

# Mental Toughness And Sports Competition Anxiety Between Female Football And Hockey Players- A Comparative Study

<sup>1\*</sup>Mathew Issac,<sup>2</sup>Dr. Sreejith Raj, <sup>3</sup>Dr. Toy C. T.,<sup>4</sup>Dr. Baiju P Jose, <sup>5</sup>Jinsha Jayaprakash. P

## Abstract

The purpose of the study was to compare the Sports Competition Anxiety and Mental Toughness between female Hockey and Football players. For the purpose of the study, a total of 200 national level women Hockey players and Football players were selected as the subjects. Equal number of subjects were taken from Hockey (N=100) and Football (N=100); these two categories were taken into consideration for the present study. Sports Competition Anxiety Test (SCAT) and The Psychological Performance Inventory of Mental Toughness questionnaire was used for the collection of data. The questionnaire was administered to the athletes in study by the investigator himself. The objective of the test was explained to the athletes and they were asked to respond to each statement as truthfully as possible. As soon as they completed the test the investigator collected the response sheets. The athletes were assured of confidentiality of the answers they would give. In order to examine the hypothesis of study, descriptive statistics such as mean, standard deviation (SD), and comparative statistics such as Independent sample 't' test were used. Apart from the finding it evident that there is a significant difference between the Anxiety and Mental toughness among female Hockey and Football players.

**Key Words:** Mental Toughness, Sports Competition Anxiety, Football and Hockey Female Players

## INTRODUCTION

### Mental toughness

Mental Toughness is a personality trait that determines your ability to perform consistently under stress and pressure, and is closely related to qualities such as character, resilience, grit and perseverance.

In the modern times it is not the participation but outstanding performance which is important. So much emphasis on excellence and for winning has led to searching for the bases of performance. Therefore, attempts to identify the factors determining success in competitive sports have captured the attention of sports scientists. Sports psychologists (researches and practitioners), coaches, sports commentators, sports fans and athletes acknowledge the importance of Mental toughness in sporting performance (Goldberg, 1998; Hodge, 1994; Tunney, 1987; Williams, 1988). In early work on the issue, Loehr (1982, 1986) emphasized that athlete and coaches felt that at least fifty percent of success is due to psychological factor that reflect Mental toughness. Similarly, Gould, Hodge, Perterson and Petlichkoff (1987) emphasized that coaches feel that Mental toughness is important in achieving success, while Norris (1999) has emphasized the importance of Mental toughness in developing champion athletes.

In sport, mental toughness is necessary in order to play at the elite level; factors influencing the extent, include self-determined motivation, environmental and surrounding factors, along with other personal forces such as persistence and optimistic thinking. Mental toughness (MT) has been positively influential to success in athletes and also has promoted adaptive mental health functioning, well-being, and incidents of lower stress levels, depression, and an increase in the quality of sleep.

### Anxiety

Anxiety is a feeling of fear, dread, and uneasiness. It might cause you to sweat, feel restless and tense, and have a rapid heartbeat. It can be a normal reaction to stress. For example, you might feel anxious when faced with a difficult problem at work, before taking a test, or before making an important decision.

Anxiety is a reaction that is measured using various scales through the observation of cognitive and physiological symptoms that become evident in reaction to a stimulus. In relation to sports, Anxiety is often associated with an upcoming performance. Anxiety could also be enhanced by the intense competition offered by sports. Anxiety in

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<sup>1\*</sup>Assistant Professor, Department of Physical Education, Mar Dionysius College, Pazhanji, Kerala, India

<sup>2</sup>Assistant Professor, Department of Physical Education, St. Thomas College (Autonomous), Thrissur, Kerala, India

<sup>3</sup>Assistant Professor and Head of the Department of Physical Education, St. Thomas College (Autonomous), Thrissur, Kerala, India

<sup>4</sup>Assistant Professor, Department Of Physical Education St. Cyril's College Adoor, University Of Kerala, India

<sup>5</sup>Physical Education Teacher, Kerala India

connection with sports is a good topic for research since it could affect a person's athletic performance either positively or negatively.

Anxiety also referred as worry or angst is defined as a physiological or psychological state described by emotional, somatic, behavioural and cognitive components. It is regarded as a displeasing feeling of concern and fear. Anxiety is regarded as a standard reaction to the stressor. It helps a person to handle a difficult situation by promoting them to handle it. When a person experiences excessive Anxiety, it is known as Anxiety disorder.

