A Study of

Competitive Anxiety and Self Confidence of National Male Gymnasts in Relation to their Competition Performance

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ABSTRACT

The purpose of present study was to analyze the Indian medal winning performance and ranking in medal tally (overall and sport specific), with respect to other countries, in last two Asian Games i.e. 2010 and 2014.

For this, comparative performance of Indian athletes in the last two Asian Games of 2010 and 2014 was undertaken, on the basis of medals won at these games. The relevant data, in this regard, were obtained from the concerned websites, newspapers, news magazines and other sources.

Results revealed that number of sports and events were reduced from 42 to 36 in 2014 Asian games, with respect to previous games. India participated in 28 sports in 2014 Asian games as compared to 36 in 2010 Asian Games. Nine medals (1Gold, 2 Silver, and 6 Bronze) in 2010 Asian games were from those four sports which were dropped in 2014 Asian games and almost same number of medals (8) were lacking in 2014 Asian Games, for Indians. Percentage of medal winning performance out of total medals was 4.12% and 3.92% in 2010 and 2014 Asian games, respectively (very small difference i.e. 0.20%). It was examined that change in ranking in medal tally depended not only on India's medal winning performance but also on the other countries, medal winning performance (mostly gold medals have played the key role to decide the ranking). In sports like Athletics and Shooting, India dropped in ranking but the medals are more with respect to previous Asian Games.. India's medal winning performance in 2014, with respect to 2010 Asian Games has recorded increases in Athletics (12 to 13), Shooting(8 to 9), Wrestling (3 to 5), Archery (3 to 4), Squash(3 to 4), Hockey (1 to 2), Badminton (0 to1); decrease in Boxing (9 to 5), Rowing(5 to 3) and no change in Kabaddi (2), Wushu(2), Sailing(1) and Swimming (1).

From this study, it was concluded that Indian athletes, coaches, supporting staff, sports federations and sport organizations should focus more on all sports to maintain its winning performance, in future.

INTRODUCTION

Competitive Gymnastics is not for everyone; nor everyone has the mind and body to prepare for elite competitive Gymnastics. Some of the gymnasts are not successful due to lack of mental preparation and mental toughness. The elite competition performance requires not only the physical and physiological preparation but also well-balanced mental preparation, to succeed in the competition. The modern trend of Gymnastics is that it is not only the

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physical-physiological ability, that is required. but also psycho-physiological ability To gain required mental preparation during practice, prior to and during competition, the sport psychology plays an important role in the mental preparation of the gymnasts. It embraces such fundamental concerns and concepts as motivation, arousal levels, skill acquision, feed back reinforcement, anticipation, psychological preparation, attention, attitudes, emotional stability, stress management, building–up self confidence, controlling anxiety etc.

Sports performance, during competitions, is influenced by many factors. The most important factor which influences sport performance, during competition, seems to be the level and incidence of competition anxiety (Debnath & Bawa, 2005). Competition anxiety is a complex emotional state characterized by a general fear or foreboding, usually accompanied by tension. It is related to apprehension and fear, and is frequently associated with failure, either real or anticipated (Frost 1971). Anxiety has been used to describe the response to a situation perceived as stressful, by an individual, which may vary and fluctuate over time, as a result of the amount of stress perceived. Hence, anxiety is a subjective evaluation on the part of the individual, in terms of the stress perceived (Landers & Boutcher, 1986). Anxiety has thought component (e.g., worry and apprehension) called cognitive anxiety. It also has a somatic anxiety component, which is the degree of physical activation perceived. In addition to the distinction between cognitive and somatic anxiety, another important distinction to make is between state and trait anxiety. State anxiety refers to the ever changing mood component. It is an emotional state "characterized by subjective, consciously perceived feelings of apprehension and tension, accompanied by or associated with activation or arousal of the autonomic nervous system". Cognitive state anxiety concerns the degree to which one worries or has negative thoughts, whereas somatic state anxiety concerns the moment to moment changes perceived physiological activation (Spielberger, 1996). Top athletes, each, have a zone of optimal state anxiety in which their best performance occurs . Outside this zone, poor performance occurs (Hanin, 1986).

