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SOURCES OF PSYCHOLOGICAL STATES RELATED TO PEAK PERFORMANCES IN ELITE TABLE TENNIS PLAYERS

Abstract

Take home message

The findings provided information for sport psychologists and coaches to organize appropriate psychological skills training programs for table tennis players.

Introduction

The purpose of this study was to investigate the sources of psychological states for peak performance in elite table tennis players.

Methods

Semi-structured interviews were conducted with 10 elite table tennis players (mean age = 20.9±1.85, mean sport years = 12.4±2.86), and the average duration of each interview lasted about 60 minutes. Content analysis was performed to analyze the qualitative data of transcribed verbatim obtained through individual face-to-face interviews.

Results

Optimal mental states were characterized by Concentration, Self-confidence, Positive thinking, Emotion management, and Motivation by the inductive analysis. Furthermore, the sources of concentration were sober-minded thinking, concentration on the present and seeking an opportunity to reverse. The sources of self-confidence comprised coaches' instruction, mental, tactical, and physical preparation before competition, self-belief in techniques, and social support. The sources of positive thinking included self-challenging and self-encouragement. Further, mental relaxation and competing like regular practice were the sources of emotional management. A desire for winning and concern about the result were the sources of motivation.

Keywords: sources of psychological states, peak performance

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THE EXPLORATION OF THE THREE-STAGE LAW OF 11 POINTS RULE

Abstract

Take home message

1. Because of the increase of key and crucial balls in the 11-point rule tournament, players should decrease the turn-over of continuous attacks.
2. Players should strengthen the use of two straight balls when offence becomes defence.
3. Players should persist in playing on the forehand break-through tactics.

Introduction

A table tennis tournament is made up of service stage, return stage and persistent stage. How do the getting-point percentage and using percentage of three stages change in the 11 points rule? By the statistics and analysis of 56 tournaments of 11 points rule in the recent year, this article provides some thoughts to be referred to. The time of a 11-point-rule tournament is short. The rate of appearance of its crucial balls is high. Its casual rate is high. Its rhythm is faster. Especially, a table tennis tournament has more changes than other events. These ask the exact study of technique-tactics of every stage of training and tournament to find the 11-point rule law.

Methods

Video analysis References Statistics Logical analysis

Results

1 Service stage

Compared with 21-point rule, the getting-point and using percentage of the 11-point-rule service stage has not much change. The 11-point rule uses the circulating service rule of 2 balls per player. Players' service and drive after service in this stage is mainly flexibility and powerful. Drive after service is the important means of getting points. Excellent players' getting-point percentage in this stage is often excellent. Moreover, the data of the statistics table also prove that whether a 21-point-rule tournament or a 11-point-rule tournament, the average getting-point percentage in this stage is 66%, which is excellent.

2 Return stage

Chinese players have more change in this stage. The getting-point percentage in this stage rises from 44.9% to 53%. The using percentage decreases from 32% to 20%. There are two reasons. The first reason is that Chinese players strengthen the quality of high balls and chop balls. The second reason is the inherent law of 11-point rule. (Chinese players don't completely master the 11-point-rule law and sometimes play on the return though of 11-point rule.)

3 Persistent stage

The using percentage of persistent stage of 11-point rule is increased by 12%. Chinese players' getting-point percentage in this stage hasn't obvious changes. Compared with 21-point rule, the technique-tactics of persistent stage of 11-point rule has more change. Players' mostly play on the basis of their own technique-tactics' characteristics, playing style and planned tactics. Players should play on the basis of their own rhythm. Players should first play powerfully and actively on the basis of reasonably and effectively using technique-tactics in persistent stage and make efforts to be active, speed and flexibility. Players should be not only power but also accuracy. As long as combining power with accuracy, players can make it.

Discussion

Player should first play powerfully and then play steadily. Players should attach importance to the quality of return. Whether driving or controlling balls, players should be active to create advantageous conditions for persistent stage. In the way of tactics, players should attach importance to increasing the forehand break-through tactics on the basis of present tactics and make efforts to get good chances and superiority. In addition, players' first judging and consciousness of returning balls should be fast. Players should be ready to deal with changes.

From the statistics, it is found out that few players is good or excellent in persistent stage. There are two main reasons. The first reason is that over-power leads to the increase of turn-over. The second reason is that over-stability leads to the ball quality of balls and being passive.

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Sara Ekman¹, Irene Faber², Frits Oosterveld³, Ria Nijhuis-Van der Sanden⁴¹Lic. Physical therapist, student Master of Sports Medicine, Lund University, Lund, Sweden²School of Health, Saxion University of Applied Sciences, Enschede, The Netherlands; i.r.faber@saxion.nl
Professor of Physical Activity and Health, Expertise Center Health, Social Care and Technology, Saxion University of Applied Sciences, Enschede, The Netherlands³Professor and Chair in Allied Health Sciences, IQ healthcare, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands.**RELIABILITY STUDY OF A MOTOR TEST BATTERY FOR TALENT IDENTIFICATION****Abstract****Take home message**

The Dutch Table Tennis Federation (NTTB) talent identification assessment (TIDA) as a whole is a reliable test for examining children's motor skills between six and ten years of age. The TIDA could be used as a part in the talent detection among children playing table tennis.

Introduction

The NTTB values early talent detection and development, and takes actions to ensure that talented children get the training and opportunities they need. The national day of talent is a day where youth players from table tennis clubs all over the Netherlands take part in the TIDA and a table tennis tournament. Selection of the youth players is conducted at regional days of talent, where the same concept is used. The TIDA that is used during the days of talent is a norm-ranked motor control- and coordination oriented test battery. Every test item is chosen to examine one specific trait needed when playing table tennis. Some research has been conducted about the reliability and validity of the TIDA, however the reliability and validity for the whole test battery has still not been investigated. The aim of this study was to research the test-retest reliability and the internal consistency of the TIDA.

Methods

During the regional day of talent in the eastern region of the NTTB 25 youth players (14 girls and 15 boys; mean age 9.2 years (SD1.00) were tested with the TIDA. The children were tested for all test items twice during the day to investigate test-retest reliability. The eight test items in the NTTB test battery are "sprint", "speed with ball", "agility", "ball control 1 & 2", "hitting target with table tennis ball and bat", "vertical jumping power", "throwing table tennis ball" and "eye hand coordination". ICC's (intraclass correlation; two-way random, absolute agreement) were calculated per test item and for the total score for test-retest reliability and internal consistency was estimated using a Chronbach's alpha.

Results

The Chronbach's alpha for the total score of the TIDA is 0,812 (Table 1). Only deleting ball control 1 and 2 will increase the Chronbach's alpha.

Table 1. Chronbach's alpha for all test items in the NTTB test battery.

	Chronbach's Alpha
Total score TIDA	0,812
If following item is deleted:	
Throwing ball	0,772
Eye hand coordination	0,764
Ball control 1 and 2	0,845
Aiming for target	0,776
Sprint	0,765
Agility	0,802
Vertical jump power	0,801
Speed with ball	0,782

Further analyses showed that the deletion of the subtest items ball control 1 and throwing a ball with non-preferred hand gave the best value for internal consistency.

The intra class correlation shows that as a whole the TIDA is a reliable test battery (ICC 0,908; $p < 0,001$). Analyses of the test (sub)items showed low ICC's for ball control 1 and throwing ball with non preferred hand (Table 2).

Table 2. ICC two way random per test item and for the total score of the NTTB test battery.

Test item	ICC**	p-value
Ball control 1	0,422*	0,010
Ball control 2	0,643*	<0,001
Sprint	0,757 (0,862)*	<0,001
Agility	0,764*	<0,001
Throwing ball preferred hand	0,922 (0,959)*	<0,001
Throwing ball non preferred hand	0,406 (0,577)*	0,021
Hitting target with table tennis ball and bat	0,525*	0,004
Speed with ball	0,589*	<0,001
Vertical jump power	0,645 (0,784)*	<0,001
Eye hand coordination	0,876 (0,934)*	<0,001
Total score (based on norm values)	0,908 (0,952)*	<0,001

* p-value $\leq 0,05$,

** ICC $\geq 0,75$ = excellent; values based on raw data; showing single measurement for ICC scores, for the test items that had several attempts also average measurement is shown

Discussion

The TIDA of the NTTB seems a reliable test for testing youth players' motor skills and could be a help in detecting children with talent in table tennis. Ball control 1 and throwing the ball as far as possible with the non-preferred hand are shown to be less reliable in this study. When removing these test items from the test battery, the Chronbach's alpha for all test items was improved. Moreover, because ball control 1 and 2 are measuring the same construct, it seems legitimate to delete ball control 1 giving the TIDA a higher reliability. It could also be discussed whether throwing the ball with the hand the player usually does not use is a useful test over all. More research on validity of the TIDA is desirable.

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KINEMATICS OF FOREHAND TOP SPIN OF TABLE TENNIS PLAYERS

Abstract

Take home message

The body should be moved in a kinetic chain to be able to produce a powerful forehand top spin in table tennis.

Introduction

Forehand top spin is one of the most used and effective shot in table tennis. Therefore, performing this important skill effectively is important in winning the game. The body should be moved in a harmony to give the ball more speed and spin and force the opponent for a mistake. For this reason, the purpose of this study is to understand the kinematics variables that affect the forehand top spin performance.

Methods

5 male and 5 female table tennis players were asked to perform forehand top spin while led markers were attached on some body segments. Muscle activation patterns were also examined by attaching EMG sensors on some selected muscles. Recordings were then analyzed by using Visual 3D software to calculate kinematics of forehand top spin performances of players. The ball speed were recorded by using a radar gun and also checked by a high speed camera. Participants were performed 3 top spins to the right and left side of the table.

Results

The preliminary results demonstrated that male players bend their knee more than female players. Since all the data were not analyzed yet. We can't give quantitative results for now.

Discussion

Forehand top spin is such a movement that the player should use his/her body as a kinetic chain. The movement should start from the ankle and then the knee, thorax rotation, shoulder elbow and wrist. The timing of these movements should be on time so that the most effective shot can be performed. It can be speculated that players who uses the kinetic chain in a effective way can perform an effective and powerful top spin.

