

ANALYSIS OF UNFORCED ERRORS AND MENTAL TOUGHNESS OF WINNERS AND LOSERS IN BADMINTON

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Introduction:

Badminton is a competitive game. Players compete against each other whenever they go on to the court to play a game. If winning is of primary importance in competition, then the performance the players gives in the game is the determining factor in winning. The competition is the arena in which a player tests his skills against his opponent.

Unforced errors result basically from 'lack of care, concentration, technique or tactical awareness'. Top class players, because they have practiced forty or fifty consecutive shot routines, make very few such errors. They thus give away virtually no points unless under the relentless and continuous pressure of an equal or better player. Their opponents have therefore to play to even to finer limits to gain points and in doing so, are themselves possibly forced into errors.

There has never been more pressure upon professional badminton players than now. Consider the facts. The money is more and the crowds are bigger. Standards of play have risen, quality in depth has increased, and there are far fewer easy matches. National attention and expectations are more intense than ever, particularly in developing nations. The entry of badminton into the Olympics also has raised the stakes still higher.

Mental toughness is a widely used expression in modern sports. It is a quality, which differentiates the winner from the loser, the champion from the rest of the field. Basically, sportsmen with mental toughness have the ability to raise their game to the highest level at crucial moments in a match. This also implies that the mental toughness gives them the necessary focus and ability to concentrate on the job in hand.

The purpose of the study was to analyse unforced errors and mental toughness of winners and losers in badminton.

Methodology:

All the male badminton players of who participated in the West Zones Inter-Varsity and All India Inter University Badminton Tournaments held at Jiwaji University, Gwalior from 20th to 27th February 2006 served as subjects for this study. Age of the subjects ranged from 18 to 25 years. Of these only those badminton players who played singles matches for their teams were considered to serve as subjects for the purpose of collection of data.

The criterion measure for testing the hypothesis in this study were:

1. The scores obtained in the mental toughness questionnaire from the concerned players who participated in tournament.
2. Number of Unforced Errors committed by winners and losers in singles matches.

The questionnaire on mental toughness prepared by Alan Goldberg has sixty items, which has four categories namely: handling pressure (20 questions), concentration (17 questions), mental rebounding (14 questions) and winning attitude (9 questions). A sample statement under handling pressure category read "I think about my opponent's size, previous performance or reputation before I play a match."

The subjects were instructed to respond to each item according to how they generally felt in competitive sports situations.

Every statement has two possible responses i.e.

- A. True B. False

There was no time limit for the completion of the questionnaire but the subjects were instructed not to ponder too long over any statement and respond all the statements in the questionnaire independently.

The questionnaire on mental toughness was administered to the winner and loser players of the university badminton teams contesting against each other in the tournaments.

Researcher took permission from the coaches of the concerned teams for administering the questionnaire. Researcher also took the consent of the subjects to fill up the questionnaire. Subjects were ensured that the responses given by them on the questionnaire would be strictly confidential and not be revealed to any one.

Responses given by the players in the questionnaire were separately tabulated to alternatives and thus the tables were prepared for the analysis of data.

The total numbers of unforced errors committed by the winner and loser players in singles play were scored separately by each of the three badminton experts independently. The average of the total number of unforced errors constituted the score of the player.

Findings:

To determine the significance of difference between means of winners and losers male badminton players on handling pressure, concentration, mental rebounding, winning attitude and mental toughness, t - test was applied and the data pertaining to this has been presented in Table – 1 through 5.

TABLE - 1
SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS OF WINNERS AND
LOSERS MALE BADMINTON PLAYERS OF WEST ZONE
AND ALL INDIA ON HANDLING PRESSURE

| Factor | N | Mean | Mean Difference | σ_{DM} | t |
|---------|----|-------|-----------------|---------------|-------|
| Winners | 29 | 13.55 | 2.20 | 0.82 | 2.68* |
| Losers | 29 | 11.35 | | | |

* Significant at 0.05 level. tab $t_{0.05}(56) = 2.01$

TABLE - 2
SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS OF WINNERS
AND LOSERS MALE BADMINTON PLAYERS OF WEST ZONE
AND ALL INDIA ON CONCENTRATION

| Factor | N | Mean | Mean Difference | σ_{DM} | t |
|---------|----|-------|-----------------|---------------|-------|
| Winners | 29 | 10.72 | 2.0 | 0.82 | 2.44* |
| Losers | 29 | 8.72 | | | |