Self confidence is one of the key factors to get success. Those who don't have confidence on self, perform poorly, especially in Gymnastics (Debnath, 2005). Confident athletes believe in themselves. Most importantly, they believe in their ability to acquire the necessary skills and competencies, both physical and mental, to reach their potential. Less confident players doubt whether they are good enough or have what it takes to be successful. When one expects something to go wrong, one is creating what is called self fulfilling prophecy. Unfortunately, this phenomenon is common in both competitive sport and exercise programmes. Negative self-fulfilling prophecies are psychological barriers that lead to a vicious cycle: the expectation of failure leads to actual failure which lowers self-image and increases expectations of future failure (Weinberg & Gould, 1995).

Objective of the Study:

The study has been conducted with the following objectives:

1. To find out the anxiety (somatic and cognitive) and self confidence status of the Indian male gymnasts and relationship of competitive anxiety and

self confidence with competition performance.

2. The other objective of the study is to find out whether the high performance gymnasts significantly differ from medium and low performance gymnasts in competition performance anxiety and self confidence.

Hypotheses

The study was based on the following hypotheses :

1. There would be significant relationship between self confidence and competition performance.
2. That there would be a significant relationship between anxiety and competition performance.
3. There would be significant difference in competition performance, anxiety and self confidence between high performance group and medium performance group, high performance group and low performance group and medium performance group and low performance groups, in Gymnastics.

METHODOLOGY

Subjects

48 senior male gymnasts were selected as subjects for study, who participated in the National Gymnastics Championship.

Tools Used

Competitive State Anxiety Inventory-2

Competitive State Anxiety Inventory-2 (CSAI-2) by Martens et al (1990) was used to find out the anxiety and self confidence level of each gymnast.

CSAI-2 is a reliable test: The author has measured the reliability by internal consistency. Internal consistency measures the degree to which the items in the same sub scales are homogenous. The author has given the alpha co-efficiency of the test which ranged from 0.79 to 0.90, demonstrating a sufficiently high degree of internal consistency for each of CSAI-2 subscales.

The author has also given the concurrent validity of CSAI-2 which was examined by investigating the relationship between each of the CSAI-2 sub-scales and 8 selected A - state and A-trait inventories the test is valid as the coefficient given by the authors was quite high.

For administration and Scoring of the Test, Verbal instructions were given for filling up the questionnaire to all the subjects. The CSAI-2 was scored by computing a separate total for each of the three sub-scales, with scores ranging from a low of 9 to a high of 36. The higher the score, the greater the cognitive or somatic A-State or greater self confidence. The cognitive A-State sub-scale is scored by totaling the responses for the following 9 items: 1,4,7,10,13,16,19,22 and 25.The somatic A-State subscale is scored by adding the responses to the following 9 items: 2, 5,8,11,14R, 17,20, 23 and 26. Scoring for item 14 must be reserved in calculating the score for the somatic A-State subscale as indicated: 1=4, 2=3,3=2,4=1. The state of self confidence subscale is scored by adding the following items: 3,6,9,12,15, 18,21,24 and 27.

Competition Performance :

In Gymnastics, a performer has to perform on six apparatuses i.e., Floor, Pommel, Rings, Vault, Parallel Bars and Horizontal Bar, as per the code of points. The data regarding competition performance, of all the subjects, will be obtained from the official competition results, on the basis of their competition

performance.

Statistical Procedure:

To find out the relationship between competitive anxiety (Somatic and Cognitive) and competition performance, and self confidence and competition performance, coefficient of correlation was computed. The subjects were divided into three groups, on the basis of their competition performance. Means and Standard Deviations of each variable of each group was computed: To find out the significance difference in competitive anxiety (Somatic and Cognitive) and self confidence, between high and medium, high and low, medium and low performance groups, t-test was applied:

RESULTS & DISCUSSION

Table – 1 : Coefficient of Correlation among various variables (N = 48) Correlation Matrix

Coefficient of Correlation	Competition Performance	Somatic Anxiety	Cognitive Anxiety	Self Confidence
Competition Performance	1.00	0.18	-0.20	0.07
Somatic Anxiety	-	1.00	0.17	-0.19
Cognitive Anxiety	-	-	1.00	-0.30
Self Confidence	-	-	-	1.00

It is evident from the Table 1 that there is coefficient of correlation of 0.18 between competition performance and somatic anxiety. The coefficient of correlation obtained is non-significant. A non-significant correlation of -0.20 is observed in Table1 between competition performance and cognitive anxiety. Table1 shows that the amount coefficient of correlation of 0.07 between self confidence and competition performance.

