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Scoring Performance of the three phases in Table Tennis

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INTRODUCTION:

Table tennis is a fast-paced sport where the serve-attack and the service-return-attack have been considered the most important and effective scoring tactics. The 'three-phase evaluation method' has been developed to analyze table tennis match performance based on three key phases: the attack after service, the service-return with attack, and the stalemate phase. The method combined with other variables such as stroke type and ball bouncing area have usually been used to analyze the techniques and tactics of the individual players. There has been evidence to support that the impact of the serve and subsequent attack on the rally outcome decreases as the number of strokes increases (1). This study aimed to use a revised three-phase evaluation method to analyze the scoring performance of elite mens singles matches in relation to the outcome of the matches.

METHODS:

The notational analysis was applied to analyze seven mens singles matches from the quarter-finals to the finals in the 2022 World WTT Cup Finals Xinxiang. Every point in a game was assigned to one of three phases: scored at stroke 1 and 3 of the rally for the service phase, scored at stroke 2 and 4 of the rally or the service-return phase, and scored at stroke 5 or later for the stalemate phase. The scoring rates of each phase were calculated by dividing the total points won in that phase by the total number of services, service-returns, or 5 or longer rallies, respectively. The 3 (phase) \times 2 (outcome) repeated measure ANOVA was used to analyze the scoring rates.

RESULTS:

The effect of phase was significant, $F(2, 12) = 31.38$, $p < .001$; the post hoc paired comparisons showed that the stalemate phase had significantly higher scoring rate than the other 2 phases ($ps < .001$). In addition, the winners also had significantly higher scoring rate than the losers, $F(1, 6) = 22.03$, $p < .01$. No significant interaction effect was found.

CONCLUSION:

The stalemate phase had the highest scoring rate over the three phases. This indicates that more points were determined later in the rally rather than from the service or service-return attack tactics. Service and service-return both are important techniques and tactics in table tennis, but the result of the analysis suggests that developing tactics for stalemate phase may be the key to winning the table tennis matches.

REFERENCE:

1) Gómez, M. et al., Int J Perform Anal Sport, 2017

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