

WHAT TENNIS RESEARCH TELLS US ABOUT ... WOMEN'S TENNIS

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A series of articles on the women's game which have appeared in sport scientific publications are summarised below. Coaches interested in obtaining more information from these articles can find them using the relevant references.

TECHNIQUE

TENNIS SERVE OF ADVANCED WOMEN PLAYERS

An analytical study of the tennis serve as hit by advanced women players was conducted. Each of the ten subjects hit 20 trial first services. The speed and placement of each serve was recorded, and a motion picture recording was made for selected trials. The results indicated that, for these players, there was no relationship between the speed and the accuracy of their serve. Certain differences observed in the serving movement used by the subjects appeared to be significantly related to their success, measured in terms of speed and accuracy of their serves. The degree of body rotation, backward bend and arm extension during impact was positively related to success in serving.

Johnson, J. (1957). Tennis serve of advanced women players. Research Quarterly for Exercise and Sport, 28, 123-131.

ONE-HANDED AND TWO-HANDED BACKHAND DRIVES OF HIGHLY SKILLED FEMALE COMPETITORS

This investigation was conducted to aid in the understanding of the mechanical differences between the one-handed and two-handed backhand drives and assist in the prediction of the optimal stroking method per individual. The purpose of this investigation was to study the backhand of 36 highly skilled female tennis players. The results showed that:

- a) The one-handed backhand is basically a multiple-segment motion in which the hips, trunk, arm, forearm, hand and racket move in an extremely co-ordinated fashion.
- b) The two-handed backhand was observed to be a two-segment motion where hips rotate, then the trunk and upper limbs rotate simultaneously.
- c) It was suggested that the multiple-segment co-ordination required by the one-handed backhand may explain why many beginners "lead the swing with their elbow" or "drop the hand and racket" just prior to impact to help propel the ball upward.

Groppel, J.L. (1978). A Kinematic Analysis of the tennis one-handed and two-handed backhand drives of highly skilled Female competitors. Doctoral Dissertation. The Florida State University.

PSYCHOLOGY

PERSONALITY OF FEMALE TENNIS PLAYERS

This study was undertaken to add to the understanding of the profile of the female athlete both psychologically and physiologically. Sixteen internationally ranked female professional tennis players were administered the Cattell 16PF Questionnaire. When age was controlled in the research design (under 27 vs. Over 28 years old), the younger players were significantly more intelligent and experimental than the older group. When rank was controlled (above 50, below 50), no significant results were reported. Compared to the norms for the general female population, the tennis pros were significantly more reserved, more intelligent, more suspicious, and less pretentious. More information is needed to study intragroup comparisons, as well as comparisons with non elite female athletes and elite male athletes.

Gondola, J.C. & Wughalter, E. (1991). The personality characteristics of internationally ranked female tennis players as measured by the Cattell 16 PF. Perceptual and motor skills.73, n°3, 987-992.

FEMALE COACHING BEHAVIOUR

The purpose of the research was to analyse the behaviour of 3 female tennis coaches observed during three practice sessions. The results showed that:

- 1) There was no significant difference in the pattern of behaviour presented by each subject
- 2) It seems that behaviour becomes more consistent with experience
- 3) All three coaches interacted primarily with individual athletes
- 4) All three coaches made significantly more organisational comments than skill comments to the players
- 5) Each coach exhibited a more positive than negative tone in her comments
- 6) There was no significant difference in the number of comments spoken to the male and female players
- 7) Coaches used an a-gender approach to coaching
- 8) Comments were appropriate to the situation rather than to the gender of the recipient

9) Female coaches showed little leniency towards female athletes, rather they demanded optimal performance from both genders.

Harries-Jenkins, E. & Hughes, M. (1993). A computerised analysis of female coaching behaviour with male and female athletes. In T. Reilly, M. Hughes & A. Lees (Eds.) Science and racket sports, 238-243.

