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Statistical analysis on mental toughness of junior and senior state level sports persons of Chhattisgarh

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Abstract

The aim of the present study was to compare the mental toughness between male sports person and Para male sports person. Total hundred (n=100) player was selected for study as sample. The samples were further divided into groups of 50 each. The first group consisted of male sports person and the second group of Para male sports person. The data was collected by using simple random sampling technique of sports person and Para sports person, and age of the subjects were 18 to 28 year. In order to assess the mental toughness of sports person and Para sports person by Sandeep Tiwari. The data was collected tabulated and subject to statistical analysis. Descriptive analysis was done by computing means, standard deviations and t-test. The result revealed that there is significant difference found between the male sports person and male Para sports person.

Keywords: Mental toughness, sports person and para sports person

Introduction

Sports psychology is an application of principles, method and techniques of analysis, appraisal and enhancement for optimizing human sports or human athletic behavior. Sports psychology as an area of study involves many individuals of diverse backgrounds with a common interest that of knowing more about athlete and sport. Newspaper accounts reflect psychology employed prior to or during competition and radio and television sports announces and analyst delve into the mysteries of explaining unexpected athletic performances. Coaches and athletes do likewise as do sports fans. But the major direction of the intellectual pennant, sport psychology has led to the recognition of the science of “human behavior” as a replacement for practices, hereto fore based on common sense, popular belief and half-truths.

During the past two decades sports psychology has emerged as a legitimate field of scientific enquiry. Researchers are afforded ample opportunities to observe, describe and explain the various psychological factors that influence the diverse aspects of sports and physical activities. Sports involve extremely complex behavior issues. As a consequence of intense competition, a sports man’s behavior may undergo important changes. Physical education scientists and coaches have not been expert only in the matter of skill training but also be engineers who understand the mechanism of human behavior or the playfield, under extremely diverse situation. Sport psychology, is an applied psychology has taken giant strides. The knowledge in all fields of human endeavor, especially of behavior, has expanded to such an extent that it is difficult to discuss one aspect of behavior without reference to others. In the field of competitive sports, training of the athletes is incomplete without psychological training of the competition. Psychological readiness and mental toughness play as a decisive role as to determine whether or not an athlete in competition and in training responds to their optimum potentials.

Interestingly, the need for sport psychology seems to be increasing in two contradictory ways. First, athletes and coaches, in search of “winning edge”, are looking to sport psychologist for a mental advantage. They are asking for procedure and technique that will make a good athlete even better. As physical skill, training technique and work-loads reach their maximal level; the remaining frontier is the mind.

Some of the many characteristics that are evident when a player is mentally tough include:

- Self-confidence

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- Self-motivation
- Focus
- Concentration
- Composure
- Calmness
- Poise
- Self-control
- Positive Energy
- Determination
- Persistence
- Leadership

What is mental toughness and why do you need it?

In today's world, it is rare to see individuals competing for pure pleasure, relaxation and innocent recreation. Rare too is the phrase "it does not matter whether we win or lose"-a mantra which is considered increasingly old fashioned. The world in which we live today is seemingly more obsessed with success and with the desire and drive to "win". Perhaps it is the thought of being the best, the thought of being the most powerful or the most intelligent that is captivating and encompasses our drive for success. In almost every endeavour that humankind embarks on there exists the drive to be at the top or to continuously improve at the very least. Michael Sheard, in his book *The Achievement Mind set: Understanding Mental Toughness* presents some thought provoking questions that we should all be considering. He asks the following: What separates an athlete thriving on elite competition from one who disintegrates under pressure? Why is it that some athletes are able to succeed in the face of adversity while others cannot? Why can some athletes resist and disregard negative effect in competition while others let it influence and weaken their competitive performance? What is it that allows athletes to rebound after defeat and personal failure? Many suggest that the answers to these questions lie in the successful development, implementation and continuous maintenance of the concept of Mental Toughness. Top sports people today realise that winning goes far beyond just technique and further includes a new dimension known as the 'psychology of winning' which incorporates a magnitude of different mental ingredients such as context specific mental skills found in tailor-made Mental Toughness programmes.

Six elements of mental toughness

To become mentally tough one must practice attributes that lead to mental toughness. I wish there were a formula to follow, but there is not. It takes time and patience under the right leadership to develop mental toughness. Parents, educators, coaches and other mentors must be systematically involved in the training process.

1. **Flexibility:** Game-ready leaders have the ability to absorb the unexpected and remain supple and non-defensive. They maintain hum or even when the situation becomes tough. If something isn't going well or doesn't turn out as expected, they remain flexible in their approach and look for new ways to solve the problem. Just like a quarterback faced with a broken play, a leader may have to decide quickly on a different way to get the ball down the field. Also, leaders must continually be open to re-educating themselves, even in the basics, which they may have taken for granted for too long. They need to exercise caution in defensively falling back on ideas they know and are comfortable with rather than looking for new ways of doing business.
2. **Responsiveness:** Game-ready leaders are able to remain engaged, alive and connected with a situation when under pressure. They are constantly identifying the opportunities, challenges and threats in the environment.

