ANALYSIS OF MEN'S VOLLEYBALL MATCHES OF RIO OLYMPICS 2016 DURING THE SEMI-FINAL AND FINAL PHASES

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Abstract The Rio Olympic men's volleyball matches were analyzed with the aim of identifying the match statistics which best discriminated between winning and losing teams. The analysis was based on semi-final and final matches played during the most recent Rio Olympic Game 2016.Two categories of variables were studied: 1) those related to attacking play: total successful spike, direct points by serve, number of opponents error committed and 2) those related to defense: total spike prevented by successful block, spike defense by dig and Reception, number of self-errors committed. Statistics analysis of these matches revealed the following: (a) the variables related to attacking play and (b) the variables related to defense. The results suggest that winning and losing international teams may be discriminated from one another on the basis of variables such as opponent's errors and the effectiveness of their attacking play. This information may be benefited for both coaches and players, adding to their knowledge about game cognitive ability and to evaluate specificity at the time of practice and game planning.

*Keywords***: Volleyball, Performance indicators, Match analysis.

Introduction

Volleyball is apparently one of the most popular sports in the world. Despite its universal nature and its official history dating back more than a hundred years .there are still some uncertainties about its techniques and tactics multi-dimensions. Therefore, there are some ambiguities in the planning of the training process to improve performance in the competition. A match analysis is commonly used in many sports and is viewed as a vital process that enables coaches to collect objective information which can be used to provide feedback on performance (Carling et al., 2005). As coaches are prone to making subjective judgments and may be unable to recall events reliably, they are increasingly turning to match analysis as a way of optimizing the training process of their players and teams (Hughes and Franks, 2004).The main aim of match analysis is to identify the strengths and weaknesses of one's own team, thereby enabling the former to be further developed and the latter to be worked upon. Identically, coach of every teams scrutinize the performance of an opponent side will use the data to identify ways of countering that team's strengths and use to good advantage its weaknesses (Carling et al., 2008). Performance indicators in sport can be defined as the selection and combination of variables that define some aspects of performance and which help to achieve success (Hughes and Bartlett, 2002). In the context of volleyball in the Olympics Game is undoubtedly the greatest prize and it provides an opportunity to compare the best teams and players in the world. Usually, after an Olympic Game, successful teams set new trends in terms of training and playing style. Other than in the historical field, however, there have been very few longitudinal studies of volleyball Match statistics, and although the game has evolved considerably over the last fifty years, the style of play appears to have changed very little during the last decade if one considers the general playing style of teams competing at the Olympic Game.

Background on Volleyball

Volleyball is a ball sport that is played by two teams of six players each. Dimension of volleyball court is 18meters (59 feet) by 9 meters (29.5 feet) in long and wide. Each team occupies one half of the court, which is 9 meters by 9 meters. The halves are separated by a net whose top is 2.43 meters above the floor in men's

competitions. The overall goal is to score points by grounding the ball on the opponent's court. First three sets out of five sets won by a team will be winner. A set is won by the first team to score 25 points and lead by two points. However, the fifth set is typically played to only 15 points. The players follow a rotation scheme, where they must rotate one time in clockwise direction after their team wins the serve. Notwithstanding that the rotation scheme inflicts some restrictions; this tactical freedom allows teams to adopt a wide variety of match strategies. Therefore, volleyball players need to master the following basic skills:

Serve - The serve is the skill of moving the ball from behind the back-line into the opponent's   court.

Spike -The spike is the offensive skill of hitting the ball such that the opponent cannot prevent it from touching their court.

Block -The block is the skill of stopping or altering an opponent's attack by players standing at the net.

Dig -The dig is the defensive skill of preventing the ball from hitting the court when the ball is   nearly touching the floor after a serve or attack from the opponent.