PSYCHOLOGICAL PROFILE OF FEMALE TENNIS PLAYERS

The present study tried to develop a psychological profile of 16 professional tennis players from five countries. Six mood states were measured: tension, depression, anger, vigour, fatigue and confusion. Results showed that:

- 1) Older female tennis players were less tense, depressed, fatigued and confused (positive mood state) than college age women,
- 2) Younger players showed a profile similar to that of the college-age students.

Wughalter, E. & Gondola, J.C. (1991). Mood states of professional female tennis players. Perceptual and motor skills. 73, n° 1, 187-190

MOOD STATES OF PROFESSIONAL TENNIS PLAYERS

This study investigated mood state and psychological skills of world ranked female tennis athletes, and the psychological differences between 47 top (1-65), middle (75-180) and bottom (200+) ranked tennis players of the WTA who participated in the research. The results showed that:

- 1) There was a trend for top-ranked players to exhibit greater concentration, and motivation, and less confidence and team emphasis than bottom-ranked ones
- 2) World ranked female tennis players exhibit mood state patterns and psychological skills similar to athletes in other sports.

Meyers, M., Sterling, J.C. et al. (1995). Mood and psychological skills of world ranked female tennis players. Journal of sport behaviour. 27 n° 3 September, 156-165.

CRITICAL SITUATIONS

The purpose of this investigation was to determine the effects of a critical situation on the tennis performance of males and females. Results showed that: 1) After losing the first set, males came back to win the match significantly more often than females,

2) The same results applied to singles and doubles, and juniors and professionals. This was explained. If females attribute the loss of the first set to lack of ability this would cause them to expect to lose the match since ability is a stable attribute. Whereas, if they attribute it to a lack of effort, as males do, they might try harder since effort is an unstable attribute.

Weinberg, R.S., Richardson, P.A., & Jackson, A.J. (1981). Effect of situation criticality on tennis performance of male and female. International Journal of sport Psychology, 12, 253-259.

COMING FROM BEHIND

The purpose of the study was two fold:

- 1) To determine if there are any differences in elite male and female tennis players in terms of their ability to come from behind to win a match after losing the first set
- 2) To determine if elite (top 20) male and female tennis players come from behind to win significantly more often than less elite (top 500) tennis players.

Results showed that:

- a) There was no difference between males and females in coming from behind
- b) Both elite males and females come from behind more often than less elite players
- c) Self-confidence appears to be one variable that consistently differentiated between successful and less successful tennis players.

Ransom, K. & Weinberg, R.S. (1985). Effect of situation criticality on performance of elite male and female tennis players. Journal of sport behaviour, 8, 144-148.

MOMENTUM

The purpose of this investigation was to determine the gender differences in the tennis players' ability to come from behind and win a match (reverse psychological momentum).

Results showed that:

- 1) Males were more likely to come from behind and win than females
- 2) However, female players appear to slowly increase their ability to reverse psychological momentum and come back to win a match after losing the first set
- 3) When looking at the categories, these differences are more prevalent at the junior level

Weinberg, R.S. & Jackson, A. (1989). The effects of psychological momentum on male and female tennis players revisited. Journal of sport behaviour. 12, n°3, 167-179

ACHIEVEMENT GOALS

The present study examined the perceived causes of success among elite adolescent tennis players and investigated the function of gender in the interdependence of goal orientation and beliefs concerning tennis achievement. 80 male and 41 female adolescents participated in the research.

Results showed that:

- 1) There were two conceptually coherent personal goal-belief dimensions in females:
 - a) Ego orientation and the beliefs that ability and maintaining a positive impression were the primary causes of success,
 - b) Task orientation coupled with the effort and a de-emphasis on external factors and deceptive tactics would lead to tennis accomplishment
- 2) Females held the belief that effort plays a key role in order to succeed in tennis more strongly than males.

Newton, M. & Duda, J.L. (1993). Elite adolescent athletes' achievement goals and beliefs concerning success in tennis. Journal of Sport and Exercise Psychology. 15, 437-448.