

# DIFFERENCES IN THE SUCCESS OF THE ATTACK BETWEEN OUTSIDE AND OPPOSITE HITTERS IN HIGH LEVEL MEN'S VOLLEYBALL

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## Introduction

Terminal actions are those game actions that may represent the end of a point. Several studies have concluded that the most definitive action is the attack. Concerning the player role, the specialization in high level volleyball has led to classify players into different types depending on their functions, being the most requested when it comes to the attack the opposite hitter followed by the outside hitters or receivers. The objective of this study was to determine the success of the three most frequent attackers for their team in top-level men's volleyball, according to their location on-court in the moment of performing attacks.

## Methods

2925 attacks ( $n = 2925$ ) which meant the end of the point were registered from 23 matches of the 2010 Men's World Championship, differentiating between the *player role* (1<sup>st</sup> receiver, 2<sup>nd</sup> receiver and *opposite*, the three most frequent attackers in any high-level volleyball team. The 1<sup>st</sup> receiver is the player who starts closer to the setter in the initial formation, whereas the 2<sup>nd</sup> receiver starts near the opposite), the *location on the court* when the attack took place (*front court* and *back court*) and the *result of the attack* (*positive* (#) and *negative* (=)).

## Results

The Chi-square test presented significant results ( $p < 0.000$ ) for the variables. The effect of the association showed a *Cramer's V* = 0.152. The adjusted residual analysis showed higher values than expected for the *opposite* between the *back-court location* and the *attack=* and for the *front-court location* and the *attack#*. Furthermore, a decision tree analysis was performed, setting the *result of the attack* as the dependent variable and the *player role* and the *location on the court* as independent variables. The model split the sample into two groups: *opposite* and 1<sup>st</sup> and 2<sup>nd</sup> receiver. The *receivers* presented a probability of success of 72.5% in their attacks, whereas for the *opposite* it was 55.1%. In addition, the likelihood of success of the *opposite* when performing definitive attacks was 48.4% from the *back court* and 62% from the *front court*.

## **Discussion**

The opposite player is the most frequent attacker, agreeing with previous studies. However, our results disagree with prior conclusions, which found the opposite as the most successful player in terms of quantity, but our analysis showed higher efficacy for both the 1<sup>st</sup> and 2<sup>nd</sup> receiver. Besides, the lack of significant differences between the efficacy of the attack from front and back court by the receivers places them as strong attackers.

## **Conclusions**

There is no statistical difference in the attack# probability between the front and back court location for the receivers. All tests performed indicate an increasing relevance of the outside hitters from the back court, which contrasts with the traditional model in male volleyball of using the opposite as a specialist in back-court attack rather than any of the receivers.

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