The relationship between Anxiety and sports is very complex, as it involves the specific and unique Anxiety responses of each person and the effect of the differing sport types on the relationship. For example, the Anxiety responses elicited by individual sports would differ from those elicited by contact sports. Individual and contact sports likewise cause different experiences of Anxiety due to the different task demands of the sports (Mellalieu, Hanton and O'Brien, 2004). This paper shall analyze, mainly through a review of existing literature, the relationship and causal connections between Anxiety and sports in general, and individual sports in particular. It is hoped that analysis of existing literature on the matter would yield positive findings.

### **Statement of the problem**

The purpose of the study was to compare the sports competition Anxiety and Mental toughness between female Hockey and Football players.

### **Hypothesis**

Based on the literature found, it was hypothesized that:

1. There would be a significant difference in Anxiety and Mental toughness between Female Hockey and Football players.
2. Among various groups, there would be a significant difference between the sub factors of Mental toughness.

### **METHODOLOGY**

For the purpose of the study, a total of 200 National Level Women Hockey players and Football players were selected as the subjects. Equal number of subjects were taken from Hockey (N=100) and Football (N=100); these two categories were taken into consideration for the present study. Sports Competition Anxiety Test (SCAT) and The Psychological Performance Inventory of Mental Toughness questionnaire was used for the collection of data.

### **▶ SPORTS COMPETITIVE ANXIETY TEST (SCAT)**

#### **Interpretation of Range of Scores**

Less than 17 - you have a low level of Anxiety  
17 to 24 - you have an average level of Anxiety  
More than 24 - you have a high level of Anxiety

#### **Scoring method:**

The procedure for scoring SCAT is as follows: for each item one of three responses are possible (a) Hardly ever, (b) Sometimes, and (c) Often.

The test was administered about one hour prior to the player's match schedule in a bid to get genuine responses. Before giving them the test, the investigator instructs them as follows: Below are some statements about how one feels when they compete in sports and games. Read each statement and decide if you Hardly Ever 'Sometimes' or 'Often' feel this way, when you compete in sports and games. According to your choice, tick mark (✓) the statement'. There are no right or wrong answers. Do not spend too much time on anyone statement. Remember to choose the word that best describes how you usually feel when competing in sports and games.

3,5,6,8,9,11,12,14 and 15.

The spurious items: 1, 4, 7, 10, 13 and 15 are worded and not scored. Items 2,3,5,8,9,12 and 14 were scored according to the following key:-

1 = Hardly ever, 2 = Sometimes, 3 = Often

Items 6 and 11 were scored according to the following key

1 = Often, 2 = Sometimes, 3 = Hardly ever

If a person skips 1 of the 10 test items, his prorated full scale score will be obtained by computing the mean score for the 9 items answered, multiplying this value by 10, and rounding the product to the next whole number. When two or more items are omitted, the respondent's questionnaire is invalid. The range of scores on SCAT is from 10 (low competitive A-trait) to 30 (high competitive A- trait).

## ➔ MENTAL TOUGHNESS

### **The Psychological Performance Inventory of Mental Toughness**

#### **Rebound Ability**

It is the skill of mentally bouncing back from setbacks and mistakes. Mental toughness depends on the ability to quickly leave mistakes and failures behind you. Hanging onto mistakes will get you into big trouble, performance-wise. Athletes, who dwell on their mistakes during a competition continues, end up making more mistakes.

#### **To deal with the ability to handle pressure**

Without the ability to stay calm under pressure, an athlete will always underachieve. Peak performance demands that you are relaxed once the performance begins. While a little nervousness is critical get "up" for a game/match/race and perform at your best, (good nervousness) too much nervousness (bad nervousness) will tighten your muscles and send the performance down the tubes.

#### **To deal with your ability to concentration**

In every sport, the ability to focus on what's important and block out everything else is one of the primary keys to excellent performance. Poor concentration is the major reason why an athlete chokes and gets stuck performance slumps. Getting psyched out or intimidated is a direct result of concentrating on the wrong things.

#### **To deal with your level of confidence and the factors that affect confidence**

One characteristic of a Mentally tough athlete is that he/she possesses a confidence level that seems to be unshaken by setbacks or failures. Under the pressure of competition, low confidence will neutralize natural ability, hard work and talent. Similarly, high confidence will enhance an athlete's training and God given talents, lifting their performance to the next level.

#### **To deal with motivation**

Motivation is the fuel that drives the training towards a successful competition and the accomplishment of goals. Without adequate motivation, athletes get stuck having "permanent potential". Without motivation, one won't put in the work necessary to become a winner. Motivation allows one to pick oneself up after a setbacks and keeping going.