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THE EFFECT OF SPLIT STEP ON MOVEMENT VELOCITY AND DURATION IN TABLE TENNIS

Abstract

Take home message

The split step help to increase the movement velocity and therefore reduces the total movement time of table tennis players.

Introduction

A Split Step is a small vertical jump to get prepared for the first lateral step when receiving the ball in racket sports (Uzu, Shinya & Oda, 2009). In table tennis players have very limited time compared to tennis and badminton because of the ball velocity and the distance between players. There is a lack of information in the literature about the effect of split step on movement speed and duration.

Methods

10 male table tennis players were asked to perform a series of movements with and without split step. A series of lights were placed vertically right in front of the players. Under the lights there was a panel which has target points shown. The light series was set to go first up and then down like a table tennis ball and then the target point was shown to the players. Players were asked to go to the targets as soon as possible with and without making a split step.

Results

The preliminary results demonstrated that the players reached to the targets in less time. The movement speed of the players was faster when they performed split step.

Discussion

Split step is a small but very important movement that has potential effect on players' performance when receiving the serve and other shots. Therefore, it should be implemented to the training programs of the players especially for children. Since table tennis is a fast game every step is very important in returning the ball effectively. Split Step helps players to get ready for every shot.

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Irene Faber¹, Frits Oosterveld², Ria Nijhuis-Van der Sanden³¹*School of Health, Saxion University of Applied Sciences, Enschede, The Netherlands; i.r.faber@saxion.nl*²*Professor of Physical Activity and Health, Expertise Center Health, Social Care and Technology, Saxion University of Applied Sciences, Enschede, The Netherlands*³*Professor and Chair in Allied Health Sciences, IQ healthcare, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands.***CONCURRENT VALIDITY OF TEST ITEMS OF A TALENT IDENTIFICATION ASSESSMENT****Abstract****Take home message**

The concurrent validity of the test item ‘speed with ball’ is confirmed by this study and this item could fit well in a talent identification assessment (TIDA). The validity of ‘sprint’ is only partly verified and no evidence was found for ‘agility’ and ‘vertical jump’.

Introduction

During the national talent day of the Dutch Table Tennis Federation (NTTB) young table tennis athletes are examined on their table tennis talents. Therefore the children take part in a tournament while being observed by scouts and their motor skills are tested using a TIDA. However, the validity of the test items used in this assessment has not been confirmed, yet. The goal of this study is to investigate concurrent validity of the test items ‘agility’ (speed in combination with maneuverability), ‘sprint’, ‘speed with ball’ (speed in combination with manual ball handling) and ‘vertical jump’. For this purpose the relation between (1) the results of these test battery items and similar tests and (2) the results of these test items and the table tennis performance (ranking) were investigated.

Methods

The test results and tournament ranking of 49 youth players between 7-11 year (31 boys, 18 girls; mean age 9.3 years (SD 1,18); 26 children take part in regional competition) that participated at a regional tournament, were analyzed. All children took part in the tournament and each child was tested for one or two test battery items of the NTTB and the alternative tests. The alternative tests for ‘agility’ were the ‘hexagon test’ and ‘side-ward moving’ (round a table). For ‘sprint’, ‘speed with ball’ and ‘vertical jump’ the alternatives were correspondingly ‘10x5 meter sprint’, ‘slalom dribble’ and ‘hexagon test’. Pearson correlation coefficients and Spearman rank order correlation coefficients were calculated for the relation between the results of the test items and between the test results and the tournament ranking, respectively.

Results

The results are presented in table 1 en 2. Concurrent validity of the TIDA of the NTTB is best shown for ‘speed with ball’. Both the alternative test (table 1) and tournament ranking (table 2) showed rather high correlation coefficients with this item. Also ‘sprint’ and ‘10x5 meter sprint’ were significantly highly correlated (table 1). Concurrent validity for ‘agility’ and ‘vertical jump’ was not confirmed by this study.

NTTB test	Alternative test	N	R	p
Agility	Hexagon test	15	0,09	0,746
	Sideward moving	17	0,58*	0,014
Sprint	10x5 meter sprint	16	0,74*	0,001
Speed with ball	Slalom dribble	16	-0,72*	0,002
Vertical Jump	Hexagon test	16	-0,45	0,083

Table 1: Pearson correlation coefficient for the relationship between the results of the NTTB test and an alternative test (* $p < 0,05$; significant).

NTTB test	N	R	P
Agility	17	0,38	0,138
Sprint	16	0,21	0,438
Speed with ball	16	0,58*	0,019
Vertical Jump	16	-0,15	0,593
Alternative test			
Hexagon test	16	0,28	0,289
Sideward moving	17	0,63*	0,007
10x5 meter sprint	16	0,36	0,172
Slalom dribble	16	-0,68*	0,003

Table 2: Spearman correlation coefficient for the relationship between the results of the test-items and the tournament ranking (* $p < 0,05$; significant).

Discussion

It was quite hard to find alternative tests for 'agility' and 'vertical jump' which should measure the same construct. Remarkable were the significant moderate correlations between the ranking and the alternative tests 'sideward moving' and 'slalom dribble'. Research about the potential inclusion of 'sideward moving' in the TIDA is recommended. 'Slalom dribble' is expected to have less additional value. Further research is necessary to examine the reliability and predictive value of all test items.

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THE DUTCH NATIONAL TALENT DAY: A FIRST STEP TO AN EVIDENCE-BASED TALENT IDENTIFICATION PROGRAM

Abstract

Take home message

Valid and reliable testing on sport-specific determinants during a talent identification program is desirable to objectively select talents. Such a program will support elite sports and could be a helpful tool to stimulate 'life-long sporting'. Scientific research can make a first step to an evidence-based concept.

Introduction

Talent identification programs are used to identify talented athletes in time and to succeed at world class level. Besides the benefits for elite sports, talent identification in sports can be a helpful tool increase sport participation in an open population and reduce drop-outs, because it can provide an optimal connection between sports, talents and personal preferences also on an amateur level.

In literature suggestions are made about the determinants in sports which can predict success and should be used for talent identification. Models propose determinants from several areas such as: 'anthropometry', 'motor skills', 'mental skills', 'physical qualities' and 'contextual factors'.^{1,2,3} Although key-predictors are recognized for some sports, most sports still search for these determinants. It has been recommended that each sport develop a sport-specific talent identification program.^{1,2,3}

Methods

The Dutch Table Tennis Federation (NTTB) developed a talent identification program to organize and structure talent identification. The national talent day is one of the events in this program. During the national talent day of the NTTB young table tennis athletes are examined on their table tennis talents. Therefore these children participate in a tournament while being observed by scouts and their motor skills are tested using a talent identification assessment (TIDA). Data were collected from 1998 till 2010 and include the test results and tournament ranking of more than 1300 youth players between 5-12 year. Moreover the national rankings of the youngsters are available to follow the performance level of these youth players over years. Sport-specific determinants for talent can be determined from this data-set to learn more about talent identification in table tennis.

Results

At this moment the data are processed and analyzed.

Discussion

A talent identification program which is based on scientific evidence can be of great value for the table tennis sports. Elite sports and also sport at a recreational level might benefit from good talent detection. Earlier research revealed that trainers / coaches of the Dutch national selection found 'motor skills' the most important factor to succeed, followed by mental and physical fitness.⁴ At this moment little is known about the determinants which are key-factors in table tennis for success on world class level. For that reason it seems legitimate to investigate the value of the TIDA used by the NTTB. However, talent detection which only consist of national ranking seems inappropriate, because ranking is influenced by the amount and quality of training. Furthermore, the nowadays system of scouting is not transparent and personal preferences of scouts might influence the results. Valid and reliable testing on sports-specific determinants during a talent identification program is desirable to objectively select talents. Scientific research can make a first step to an evidence based concept.

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HOW LIHA RACKET; A GIFT FROM PETER CUA HELPED ME

Abstract

A case-study

This is a new study and new experience in my life. It's a story about a blind or innate sightless girl. Her name is S. and she is 9 years old. She is studying in a special school with mentally handicap children but with high level intelligence. Initially I started with Dan Syndrome girls and then S. joined us because they were her classmates. Little by little I asked her to gather table tennis balls and she started it by interest. Then she started to grip the racket and step by step forehand bounces (2-3 strokes), then backhand bounces (2-3 strokes) and strokes toward the wall.

Now, she is practicing those exercises at home. Do you know how she was doing those practices and by what? She was playing by a pan which she imagined like a racket. When I asked her to draw a racket, she just drew a small pan with a long handle.

After all, I had to do something for all children who damage all rackets by picking their rubbers up & it was costly for school. Then I made 6 sandy rackets by hand for them to solve this problem by using the old bats. With the new sandy rubbers which costs 2 US\$ for 6 rubbers, they couldn't damage with their mouths and fingers because they are hard. Their sound attracts them too.

Now, she stands behind the table for ruling with the other girls using correct stand to play forehand and backhand strokes with the correct angles of racket and arm. When I used multi balls practice for the other girls she stood near me, I dropped the balls in front of her on the table and helped her hit the balls correctly.

After doing that exercise for many times , she started to drop the balls for herself and stroked them cross-court. Now, she is doing it in forehand & backhand constantly.

And you can watch it in video.

Fariba Ghavam Zadeh Alrazavi¹, Nazanin Zaeem Kohan², Neda Mahmoodzadeh³¹International table tennis coach, Education committee irTTF²Management MA student of Azad university of Iran, Guilan, Rasht.³Table tennis coach**REVISION AND EVALUATION OF “NET RULE” IN TABLE TENNIS SPORT****Abstract****Take home message**

Some results of this research are:

1. Net rule elimination causes time out decrease.
2. Net rule elimination causes players concentration increase when receiving service.
3. Net became decisive and exciting in sensate points.
4. By net rule elimination, spectators will expect service reaction.
5. By net rule elimination TV broadcast show of this game has more chance because of time-out reductions.
6. Disagreement between referee and players decreases and more justice will be governed.
7. By making service rule simple, more spectators will be attracted to this game.