* Significant at 0.05 level. tab $t_{0.05}(56) = 2.01$

TABLE - 3
SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS OF WINNERS AND
LOSERS MALE BADMINTON PLAYERS OF WEST ZONE
AND ALL INDIA ON MENTAL REBOUNDING

| Factor | N | Mean | Mean Difference | σ_{DM} | t |
|---------|----|------|-----------------|---------------|-------|
| Winners | 29 | 8.24 | 1.38 | 0.62 | 2.23* |
| Losers | 29 | 6.86 | | | |

* Significant at 0.05 level. tab $t_{0.05}(56) = 2.01$

TABLE - 4
SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS OF WINNERS
AND LOSERS MALE BADMINTON PLAYERS OF WEST ZONE
AND ALL INDIA ON WINNING ATTITUDE

| Factor | N | Mean | Mean Difference | σ_{DM} | t |
|---------|----|------|-----------------|---------------|-------|
| Winners | 29 | 6.14 | 0.17 | 0.47 | 0.36* |
| Losers | 29 | 6.31 | | | |

*Insignificant at 0.05 level. tab $t_{0.05}(56) = 2.01$

TABLE - 5
SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS OF WINNERS
AND LOSERS MALE BADMINTON PLAYERS OF WEST ZONE
AND ALL INDIA ON MENTAL TOUGHNESS

| Factor | N | Mean | Mean Difference | σ_{DM} | t |
|---------|----|-------|-----------------|---------------|-------|
| Winners | 29 | 38.66 | 5.42 | 2.07 | 2.62* |
| Losers | 29 | 33.24 | | | |

*Significant at 0.05 level. tab $t_{0.05}(56) = 2.01$

It is evident from Table - 1 through 5, that there is significant difference in Handling Pressure, Concentration, Mental Rebounding variables and mental toughness scores of winners and losers male badminton players of West Zone and All India as the obtained t - values of 2.68, 2.44, 2.23, 2.62 respectively are higher than the tabulated $t_{0.05}(56) = 2.01$. However there is no significant difference between winners and losers male badminton players in winning attitude (0.36) as the obtained t - value is less than the tabulated t - value of 2.01.

To compare the unforced errors, significant difference between winners and losers badminton players from different Universities of West Zone, All India, and, West Zone and All India, t-test was applied and the data pertaining to this has been presented in Table - 6 through 8.

TABLE - 6
SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS ON UNFORCED
ERRORS OF WINNERS AND LOSERS MALE BADMINTON
PLAYERS OF WEST ZONE

| Factor | N | Mean | Mean Difference | σ_{DM} | t |
|---------|----|-------|-----------------|---------------|-------|
| Winners | 34 | 16.32 | 5.42 | 2.45 | 2.21* |
| Losers | 34 | 21.74 | | | |

*Significant at 0.05 level. tab $t_{0.05}(66) = 2.00$

Table - 6 shows that there is significant difference in unforced errors of winners and losers male badminton players of different universities from West Zone as the obtained t-value of 2.21 is higher than the required value to be significant at $t_{0.05}(66) = 2.00$.

TABLE - 7
SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS ON UNFORCED
ERRORS OF WINNERS AND LOSERS MALE BADMINTON
PLAYERS OF ALL INDIA

| Factor | N | Mean | Mean Difference | σ_{DM} | t |
|---------|----|-------|-----------------|---------------|-------|
| Winners | 20 | 16.25 | 3.95 | 1.89 | 2.09* |
| Losers | 20 | 20.20 | | | |

*Significant at 0.05 level. tab $t_{0.05}(38) = 2.02$

Table - 7 shows that there is significant difference between unforced errors of winners and losers male badminton players of different universities from All India as the obtained t-value of 2.09 is higher than the required value to be significant at $t_{0.05}(38)=2.02$.

TABLE - 8
SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS ON UNFORCED
ERRORS OF WINNERS AND LOSERS MALE BADMINTON
PLAYERS OF WEST ZONE AND ALL INDIA

| Factor | N | Mean | Mean Difference | σ_{DM} | t |
|---------|----|-------|-----------------|---------------|-------|
| Winners | 54 | 16.30 | 4.87 | 1.68 | 2.88* |
| Losers | 54 | 21.17 | | | |

* Significant at 0.05 level. $tab t_{0.05}(106) = 1.98$

Table - 8 shows that there is significant difference between unforced errors of winners and losers male badminton players from different universities of West Zone and all India as the obtained t – value of 2.88 is higher than the required value to be significant at $t_{0.05}(106) = 1.98$.

The scores obtained as responses in mental toughness questionnaire from the winners and losers male badminton players in West Zone and All India were correlated to the unforced errors committed by them. This has been presented in Table – 9.