While analyzing the relationship of somatic anxiety and cognitive anxiety and self confidence, it is observed from the Table that there exists correlation of -0.20 which is non-significant between somatic anxiety and cognitive anxiety. In fact, these both are two sub scales of state anxiety. Table1 also depicts a non-significant correlation of -0.19 between somatic anxiety and self confidence.

While going through the results given in the above Table, it is seen that there exists significant correlation between cognitive anxiety and self confidence, the value of the coefficient of correlation between self confidence and cognitive anxiety obtained is 0.30, which is significant at 0.05 level.

Table – 2 : Means. Standard Deviations and t-test values in various variables between High Performance Group (H.P.G.) and Medium Performance Group (M.P.G)

	Variable	H.P.G.(N=16)		M.P.G (N=16)		M.D	S.E.M.D	t-value
		Mean	SD	Mean	SD			
1	Competition Performance	45.64	0.864	43.09	0.73	2.55	0.283	9.020**
2	Somatic Anxiety	17.81	3.125	17.25	3.77	0.56	1.230	0.457
3	Cognitive Anxiety	18.31	3.950	20.06	3.75	1.75	1.360	1.285
4	Self Confidence	24.50	7.560	26.94	5.93	2.44	2.390	1.020

** Significant at 1% level

In Table 2 the mean of competitive performance of high performance group and medium performance group is 45.64 ± 0.864 and 43.09 ± 0.73, respectively. The mean difference (MD) is 2.55 and standard error of mean difference (SEMD) is 0.283.

The t-test value for competitive performance between high performance group and medium performance group has shown 1% significant difference(t=9.02).

The mean of somatic anxiety – of high performance group and medium performance group is 17.81 ± 3.125 and 17.25 ± 3.77, respectively. The MD is 0.56 and SEMD is 1.23. The t-test value for SA between HPG and MPG has shown no significant difference (t=0.457).

The mean of cognitive anxiety of high performance group and median performance group is 18.31± 3.95± and 20.06 ± 3.75, respectively. The MD is 1.75 and SEMD is 1.36. The t-test value for CA between HPG and MPG has shown no significant difference (t=1.285)

The mean of self confidence of high performance group and medium performance group is 24.50 ± 7.56 and 26.94 ± 5.93, respectively. The MD is 2.44 and SEMD is 2.39. The t-test value for SC between HPG and MPG has shown no significant difference (t=1.02).

Table – 3 : Means. Standard Deviations and t-test values in various variables between High Performance Group (H.P.G.) and Low Performance Group (L.P.G.)

	Variable	H.P.G.(N=16)		L.P.G. (N=16)		M.D	S.E.M.D	t-value
		Mean	SD	Mean	SD			
1	Competition Performance	45.64	0.864	38.80	2.65	6.84	0.670	9.82**
2	Somatic Anxiety	17.81	3.125	16.25	5.00	1.56	1.470	1.06
3	Cognitive Anxiety	18.31	3.950	20.13	2.87	1.82	1.220	1.49
4	Self Confidence	24.50	7.560	26.38	4.56	1.88	2.190	0.86

** Significant at 1% level

In the Table 3 the mean of competitive performance of high performance group and medium performance group is 45.64 ± 0.864 and 38.8 ± 2.65, respectively. The mean difference (MD) is 6.84 and standard error of mean difference (SEMD) is 0.670.

The t-test value for competitive performance between HPG and LPG has shown significant difference (t=9.82).

The mean of somatic anxiety of high performance group and medium performance group is 17.81 ± 3.125 and 16.25 ± 5.00, respectively. MD is 1.56 and SEMD is 1.47. The t-test value for high performance group and low performance group has shown non- significant difference (t=1.06).

The mean of cognitive anxiety of high performance group and median performance group is 18.31± 3.95± and 20.13± 2.87, respectively. The MD is 1.82 and SEMD is 1.22. The t-test value for cognitive anxiety between high performance group and low performance group has shown non- significant difference (t=1.49)

The mean of self confidence of high performance group and medium performance group is 24.50± 7.56 and 26.38 ± 4.56, respectively. The MD is 1.88 and SEMD is 2.19. The t-test value for self confidence between high performance group and low performance group has shown non- significant difference (t=0.86)

Table – 4 : Means. Standard Deviations and t-test values in various variables between Medium Performance Group (M.P.G.) and Low Performance Group (L.P.G)