Material & methods

This analysis was based on mainly 4(Four) matches (Two Semifinals, One Bronze medal and One Gold medal) played during the most recent 31st Rio Olympic Games 2016 in Rio de Janeiro, Brazil. Although a total number of 38 matches were actually played during these Rio Olympic Games 2016.The matches were available on FIVB official sites and the data of performance analysis were delimited two categories of variables: those related to attacking play and those related to defense. The following match statistics were gathered: total successful spike, direct points by serve, number of opponents error committed and total spike prevented by successful block, spike defense by dig and Reception, number of self-errors committed. All the items converted into percentage.

Results and discussions

Analysis of the matches presented here country wise and on the basis of data following results and discussion had been made.

Table -1

Country	BRAZIL	ITALY	USA	RUSSIA
Total sets	6	8	10	8
Won sets	6	3	5	2
Lost sets	0	5	5	6

It was found from table no.1 that Brazil did not lost any set after semifinal. Whereas Italy lost 5 sets out of 8 sets, USA lost 5 sets out of 10 sets and Russia lost 6 sets out of 8 sets respectively.
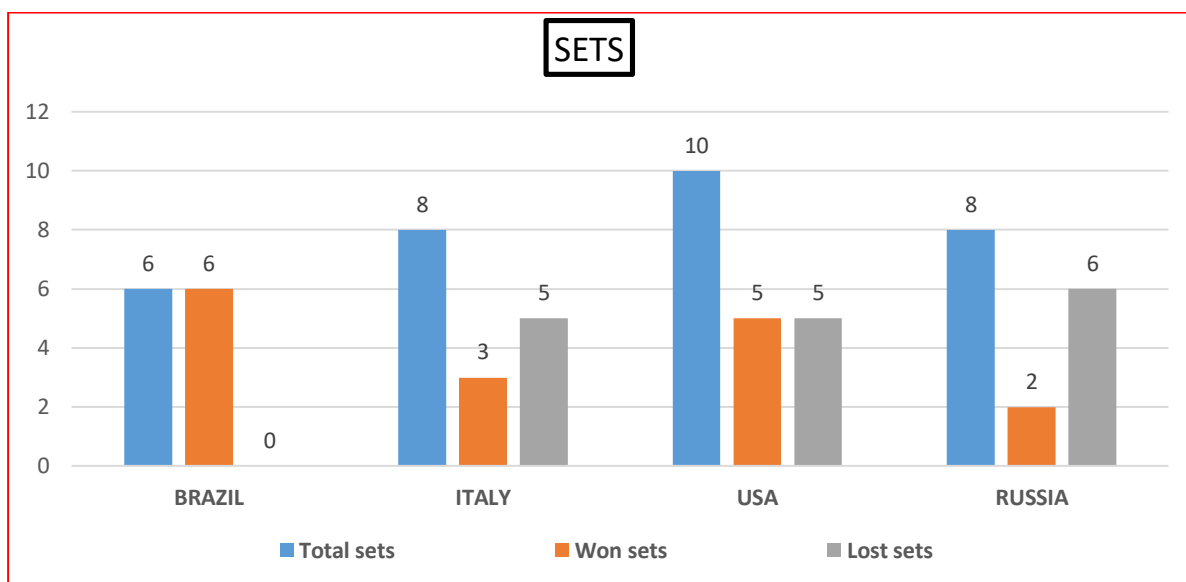
Fig:-1 represents the lost and won set of Brazil, Italy, USA and Russia

Table-2

Country	ATTACKING PLAY								
	Spike			Serve			Opponents error		
	Attempts	Successful	% of success	Attempts	Successful	% of success	Attempts	Error committed	% of error
BRAZIL	152	80	52.63	150	09	6.00	130	52	40.00
ITALY	216	98	45.37	179	12	6.70	191	53	27.75
USA	254	130	51.18	221	13	5.88	206	54	26.21
RUSSIA	194	92	47.42	161	08	4.97	184	42	22.82

From table no.2 it was concluded that in case of attacking part of spike Brazil attempts 152 times out of which they got success 80 times and their successful spiking percentages were 52.63.Italyattempts 216 times out of which they got success 98 times and their successful spiking percentages were 45.37.USA attempts 254 times out of which they got success 130 times and their success full spiking percentages were 51.18.Russia attempts 194 times out of which they got success 92 times and their successful spiking percentages were 47.42.