Introduction

For upgrading and attracting table tennis games & pulling more interested people to watch this enlivening sport and in addition to develop this sport in social and economical fields and media, it is necessary to review and correct some limiting factors that make pauses in game process and reduce dynamic sense in players. The target of this research is studying of net rule elimination in table tennis sport & the viewpoints of players, coaches, referees, spectators and executive managers in province, national and international levels.

Methods

In this descriptive research by a questionnaire that included of questions , the net rule of table tennis has been evaluated .To prepare valid questionnaires ,this research that includes research targets , has been validated and committed with corporation and receiving feedbacks from experts. Also for desirable achieving to research targets by interview, the research questionnaire questions that are related to this research have been gathered.

To validate this questionnaire, its credit has been confirmed by.....Test. Our whole statistic community includes players ,coaches, referees ,spectators and executive manager are more than 850 people from provinces of Iran. In this research 220 people as volunteers have replies to our questions. These people include national men/women players, national and international referees, spectators and executive managers in 5 provinces of Iran.

In this research proportion test has been used as statistic assumption test. Decision criteria determined 60% for accepting or rejecting any assumption. In the Other words, at least 60% of players were in agreement with, and it means that they believed in net rule elimination as an effective factor on that indicator (assurance level has set on 95%).

No.	Research assumption	Statistical assumption	Test factor(z)	Critical number	Test result
1	Net rule elimination has meaningful effect on game speed	H ₀ :P≥0.6 H ₁ :P<0.6	-2.72	-1.645	REJECTED
2	Net rule elimination has meaningful effect on improvement of referee and players relation	H ₀ :P≥0.6 H ₁ :P<0.6	1.25	-1.645	ACCEPTED
3	Net rule elimination has meaningful effect on increasing players concentration when receiving service	H ₀ :P≥0.6 H ₁ :P<0.6	-0.6	-1.645	ACCEPTED
4	Net rule elimination has meaningful effect on TV broadcast of the game.	H ₀ :P≥0.6 H ₁ :P<0.6	-3	-1.645	REJECTED
5	Net rule elimination has meaningful effect on increasing spectators excitement.	H ₀ :P≥0.6 H ₁ :P<0.6	-0.3	-1.645	ACCEPTED
6	Net rule elimination has meaningful effect on spectators understanding to facilitate table tennis sport perception.	H ₀ :P≥0.6 H ₁ :P<0.6	-0.6	-1.645	ACCEPTED

Results

The results of this research show that elimination of net rule, cases to reduce disagreement between referee and players, to increase players concentration when receiving service, to increase spectators excitement and to make more attraction and easier and better understanding table tennis sport for spectators. But the research results, could not explain relationship between net rule elimination and speed-up table tennis and TV broadcast chance of this sport. Net rule elimination has deep effect on table tennis development and attraction.

Discussion

Jack Rogge, recent Olympic international committee headmaster, notified that a successful event for spectators and players is their principle priority. according to our responsibility as table tennis family, we should try to develop table tennis all around the world. Media, have major role in transfer and advertisement and by changing or eliminating net rule, it is possible to develop a method to attract more audiences without destroying grace and speed in this game. It seems that according to general feedback and research results, it is necessary to place some scientific reviews about net rule, on the agenda by ITTF. To make universal these results, the researcher suggest to argue this questionnaire in other countries specially in countries that are master and professional in table tennis sport.

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SPORT PRESENTATION: MANUFACTURING MORE COMPETITIVE AND VIVID TABLE TENNIS IN THE SUPER EVENTS

Abstract

Introduction

Sport presentation was originated from the ancient games long time ago but boosts with new technology and development of modern sport. Owing to the rapid progress in video technology and sports marketing, the new ways in sport presentation rise to make the sports matches more exciting. The spectators can see more vivid pictures of the matches produced by announcements, video screens, scoreboards, music, illumination, live show and interactive program on scene or from TV. Therefore, sport presentation is well known as the face and image of the sports Mega-events. In addition, sport presentation in Table Tennis has been utilized in big scale from Beijing Olympics and it makes the events more attractive than ever before.

Methods

In this paper, my research question covers three key points. Firstly, how to draw the characters of sport presentation in Table Tennis events? Secondly, how many patterns of sport presentation and what about the core pattern in Table Tennis events? Thirdly, how to design the sport presentation elements and procedure in Table Tennis super events? The author will adopt research approach field observation, interview, surveys and literature analysis to collect qualitative and quantitative data. Especially, the paper will explore the spectacle of sport presentation communication in Table Tennis with vigorous competition and various events.

Results

The conclusions of the paper probably list below: 1st, sport presentation communicates with all-media channels for sake of atmosphere construct, interactive activity and culture communication are regarded as the key point in Table Tennis sport presentation. 4 models produced with the field of sport presentation are indicated in this paper in terms of senders, audience, information and media: transmission model, reception mode, ritual model, publicity model. Finally, ritual field creating turns to be the core idea in sport spot with environment consent, emotion consent and identity consent. Accordingly a pattern of multi-senders, multi-media, multi-elements, multi-ways and multi-system goes out in this paper, upon which around the sports competitions a sport culture is formed by means of public media to serve the public. We believe that sport presentation in Table Tennis is going to show interactive entertainment and manufacturing consent of events brand with proper communication model management.

Discussion

Sport presentation appears more and more in different types of Table Tennis events with various formats. As sport presentation director of international Table Tennis events held in China, we need more and more creative idea on sport presentation practice. On one hand, the events can focus more attention by vivid competition as well as passionate atmosphere. On the other hand, Table Tennis presentation is ought to embody Ping Pong cultures much. Hope that the idea I provided in this paper can be carried out a lot in the practice of sport presentation in some super TT events, such as Rotterdam World Championships and London Olympic Game recently.

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THE ART OF 'WATCHING AND BEING WATCHED': A RESEARCH ON MEDIA LITERACY IMPROVEMENT FOR CHINESE TABLE TENNIS ATHLETES

Abstract

Introduction

In Beijing 2008 Olympic Games, the Chinese athletes gained exceptional performance with 51 gold medals. While more and more spot lights focus on the sports stars in new media era, we find there are plenty of problems on their knowledge, social cognition and media literacy beyond honor. We have to admit that now Chinese athletes pay almost all effort to champions, defeat the rivals and win the match rather than all-round development under the background of the whole national system in sport industry. Media literacy for athletes refers to the capability of resource collection, information process, media use, public relations management and emergency response. On the one hand, sport athletes consume the media content as an ordinary people, on the other hand, he or she especially well-known turns to the key point element in sport communication of mass media, which means the art of watching and being watched.

Methods

In this paper, my hypothesis is firstly to draw the outline of Chinese athletes' media literacy recently. Secondly, what are the different patterns of media literacy improvement for athletes in practice? Thirdly, how to bring in open-minded idea and smart principle to athletes, sport organization and sport marketing in media literacy improvement? The author will adopt research approach field observation, case study, interview, experiment to collect data. The athletes will be in enquiry and fill in the survey indicating the actuality of their media literacy and the coaches, the officials in sport administration, the journalists in sport media will take an interview for improvement patterns. In addition, the experiment will be designed to compare athletes participating more press conferences to the less.

Results

1st, the improvement of media literacy for athletes is accord with interest of athletes, sport marketing and public audience in common. 2nd, it describes 3M improvement patterns of media literacy for athletes, such as mental advocacy pattern, mass education pattern, media exposure pattern. 3rd, improvement pattern selecting is due to various personality and organizing system. In my opinion, 'one-arm length' principle seems to be more effective to solve the low media literacy issue for Chinese athletes.

Discussion

Media literacy and media use are considered as hot topics internationally, as well, they enter the horizon of Chinese scholars for theoretical research and practical needs. The Chinese athletes will improve their qualities by media literacy principles referred in the paper.

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THE RELATIONSHIP BETWEEN SOCIAL TABLE TENNIS ATHLETES' PERCEPTION ON COACHES' LEADERSHIP BEHAVIOUR AND SATISFACTION

Abstract

Take home message

This study can offer some suggestions for the direction of future researches and applications in coaches' leadership and team management.

Introduction

The purpose of this study was to explore the relationship between social table tennis athletes' perception on coaches' leadership behaviour and satisfaction.

Methods

The research approach applied to this study was the survey method with a questionnaire. The researcher took the table tennis athletes who joined the Zhōng Zhèng Cup 2010 as samples. 213 samples were effective among 244 table tennis athletes and the rate of retrieve was 87.3%. The statistical methods include item analysis, factor analysis, descriptive statistics and canonical correlation.

Results

There were canonical correlations existed between social table tennis athletes' perception on coaches' leadership behaviour and satisfaction. The "training and direction" and "award" of coaches' leadership behaviour mainly affected "coaches' leadership Behaviour" of satisfaction .

Discussion

The highest scores of table tennis athletes' perception on coaches' leadership behaviour was "training and direction", the lowest was "autocratic", the scores of table tennis athletes' satisfaction on "coach and leadership behaviour" were higher than that on "performance".

Keywords: coach leadership behaviours, satisfaction

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THE STUDY OF UNIVERSITY TABLE TENNIS ATHLETES' PERCEPTION ON COACHES' LEADERSHIP BEHAVIOUR

Abstract

Take home message

This study can offer some suggestions for the direction of future researches and applications in coaches' leadership and team management.

Introduction

The purpose of this study was to explore university table tennis athletes' perception on coaches' leadership behaviour.

Methods

The research approach applied to this study was the survey method with a questionnaire. The researcher took the table tennis athletes who joined the University Game 2010 as samples. 447 samples were effective among 500 table tennis athletes and the rate of retrieve was 89.4 %. The statistical methods include item analysis, factor analysis, reliability analysis, t-test, one-way analysis of variance, and Scheff'e method.

Results

The scores of table tennis athletes' perception on coaches' leadership behaviour in sequence were "award", "training and direction", "democracy", "caring" and "autocratic".

Discussion

Different genders, grades, and days of training have significant differences in "training and direction" behaviour. Different genders, grades, highest athletic achievement and days of training have significant differences in "award" behaviour. Different genders have significant differences in "caring" behaviour. Different grades have significant differences in "democracy" behaviour. Different genders and days of training have significant differences in "autocratic" behaviour.