	Variable	M.P.G.(N=16)		L.P.G (N=16)		M.D	S.E.M.D	t-value
		Mean	SD	Mean	SD			
1	Competition Performance	43.09	0.73	38.80	2.65	4.29	0.69	6.240**
2	Somatic Anxiety	17.25	3.77	16.25	5.00	1.00	1.57	0.639
3	Cognitive Anxiety	20.06	3.75	20.13	2.87	1.17	1.17	0.060
4	Self Confidence	26.94	5.93	26.38	4.56	1.87	1.87	0.300

** Significant at 1% level

In the Table 4 the mean of competitive performance of medium performance group and low performance group is 43.09 ± 0.73 and 38.80 ± 2.65, respectively. The mean difference (MD) between two groups is 4.29 and standard error of mean difference (SEMD) is 0.69.

The t-test value for competitive performance between medium performance group and low performance group has shown significant difference (t=6.24).

The mean of somatic anxiety of medium performance group and low performance group is 17.25 ± 3.77 and 16.25 ± 5.0, respectively. The MD between two groups is 1.0 and SEMD is 1.57. The t-test value of somatic anxiety between medium performance group and low performance group has shown no significant difference (t=0.639).

The mean of CA of medium

performance group and low performance group is 20.26± 3.75± and 20.13± 2.87, respectively. The MD between two groups is 0.07 and SEMD is 1.17. The t-test value of cognitive anxiety between medium performance group and low performance group has shown no significant difference (t=0.06)

The mean of self confidence of medium performance group and low performance group is 26.94± 5.93 and 26.38 ± 4.56, respectively. The MD between two groups is 0.56 and SEMD is 1.87. The t-test value for self confidence between medium performance group and low performance group has shown no significant difference (t=0.300)

Gymnastics is one of the most beautiful sports. It consists of complicated, thrilling and exciting movements, on six apparatuses, in men section. Performance in competitive Gymnastics depends upon many factors such as physical, technical, psychological abilities etc. The most important factor in Gymnastics is the psycho-physical fitness of the individual. To give optimum performance in competition, optimum level of anxiety and high self confidence is required in Gymnastics. The results of the present study indicate that there is non-significant relationship between competition performance and somatic anxiety, competition performance and cognitive anxiety and competition performance and self confidence.

The findings also reveal that there is non-significant relationship between somatic anxiety and cognitive anxiety. However, the results of the study reveal that there is significant relationship between cognitive anxiety and self confidence. Gymnastics competition performance is evaluated on the basis of degree of difficulty of exercises and their execution. Both the factors play an important role in obtaining high performance during competition. When a gymnast increases a degree of difficulty, it is generally observed that he becomes little more anxious and feels insecure, if he does not have complete mastery over the movements which he performs; it also affects his self confidence. Self confidence and mastery of the movement go hand to hand.

From the results given in Table 2,3 and 4, it is observed that there is non-significant difference in somatic anxiety and cognitive anxiety between high performance group and medium performance group, high performance group and low performance group, and medium performance group and low performance group. It has also been observed that high , medium and low performance groups showed more cognitive anxiety than somatic cognitive. It was also found that there is non-significant relationship in self confidence level between high and medium performance groups, high and low performance groups, and medium and low performance groups. However, the self confidence is slightly lower in high performance group in relation to its counter parts i.e., medium and low performance groups. The reasons may be due to the degree of difficulty of exercise is higher, lack of mastery due to less repetitions over particular skills, lack of safety measures, level of competition, higher expectations from the coach or gymnast, more concerned about winning of medal, ego-oriented motivation, organized audience etc. While attempting greater degree of difficulty, the gymnast will come across

these things which disturbs the self confidence level of gymnast. When the gymnast is attempting greater degree of difficulty, the chances of occurring injuries are also higher with the result the gymnast becomes more anxious.

For example, Indian male gymnasts have started performing the world ranking skills such as 'Roche' (Handspring double Salto forward tucked), (Blanik) Double Salto forward piked, 'Akopian' (Tsukahara stretched with 2/1 turn) on vault. If such complex skills have not perfected, it becomes one of the factors to decrease in self confidence level of the gymnast. Keeping in view such complex skills, safety of the gymnasts and to enhance the confidence level of the gymnasts, the FIG has permitted the coach to stand at the specific apparatuses and place supplement mats. Hence, the coach as well as the gymnast should harmonize during practice and competition to control the anxiety level and enhance the self confidence level which enables one to give successful competition performance.

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