They understand that they need to think differently about how their environment and business operate.

The problems we encounter now are messier and more complicated than ever before. They often can't be solved in the ways others were. Game-ready leaders look for new ways to think about these problems and, more important, look for fresh ways out of these problems. They have a sense of urgency about responding to the changing face of business.

3. **Strength:** Game-ready leaders are able to exert and resist great force when under pressure and to keep going against insurmountable odds. They find the strength to dig deep and garner the resolve to keep going, even when in a seemingly losing game. They focus on giving their best and fighting hard until the end, with persistent intensity throughout the game.

Just as athletes dig deep to find the physical and psychological strength to continue through adverse and tough situations, game-ready business leaders must exhibit the same strength. As James Loehr puts it, top athletes think, "While this is tough, I am a whole lot tougher". Game-ready business leaders bring the same intensity, through all the continual pounding.

4. **Courage and ethics:** Game-ready leaders do the right thing for the organization and the team. They suppress the temptation to cut corners or to undermine others so they come out on top. They have the courage to make the hard but right decisions for the organization.

A famous story I share with my son as an example of courage and ethics in sports is that of the tennis player Andy Roddick. In 2008 Roddick was the No. 1 seed at the Rome Masters. He was at match point and about to win. The umpire called his opponent for a double-fault serve. Walking to shake his opponent's hand, Roddick noticed a ball mark on the clay--in bounds. Roddick got the umpire's attention and pointed out that the ball had nicked the line but was in fact in bounds. The match continued. Roddick went on to lose the match, and his beyond-the-call-of-duty honesty made him famous as an upstanding person, an opponent who would do the right thing. Game-ready leaders in business do the same. PepsiCo provides a great business example of this. A disgruntled Coca-Cola employee and two other individuals attempted to sell proprietary information to Pepsi. Pepsi received a package containing a sample of a new Coke product and other information. Pepsi immediately informed Coke, which contacted the FBI. Game-ready business leaders ultimately win by making the right and courageous decisions.

5. **Resiliency:** Game-ready leaders rebound from disappointments, mistakes and missed opportunities and get right back in the game. They have a hardiness for enduring the downs of a situation. They remain optimistic in the face of adversity and quickly change when necessary. They resolve to make things better and are experts at figuring out ways to do more with fewer resources. How about the resiliency of Detroit Tigers pitcher Armando Galarraga, who was just one out away from pitching a perfect game when Jim Joyce, the first-base umpire, called a runner safe who was indeed out? Joyce had made an error. Galarraga was certainly deeply disappointed, but he continued to pitch and get the next batter out. Afterward, Joyce admitted the error and apologized. Galarraga shrugged it off, saying, "Everyone makes mistakes".

6. **Sportsmanship:** Game-ready leaders exhibit sportsmanship. They don't let the opponent know when he or she has gotten them down. "Chin up", I say to my son. Clearly we all experience disappointment, attacks from

others, an occasional blow to the stomach. However, the behavior exhibited by game-ready leaders after losing or being attacked by others or the situation sets the tone for the rest of an organization. Additionally, top athletes support their teammates and their roles. If teammates start competing with and attacking one another, it is definitely difficult to win.

2. Negative Energy Control.
3. Attention Control.
4. Imagery and Visualization Control.
5. Motivation.
6. Positive Energy Control.
7. Attitude Control.

Table 1: Criterion measures

Variables	Author and Year	Scale
Mental toughness	Loehr (1986)	Loehr’s Psychological Performance Inventory

Procedure and Methodology

This chapter contains an elaborate description of the selection of the subjects, selections of variables, reliability of data, administration of tests & collection of data and statistical techniques employed for analyzing the data.

Selection of subject

For the current study 100 state level players of junior and senior level from Chhattisgarh from different sports have been selected as subject. There were fifty sportspersons in each category. The subjects for the study represented the state belonged to different sports namely-Handball, Kabaddi, Kho-Kho and Volleyball.

Selection of variables

After extensively reviewing the literature and with the consultation of guide and experts of physical education and more importantly understanding the need of the purpose of the study Mental Toughness has been selected which has seven sub-variables, mentioned below:

1. Self-Confidence.

Collection of data

The data of was collected from junior senior state level player by administering psychological performance inventory developed by Loher (1986). The questionnaire was administered on the players and the data was collects in the form of scores.

Description of questionnaire

Mental toughness status scale: The criterion measures for this study was the scores which will be obtained from the Questionnaire of mental toughness standardized by Loehr’s psychological performance inventory as standardized by Loehr. Given the absence of an operational definition, there has been a difficulty in developing a suitable measure of mental toughness. In professional practise, Loehr’s psychological performance inventory (PPI-1986) remains the most influential mental toughness instrument.