#### **Scoring**

In section 1, Questions 1-6 deal with the "Rebound ability" or the skill at Mentally bouncing back from setbacks and mistakes. Mental toughness depends on the ability to quickly leave mistakes and failures behind. Hanging onto one's mistakes will get one into big trouble, performance-wise. Athletes, who dwell on their mistakes during a competition, end up making more mistakes. A score of 1 point is given for each of the following answers:

1) F, 2) F, 3) T, 4) F, 5) F, 6) T

In section 2, Questions 7-12 deal with the ability to handle pressure. Without the ability to stay calm under pressure, an athlete will always underachieve. Peak performance demands that you are relaxed once the performance begins. While a little nervousness is critical for getting "up" for a game/match/race and performing at your best, (good nervousness) too much nervousness (bad nervousness) will tighten your muscles and send your performance down the tubes. A score of 1 point for each of the following answers:

7) T, 8) F, 9) F, 10) F, 11) T, 12) F

In section 3, Questions 13-18 deal with your concentration ability. In every sport, the ability to focus on what's important and block out everything else is one of the primary keys to excellent performance. Poor concentration is the major reason why athletes choke and get stuck in performance slumps. Getting psyched out or intimidated is a direct result of concentrating on the wrong things. Score 1 point for each of the following answers:

13) F, 14) F, 15) F, 16) F, 17) T, 18) F

In section 4, Questions 19-24 deal with the level of confidence and the factors that affect confidence. One characteristic of a Mentally tough athlete is that he/she possesses a confidence level that seems to be unshaken by setbacks and failures. Under the pressure of competition, low confidence will neutralize natural ability, hard work and talent. Similarly, high confidence will enhance an athlete's training and God-given talents, lifting their performance to the next level. A score of 1 point for each of the following answers:

19) T, 20) F, 21) T, 22) T, 23) F, 24) F

In section 5, Questions 25-30 deal with motivation. Motivation is the fuel that drives one training to a successful completion and accomplishment of one's goals. Without adequate motivation athletes get stuck having "permanent potential." Without motivation one won't put in the work necessary to become a winner. Motivation allows one to pick oneself up after a setback and keep going. A score of 1 point for each of the following answers:

25) T, 26) T, 27) T, 28) F, 29) T, 30) T

#### **Scoring Data**

##### **Question No**

##### **Factors**

1-6

Rebound Ability

7-12

Ability to handle pressure

13-18 Concentration Ability  
 19-24 Level of confidence  
 25-30 Motivation  
**One point was awarded to each correct answer**

**Interpretation**

A score of 6 in any one of the 5 sections indicates a special strength in that area. A score of 5 indicates solid skill and a score of 4 or less highlight the particular area as a Mental weakness that needs to address. For example a score of 6 in “rebound ability” indicates consistent ability to bounce back quickly from mistakes, failures and loses. A score of “2” or “3” in section 2 of handling competitive pressure indicates the need for arousal control/ relaxation training. Low scores in each section highlight problem areas. These “Mental weaknesses” should then form mental training goals for one to help raise their overall performance to the next level. For example, a low score in the concentration section indicates poor performance as a direct result of your inability to control your focus of attention before and during competition. By putting some time and energy into practicing concentration exercises one can become an all-round athlete.

**Overall Score**

A score of 26-30 indicates strength on overall Mental toughness. A score of 23-25 indicates average to moderate skill in Mental toughness. A score of 22 below mean that one needs to start putting in more time into the Mental training area. In order to examine the hypothesis of study, descriptive statistics such as mean, standard deviation (SD), and comparative statistics such as Independent sample ‘t’ test were used.

**Statistical Analysis**

The data collected from various subjects were subjected to statistical analysis using appropriate statistical tools. The following statistical tools were employed in the present investigation.

Descriptive statistics: Descriptive statistics such as mean and standard deviation of the scores were calculated to summarize the collected raw data.

Independent sample t test: Independent sample t test has been applied to compare the two groups with respect each Anxiety and Mental toughness.

Level of significance: The level of significance was fixed at 0.05 levels.

P value: A calculated P value less than 0.05 is considered statistically significant.