Keywords: coach, leadership, behaviours

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DETERMINANT FACTORS AND SATISFACTION OF SPECTATORS AT THE 2010 SELECTING NATIONAL TABLE TENNIS TEAM COMPETITION IN TAIWAN

Abstract

Introduction

Spectator attendance was not only related with on-field success of players, but it also played an important element to fulfill a successful competition in sports. However, the Chinese Taipei Table Tennis Association has been faced with the challenge of attraction of spectator attendance. Determinant factors and satisfaction of spectators were the fundamental information to promote 'spectating' rates. Therefore, it is very important to understand determinant factors and satisfaction of spectators, in order to provide information to the Chinese Taipei Table Tennis Association and providers of table tennis events for developing strategies and increasing spectator attendance. The purpose of this study was to investigate determinant factors and satisfaction of spectators.

Methods

Participants were 285 spectators who were attending the 2010 selecting national table tennis team competition in Taiwan. Table Tennis Spectator Attendance Scale (TTSAS) was used in this study. Descriptive statistic, Pearson correlation and canonical correlation were used in the data analysis.

Results

The results of this study were: (1) Determinant factors of spectators indicated that attraction of game was the top rated factor followed by facilities comfortable and convenience, personal factors, and media promotion. Finance was the lowest rated factor. (2) Satisfaction of spectators indicated that attraction of game was the top rated factor followed by facilities comfortable and convenience, expertise and promotion. (3) Determinant factors of spectators were significant correlated with satisfaction of spectators.

Discussion

Suggestions of this study were as follow: (1) attraction of game, facility comfortable and convenience, personal factors, media promotion were important determinant factors of spectator attendance. (2) Satisfaction of spectators needs to pay attention on attraction of game, facilities comfortable and convenience, expertise and promotion to increase spectators' participation. (3) The findings of this study should be taken into consideration in developing strategies for National Table Tennis Association in Taiwan; and (4) There is a need for further study on table tennis spectators.

Key words: determinant factors, satisfaction, spectator

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THE POSSIBILITY OF FORMING TAIWAN PROFESSIONAL TABLE TENNIS LEAGUE - A CASE STUDY OF CHINA TABLE TENNIS SUPER LEAGUE

Abstract

Introduction

The article mainly discussed the possibility of forming Taiwan Professional Table Tennis League.

Methods

In order to understanding the process of forming Taiwan Professional Table Tennis League, China Table Tennis Super League was used as an example.

Results

On the one hand, from the beginning of China Table Tennis Super League, it attracts enormous audience due to the continuing innovative skills and increasing attraction of game. On the other hand, it was hindered by unclear property right, unstable broadcasting right, and insufficient public media, such as news and magazine. Furthermore, it was also affected by the changing of environment, the lacking of market knowledge, and the incomplete law. On the contrary, Taiwan has stable audience and supported by government and organization.

Discussion

Thus, Taiwan could set up a professional organization and relative law in order to promote Taiwan Professional Table Tennis League more smoothly. In the core of game, Taiwan should continuing increasing the attraction of game and cultivating player's skill. In the long run, a successful specifically Taiwan Professional Table Tennis League could cooperate and align with other high-tech company to increase the equipment and facility.

Key words: Taiwan Professional Table Tennis League, China Table Tennis Super League

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THE APPLICATION OF PATERNALISTIC LEADERSHIP IN TABLE TENNIS COACH

Abstract

Introduction

In the training process of table tennis, the coaches were the direct leaders who were not only the role to help athletes achieving better performance, but also the role to teach athletes more than sports skills such as brother, friend, and teacher. Due to the characteristics of Patriarchal style and powerful, but also has to take care of, understanding their subordinates, and moral leadership, including the composition of, Paternalistic leadership was an efficient way to lead sports team, especially in Chinese culture. How to apply the concept of Paternalistic leadership in table tennis team was an important issue for several years. Therefore, the purpose of this article was to provide coaches some useful information to establish a new insight and model of leadership.

Results

According to the results of this review, here proposed several suggestions for application of Paternalistic leadership:

1. Authoritarian leadership: leadership training methods of partial authority was a part, and there was society, its value was undeniable. Table Tennis coaching for players of different levels should increase or decrease the proportion of authoritarian leadership.
2. Benevolent leadership: Studies show that coaching behavior of players care less, so benevolent leadership table tennis coach was more important.
3. Moral leadership: moral leadership was also a player and had forecast significant effect of perceived leadership behaviors, application of moral leadership to table tennis coaches and players to establish trust and understanding.

Discussion

In conclusion, understanding of the Paternalistic leadership is beneficial for table tennis coaches to improve performance coach and player interaction.

Key words: paternalistic leadership, table tennis, coach

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RESEARCH ON TABLE TENNIS PLAYER'S CARDIO-RESPIRATORY ENDURANCE

Abstract

Introduction

Mr. Ichiro Ogimura commented table tennis to be “the sport which performs chess while carrying out 100m running”. Although it is expressing table tennis simply, this text moves not only to front but to back or a horizontal direction in fact, chooses the optimal batting style and carries out the hit ball of the ball which comes flying at irregular timing and an irregular spin, and speed. And it is the sport as which the change of tactics is required. At the place of a top level's fighting, it is high-level performance.

Clearly high-level physical strength exists in the background of the player to develop. The physical strength level of the top player which plays an active part in the world is very high, and digests an intense prolonged game on both sides of the recess for only 1 minute. The heart rate in the game of the case of attacked type players is in 170-180 b/min the range. Table tennis is the game which are oxygen movement and non- oxygen movement mixed. It is though that intensity of Table Tennis also become high as the average heart rate under game of table tennis is in 110-170 b/min the range. The oxygen uptake used as the index of the respiratory circulatory system under movement.

Methods

During the multi-practice method, oxygen uptake and heart rate were measured by K4B2.

Results

Exercise intensity had reached to about 100% with regular movement on either side in man at the conditions of a continuous hit the ball. In addition, when every person's data was analyzed in detail, maximal and the minimum of the heart rate in each style were seen at the last, heart rate increased gradually and maximum and the minimum became of the smash accompanied by footwork as the experiment was conducted on the hit ball conditions of each style.

Discussion

From this result, it became clear that it was the practice for which the smash style accompanied by footwork strengthens the heart rate most in a table tennis. Moreover, the data on 3 dimensional analysis for this experiment were added.

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DIFFERENCE BETWEEN INDEXES IN SITUATION EFFICIENCY OF RECREATIONAL TABLE TENNIS PLAYERS IN TWO DIFFERENT SEASONS

Abstract

Take home message

We have found that there is a statistical significant difference in the indexes of efficiency, according to the league level in the table tennis championships (relative competition success is not approximately the same). We have found that there is a statistical significant difference in the indexes of efficiency, according to the year of competition in the table tennis championships (relative competition success is different in 2006, comparing with 2007). We have found that there are no differences in the indexes of efficiency, according to the interaction of both factors: year of competition and league level in the table tennis championships (relative competition success is approximately the same).

Introduction

For the players' situational performance analysis, the basic and most utilitarian indicator of game quality is exactly the achieved result on a particular sports competition. The basic aim of the research is to question to what extent the indexes directly derived from the results of individual table tennis games could differ table tennis players of different league level, during two different years.

Methods

Descriptive statistics (arithmetic mean and standard deviation), for all indexes were calculated. In order to be able to determine differences in relation to variables and indexes of competitive efficacy in table tennis, we performed MANOVA design, where the dependent variables were efficacy indexes of table tennis players, while fixed factors were the league level and the year of competition.

Results

Results give us an insight in the average values of all the indexes, for the independent variables in research. We can approximate compare these values with each other, to get 'rough' perception about the differences and similarities between them.

Discussion

On the base of this research (on the individual competition level) and the research that is made by Sindik & Vidak (2009) on the team competition level, we can propose different competition systems in 'weaker' and in 'stronger' league levels in SOKAZ. A similar method could be used to 'decelerate' the lowest ranked teams. The main research findings comprise a conclusion that even with a small number of indexes, which can be directly deduced from the results of table tennis matches, their relation with the level of a league competition in which a table tennis player competes, can be found.

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YOUNG TABLE TENNIS PLAYER'S PRACTICE EFFICIENCY: A TEST OF PROCESSING EFFICIENCY THEORY

Abstract

Take home message

1. Present study suggests that it is important to keep young players' self-confidence by having them with the successful experience, by having them with certain financial support, and by having them with less pressure from their parents.
2. The increase of self-confidence reduces the risk of injury of young table tennis players because of the raising of practice efficiency.
3. Exercise such as bicycling is related to the less practice time of table tennis players. This finding suggests that bicycling increases the practice efficiency.

Introduction

The present study tested the Eysenck and Calvo's Processing Efficiency Theory. Processing efficiency theory stated that anxious individuals are hypothesized to be less efficient but can compensate by expending additional effort on the task. We examined factors of young table tennis player's practice efficiency. Practice efficiency refers to the situation that players have less practice time and obtain the same results. Interest in other sports, funding, previous performance and self-confidence are considered the important factors that relate to tennis players' practice efficiency.

Methods

Participants are one hundred and forty five young players (104 girls, 41 boys ; age ranged from 9 to 13). A questionnaire survey was conducted for young players from 21 elementary schools. Hierarchical regression modeling was employed in the analysis. Age and gender were controlled. Self-confidence is a moderating variable.

Results

Hierarchical regression modeling shows 4 Results (a) players with interest in swimming engage in more practice hours, (b) players with interest in bicycling engage in less practice hours, (c) players with funding engage in less practice time, and (d) the relationship between past performance and practice time is moderated by self-confidence. When players have high self-confidence, players engage in less practice time through the increase of players' performance. When players have low self-confidence, players engage in more practice time through the increase of players' performance.

Discussion

Our findings support processing efficiency theory. Factors related to anxiety such as poor performance in the past, low self-confidence, and without funding are associated with less practice efficiency. That is, players with anxiety need to work harder. Moreover, low self-confidence worsens the situation.