TABLE - 9
COEFFICIENT OF CORRELATION BETWEEN MENTAL TOUGHNESS
AND UNFORCED ERRORS OF WINNERS AND LOSERS MALE
BADMINTON PLAYERS IN WEST ZONE AND ALL INDIA

| S. No. | Variable Correlated | Coefficient of Correlation |
|--------|---|----------------------------|
| 1 | Mental Toughness and Unforced Errors (West Zone Winners) (N=30) | - 0.119 * |
| 2 | Mental Toughness and Unforced Errors (West Zone Losers) (N=30) | - 0.127 * |
| 3 | Mental Toughness and Unforced Errors (All India Winners) (N=20) | 0.015 * |
| 4 | Mental Toughness and Unforced Errors (All India Losers) (N=20) | 0.175 * |

*Not Significant at 0.05 level. $r_{0.05}(28) = 0.361$ $r_{0.05}(18) = 0.444$.

The obtained values of $r = - 0.119$ and $- 0.127$ clearly indicate a low negative correlation between unforced errors and mental toughness scores of winners and losers male badminton players in West Zone respectively which is insignificant as the required value at 0.05 level of significance with 28 degrees of freedom is 0.361. However a low positive correlations of (0.015) and (0.175) is observed between unforced errors and mental toughness scores of winners and losers badminton players of All India respectively as the required value at 0.05 level of significance with 18 degrees of freedom is 0.444.

Discussion of Findings:

From the analysis of data it is very much evident that, winners and losers West Zone and All India (Ho rejected) male badminton players differed significantly in Handling Pressure, Concentration, Mental Rebounding variables and mental toughness scores as the obtained t - values of 2.68, 2.44, 2.23, 2.62 respectively were higher than the tabulated $t_{0.05}(56) = 2.01$. This could be attributed to the fact that winners university players are mentally tough than the losers. They can handle the competitive pressures and concentrate better in difficult competitive situations.

However no significant difference (Ho accepted) was found between winners and losers male badminton players in winning attitude (0.36) variable of mental toughness as the obtained t - value was less than the tabulated t - value of 2.01. This may be due to their lack of interest and seriousness to play in such competitions.

Significant difference was also found (Ho rejected) between the unforced errors of winners and losers male badminton players of West Zone (2.21), All India (2.09), and West Zone and All India (2.88), as the obtained t-values were higher than the respective tabulated t – values at 0.05 level. This may be because winners usually commit less number of unforced errors than losers. Players will have to be more mentally tough in the rally point scoring system being implemented on experimental basis and thus commit still less or no unforced errors to win.

To assess the mental toughness and unforced errors of winners and losers male badminton players in West Zone, All India, and West Zone and All India, were correlated by using product moment correlation.

Low negative correlations of (-0.119) and (-0.127) were observed between unforced errors and mental toughness scores of winners and losers West Zone badminton players respectively. Low positive correlations of (0.015) and (0.175) were observed between unforced errors and mental toughness scores of winners and losers badminton players of All India respectively. This is because mentally tough players commit less number of unforced errors. However only unforced errors may not be responsible for winning or losing a singles match but unforced errors may contribute a lot in winning or losing in rally point scoring system.

Conclusions:

With in the limits and limitations of the present study, the following conclusions were drawn: -

1. Mean scores on mental toughness and its variables i.e. Handling Pressure, Concentration and Mental Rebounding of winners male badminton players of different universities of West Zone and All India were found to be higher than the losers.
2. Mean scores on Winning Attitude variable of Mental Toughness of loser male badminton players were found to be slightly higher than the winners.
3. Mean unforced errors committed by winner badminton players were less than the losers in West Zone, All India, and West Zone and All India.
4. Significant differences were found between winners and losers in west zone and all India badminton players in Mental Toughness, Handling Pressure, Concentration and Mental rebounding.
5. No significant difference was found in winning attitude between winners and losers male badminton players of different universities of West Zone and All India.
6. There was no significant relationship between mental toughness and unforced errors of West Zone, All India, and West Zone and All India winners and losers badminton players.

References:

- Badminton Interactive CD* Norway: Sports Technology AS.
- Downey, Jake C. *Better Badminton for All* Third Edition, London: Pelham Books Ltd., 1982.
- Davis, Pat *The Encyclopedia of Badminton* London: Robert Hale Ltd., 1987.
- Hashman, Judy and Jones, C. M. *Beginning Badminton* New York: Arco Publishing Company, Inc.1977.
- Roberts, Glyn C. and Spink, Kevin S. *Learning Experiences in Sport Psychology* Champaign: Human Kinetics Publishers Inc., 1986.
- Sethi, Geet “Killer Instinct: A Much Misunderstood Term” *The Sport Star* (November 15th 1997): 66.
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