**Comparison of Hockey and Football players based on Mental Toughness**

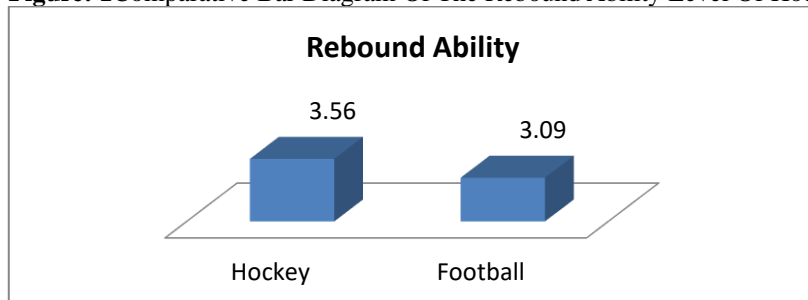
**Table 4.1** Computation Score Of ‘T’ Test For The Comparison Of Hockey And Football Players Based On Rebound Ability

| Variable       | Group    | N   | Mean | SD   | T    | Df  | P      |
|----------------|----------|-----|------|------|------|-----|--------|
| ReboundAbility | Hockey   | 100 | 3.56 | 1.15 | 2.98 | 198 | 0.003* |
|                | Football | 100 | 3.09 | 1.06 |      |     |        |

\* Significant at 0.05 levels

From Table 1, t test showed that there exists a significant mean difference in the Rebound Ability of Hockey and Football players (t=2.98). The inference is that Mental toughness scores of the Hockey group (Mean=3.56, SD=1.15) is higher than the Football group (Mean=3.09, SD=1.06). The comparative bar diagram of the Rebound Ability of Hockey and a Football group is shown in Figure 1.

**Figure: 1** Comparative Bar Diagram Of The Rebound Ability Level Of Hockey And Football Groups



**Table 4.2** Computation Score Of ‘T’ For The Comparison Of Hockey And Football Players Based On The Ability To

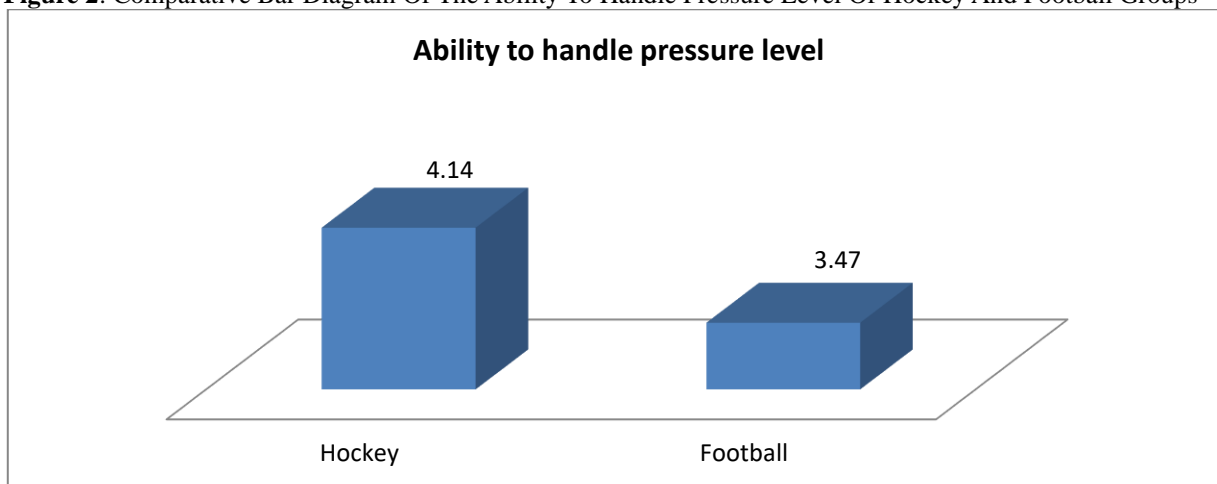
Handle Pressure

| Variable                   | Group    | N   | Mean | SD   | T    | df  | P      |
|----------------------------|----------|-----|------|------|------|-----|--------|
| Ability to handle pressure | Hockey   | 100 | 4.14 | 1.08 | 4.34 | 198 | 0.000* |
|                            | Football | 100 | 3.47 | 1.09 |      |     |        |

\* significant at 0.05 level

From Table 2, t test showed that there exists a significant mean difference in the Ability to handle pressure in Hockey and Football players ( $t=4.34$ ). The inference is that Mental toughness scores of the Hockey group (Mean=4.14, SD=1.08) is higher than the Football group (Mean=3.47, SD=1.09). The comparative bar diagram of the ability to handle pressure of Hockey and the Football group is shown in Figure 2.