In other parts of attacking i.e. serve Brazil attempts 150 times out of which they got success 09 times and their successful serve percentages were 6.00.Italy attempts 179 times out of which they got success 12 times and their successful serve percentages were 6.70.USA attempts 221times out of which they got success 13 times and their successful serve percentages were 5.88.Russiaattempts 161times out of which they got success 08 times and their successful serve percentages were 4.97.

In case of Opponent's error Brazil attacked 130 times and opponents Error committed 52 times and their percentages of error 40.00.Italy attacked 191times and opponents Error committed 53 times and their percentages of error 27.95.USA attacked 206 times and Error committed 54 times and their percentages of error 26.21.Russia attacked 184 times and opponent's error committed 42 times and their percentages of error was 22.82.
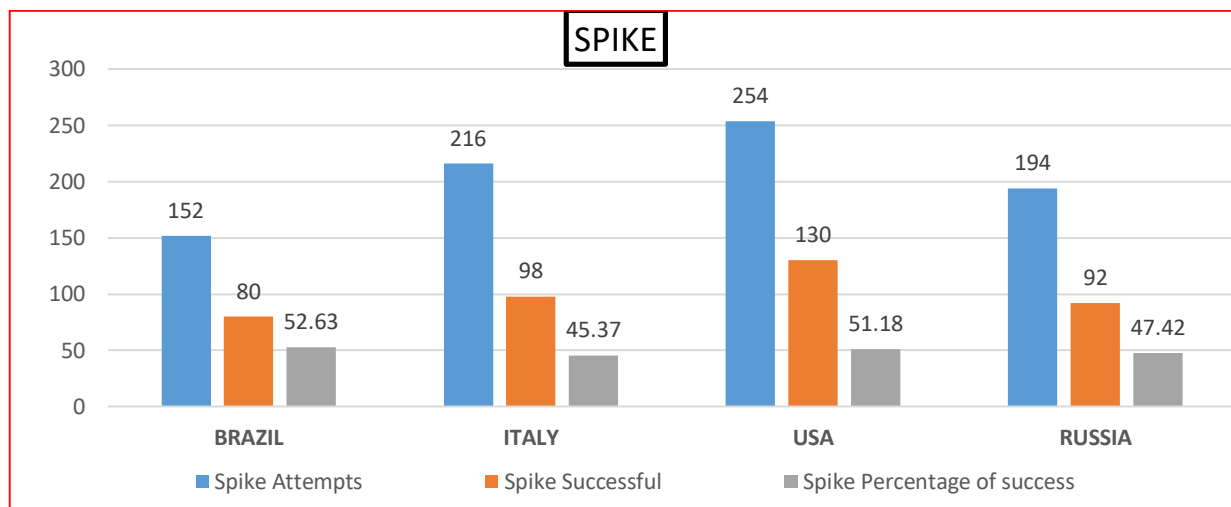

Fig: 2 represent the Spike attempts, spike successful, spike percentage of success of Brazil, Italy, USA and Russia.
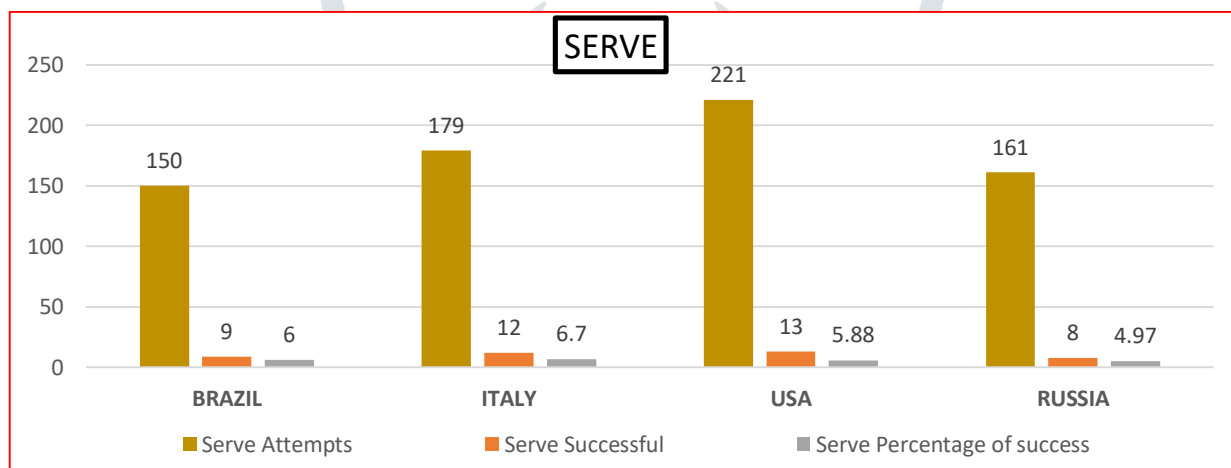

