

EVALUATION OF RECEIVING ABILITY OF TEENAGE MALE TABLE TENNIS PLAYERS IN TAIWAN

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The purpose of this study was to evaluate the forehand receiving ability of teenage male table tennis players. Thirty-nine male players consist of skill levels from junior to senior high school students and national squads were selected. This assessment involves three tests: basic control, judgment, and match-like condition simulation. We found under the basic control test, the junior high school players performed poorer in downspin and left-side downspin in the aspect of accuracy ($P < 0.01$). As for the judgment test, the junior high school players showed less accuracy in all kinds of backspin types, compared to national squads level players ($P < 0.01$). In the test of match-like condition simulation, Junior high school players showed that their ability in handling all kind of spins to be relatively weak compared to senior high school and national level players.

KEY WORDS: basic control, match-like condition simulation, forehand topspin

INTRODUCTION: During a match, a player might have 5 to 10 times opportunity to be the receiving end and it is critical to receive the ball well. One bad receiving may simultaneously create more opportunities for the opponent to attack and make the player to be nervous and fearful, resulting in a series of errors or even loss of a game (Lu, 2010). On the other hand, it is just as the same importance for a player to possess a forehand counter stroke as it is for him to possess good receiving abilities. In making a comprehensive survey for outstanding male table tennis players around the world, we find that they have perfect forehand attacks because not only it is a major measurement of gaining points, but it is also a good weapon in defeating an opponent at critical moments (Kong, 2013).

The integration of the two above-mentioned skills are being crucial to a table tennis player, distinctly indicates that receiving ability is a key factor that affects outcome of a game. Therefore, this study was to evaluate receiving ability in different levels of table tennis players, so as to understand their weakness in the receiving skills.

METHOD: There were 39 male table tennis players consisting of junior and senior high school and national squad levels who participated in the study. Meanwhile, each participant filled out an investigation form including basic personal information and health conditions, as well as a letter of consent agreeing to participate in the study. The method adopted in this study is adapted from the method for assessing a tennis player's ability in drive, designed by (Vergauwen, Spaepen, Lefever, & Hespel, 1997 ; Vergauwen, Madou, & Behets, 2004). A national champion-level table tennis coach served to each participant and recorded the results of their counter strokes. During the tests, in the case of any let or service fault by the server, that serve was omitted. Each participant received tests involving three situations, i.e., ball control, judgment, and simulated match-like conditions simulation.

For each above-mentioned test, there were six identical serves; for instance, topspin, backspin, left sidespin, right sidespin, left side downspin, and right side downspin. Facing each kind of serve by the server, a participant must receive 6 times; therefore, they received a total of 108 serves. The criteria to assess a player's receiving ability are success rate and accuracy rate. Independent one way ANOVA was used for statistical analysis.

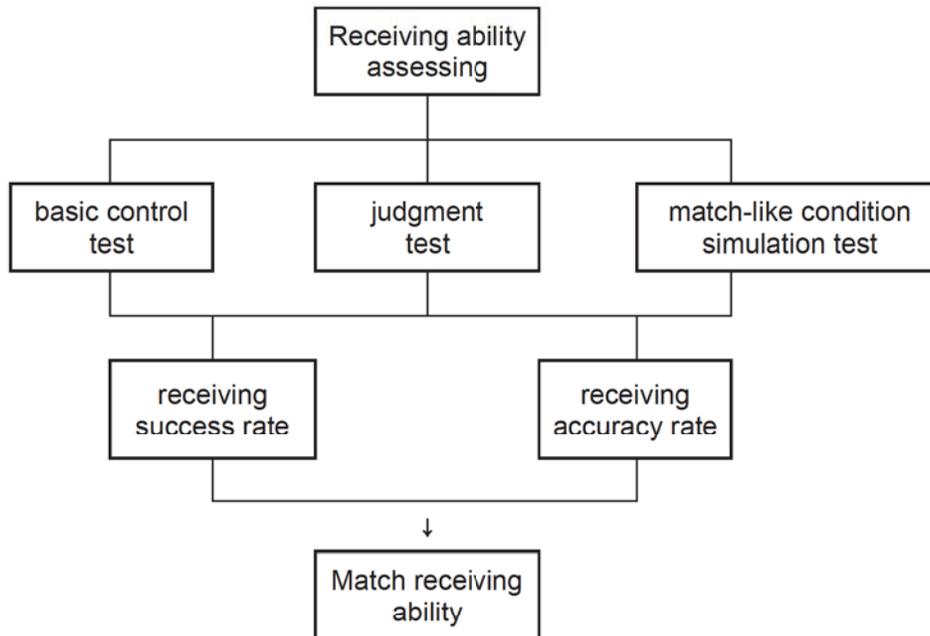


Figure 1: Assess model to table tennis receiving ability (Liu & Tseng, 2007)

RESULTS AND DISCUSSION: Figure 2 shows that in the basic control accuracy, except the top spin and right sidespin, the junior high players had a lower accuracy rate in other types of spins than senior high school and national level players. Figure 3 indicates that in the judgment test, the junior high players also performed worse than the national players. From Figure 4 and Figure 5 we can also see that in a simulated match-like condition simulation, the success rate in some spins for junior high players is not much lower than that of national players. But in terms of the accuracy rate in every spin type, junior high players had inferior performance to senior high and national players. The match-like condition simulation was the closest to a real competition condition. From the result of this study we can see that the performance of junior high players in receiving accuracy was very poor. There were two key factors: firstly the players are not very familiar in receiving all types of spins; secondly, in a simulated match-like condition simulation it principally piece together the ability of ball control and ability of judgment, the player must quickly consider all factors that may affect receiving counter-strokes and then swiftly react to recounter-attack (Ling, 2002). So, when the training program is more versatile, the movement is more skilled, the accuracy rate in receiving is higher accordingly (Chiu, Shien & Chu, 2009).