**Figure 2:** Comparative Bar Diagram Of The Ability To Handle Pressure Level Of Hockey And Football Groups



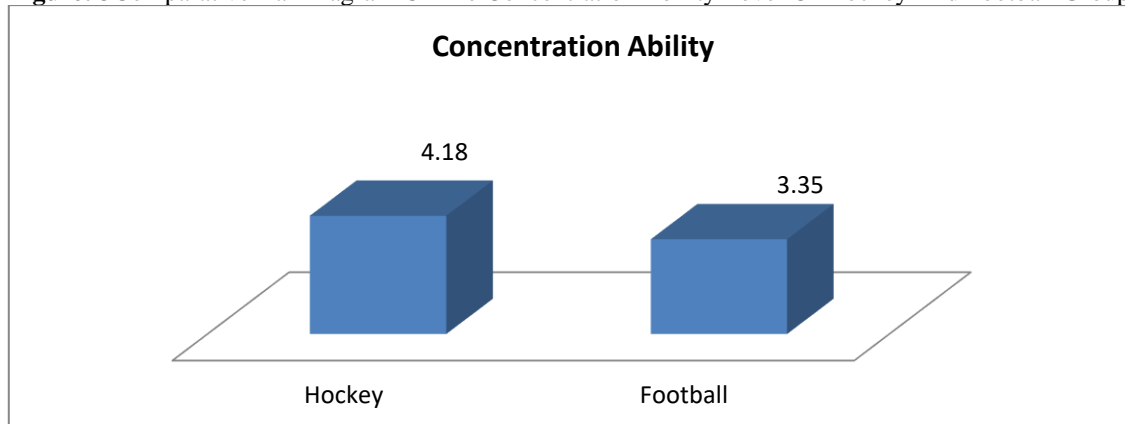
**Table 4.3** Computation Score Of 'T' For The Comparison Of Hockey And Football Players Based On Concentration Ability

| Variable              | Group    | N   | Mean | SD   | T    | df  | P      |
|-----------------------|----------|-----|------|------|------|-----|--------|
| Concentration Ability | Hockey   | 100 | 4.18 | 1.13 | 5.33 | 198 | 0.000* |
|                       | Football | 100 | 3.35 | 1.06 |      |     |        |

\* Significant at 0.05 level

From Table 3, t test showed that there exists a significant mean difference in the Concentration Ability of Hockey and Football players ( $t=5.33$ ). The inference is that Mental toughness scores of the Hockey group (Mean=4.18, SD=1.13) is higher than the Football group (Mean=3.35, SD=1.06). The comparative bar diagram of the Concentration Ability of Hockey and a Football group is shown in Figure 3.

**Figure: 3** Comparative Bar Diagram Of The Concentration Ability Level Of Hockey And Football Groups



**Table 4:4** Computation Score Of 'T' For The Comparison Of Hockey And Football Players Based On The Level Of

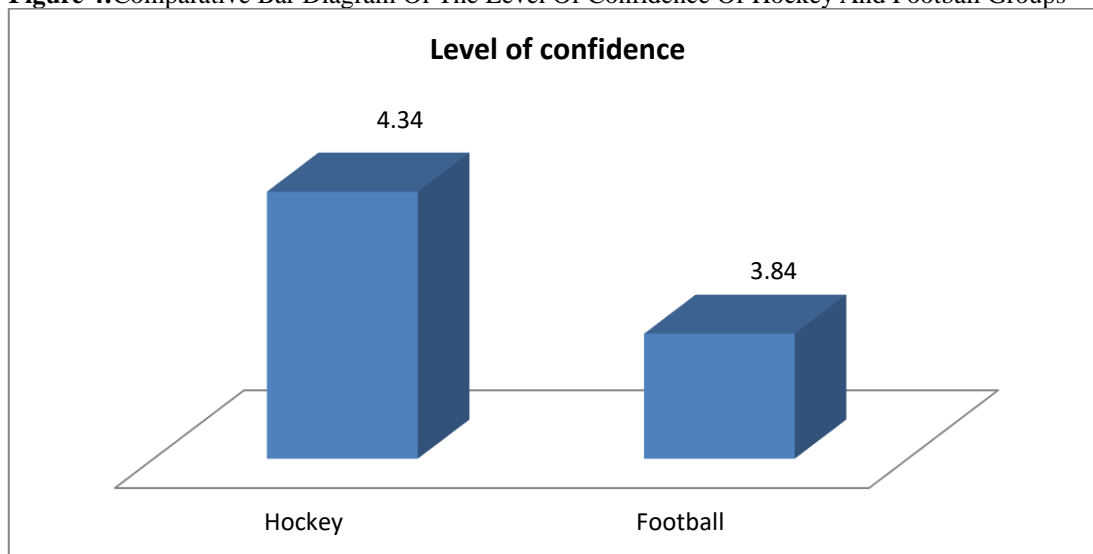
Confidence

| Variable            | Group    | N   | Mean | SD   | T    | df  | P      |
|---------------------|----------|-----|------|------|------|-----|--------|
| Level of confidence | Hockey   | 100 | 4.34 | .97  | 3.19 | 198 | 0.002* |
|                     | Football | 100 | 3.84 | 1.22 |      |     |        |