Fig:3 Represent the serve attempts, serve successful and serve percentage of success of Brazil, Italy, USA and Russia.
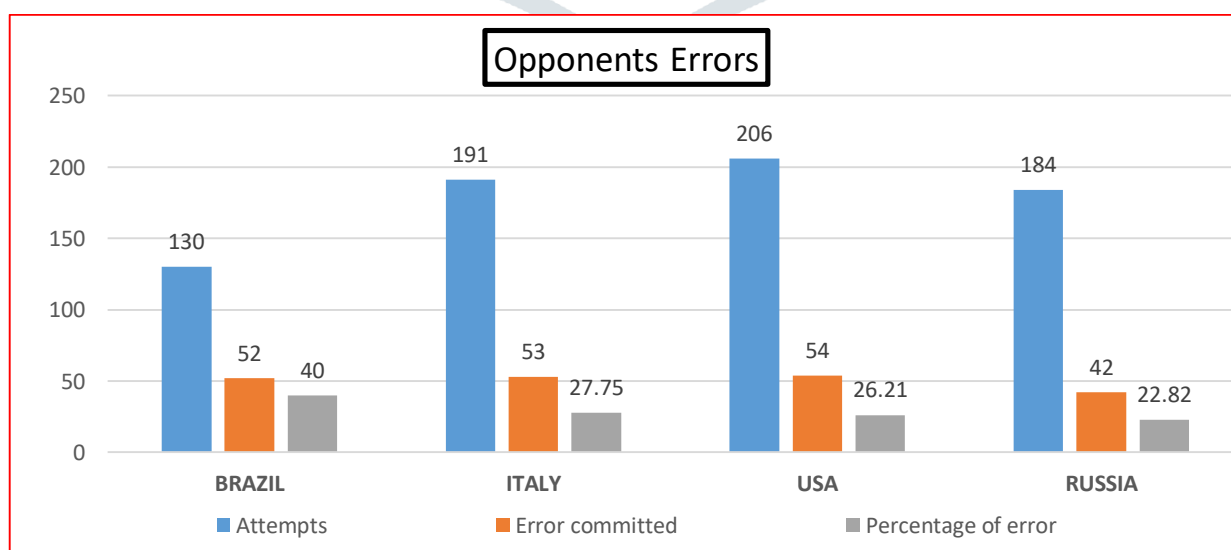

Fig: 4 represent the attempts, error committed and percentage of error of Brazil, Italy, USA and Russia.

Table-3

Country	DEFENSIVE PLAY								
	Block			Dig and Reception			Self-Errors		
	Attempts	Successful	% of success	Attempts	Successful	% of success	Attempts	Error committed	% of Self-Errors
BRAZIL	79	13	16.45	105	63	60.00	154	33	21.43
ITALY	104	14	13.46	139	87	62.59	177	60	33.90
USA	136	24	17.65	173	113	65.32	221	62	28.05
RUSSIA	98	17	17.35	155	85	54.84	159	46	28.93

From table no.3 it was concluded that in case of defensive part of block Brazil attempts 79 times out of which they got success 13 times and their successful block percentages were 16.45.Italy attempts 104 times out of which they got success 14 times and their successful block percentages were 13.46.USA attempts 136 times out of which they got success 24 times and their successful block percentages were 17.65.Russia attempts 98 times out of which they got success 17 times and their successful block percentages were 17.35.

