whether the beneficial effects of superstition on performance would also hold in real-life situations. In fact, correlational support for this possibility exists in the realm of sports. Buhrmann and Zaugg (1981) found that for competitive basketball players, superstitious beliefs and performance are positively related: Superior teams, as well as superior players within a team, exhibit more superstitious behaviors. In light of the present findings, this suggests that even in real-life performance situations, superstitious thoughts and behaviors result in performance benefits. It is interesting to note that much of the article is devoted to covering the superstitious elements in the game rather than the aspects of game play and strategy, and that the superstitious beliefs filter throughout the team, in this instance, from the coach and play to the manager. Some athletes admit to their superstitions, and naturally enough, they are reported to the public without hesitation.

A perusal at Analysis of Variance (ANOVA) **Tables 7-9** with regard to decision making of individual sport (archery, shooting and fencing), Dual Sports (Chess, Tennis and Badminton) and Team Sports (Basketball, Handball and Football) group revealed insignificant differences among various sport groups. The outcome of the above results might be due to the practical environment includes different types of games. But when we find out the intra-group difference between individual, dual and team sports it is revealed significant differences between these groups.

The findings of Analysis of variance (ANOVA) **Tables 10** and **11** with regard to decision making individual, Dual and Team Sports revealed significant differences among sport groups. The findings might be as results of pressures of their study and less responsibility in team sports which might lead them to the low decision-making level. Therefore, Post-hoc test (LSD) was applied to find out the degree and direction of differences between paired means among various sport groups (individual, dual and team sports) with regard to decision making. After the analysis it can safely be reviewed that individual sport group has higher decision making power as compare to their counterpart dual and team sport. Similar trends have been reported by Flaming et al. (2010) found that significant difference between Philippines and United States students on the variable decision making. Dureja and Singh (2011) found that Physical education students have better decision making level as compared to their counterpart psychology students.

Table 10.
Analysis of Variance (ANOVA) results with regard to decision making among Various Sport Groups (Individual, Dual and Team Sports).

Source of variance	Sum of Squares	df	Mean Square	F-ratio	Sig.
Between Groups	3054.86	2	1527.43	127.63	.00
Within Groups	1041.13	87	11.96		
Total	4096.00	89			

F .05 (2, 87).

Table 11.
Comparison of Mean Values of Post-hoc test (LSD) among various Sport Groups (Individual, Dual and Team Sports) with regard to Decision Making.

Group (A)	Group (B)	Mean Difference (A-B)	Sig.
Individual Sports (Mean = 63.70)	**Dual**	6.83	.00
	Team	14.26	.00
Dual Sports (Mean = 58.86)	**Individual**	−6.83	.00
	Team	7.43	.00
Team Sports (Mean = 49.43)	**Individual**	−14.26	.00
	Dual	−7.43	.00

Conclusion

The results revealed significant difference with regard to variable superstitious behavior and decision making among individual, Dual and Team Sports athletes. The individual sport group has low superstitious belief and better decision making level as compared to their counterpart dual and team sport.

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