\* significant at 0.05 level

From Table 4, t test showed that there exists a significant mean difference in the Level of confidence of Hockey and Football players ( $t=3.19$ ). The inference is that Mental toughness scores of the Hockey group (Mean=4.34, SD=.97) is higher than the Football group (Mean=3.84, SD=1.22). The comparative bar diagram of the Level of Confidence of Hockey and a Football group is shown in figure 4.

**Figure 4:**Comparative Bar Diagram Of The Level Of Confidence Of Hockey And Football Groups



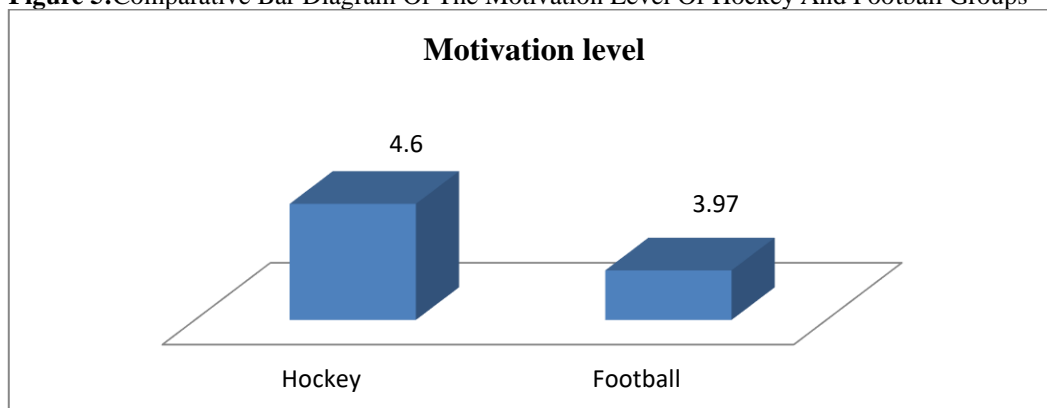
**Table 4.5**Computation Score Of 'T' Test For The Comparison Of Hockey And Football Players Based On Motivation

| Variable   | Group    | N   | Mean | SD   | T    | Df  | P       |
|------------|----------|-----|------|------|------|-----|---------|
| Motivation | Hockey   | 100 | 4.60 | 1.00 | 4.51 | 198 | 0.000** |
|            | Football | 100 | 3.97 | .96  |      |     |         |

\* significant at 0.05 level

From Table 5, t test showed that there exists a significant mean difference in the Motivation of Hockey and Football players ( $t=4.51$ ). The inference is that Mental toughness scores of the Hockey group (Mean=4.60, SD=1.00) is higher than the Football group (Mean=3.97, SD=.96). The comparative bar diagram of the Motivation of Hockey and a Football group is shown in figure 5.

**Figure 5:**Comparative Bar Diagram Of The Motivation Level Of Hockey And Football Groups



**Table 4.6:**Computation Score Of 'T' Test For The Comparison Of Hockey And Football Players Based On Mental

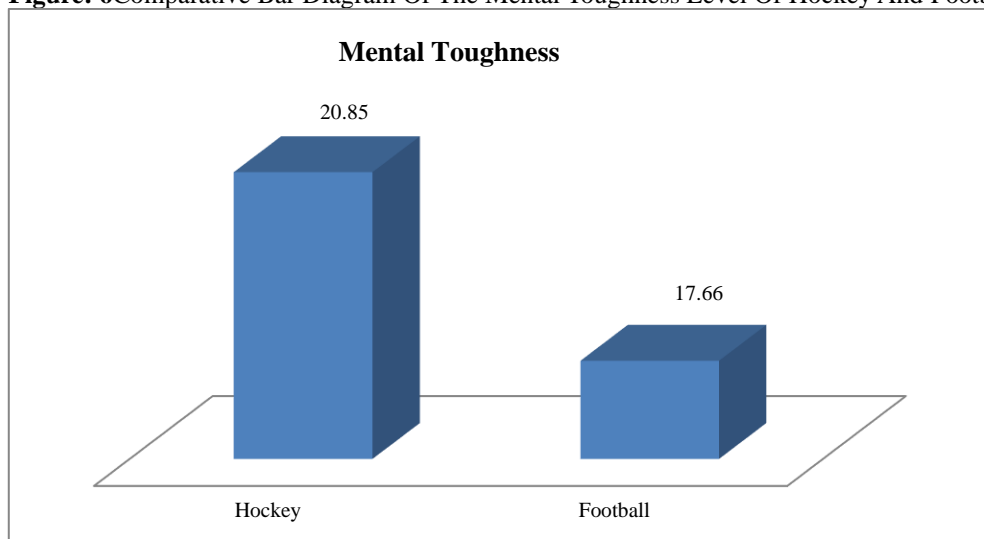
Toughness.

