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Construction of Application Strategy for Statistical Analysis of Beach Volleyball Game Techniques and Tactics Based on the Concept of Standardization of Research Methods

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INTRODUCTION:

To explore the establishment of a standardized statistical analysis strategy for beach volleyball techniques and tactics, and to verify its reliability and validity, to provide theoretical standards and methods for studying the technical and tactical characteristics of beach volleyball games, and to lay the theoretical foundation and practical path for the Chinese Volleyball Association to promote the technical statistical methods of beach volleyball.

METHODS:

1. Expert Interview Method: Interviewing 3 professionals. 2. Focus Group Discussion: Focus groups are formed by 3 coaches, 6 players, 2 volleyball technical and tactical statistical analysis professionals and 2 researchers to communicate and discuss statistical technical and tactical indexes and effects as well as analysis methods. 3. Experimental method: Fifteen games (60 players) from the final stage of the 14th National Games in 2021 were selected to allow three technical and tactical statisticians to count the games using the Data Volley 4 strategy and one coach at the game site according to the same statistical criteria.

RESULTS:

1. Sorted out the eight modules of "goal setting, index selection, effect standard, related technology setting, tactics setting, statistical standard, hardware and software configuration and practical analysis" to build a standardized technical and tactical statistics strategy; 2. Using the data of 8 matches of the champion Liaoning mens sand volleyball team No. 1 as the sample, using chi-square test and independent sample t-test to compare the final and preliminaries of receiving and serving ($\chi^2=18.67$ $p=0.001<0.05$, attacking ($\chi^2=3.663$ $p=0.61>0.05$), and average block score per set ($t=2.934$, $p=0.011<0.05$) technical performance effects to provide a basis for the selection of the study matches;

3. The intra-group correlation coefficient test application strategy was used and the degree of rater reliability consistency was excellent (all three ICC coefficients >0.90); the paired t-test and Bland- Altman consistency analysis of the average reception rate and offensive success rate per set of applied strategy statistics and traditional paper-and-pencil statistics showed no significant difference ($p>0.05$) and good consistency ($p>0.05$).

CONCLUSION:

1. The standardized system construction of the application strategy can meet the needs of the sand volleyball team in preparing for matches, and at the same time can provide standards and methods for official match technical statistics. 2.The application strategy has good validity and lays the foundation for different statisticians to divide and cooperate. 3. Among the main opponents in preparing for major matches, the latest matches are preferred when choosing the matches.

Topic: Statistics and Analyses

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