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COMPARISON OF UPPER LIMB STRENGTH BETWEEN ELITE AND GENERAL MALE COLLEGE TABLE-TENNIS PLAYERS IN TAIWAN

Abstract

Introduction

The purpose of this study was to investigate upper limb strength between elite and general male college table-tennis players. The result could also be one reason to explain why the players' skills can't move ahead.

Methods

Subject's height (cm), weight (kg), hand grip strength and elbows, wrist and forearm muscle maximal strength were measured at 3 angular speed: 60, 180 and 300 °/s by using Biodex system 4 PRO.

Results

The following results were found.

- (1) There was no significant difference of dominant hand's grip between the two groups ($p > .05$);
- (2) Elite players have significant greater muscle strength of elbow joints extension muscle contraction than college students at 180°/s angular speed ($p < .05$). Elite players also have significant great muscle strength of elbow extension at 300°/s angular speed than the general college players and college students ($p < .001$).
- (3) There were no muscle strength significant differences among groups, when wrist joints flexion muscle contraction, at 60 °/s angular speed ($p > .05$). But the elite player have greater muscle strength when wrist joints flexion muscle contraction, at 180°/s and 300 °/s angular speed, than college students ($p < .05$). Elite college players have greater wrist joints extension muscle strength, at 60 °/s angular speed than the general college players ($p < .05$). Elite college players and general players have greater wrist joints extension muscle strength, at 180°/s and 300 °/s angular speed than the college students ($p < .001$).
- (4) There were no significant different in forearm pronation among groups. Elite players have significant greater supination muscle strength than the general players and college students at 300 °/s angular speed ($p < .05$). Elite players also have significant greater supination muscle strength than the college student at 60°/s and 180°/s angular speed ($p < .05$).

Discussion

The result shows lower performance comparing with other exercise items so it still has much to improve. Besides focusing on the table-tennis player's technique, the enhancement of muscle strength should not be neglected. The study was to establish data of elite table-tennis players' handgrip strengths and wish that could have assistances in working out exercise and rehabilitation plans and breakthroughs of sports scores in the future.

Key words: peak torque, extension, flexion, pronation, supinati

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PERSONALITY CHARACTERISTICS OF ELITE TABLE TENNIS ATHLETES OF THE PHILIPPINES: BASIS FOR A PROPOSED RECRUITMENT PROGRAM

Abstract

Take home message

As basis for an effective recruitment program for table tennis, the results recommend that in the selection of table tennis players, aside from talent, those who manifest personality characteristics of originality, rule consciousness, assertiveness, competitiveness, conscientiousness, achievement, and resilience would help in training table tennis players to be elite athletes in the future.

Introduction

Sports Psychologists have long been attributing successful athletic performance to their personality characteristics. Versari (2004) and Auweele, Cuyper, Van Mele, and Rzewnicki (1993) have concluded that there is a positive relationship between personality and some aspect of athletic performance. It was also thought that a person's answers on a questionnaire could be used to predict successful performance. Coaches were at first ecstatic about the possibility of selecting their players based on the ability of a psychological inventory to predict success (Anshel, 1997). In the Philippines, where table tennis is a fast developing sport, the selection and development of elite table tennis players is of utmost importance. Hence, an assessment of personality characteristics of such athletes that will aid in a recruitment program was the aim of this study.

Methods

Making use of the Descriptive Research Design, this study investigated the personality profile of 50 male and female elite table tennis players of the Philippines through the use of the Minnesota Personality Questionnaire (MPQ), a 90-item questionnaire which measures 14 attributes of personality and a scale which measures socially desirable responding. Inferential statistics such as the test of significant differences, and correlational methods were employed for analyzing data.

Results

Findings show that elite table tennis players scored high in originality, rule consciousness, assertiveness, competitiveness, conscientiousness, achievement, and resilience. These imply that they have strong tendencies to have original acts, take risks when situations demand in the sport, they wish to assert themselves, persevering in their sport in order to achieve, and are emotionally stable and calm. Results further manifested that there is no significant difference between the above personality characteristics as far as gender is concerned.

Discussion

Elite table tennis players possess personality characteristics that make them successful in their sport. High levels of originality, rule consciousness, assertiveness, competitiveness, conscientiousness, achievement, and resilience are but a few. As basis for a recruitment program for table tennis, these results recommend that in the selection of table tennis players, aside from talent, those who manifest the above characteristics would help in training table tennis players to be elite athletes in the future.

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PERFORMANCE INDICATORS IN TABLE TENNIS: A REVIEW OF THE LITERATURE

Abstract

Take home message

A summary of the most important performance indicators in table tennis can provide a tool towards a standardization of performance analysis at international level.

Introduction

In the recent scientific literature in the field of sport sciences, it is possible to notice that research branches on performance analysis are widely developing (1)(2). Hughes and Bartlett (2002) stated that sport biomechanists and notational analysts are concerned with the analysis and improvement of sport performance. They analyzed the structure of sports, distinguishing: technical, tactical and biomechanical indicators. The aim of this study is to summarize the most important table tennis performance indicators proposed in the literature.

Analysis

The authors commonly divide the performance indicators in different categories:

Player: gender, nationality, height, weight, use of right or left hand, grip (pen holder/classic), style of play (all-round, defensive, etc), best ranking and current ranking, etc.

Technique: strokes (service, push, top, top counter top, block, flick, drive, smash, lob, forehand or backhand) and steps (one step, chasse, slide, crossover and pivot)(3)(4).

Tactic: impact position of the ball on the table (six areas), type of error, efficacy, time-out, play time (inter-serve times, rally time and inter-point time) (5) and action outcome.

Equipment, playing conditions and facilities: table, ball, net, floor, size of the gym, training hall, artificial light, transports (jet leg), etc.

Environment and psychology: climate, geographical and social conditions (diet/food, religion, etc.) of the countries where the competitions are held (6).

Discussion

Performance indicators provide a good tool from a technical and tactical point of view for coaches and performance analysts, to improve training and agonistic results. It is possible to have a full and correct analysis of the data by using a statistical software. However, it is important to remark that a lot of problems cannot easily be solved by using statistics, as sport is the complex result of interacting human behaviors.

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RELATIONSHIPS BETWEEN FOOTWORK AND IMPACT POSITION OF THE BALL ON THE TABLE IN TABLE TENNIS

Abstract

Take home message

The study of the relationship between footwork technique and impact position of the ball on the table allows to improve the training and the tactical behavior during the match.

Introduction

In the literature about notational analysis in sport, it is evident that every sport has different features and specific performance parameters (1). In table tennis, among the most important indicators, there are the footwork/steps (2) and the impact position of the ball on the table (3). The aim of this study is to analyze the relationships between the last two indicators, to provide information useful for coaches and athletes.

Methods

10 matches at international level have been watched with slow motion. The 20 players, at the time of the matches were in the first thirty position of the world ranking. For every rally the following indicators have been taken into account: player, impact position of the ball on the table, the last step before the stroke and the impact position at the other side of the table. The two parts of the table has been divided in 6 equal areas. The data were analyzed with the Excel Software through the use of contingency tables for area/step and step/area at the other side of the table.

Results

Every rally starts with a service: 52% in area 3, 15% in area 2, 15% in area 4, etc. The most used step is the One Step, and after that, the ball arrives in area 5 (26%), area 3 (15%), etc. The ball arrives very often in area 5, after a: One Step (28%), Chassè (21%), etc. The last analysis is based on the area of impact of the ball and the footwork technique used to arrive very fast in the right position. If the ball bounces in area 5, the players prefer Stroke without step (28%) and Chassè (27%), etc.

Discussion

By studying the relationship between footwork technique and the area of impact of the ball on the table, it is possible to develop a useful knowledge for the coaches. This can help to improve the technique and the tactic to obtain better competitive results.

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RELIABILITY OF SELECTED TABLE TENNIS PERFORMANCE INDICATORS

Abstract

Take home message

Some table tennis performance indicators show a good intra and inter-observer reliability. Therefore, they can be used by coaches, players and performance analysts in table tennis to improve training and competitive activities.

Introduction

Over the last few years, the scientific research about sport has focused in detail on a branch of performance analysis, namely the notational analysis (1)(2)(3)(4). Notational analysis allows to collect interesting data about matches and to have good feedback information to improve technical and tactical aspects. However, the analysts have to select the most important performance indicators and, first of all, they must evaluate the reliability of the data. The aim of this study is to evaluate the intra and inter-observer reliability (5) of some among the most important performance indicators in table tennis.

Methods

Inter-observer reliability: 10 highly experienced coaches (third national level, high level) have analyzed the first set of Man's table tennis singles final of the 29th Olympic Games in China. They collected data about: players, different strokes and about efficacy (5 values: #, +, 0, - and =)

Intra-observer reliability: an observer (table tennis coach) watched the full match three times and noted: player, footwork/step, stroke modality and impact point of the ball on the table (6 areas).

Intra and inter-observer reliability have been evaluated by Krippendorff's Alpha (6), calculated through the statistical software R.

Results

Krippendorff's Alpha could range from 1 (perfect reliability) to -1 (total disagreement). A good reliability is attained for Alpha = 0.8 (6).

Inter-observer reliability: different kind of strokes (Alpha=0.894), efficacy (full evaluation, 5 levels, Alpha=0.469) and efficacy (2 levels: # and =, Alpha=0.735).

Intra-observer reliability: strokes (Alpha=0.992), different kinds of steps (Alpha=0.990) and impact point of the ball on the table (Alpha=0.997)

Discussion

The only performance indicators without a good reliability was connected with the evaluation of the efficacy of intermediate strokes. The other indicators, assessed by inter and intra-operator comparisons, showed a very good reliability. These results allow to state that the selected performance indicators could be taken into account in table tennis notational analysis.

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BURNOUT, STRESS AND RECOVERY AS PREDICTORS OF PERFORMANCE: A LONGITUDINAL STUDY AMONG YOUTH INTERNATIONAL TABLE TENNIS PLAYERS

Abstract

Take home message

Stress, recovery and burnout were significantly related to future performance (next month) of youth elite players, reduced sense of accomplishment (burnout) being the strongest performance's predictor.