| Variable         | Group    | N   | Mean  | SD   | T    | Df  | P      |
|------------------|----------|-----|-------|------|------|-----|--------|
| Mental Toughness | Hockey   | 100 | 20.85 | 3.51 | 6.89 | 198 | 0.000* |
|                  | Football | 100 | 17.66 | 3.00 |      |     |        |

\*significant at 0.05 level (P<0.01)

From Table 6, t test showed that there exists a significant mean difference in the Mental Toughness of Hockey and Football players (t=6.89). The inference is that Mental toughness scores of the Hockey group (Mean=20.85, SD=3.51) is higher than the Football group (Mean=17.66, SD=3.00). The comparative bar diagram of the Mental Toughness of Hockey and a Football group is shown in figure 6.

**Figure: 6**Comparative Bar Diagram Of The Mental Toughness Level Of Hockey And Football Groups.



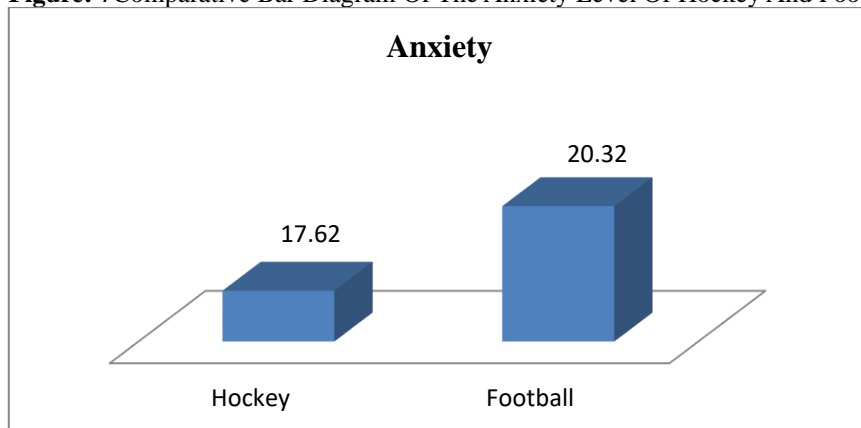
**Table: 4.7**Computation Score Of ‘T’ For The Comparison Of Hockey And Football Players Based On Anxiety

| Variable | Group    | N   | Mean  | SD   | T     | Df  | P      |
|----------|----------|-----|-------|------|-------|-----|--------|
| Anxiety  | Hockey   | 100 | 17.62 | 3.29 | -5.59 | 198 | 0.000* |
|          | Football | 100 | 20.32 | 3.51 |       |     |        |

\* Significant at 0.05 level

From Table 7, t test showed that there exists a significant mean differences in the Anxiety of Hockey and Football players (t=-5.59). The inference is that Anxiety scores of the Football group (Mean=20.32, SD=3.51) is higher than the Hockey group (Mean=17.62, SD=3.29).The comparative bar diagram of the Anxiety of Hockey and a Football group is shown in figure 7.

