

INTRODUCTION

The importance of the serve is high in men's international top volleyball. Strong serve is a powerful offensive weapon in scoring points directly or in assisting the block or transition attack to score points [1, 2]. The players use mainly six different kinds of serve techniques: jump serve, short jump serve, jump float, short jump float, float and short float.

The purpose of this study was to examine the efficiency of different serve techniques in men's volleyball at three levels: boy's youth national teams, Finnish men's league teams and men's national teams.

METHODS

The efficiency of different serves was evaluated from 19 matches played in 2007; 8 matches from YECQ Pool C (1089 serves), 5 matches from men's Finnish league (1033 serves) and 6 matches from men's WL (1016 serves):

- ▶ Boy's youth national teams, G1
 - n=49, age 17.2±0.6 years, height 194.3±5.9 cm.
- ▶ Men's Finnish League teams, G2
 - n=59, 25.8±5.4 years, 193.4±5.6 cm.
- ▶ Men's national teams, G3
 - n=38, 26.7±3.9 years, 196.7±5.2 cm

A six-point assessment scale (0–5) was used to evaluate the efficiency of the serves:

- 5 = ace/point
- 4 = no attack from the opponent team
- 3 = opponent can use only high ball attack
- 2 = opponent can use first tempo attack with a small risk
- 1 = opponent can use all attack options
- 0 = error

The serve technique distribution and the means and S.D. for serve efficiency for different serve techniques and groups were calculated. T-test for independent samples was used for statistical analysis. Also ace-error ratios, ace, positive (proportion of level 3-5 serves) and error percentages for every serve technique were calculated.

RESULTS

In the men's matches the jump serve was the most often used serve type (54–65%), whereas in the youth matches the jump float was the main serve technique (50%). Altogether jump serve and jump float were the most commonly used serve techniques in all groups G1: 92%, G2: 83% and G3: 88% and other serve types were used only rarely (12 %) (figure 1). Due to the small proportion short float serves were excluded from the additional analysis.

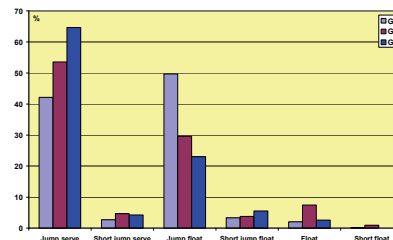


Figure 1. The proportions of different serve techniques in different groups.

The efficiency of jump float serve was significantly higher for G1 than for G2 ($p<0.01$) and G3 ($p<0.01$). In G1 jump float serve was significantly more efficient than jump serve ($p<0.001$) and short jump float ($p<0.05$) (figure 2).

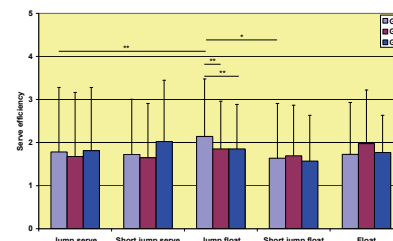


Figure 2. The means and SDs of the serve efficiency for different groups and serve techniques (* = $p<0.05$, ** = $p<0.01$ and *** = $p<0.001$).

The ace-error ratios were highest for G1 (1.00) and G2 (1.33) in float and for G3 (0.75) in short jump serve (figure 3).

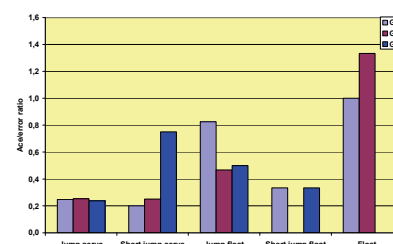


Figure 3. Ace-error ratios for different groups and serve techniques.

The highest positive serve percentages were for G1 jump float 43% and jump serve 35%, for G2 float 35% and jump serve 31% and for G3 jump serve 36% and short jump serve 33%. For all three groups jump serve and short jump serve had the highest error percentages (figure 4).

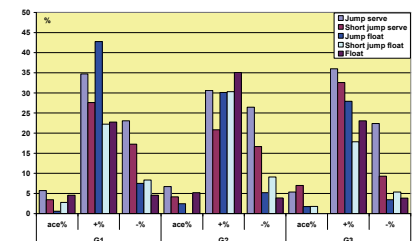


Figure 4. Ace, positive and error percentages for different groups and serve techniques.

CONCLUSIONS

- In men's volleyball the serve technique and efficiency differed according to the performance level.
- At the men's level jump serve and at the youth level jump float serve were the dominant serve techniques.
- Jump float serve was the most effective serve technique at youth level and so it can be said that the high use of it is sensible.
- The effective use of jump serve places high demands on the physical abilities and therefore it seems that it is easier for the younger players to use jump float serve.
- At men's level jump serve was quite effective, but it also had the highest error percentage. The high use of jump serve can be explained by the target to score direct points by ace serves, even if it also means a lot of directly lost points.

REFERENCES

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