Introduction

In elite sports, it is not bad to be high on stress, as long as athletes know how to recover optimally. Chronic exposure to stress associated with insufficient recovery cause burnout, leading to decrease of sport performance (Kellmann & Kallus, 2000).

The prevalence of correlational studies and the absence of longitudinal approaches have prevented the exploration of causality between burnout, stress, recovery and performance.

Methods

20 boys ($M_{age}=14.15$, $SD=1.84$) and 25 girls ($M_{age}=15.38$, $SD=1.99$) international table tennis players ($M_{hours\ of\ training\ per\ week}=22.52$, $SD=4.11$) voluntarily participate in this study. Participants completed 2 to 4 times (27 athletes 3 times and 14 athletes 4 times) questionnaires à time 1 (T1) and time 2 (T2) with delay of one month between T1 and T2, resulting in 142 raw data.

A longitudinal design with self-reported questionnaires was used.

At T1, participants completed the RESTQ-Sport (18 stress and recovery subscales) and the ABQ (3 burnout subscales: physical/emotional exhaustion, reduced sense of accomplishment and sport devaluation). At T2 (one month later T1), participants completed a single item assessing the subjective performance's level of the past month.

Results

In order to assess whether stress, recovery and burnout are related to future performance, we examined simple correlations and performed a series of multiples regression analyses (standardized scores were used).

Four stress (*general stress*, $r=-0.26$; *conflicts/pressure*, $r=-0.27$; *fatigue*, $r=-0.19$; *lack of energy*, $r=-0.24$), two recovery (*general well-being*, $r=0.23$; *self-efficacy*, $r=0.29$) and one burnout variables (*reduced sense of accomplishment*, $r=-0.51$) were significantly ($p<0.05$) correlated with performance.

When RESTQ-Sport scores were entered in model, *fatigue* ($\beta=-0.27$, $p=0.05$), *being in shape* ($\beta=-0.29$, $p=0.02$) and *self-efficacy* ($\beta=0.24$, $p=0.09$) were reliable predictors of performance ($F_{(18,123)}=2.30$; $p<0.005$, $R^{2adjusted}=0.14$).

When ABQ scores were entered in model, *reduced sense of accomplishment* ($\beta=-0.55$, $p<0.001$) was the only reliable predictor of performance ($F_{(3,138)}=17.36$; $p<0.001$, $R^{2adjusted}=0.26$).

When both RESTQ-Sport and ABQ scores were entered in model, *reduced sense of accomplishment* ($\beta=-0.45$, $p<0.001$), *being in shape* ($\beta=-0.22$, $p=0.07$) and *fatigue* ($\beta=-0.24$, $p=0.08$) were reliable predictors of performance ($F_{(21,120)}=3.24$; $p<0.001$, $R^{2adjusted}=0.25$).

Discussion

Burnout subscales were better predictors of performance than stress and recovery subscales (26% vs. 14%). This could be explained by a conceptualization of performance as a mean performance during one month. It would have favored variables which were more stable through time (burnout vs. stress and recovery). Nevertheless, results suggest that the monitoring of changes in burnout, stress and recovery could be a useful way to discover early signs of decrease performance.

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MONITORING STRESS AND RECOVERY: A PRELIMINARY FRENCH VERSION OF THE RESTQ-SPORT AMONG YOUTH TABLE TENNIS PLAYERS

Abstract

Take home message

The French version of the Recovery-Stress Questionnaire-Sport (RESTQ-Sport) is a reliable and valid instrument which makes it possible to observe longitudinally individual or groups of youth table tennis players.

Introduction

Stress can result in overtraining or burnout, or in the case of sufficient recovery, in a positive training effect. Therefore, a planned control of training integrates systematic recovery times or training with less intensity. In this perspective, development of reliable and valid instrument which measures *simultaneously* stress *and* recovery could help practitioners.

The RESTQ-Sport provides a picture of current recovery-stress state based on 12 nonspecifics (48 items) and 7 additional sport-specific (28 items) scales (Kellman & Kallus, 2001). However, Davis et al. (2007) have failed to find adequate goodness-of-fit for the original factorial structure using confirmatory factor analysis (CFA).

The purpose of the present was to evaluate the validity and reliability of the French version of the RESTQ-Sport.

Methods

148 (13 to 18 years) table tennis players (1 to 5 questionnaire completions with delay of one month, resulting in 614 cases) competing at regional, national or international levels voluntarily participate in this study.

A cross-sectional design with self-reported questionnaires was used. Factorial validity was examined through CFAs, reliability through Cronbach's alpha coefficients and criterion-related validity both internally (inter-scale correlations) and externally (correlations with burnout and motivation).

Results

CFA of nonspecific scales provides adequate fit to the data ($CFI = 0.96$; $NNFI = 0.96$; $RMSEA = 0.067$). Nonetheless, factor loadings (FL) of items 5, 22 and 31 were below the cut-off criterion of 0.40. An alternative model (item 31 and items 5, 13, 22 and 32 of the social relaxation factor were discarded) was compared to the original model via AIC and ECVI values. Results suggested that the alternative model ($CFI = 0.97$; $NNFI = 0.97$; $RMSEA = 0.058$, $FLs > 0.40$) provided better fit to the data.

CFA of the sport-specific scales provides adequate fit to the data ($CFI = 0.95$; $NNFI = 0.94$; $RMSEA = 0.075$, $FLs > 0.40$). Alpha coefficients indicated that reliability of each of the 18 subscales was adequate, with Cronbach's alpha coefficients varying from 0.65 to 0.85, except for the success dimension (0.56).

Significant relationships in the expected directions were observed between the RESTQ-Sport subscales, motivation and burnout.

Discussion

With appropriate feedback to athletes, RESTQ-Sport scores can enhance athletes' self-awareness on how activities in daily life affect individual recovery-stress state especially when questionnaire is completed regularly. Change over-time help to educate youth athletes that recovery is a key issue for their sport career.

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Martinent Guillaume¹, Decret Jean-Claude²¹CRIS, Université de Lyon - Université Claude Bernard Lyon 1²French Federation of Table Tennis**PROFILE OF STRESS-RECOVERY STATE AND BURNOUT AS A FUNCTION OF PERFORMANCE LEVEL (HIGH VS. LOW) AMONG INTERNATIONAL YOUNG TABLE-TENNIS PLAYERS****Abstract****Take home message**

Distinct profiles of stress, recovery and burnout have been identified between international youth table tennis players with high *versus* low performance levels.

Introduction

Losses resulting from the early retirement of young elite athletes, possibly due to burnout, ensue from an individual unfulfilled human potential and lower national team programs. Burnout is conceptualized as the result of chronic exposure to stress and insufficient recovery (Kallus & Kellman, 2000).

It would be useful to identify different profiles of athletes in regards to stress, recovery and burnout, as a function of performance level (high vs. low) in order to help coaches to prevent the apparition of burnout among youth elite athletes.

Methods

45 (20 males and 25 females) youth international table tennis players ($M_{age} = 14.83$, $SD = 2.00$; $M_{hours\ of\ training\ per\ week} = 22.52$, $SD = 4.11$) voluntarily participate in this study. Participants completed 2 to 5 times (28 athletes 4 times and 14 athletes 5 times) questionnaires with delay of one month between each completion, resulting in 190 subjects.

A cross-sectional design with self-reported questionnaires was used.

Participants completed the RESTQ-Sport (18 subscales measuring stress and recovery, 2 global index of stress and recovery, and a global index of stress-recovery state), the ABQ (burnout subscales measuring physical/emotional exhaustion, reduced sense of accomplishment and sport devaluation) and a performance's level item (subjective performance's level of the past month). Coach of each athlete also completed performance's level item of athletes. Global score of performance level was computed by adding athlete's and coach's responses.

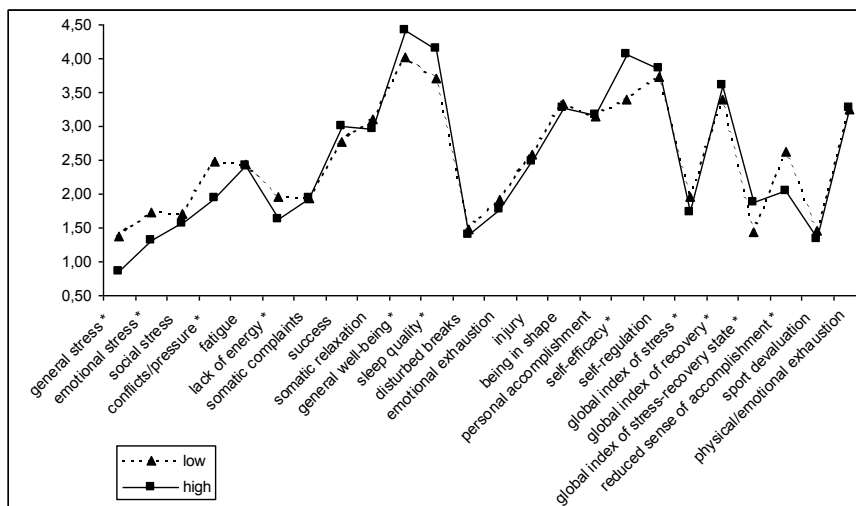
Results

Figure 1: Stress, recovery and burnout scores as a function of performance levels (high vs. low), * $p < 0.05$

190 subjects were split into two groups depending on their global performance score (high > 13 vs. low < 12). We examined if stress, recovery and burnout would differ across the two groups. Results of a MANOVA yielded a significant multivariate effect on the dependent variables as a whole (Wilk's Lambda = 0.70, $F_{(21,103)} = 2.10$, $p < .01$, $\eta^2 = 0.30$). The results of univariate ANOVAs indicated that 11 variables differed significantly across the two subgroups of athletes. Results are presented in Figure 1.

Discussion

Knowledge of the distinct profiles of athletes based on their stress, recovery and burnout responses will aid the practitioner in the screening, diagnosis and intervention with performers. According to the pattern of stress, recovery and burnout of the performer, sport psychologists and practitioner should develop appropriate interventions to prevent the apparition of burnout on youth elite athletes.

