International Journal of Physical Education and Sports Sciences

Vol. VII, Issue No. XIII, July-2014, ISSN 2231-3745

"COMPARATIVE ANALYSIS OF UNFORCED AND FORCED ERRORS AMONG WINNER AND LOOSER FEMALE VOLLEYBALL PLAYERS OF NATIONAL LEVEL OF INDIA"

AN INTERNATIONALLY INDEXED PEER REVIEWED & REFEREED JOURNAL

www.ignited.in

International Journal of Physical Education and Sports Sciences
Vol. VII, Issue No. XIII, July-2014, ISSN 2231-3745

"Comparative Analysis of Unforced and Forced Errors among Winner and Looser Female Volleyball Players of National Level of India"

Dr. Rajender Singh[1] Dr. Avishesh Kumar Singh[2]

[1]HOD/Director, Physical Education Jiwaji University, Gwalior (M.P.) Email :- prof_rajendersingh@yahoo.com

[2]Visiting faculty, SOS Jiwaji University, Gwalior, Email :- avisheshKumarsingh@gmail.com

Abstract – The main purpose of the study was to compare unforced and forced error among winners and losers volleyball women players of national level . The subject for the study were the finalist team playing for the final match of 61st senior volleyball national women championship. The two finalist team in the women section were Indian railway and kerala . Tthe final match recorded with the help of high speed video cameras. Chi square test was used for comparing of the significance of the differences in unforce and force error between winners and looser volleyball team in the women section .Chi square test for goodness of fit relation in forced error and unforced error between winners and loser team for the all three sets combined together was used . The result of the study revealed that there are no significant differences which exist in committing forced and unforced error by the winner and looser team at the national level in India.

----------♦----------

INTRODUCTION:-

Not many people know that volleyball originated in the United States. The founder of the game was a man by the name of William G. Morgan. In 1895 he became the Director of physical education for the Young Man Christian Association (Y. M. C. A) in Holyoke, Massachusetts. The Y. M. C. A had been founded in London England in 1844. It was created by businessmen who saw young man going overboard with their drinking and gambling habits and wanted them to live more productive lives. He invented a game that he named mintonette. The name of the game was later changed to volleyball.

The unforced error is a self-inflicted injury, an unnecessarily lost point. The good player has prepared himself in advance for anything that might happen in a crucial match. And you should be prepared for the time when your accuracy deserts you and the tin becomes a malignant magnet. As a young table tennis player, I was repeatedly taught, "No Unforced Errors. " Much later, I tried to apply this to squash. Whether I was playing a friendly or a tournament, my limit was three unforced errors a game. Once that quota was used up, I had to impose the discipline of playing risk-free squash, retrieving, hitting the ball hard, keeping the ball on the walls and trying to beat my opponent deep, rather than short, so as to avoid the tin. How can you develop your deep game? You should practice hitting the deep crosscourt into the sidewall nick. Work on the deep drive to perfect length. Try playing a whole match against a friend without ever going short. Almost no chance of an unforced error. (Notice how it puts pressure on his fitness, forcing him to shoot to get out of a rally. This is not the only way to play squash, but it is an approach you should have tucked away for when you need it.

METHODOLOGY:

The subjects for the study were the finalist teams of playing for the final matches of 61st Senior Volleyball National Women Championship. The two finalist teams in the women section were Indian Railways and Kerala. The final match being played between the finalist teams in the women section was recorded separately for each set of the game with the help of high speed video cameras. The players who played for first, second and third sets from each of the above teams have been considered to be subject of the study. On the other hand those players who were members of the teams but were not playing among the best six players for each set in the volleyball were not the subjects for the study. Those players who played from their respective team and contributed for winning the match or losing the match were the subjects for the study.

The following criterion measures were selected for analyzing the unforced and forced errors in volleyball

which affected the game outcome in volleyball in the men and women section at national level. The list of unforced and forced errors which were selected as criterion measures are as follows:

(a) Forced errors:

1.	Block	2.	Drop
3.	Under hand	4.	Over head

(b) Unforced errors:

1.	Service	2.	Underhand
3.	Overhead	4.	Spiking
5.	Block	6.	Drop
7.	Misconduct	8.	Net touch foul
9.	Line Cut Foul	10.	Technical foul
11.	Rotation Foul	12.	Overlap foul
13.	Reception Foul	14.	Holding foul
15.	Double touch foul	16.	Early movement foul
17.	Four touch fault		

The reliability of data was ensured by recording the matches by a high speed camera at the time when the matches were played between the finalist teams in the men and women section at the 61st National Volleyball men and women Championship 2012. The data obtained by recording the playing ability by using four video cameras for all players in each game was considered to be reliable. It was further considered to be reliable, because each member of the team was playing for their own team and were making 100% efforts by using their skills, techniques, tactics and strategies to win over their opponents in the final matches in the men and women section respectively. The video recording was analysed by the panel of three experts to list down the frequencies or occurrence of unforced and forced errors during the game by the winner and looser teams in the men and women section respectively.