In Figure 2 and Figure 3, it appears that for junior high players, there're some different performance in dealing with spins, especially in the most complex match-like simulations, they really have to reinforce and enhance their accuracy rate. It is recommended that when planning training program for junior high and senior high school players, all types of spin training should be covered. Therefore, the accuracy rate can be enhanced and in turn achieving better competition result.

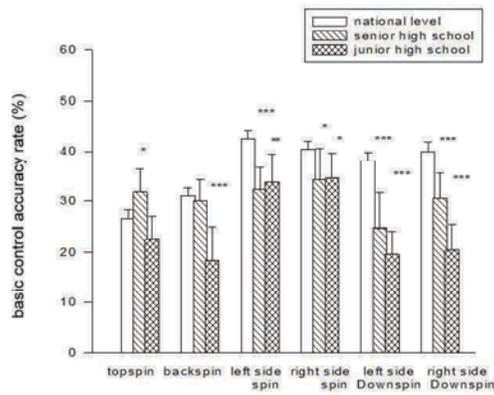


Figure 2: Comparison of receiving control accuracy rate performed by players from three different level with various spinning services.* $P < .05$ and ** $P < .01$ and *** $P < .001$ means significant difference in comparing to the performance of national-level players.

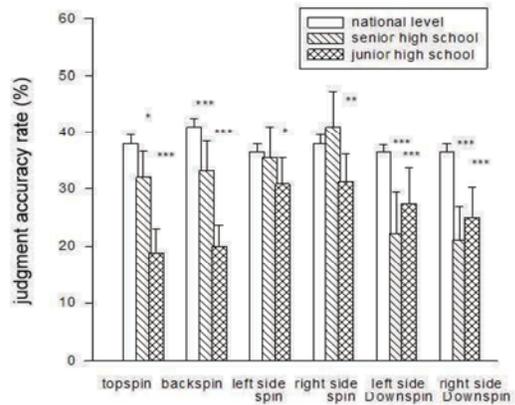


Figure 3: Comparison of receiving judgment accuracy rate performed by players from three different level with various spinning services.* $P < .05$ and ** $P < .01$ and *** $P < .001$ means significant difference in comparing to the performance of national-level players.

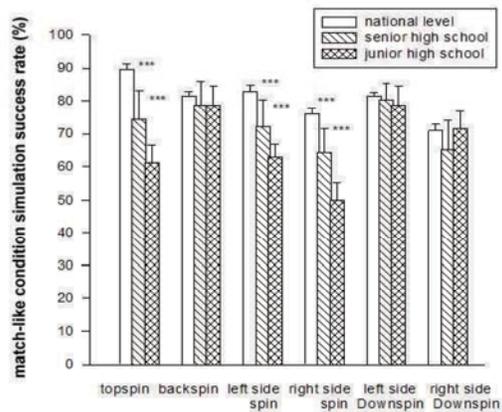


Figure 4: Comparison of receiving match-like condition simulation success rate performed by players from three different level with various spinning services.*** $P < .001$ means significant difference in comparing to the performance of national-level players.

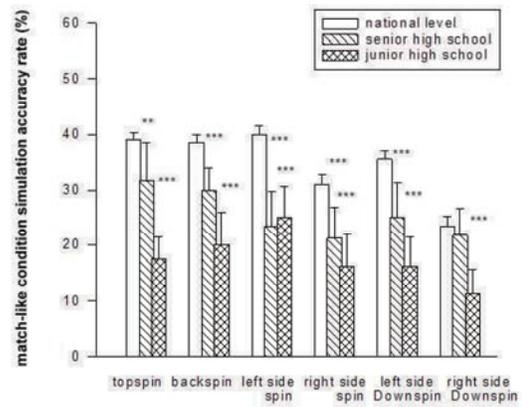


Figure 5: Comparison of receiving match-like condition simulation accuracy rate performed by players from three different level with various spinning services.** $P < .01$ and *** $P < .001$ means significant difference in comparing to the performance of national-level players.

CONCLUSION: From the accuracy rate of three different tests on receiving of two more complicated spin types involves left downspin and right downspin, there's a significant performance gap between the junior high, senior high school players and the national squad level players. From these results, it is recommended in the forthcoming training programs, more training schemes on complex spin types should be arranged so as to reinforce all-round ability in receiving skills.

REFERENCES :

- Chiu, J. P., Shien, S. G. & Chu, C. Y. (2009). High school women's table tennis players special fitness and the annual training program. *The Journal of Innovation and Research*, 5(1), 55-61.
- Kong, L. H. (2013). Analysis of female serving and receiving skills. *The Journal of Table Tennis World*, 253, 80-81.
- Ling, H. S. (2002). *Relevant research on table tennis players' visual responsiveness and performance of hitting and getting balls*. Unpublished doctoral dissertation, Chinese Culture University, Taipei, Taiwan.
- Lu, S. D. (2010). Table tennis rules revise and development. *The Journal of Table Tennis World*, 217, 102-103.
- Liu, Y. T., & Tseng, W. P. (2007). *Evaluation of Forehand Receiving Quality in Junior- to Senior High School-Level Table Tennis Players*. Poster session presented at the annual meeting of the American College of Sports Medicine, New Orleans.
- Vergauwen, L., Madou, B., & Behets, D. (2004) Authentic evaluation of forehand groundstrokes in young low-to intermediate-level tennis players. *Medicine science in sports and exercise*, 36.
- Vergauwen, L., Spaepen, A.J., Lefevre, J., & Hespel, P. (1997) Evaluation of stroke performance in tennis. *Medicine science in sports and exercise*, 30 (8), 1281-1288.