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DEVELOPING TABLE TENNIS IN A DEVELOPING COUNTRY: THE NIGERIA EXPERIENCE

Abstract

Background

In order to continue to make progress in any human endeavour, there may be a need for self examination from time to time.

Borrowing from this popular saying, a group of Nigerians-consisting of retired players, coaches, sports scientists and sports enthusiasts- came together to examine the state of affairs regarding the game of table tennis in Nigeria.

After brainstorming on the matter, the group came to the following conclusion:

1. The game is not as popular as other types of sports e.g. football.
2. Our performances at the international level in the past few years have not been encouraging.
3. There is need to improve the awareness and the standard of the game.

Aim

This study seeks to investigate how the game of table tennis could be made more popular with attendant improvement in the quality of the game. In addition, the study is meant to highlight the role the private sector could play in the development of the game. Also, the paper is intended to be the first of a series on this pilot study.

Method

Questionnaires were distributed to some primary and secondary school students to ascertain the popularity of the game

Talents hunt for children between the ages of 5 to 12 years

Utilization of mini table tennis boards and bats for training pupils

Training of selected pupils using the above materials

Aiming at organizing competitions amongst students so trained with the intention of turning them over to interested corporate bodies by age 12years for further training

Results

There have been many difficulties along the way.

The main challenges so far are:

Skepticism and lack of encouragement from the public

Scarcity of funds

Conclusion

The above account illustrates the efforts of a few people aimed at developing the game of table tennis in a developing country.

While efforts have been made and are still being made to achieve that goal, the main factors that may militate against success are funds and skepticism on the part of both the public and government agents.

Scarcity of funds deserves special mention because the project requires a lot of funds; as the issue is very crucial to the success or otherwise of the project.

Also, while the success of the project depends on availability of funds to a large extent, success of the program may also have a positive impact on the economy of the nation. This may come by way of job opportunities for the citizenry.

We strongly believe that we shall achieve the desired goal if we persist in our efforts to look for donors and sponsors for the program.

If we eventually succeed in this endeavour, we shall be leaving a lasting legacy for generations unborn in respect of the game of table tennis in Nigeria.

Key words: *Developing, Tennis, Experience*

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ASSESSMENT OF TABLE TENNIS TEMPORARY STRUCTURE

Abstract

Take home message

In the field of sport high performance, the evaluation of the temporary structure of game actions in a match is a matter of interest. This method may represent a valid tool to understand table tennis and its physical training.

Introduction

The evaluation of the temporary structure of a sport requires recording at least the total time of the match completing it with the real active phase of play. The relation between the total match time and the active game time determines real tennis table workload.

The aim of this study was to assess the temporary structure of high-level table tennis, evaluating the total match duration as well as the real active part of play and the passive phase.

Methods

The study was carried out evaluating the data achieved during the matches of the 2007 Spanish Absolute Championship. A total of 13 matches (8 belonging to the male category, from octave to final and 5 belonging to the female category, from quarterfinals to final) were recorded and analyzed.

Results

Although the average duration of male matches was 2071.5 s, the active phase was only 383.18 s, which represents 18.5% active phase vs. 81.5% passive phase. In the female category, the mean duration of the matches was 1934.48 s, real game was only 309.91 s that represents 22.2% of active part. Mean duration of male matches was 32.8% longer than female matches. The passive phase between games is also longer in the masculine category than in the feminine one, with a difference of 36.36%.

Discussion

The analysis of the temporary structure of a table tennis match is useful for understanding competition physical needs¹. These data provide information regarding the time of the games, the duration of the passive phases between games and allows understanding the activity levels reached during the match.

The duration of passive phases between games improves together with the complexity of the match. Similar results have been recorded in other racket sports like squash².

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TABLE TENNIS PRINCIPLES REFLECTING THE NATURE OF THE SPORT

Abstract

Introduction

Every thoughtful discipline is based upon principles. Used here, the term principles refer to fundamental truths or understandings that provide foundational insight into the outward manifestations of the discipline's activities and serve as an area of study. The number of examples demonstrating this are very great indeed, including titles such as: *The Principles of Accounting*; *Civil Engineering Principles of the 20th Century*; and *Lehninger Principles of Biochemistry*.

Yet, despite the highly successful pervasiveness of this intellectual structure, the history of table tennis coaching has not featured principles as a framework for the practitioner. Rather, an excessive emphasis on the mechanics of play has been the primary focus.

This study intends to (1) identify a set of core principles reflecting the nature of table tennis and (2) then construct a set of coaching and playing principles that reflect these inherent qualities. The former is necessary, for the most fundamental elements of table tennis concern the nature of the sport. The latter is necessary, for principles, after all, exist to be applied in their practical domain. These two sets together constitute a framework for the coaching practitioner's instruction to players on the principles and mechanics of how to play at an exceptional level.

Results

Specifically, ten principles on the nature of the sport are identified and discussed in this study, which include such statements as "Table tennis is complex," "Table tennis is played in an unstable environment," "Table tennis is a game of ball spin," and "Table tennis is a game of skill." The explanation of each principle will be accompanied by multiple coaching and playing principles that reflect its qualities. For example, "Table tennis is a game of skill" will be elaborated via, among other coaching and playing principles, with the following: Player skills are organized, for coaching purposes, into three categories—mental, emotional, and physical.

Discussion

The benefits of this study are clear: To have established and accepted a set of table tennis truths and understandings that create a foundation for coaching education, the wisdom and great insights of the sport's finest coaches becomes broadly available to the coaching core. This study will function as the basis for the creation of a set of coaching principles for how to play the game. All of this is just a beginning, as the finest thinkers in the discipline enhance and extend the information into greater expansion and richness.

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ELECTRONIC SYSTEM FOR NET TOUCH DETECTION FOR TABLE TENNIS

Abstract

Take home message

Net touch detection, Electronic circuit for Table Tennis, Electronic tool for umpires, Tool for training steering control of the shots.

Introduction

The detection of touch of ball in the net during the service requires the full attention and some ability of the umpire and assistant umpire. Sometimes neither of both umpires are aware of the friction and are the same players who have indicated to the umpires. In other sports, as in Tennis, there are already systems for net touch detection, it doing easier the umpire's work.

Methods

Some aims of the design were: to use the least amount of devices, the use of low cost and low power devices and the simplicity of use. In order to reach these goals, were used a low power microcontroller and a MEMS motion sensor, both in SMT (surface mount technology) packages.

Results

The electronics system presented is useful for the support of the umpires in real match also as for training sessions. The electronic circuit designed is very compact and tiny. More options will be added in the future.

Discussion

This paper presents the design of an electronic system for detecting the net touch, specific for the use in table tennis. This system can be configured to indicate the touch of the ball into the net, via an audible signal, or if the environment is very noisy, through a light indicator that can be seen by players and umpires, or we can have both signals.

This detection circuit is very easy to use and is controlled by the assistant umpire, so that only detect the touch of the ball into the net during services and not along a rally. The design of this system was made thinking in the option of would connect a small display, in order to show the amount of the ball touches on the net along the match or at the end of each game or after finish the match.

Additionally, this circuit was designed to be able of receive an accessory (sheet-pad) and placing it on the table surface, in a specific position, and to detect the hits of the ball over it. In this way this system can be used in the training sessions to count successful shots on a selected place of the table, helping in the practice of the steering control of the shots.

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FACTORS THAT FACILITATE OF HINDER THE DEVELOPMENT OF 'HEALTHY TENNIS CLUBS' IN THE NETHERLANDS: A QUALITATIVE STUDY

Abstract

Take home message

Sport clubs are ideal settings for health promotion, but they need support from national sporting organisations in the form of standard health policies, coach education on injury prevention and management, and easily accessible practical information and materials.

Introduction

An unhealthy lifestyle is a major contributing factor to annual morbidity and mortality in the Netherlands, mainly related to smoking, obesity, lack of physical activity and an unhealthy diet.¹ Because of the great number of people involved in organised sports, using the sport setting-based approach to promote a healthy lifestyle could potentially have a large positive impact on public health.²

The aim of the study was to explore the factors that facilitate or hinder the implementation of health-promoting measures at tennis clubs and to identify possible interventions that would help the clubs to take on a role in health promotion in order to make recommendations to the Royal Netherlands Lawn Tennis Association (KNLTB) for targeted support programs.

Methods

A qualitative research was conducted with an exploratory design. Through purposive sampling, ten board members from Dutch tennis clubs were recruited. Semi-structured interviews were used to explore their experiences and perceptions of health promotion at tennis clubs and possible facilitators and barriers. The data were analysed using thematic content analysis.

Results

Four themes emerged: healthy catering, injury prevention and health services, social health, and safety around the club. The main facilitators are support of club management, having legislation and regulations in place, and having appointed officers. The main barriers were found to be lack of kitchen-related knowledge and skills of volunteers, insufficient education of coaches on injury prevention and management, a lack of standard health policies, and fragmented access to relevant information.

Discussion

Board members have faced a number of practical issues when trying to implement or maintain health promotion initiatives. The KNLTB could support tennis clubs by developing standard policies and guidelines in the identified areas of health promotion, by empowering coaches through education on injury prevention and management, and by producing easily accessible, practical information and materials for clubs to use.

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EFFECTS OF EXERCISE MODE ON THE COGNITIVE PERFORMANCE OF THE ELDERLY: A GO / NOGO EVENT-RELATED POTENTIAL STUDY

Abstract

Introduction

Purpose: The effect of exercise mode on the cognitive function of older adults were investigated using the N1 and P3 component of the event-related brain potential (ERP).

Methods

There are two groups: table tennis group (n=8) and no physical activity group (n=8) in this study. All participants (60–75 years) performed a stimulus discrimination task, known as an vision“go/nogo” task. Neurocognitive function was evaluated by ERP and behavioral responses to task. ERP activity was recorded from four sites (i.e., FZ, CZ, PZ, and OZ).

Results

No differences between groups were found in the amplitude and latency of N1 and P3. However, table tennis group has a greater accuracy than the control.

Discussion

The finding suggests that participating in table tennis could facilitate the ability inhibition in elders. The implication of participating in table tennis on the prevention of cognitive degeneration is discussed.