The subject reliability was considered to be very high since the volleyball players were competing for winning their matches against opponents and no team players were competing for losing the match being played at 61th senior National Volleyball Championship 2012-13 in the men and women section.

The research scholar had invited three experts to analyze the video recording of all the sets of matches in the men and women section. The video recording was played on a big screen in slow motion before the experts to analyse unforced and forced errors in all sets separately for men and women section on the basis of winning and losing the match. The data was recorded on the score sheets as per the errors being committed by the players while the match was in play and the referee/umpire gave points to the respective team on the basis of unforced and forced errors.

The scholar made a score sheet for unforced and forced errors separately to record the unforced errors and forced errors committed by the players during the match. The errors recorded by the expert for the winning and losing team were tabulated on the basis of frequencies for separate skills for the men and women teams separately. The raw scores are given in each table in fourth chapter.

In order to test the hypothesis, the researcher has employed following statistical tools:

a. The Descriptive statistics was applied for finding out the trends and patterns of occurrence of unforced and forced errors by winners and looser in each set of the game of volleyball separately for men and women teams.

b. The Chi square test was used for comparing the significance of difference in unforced and forced errors between winners and looser volleyball teams in the men and women section separately.

c. The goodness of fit test was used for finding out association between game outcome and gender in relation to unforced and forced errors.

RESULTS AND DISCUSSION: -

Frequency and percentage distribution of various unforced errors committed in all three set combined together by winners and looser volleyball women team in the final match of national volleyball championship is presented in table –1

Table –1

FREQUENCY AND PERCENTAGE DISTRIBUTION OF VARIOUS UNFORCED ERRORS COMMITTED IN ALL THREE SET COMBINED TOGETHER BY WINNERS AND LOOSER VOLLEYBALL WOMEN TEAM IN THE FINAL MATCH OF NATIONAL VOLLEYBALL CHAMPIONSHIP-2012

Name of skills/foul in volleyball	Total No. of skills used by winner	Total No. of Unforced errors Committed By winner	Percentage of unforced errors by winner	Total No. skills used by Tamil looser	Total No. of Unforced errors committed by looser	Percentage unforced errors by looser
Service	73	09	12.32%	55	06	10.19%
Underhand	--	--	--		--	--
Overhead	--	--	--		--	--
Spiking	74	06	8.10%	52	07	13.46%
Block	49	18	36.73%	68	36	52.94%
Drop	--	--	--		--	--
Misconduct	--	--	--		--	--
Net touch	123	--	--	120	07	5.83%
Line cut	--	--	--	--	--	--
Technical foul	--	--	--	--	--	--
Rotation foul	--	--	--	--	--	--
Overlap	123	--	--	--	--	--
Reception foul	200	01	0.5%	212	07	3.30%
Holding foul	97	01	1.03%	--	--	--
Double touch	103	02	1.94%	80	02	2.5%
Early movement	--	---	--	--	--	--
Four touch fault	--	--	--	--	--	--
Total No. of unforced errors by both team	**102**	**37**	**36.27%**		**65**	**63.73%**

It is evident from table No. 1 that the winners team had committed 36.27% unforced errors only whereas looser team had performed 63.73% unforced errors while playing all three sets combined together of final match of national volleyball women championship.

It is also clear that the most repeated or most frequent unforced errors being done by both teams has been blocking i.e. 52.94% in the case of looser team and 36.37% in the case of winners team. The second most frequent unforced errors have been spiking i.e. 13.46% in the case of looser but in the case of winners team it was not spiking but serving i.e. 12.32%. The third most frequent unforced errors have been service i.e. 10.19% in case looser team and Spiking i.e. 8.10% in the case of winners team respectively. It further to note that fourth most frequent unforced errors were net touch i.e. 5.83% in the case of looser team where as it was double touch i.e. 1.94% in the case of winners team. The most least unforced errors was found to be double touch i.e. 2.5% and reception foul i.e.3.30% in the case of looser team. Whereas, in the case of winners team it was reception foul i.e. 0.05%.