**Figure: 7**Comparative Bar Diagram Of The Anxiety Level Of Hockey And Football Groups.

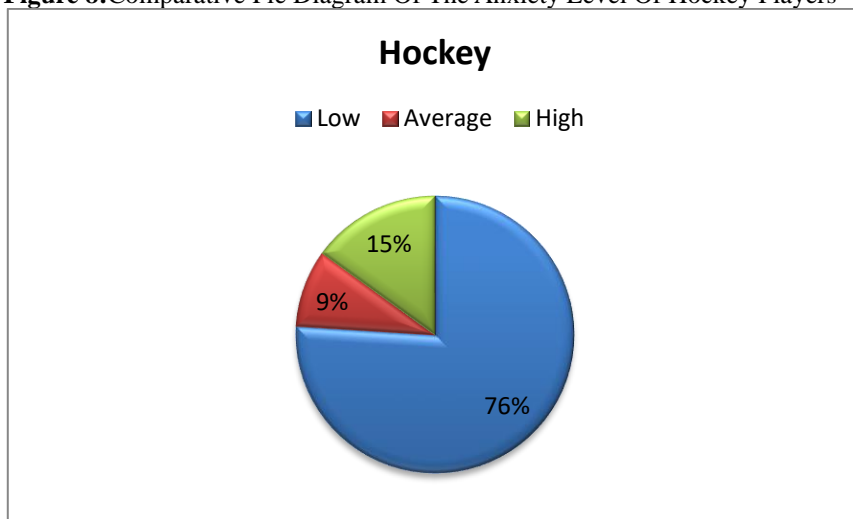


**Table: 4. 8**Level Of Anxiety In Hockey And Football Groups

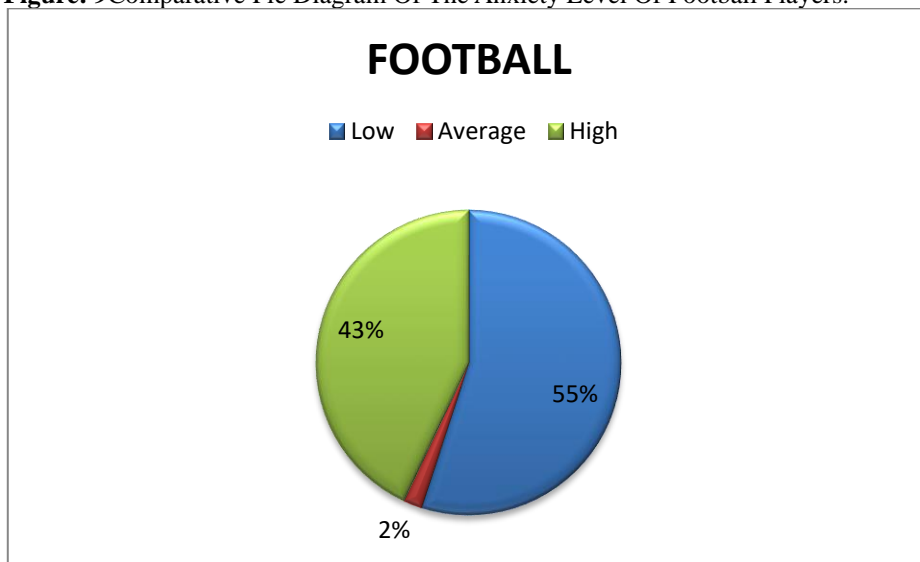
|         | Hockey |      | Football |      |
|---------|--------|------|----------|------|
| Anxiety | F      | %    | F        | %    |
| Low     | 76     | 76.0 | 55       | 55.0 |
| Average | 9      | 9.0  | 2        | 2.0  |
| High    | 15     | 15.0 | 43       | 43.0 |

From Table 8, the Hockey player's majority of respondents (76.0%) have low level of Anxiety. The Football player's majority of respondents (55.0%) have low level of Anxiety. The comparative pie diagram of the Anxiety level of Hockey and Football groups is shown in figure 8 and 9.

**Figure 8:**Comparative Pie Diagram Of The Anxiety Level Of Hockey Players



**Figure: 9**Comparative Pie Diagram Of The Anxiety Level Of Football Players.



## CONCLUSIONS

Within the limits and limitations of the present study and on the basis of the results, the following conclusions may be drawn.

It is seen that the **Mental Toughness** variables such as **Rebound Ability, Ability to handle pressure, Concentration Ability, Level of confidence and Motivation** scores of athletes in Hockey and Football shows significant difference. The Mental toughness scores of the Hockey group (**Mean=20.85, SD=3.51**) is higher than the Football group (**Mean=17.66, SD=3.00**). The observed mean differences in Mental toughness scores are statistically significant by t test. It showed that there exists significant mean differences in the Mental toughness of Hockey and Football players (**t=6.89**).

It is evident that athletes in Hockey have a high level of Mental toughness compared to athletes in Football. And this helps them to exhibit higher performance in sports competitions.



The Anxiety scores of the Football group (**Mean=20.32, SD=3.51**) is higher than the Hockey group (**Mean=17.62, SD=3.29**). The observed mean difference in Anxiety scores is statistically significant by T test. It showed that there exists a significant mean difference in the Anxiety of Hockey and Football players (**t=-5.59**)  
It is clear that athletes in Hockey have the lowest level of Anxiety compared to athletes in Football. In addition, this helps them to exhibit higher performance in sports competitions.

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