In other parts of defensive i.e. Dig and Reception Brazil attempts 105 times out of which they got success 63 times and their successful Dig and Reception percentages were 60.00.Italy attempts 139 times out of which they got success 87 times and their successful Dig and Reception percentages were 62.59.USA attempts 173 times out of which they got success 113 times and their successful Dig and Reception percentages were 65.32.Russiaattempts 155 times out of which they got success 85times and their successful Dig and Reception percentages were 54.84.

In case of Self-Errors Brazil attempts 154 times and Error committed 33 times and their percentages of self-error 21.43.Italy attempts 177 times and opponents Error committed 60 times and their percentages of self-error 33.90.USA attempts 221 times and Error committed 62 times and their percentages of self-error 28.05.Russia attempts 159 times and error committed 46 times and their percentages of self-error was 28.93.
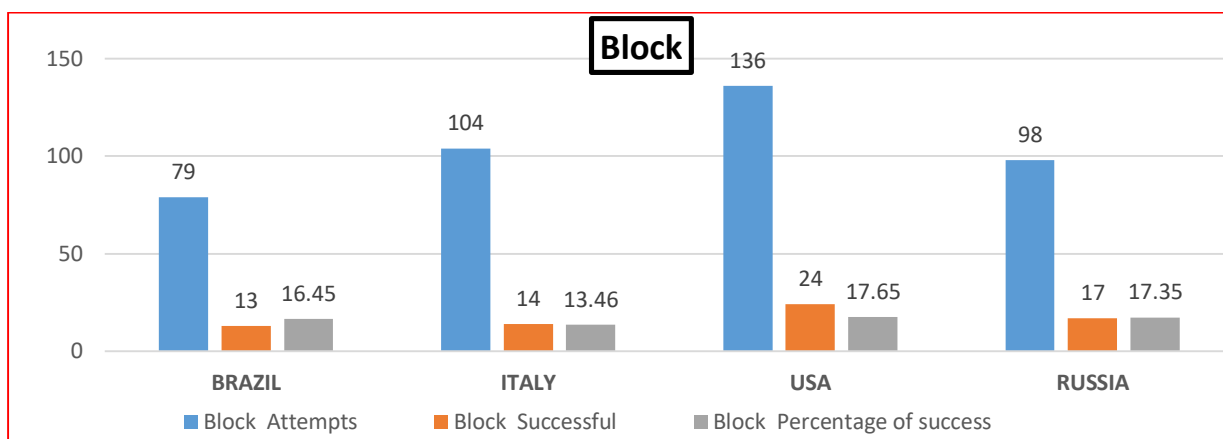
Fig:5 represent the block attempts, successful block and percentage of block success of Brazil, Italy, USA and Russia.
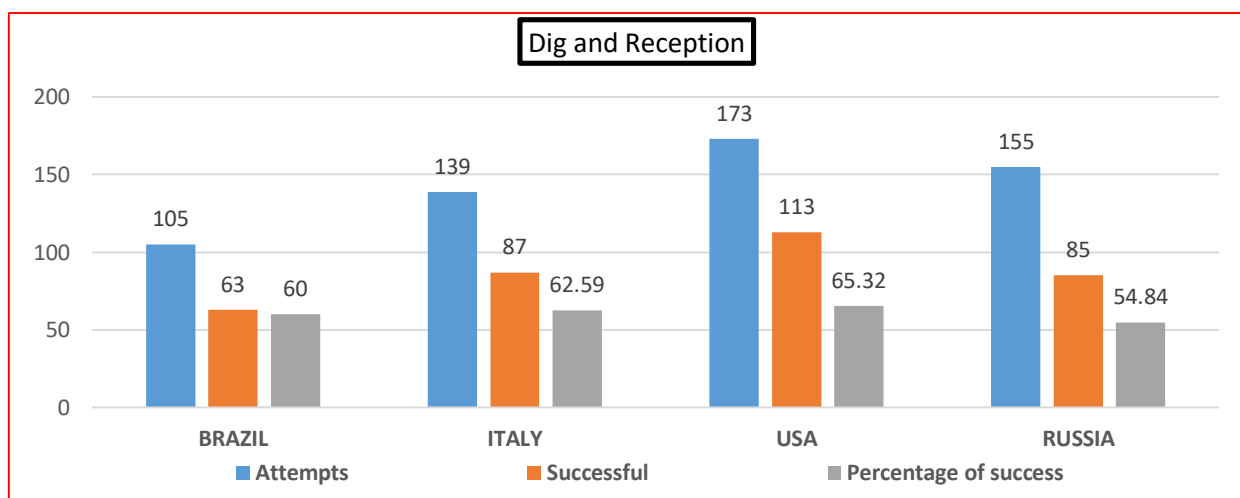