The Frequency and percentage distribution of various forced errors committed in all three set combined together by winners and looser volleyball women team in the final match of national volleyball championship is presented in table –2

Table –2

FREQUENCY AND PERCENTAGE DISTRIBUTION OF VARIOUS FORCED ERRORS COMMITTED IN ALL THREE SET COMBINED TOGETHER BY WINNERS AND LOOSER VOLLEYBALL WOMEN TEAM IN THE FINAL MATCH OF NATIONAL VOLLEYBALL CHAMPIONSHIP 2012

Name of skills in volleyball	Total No. of time skills used by winner	Total No. of forced Errors committed by winner	Percentage of forced Errors by winner	Total No. of time skills used by looser	Total No. of forced Errors committed by looser	Percentage of forced Errors by looser
Block	49	03	6.12%	68	05	7.35%
drop	19	10	52.63%	17	04	23.52%
Under hand	97	07	7.21%	132	14	10.60%
Over head	103	--	--	80	04	5%
Total No. of forced errors by both team	**47**	**20**	**42.55%**		**27**	**57.45%**

The above table clearly reveals that maximum number of forced errors committed by winners team in all three sets combined together has been 52.63% in dropping skills followed by 7.21% in underhand and lowest forced errors i.e. 6.12% in the blocking. Whereas, the looser team forced errors were found to be maximum i.e. 23.52% in dropping skills followed by, 10.60% in underhand pass followed by 7.35% in blocking techniques. The Lowest proportion of forced errors was found to be 5% in overhead pass by the looser team in all three set of the final match of national women volleyball championship.

The Chi square test analysis of observed and expected frequencies of unforced errors in all three sets combined together between winners and looser team of national volleyball women championship is presented in table –3

TABLE- 3

CHI SQUARE TEST ANALYSIS OF OBSERVED AND EXPECTED FREQUENCIES OF UNFORCED ERRORS IN ALL THREE SETS COMBINED TOGETHER BETWEEN WINNERS AND LOOSER TEAM OF NATIONAL VOLLEYBALL WOMEN CHAMPIONSHIP

	Total (F_o)	F_e	Calculated Value
Winner team	37	51	7.686*
Looser team	65	51	

Tab $'X^2'_{0.05}(1) = 3.841$
*Significant at 0.05 (1)

It can be deduced from the table 3 that chi square value of 7.686 is significant because it is higher than the tabulated value i.e. 3.841 at 5% level with 1 degree of freedom. Thus the null hypothesis may be accepted. It is clear from calculated value that there are significant differences in committing unforced errors between the winners and the looser team in the all three sets combined together in final match of national volleyball women championship.

The Chi square test analysis of observed and expected frequencies of forced errors in all three sets combined together between winners and looser team of national volleyball women championship is presented in table- 4

TABLE –4

CHI SQUARE TEST ANALYSIS OF OBSERVED AND EXPECTED FREQUENCIES OF FORCED ERRORS IN ALL THREE SETS COMBINED TOGETHER BETWEEN WINNERS AND LOOSER TEAM OF NATIONAL VOLLEYBALL WOMEN CHAMPIONSHIP

	Total (F_o)	F_e	Calculated Value
Winner team	20	23.5	
			1.043
Looser team	27	23.5	

Tab 'X^2' 0.05(1) = 3.841

It is evident from the above table 4 that chi square value of 1.043 is not significant because it is less than the tabulated value i.e. 3.841 at 5% level with 1 degree of freedom. Thus the null hypothesis may be rejected. It is clear from calculated value that there are no significant differences in committing forced Errors by the winners and the looser team in all the three sets all three sets combined together the final match of national volleyball women championship.

The chi square test analysis of observed and expected frequencies of forced and unforced errors in all three sets combined together between winners and looser team of national volleyball women championship is presented in table- 5.

TABLE-5

CHI SQUARE TEST ANALYSIS OF OBSERVED AND EXPECTED FREQUENCIES OF FORCED AND UNFORCED ERRORS IN ALL THREE SETS COMBINED TOGETHER BETWEEN WINNERS AND LOOSER TEAM OF NATIONAL VOLLEYBALL WOMEN CHAMPIONSHIP

	Total (F_o)	F_e	Calculated Value
Winner team	57	74.5	
			8.221*
Looser team	92	74.5	

Tab 'X^2'$_{0.05}$(1) = 3.841
*Significant at 0.05 (1)

It is evident from the table 5 that chi square value of 8.221 is significant because it is higher than the tabulated value i.e. 3.841 at 5% level with 1 degree of freedom. Thus the null hypothesis may be accepted. It is clear from calculated value that there are significant differences in committing forced errors plus unforced Errors by the winners and the looser team in all three sets combined together in the final match of national volleyball women championship.