Table 2: Sub-dimension of mental toughness

S. N.	Sub-dimension of Mental Toughness	Questions of each sub-dimensions	Positive Worded Items	Negative Worded Items
1	Self-confidence	1, 8, 15, 22, 29, 36	1, 15	8, 22, 29, 36
2	Negative Energy Control	2, 9, 16, 23, 30, 37	2, 9, 16, 23, 30	37
3	Attention Control	3, 10, 17, 24, 31, 38	3, 10, 24, 31, 38	17
4	Visualization and Imagery Control	4, 11, 18, 25, 32, 39	-----	4, 11, 18, 25, 32, 39
5	Motivation	5, 12, 19, 26, 33, 40	33	5, 12, 19, 26, 40
6	Positive Energy	6, 13, 20, 27, 34, 41	20	6, 13, 27, 34, 41
7	Attitude Control	7, 14, 21, 28, 35, 42	14	7, 21, 28, 35, 42

Scoring was done on the basis of 5 point Likert Scale and performance was recorded in numbers. For positive worded items the scoring was done in the following manner:

Table 3: Scoring key for Psychological Performance Inventory of Positive Worded Items

Response Categories	Score
Almost Always	1
Often	2
Sometimes	3
Seldom	4
Almost Never	5

For the negative worded items the whole procedure of scoring was reversed and was done in the following manner:

Table 4: Scoring key for psychological performance inventory of negative worded items

Response Categories	Score
Almost Always	5
Often	4
Sometimes	3
Seldom	2
Almost Never	1

After scoring 42 items, added each of seven sub-dimensions separately and further added all sub-dimensions to get score of Mental Strengths and Weakness. After scoring of each sub-dimension if score fall below twenty (20) for any sub-dimension then special cares is need for that deficiency.
 26-30 Excellent Skills.
 20 - 25 Room for Improvement.

06 - 19 Needs Special Attention.

Statistical analysis

To compare the selected psychological variable of sportsmen, following statistical techniques were applied to assess the data:

- Mean.

- Standard Deviation.
- Independent T-test.

The level of significance was set at 0.05 level of confidence, and calculations were completed using SPSS version 17.0.

Discussion of findings

In the present study, the data of 100 (Hundred) subjects (50 junior and 50 senior) was collected from different sports persons from various sports namely, Kho-Kho, Basketball, Volleyball Hockey, Kabaddi, Cricket, Handball etc. belongs to Chattisgarh & with minimum of state level participation. The data collected when compared statistically showed that there was significant difference in the overall Mental Toughness of junior and senior level of sports persons with t value of junior mental toughness ($t=0.172$), thus, it can be concluded that with experiences and maturation players become Mentally Tough.

Further, the result of sub variables indicates that there was significant difference found between scores of junior and senior athletes on Visualization and Imagery Control, Motivation, Positive Energy and Attitude control with t test of Visualization and Imagery Control ($t=0.002$); Motivation ($t=0.16$); Positive Energy ($t=0.49$); Attitude Control ($t=0.39$) respectively.

Whereas, no significant difference was found on Self-Confidence and Negative Energy Control, Attention Control of junior and senior players with t value of Self-Confidence ($t=0.77$), Negative Energy Control ($t=0.53$) and Attention Control ($t=0.133$) respectively. This insignificant result may occur due to the responses which might have affected the result of the present study.

Conclusion

Sports psychology as an area of study involves many individuals of diverse backgrounds with a common interest that of knowing more about athlete and sport. During the past two decades sports psychology has emerged as a legitimate field of scientific enquiry. Researchers are afforded ample opportunities to observe, describe and explain the various psychological factors that influence the diverse aspects of sports and physical activities. Sports involve extremely complex behavior issues. In this study an attempt is made by the scholar to assess one more significant psychological factor on performance that is Mental Toughness. There are several factors as to why a positive mentality or mental toughness is a huge benefactor to success. An elite athlete must be able to handle pressure, have self-belief and avoid any lifestyle distractions. They must have that urge to win and know that they have all the capabilities to do anything they desire. This separate's the good athletes from the elite athletes. "Mental toughness" is frequently used colloquially to refer to any set of positive attributes that helps a person to cope with difficult situations. Coaches and sport commentators freely use the term mental toughness to describe the mental state of athletes who persevere through difficult sport circumstances to succeed. In support of this, a number of studies have linked mental toughness to sporting success or achievement. However, it is often simply applied as a default explanation for any victory, which is highly problematic as an attribution. Criticisms about the use of this imprecise approach abound. To become mentally tough one must practice attributes that lead to mental toughness. I wish there were a formula to follow, but there is not. It takes time and patience under the right leadership to develop mental toughness. Parents, educators, coaches and other mentors must be systematically involved in the training process.

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