Fig:6 represent the dig and reception attempts, successful Dig and Reception and percentage of Dig and Reception of Brazil, Italy, USA and Russia.
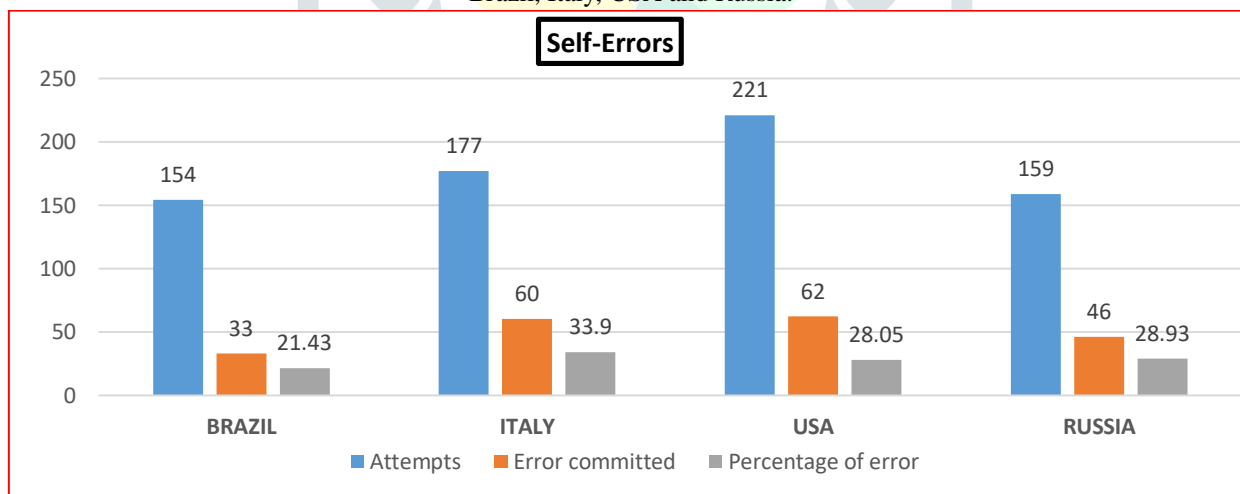

Fig:7 represent the self-errors attempts, self-errors committed and percentage of self-errors of Brazil, Italy, USA and Russia.

Conclusions: on the basis of above results and discussion the following conclusion had been drawn-

Attacking play

1. Brazil had more successful attacking percentage than others.
2. Italy team earned more points than others teams in service.
3. Opponents error during attacking is higher than others that's means others teams occurred more error against Brazil team and it is remarkable point that Brazil holds world no.1 (one) rank since 2016.

Defensive play

1. It was notable that Brazil team made less self-error than others team.
2. Brazil was poor in defensive play than the attacking.
3. Blockers of Russia and USA were more successful than others teams.
4. It was concluded that dig and reception of USA players were better than others three teams.

Recommendation

Self-error is an important aspect in volleyball, so try to make less number of self-error during match. This work will helpful to the coaches, players and researcher in future study.

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