The Chi square test for association between gender and game outcome in relation to unforced errors in the first set of national volleyball championship is presented in table- 6

TABLE- 6

CHI SQUARE TEST FOR ASSOCIATION BETWEEN GENDER AND GAME OUTCOME IN RELATION TO UNFORCED ERRORS IN THE FIRST SET OF NATIONAL VOLLEYBALL CHAMPIONSHIP – 2012

	Winner (F_o)	F_e	Looser (F_o)	F_e	Calculated Value
Male team	08	7.14	13	13.86	
					0.269
Female team	09	9.86	20	19.14	

Tab 'X^2'$_{0.05}$(1) = 3.841

An examination of the above table clearly reveals that the value of chi square is not significant at 0.05 levels with one degree of freedom because the calculated value of 0.269 is significantly lower than the tabulated value of 3.841. Thus it may be concluded that there is no association between gender and result outcome of game in volleyball in relation to unforced errors in first set. It may be inferred that the pattern of unforced error among the winners and looser team are same in both gender i.e. male and female in the game of volleyball at national level in India.

The Chi square test for association between gender and game outcome in relation to forced errors in the first set of national volleyball championship is presented table 7

TABLE –7

CHI SQUARE TEST FOR ASSOCIATION BETWEEN GENDER AND GAME OUTCOME IN RELATION TO FORCED ERRORS IN THE FIRST SET OF NATIONAL VOLLEYBALL CHAMPIONSHIP – 2012

	Winner (F_o)	F_e	Looser (F_o)	F_e	Calculated Value
Male team	7	7.15	9	8.84	0.010
Female team	10	9.84	12	12.15	

Tab $'X^2'_{0.05}(1) = 3.841$

An examination of the above table clearly shows that the value of chi square is not significant at 0.05 levels with 1 degree of freedom because the calculated value of 0.010 is significantly lower than the tabulated value of 3.841. Thus it may be concluded that there is no association between gender and result outcome of game in volleyball in relation to forced error in first set. It may be further concluded that the pattern of forced error among the winners and looser team are same in both gender i.e. male and female in volleyball at national level in India.

CONCLUSIONS

1. It may be concluded that the team which commits lesser percentage of unforced and forced error in volleyball becomes winners and the team which commits more percentage of unforced and forced errors becomes looser at National level in volleyball championship among women players.

2. It may also be concluded that the winner and looser team in women section at national level in India are required to significantly improve upon blocking techniques as it is one of the highest committed unforced errors among women volleyball players of India.

3. It may also be concluded that the loosing team in volleyball at national level needs to improve more upon their dropping skills of the game among women players.

4. It may also be concluded that there are significant differences in the unforced errors between winners and looser at national level in women volleyball players in India.

5. It may further be concluded that there are no significant differences in the forced errors in all three sets combined together between winners and looser volleyball women players at national level in India.

6. It may also be concluded that there are significant differences in the forced errors plus unforced errors in all three sets combined together between winners and looser among women volleyball players at National level in India.

7. It may also be concluded that there is no relationship between gender and results outcome of the game in volleyball in relation to unforced and forced errors among looser and winners players of national level in India.

8. It may further be concluded that the pattern of occurrence of unforced and forced errors between winners and looser team in women section are not different and the pattern of committing unforced and forced errors in both genders are almost same in volleyball at national level in India.

9. It may be concluded that winning of the game at national level in volleyball in women section largely depends upon greater use of attacking skills in the play rather than the defensive skills in India.

REFERENCES: -

1. Andy Russell, An odd steelers journey, Sports publishing L. L. C. page No. 61

2. Bob miller, the volleyball Handbook winning essentials for players and coaches. Library of congress cataloging in publication data page No. 30

3. D.R. Mohar and M.J. Haverstock," Relationship between Height, jumping ability and Agility to volleyball skills." Research Quarterly 27 (1956): 74-78

4. Kibler WB, McQueen, uhi, "fitness evaluations and fitness findings in competitive volleyball players," clinical sports medicine.1988.Apr; 7(2):403-16

5. Amit Kandpall "critical analysis of unforced errors among winners and losers male tennis players of north Zone Intervarsity level (unpublished thesis), june.2009.

6. Amit Kumar Singh Bhadoria " Analysis the forced and unforced errors of winners and losers in volleyball " (unpublished thesis),july 2011.

7. Dharma Singh Meena "Comparative Study of Unforced Errors and Mental Toughness of

Winners and Losers Male Squash Players" (unpublished thesis

8. Fernandez J, Mendez-Villanueva A and Pluim Bm , "Intensity of volleyball match play," British Journal of Sports Medicine, 2006 may;40(5):387-91

9. H Brody, " British Journal of Sports Medicine are provided here courtesy of BMJ Group" (may 2006).p.36