Keywords: Event-related potentials, Aging brain, Cognitive function, physical activity

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BEGINNING AGE AND SUCCESS OF TABLE TENNIS

Abstract

Introduction

The research focuses on the relationship between the age of initial learning table tennis and success.

Methods

The study will look at success and its relationship to the age at which a person begins to play table tennis.

Results

Take the situation in Taiwan as an example, many coaches have the attitude that learning at an early age leads to excellence in the future.

Discussion

The training is believed good for health and easy for children due to the psychological and physical development. The study will look at the relationship between success as a table tennis player and age at which one start to play table tennis.

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AN ANALYSIS OF JUMPING FORCE MANIFESTATION PROFILE IN TABLE TENNIS

Abstract

Take home message

The assessment of the expression profile of force jumping capacity allows knowing and quantifying the requirements and physical needs of the lower extremities in table tennis. This information may be used for performance control and for establishing an appropriate training program.

Introduction

Game situations of table tennis are very complex. Many studies have been performed in the last years to evaluate the physiological profile, the physical condition, the technique, the tactic and even the psychological aspects that may affect this sport.

However, data regarding lower body muscle strength in table tennis are lacking.

The aim of this study was to assess the type and magnitude of different jumping forces in high level table tennis players.

Methods

Four male players belonging to the Spanish national team participated in this study that was performed using Platform Newtest Powertimer® (Oulu, Finland), weigh bars (10 and 25 kg) with collars and plates (0.25, 0.5, 1, 2, 3, 4, 5, 10, 15 and 20 Kg, respectively) a polyurethane protective bar and five steps (height: 20 cm). A scale and a stadiometer were for weight and height measurements.

Tests were performed according to the protocols of Bosco and coll.^{1,2}: Squat Jump (SJ), Abalakov (ABK), Squat Jump with a progressive extra load of 25, 50, 75 and 100% of body weight (SJ₁₀₀), reactive force during 15s (FR₁₅) and drop jumps (DJ) (20, 40, 60, 80 and 100 cm high, respectively).

Results

The analysis of the total jumping capacity expressed in percentages, shows that table tennis players have a force profile of 15.2% for the contractile capacity, 59.6% for the instant ability to recruitment and synchronization, 6.5% of elastic capacity, 11.8% of contractile contribution of arms, 6.9% of reflex capacity.

Discussion

The assessment all the force manifestations depending on the height reached is useful for elaborating the force profile of a specific sport³.

The relation between different force values indicates that the players analysed have a good force-speed⁴ relation. Fast muscle fibers⁵ prompt activation is essential in modern tennis table.

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ANALYSIS OF ASIA TOP ATHLETES' PERFORMANCE BY OBSERVING 2010 GUANGZHOU ASIA GAME TABLE TENNIS GAMES

Abstract

Introduction

The purpose of this research is to analyze the male and female table tennis final game in 2010 Guangzhou Asia Game to understand Asia top athletes' skill development, game controlling, and strategy application in order to be the goal of adjusting Taiwan athletes' technique.

Methods

By recording the forehand and backhand side serves assaults, rubs attacks, pushes attacks, and scoring and losing points to investigate the relationship among different factors.

Results

According the result, the top factors affecting scoring and losing points are: 1. The forehand/ backhand side assaults holding. 2. the forehand and backhand side serves assaults. 3. The forehand/ backhand side pushes attacks the holding will both score and lose more points. 4. Fielding average of male and female athlete reaches 73%. 5. During the match, athletes who get six points first win the first round for about 90% chance.

Discussion

1. Through comprehensive techniques analysis, athlete needs to have high skill of continue hitting. 2. Athletes need to have high counter-system ability and etc.

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COMPARATIVE ANALYSIS BETWEEN HARDBAT AND “LIHA” (SANDPAPER) BRAND OF PLAY DURING THE 2010 PHILIPPINE NATIONAL OPEN TABLE TENNIS CHAMPIONSHIPS

Abstract

Take home message

Performance of table tennis players using different types of table tennis rackets and rules vary in all sorts depending on how well one can adapt to it. Regular practice, familiarization and participation using different types of rackets in tournaments can be attributed to peak performance.

Introduction

Table Tennis has its own historical beginnings. Hardbat and sandpaper rackets made significant contributions which dramatically improved over the years resulting in the introduction of the sponge/rubber racket in the 1950's. Hardbat is still prevalent among the Americans where major USATT sanctioned tournaments are held such as the US Open and other local events. The Sandpaper racket was introduced in the Philippines during its American Colonization. It's popularly called “Liha” among Filipinos and still prevalent especially among middle-aged to elders who may not only want to compete but to hope maintain an optimum level of fitness. In the Philippines, it has a different “service” rule compared to the current ITTF rule. In the 2010 US Open Table Tennis Championships, a special “Liha” event was introduced where the researchers attended this historic moment and showed the Filipino game of “Liha”.

Methods

The study aimed to investigate if there is no significant relationship between Hardbat and Liha game during the Philippine National Open Table Tennis Championships 2010. Three events with the corresponding participants were analyzed: Men's Team Liha Event using the ESER rule (Easy Serve, Easy Receive), Men's Singles Liha and Hardbat events using ITTF rules. Descriptive statistics and Spearman Rank Correlation were used to analyze the results of the matches.

Results

Results showed that there is no significant relationship between Men's Liha Team and Men Singles Liha ($R = 0.358$). This means that some who did not perform well in the Team Liha event were able to land in the top four (4) positions in the Singles Liha event except for the Champion in both these events who is also the top player in the country. No significant relationship was also found between Liha Singles and Hardbat ($R = .509$). Most Liha experts did not win in the Hardbat event. The champion in the Hardbat event did not even make it to the top 8 players in the Liha Singles.

Discussion

The research clearly indicated that one player does not have a monopoly of skills playing with different brand of rackets without years of intense training. The “ESER” rule also contributed significantly where players need to adapt to it through regular practice, familiarization and participation in tournaments in order to perform at their best.

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A STUDY OF EXERTION COUNT AND RECOVERY OF NATIONAL YOUTH TENNIS PLAYERS

Abstract

Introduction

Each sport had a different quantity of training. Therefore the quantity of training that was appropriate for physical fitness reinforcement was important, especially quantity of training that had no effect on athlete recovery would help to stimulate the body response for improving physical fitness in training. For those reason the researcher therefore is interested in studying the quantity of training and tennis player recovery for training guidance for tennis player.

Methods

This research is aimed to study exertion count and recovery of national youth tennis players. A group of sample which used in this research was 6 youth tennis players in ages between 15-17 who trained at tennis court, Sports Authority of Thailand for participating in a variety of tennis tournament 2010. The tools that used in this research were Polar S810 Heart Rate Monitor and Polar Precision Performance Software version 3.0. This research was used to collect data of heart rate during training, competition, and orthostatic test in order to study recovery.

Results

The research found that an average of exertion count while training was 337 units/day with the average Monday - Saturday were 324, 379, 291, 398, 330, and 297 units, respectively. The average of heart rate was 178 times/minute with the average Monday - Saturday were 180, 179, 177, 175, 180, and 177 times/minute, respectively. The average of duration was 120 minutes/day with the average Monday - Saturday were 125, 122, 103, 140, 110, and 121 minutes, respectively. In terms of tennis match, the average of exertion count was 328 units/match, the average of heart rate was 164 times/minute, the average of maximum heart rate was 189 times/minute, the average of duration was 52 minute/match, the average of recovery index for each tennis player were 2.16, 2.33, 2.16, 2.33, 2.00, and 2.10, respectively. The total average was 2.18 (normal rate = 1-3) which showed that body was still well recovery.

Discussion

This research concluded that exertion count of tennis players have no effect on a condition of overtraining.

Key words: *Exertion Count, Recovery, Tennis Players*

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MOTIVATIONAL ORIENTATIONS AMONG COMPETITIVE AND RECREATIONAL ADULT LIHA PLAYERS: A SELF-DETERMINATION THEORY VIEWPOINT

Abstract

Take home message

Adult Liha players generally have an externally regulated and introjected extrinsic motivation. Putting prime on external conditions and extrinsic rewards may lead to increased participation.

Introduction

“Liha,” a Filipino term for sandpaper, has long been played underground in the Philippines, yet only rather recently has it been heard in national and even in international competitions. The purpose of this study was to examine significant male adult (N = 66) motivational orientations towards *Liha* participation using the framework of Self-determination Theory (Deci & Ryan, 1985).

Methods

A descriptive design was used to determine if there were no significant differences in the motivational orientations between recreational and competitive players, and across adult ages: young (18-30 yrs.old), middle (31-44 yrs.old), late (45-80 yrs.old). Subjects were interviewed using the 28-item Sport Motivation Scale (Pelletier, et. al. 1995), which consists of seven subscales that measure three types of Intrinsic Motivation (IM; IM to Know, IM to Accomplish Things, and IM to Experience Stimulation), three forms of regulation for Extrinsic Motivation (Identified, Introjected, and External), and Amotivation.

Results

An analysis of variance (ANOVA) revealed significant differences in the identified and introjected extrinsic motivation ($p=.0018$) and external regulation ($p=.00015$). Comparison of means showed introjected EM ($x=4.85$) and external regulation ($x=4.99$) as having equal statistical significance. For the age groups, middle adult ($p=.018$) and late adult ($p=.007$) resembled most of the significant motivators. Moreover, the competitive liha players ($x=4.86$) are the ones who embody these motivators.

Discussion

This research clearly showed extrinsic motivations to be the primary motivational orientation in adult liha participation. Knowing players’ specific external regulators may yield significant findings on how the game managed to survive even with the unfavorable sport environmental conditions, and how it would be likely to flourish in the country.

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PIRIFORMIS SYNDROME

Abstract

Introduction

Low back pain with sciatic radiation may be caused by entrapment of sciatic nerve as it emerges under the piriform muscle. This is termed the piriform syndrome and as often seen in table tennis players. The article explains the common cause of syndrome, symptoms, diagnostic procedures, treatment and possible prevention measures.

The paper is based upon more than three decade of personnel experience of the author as the medical doctor of table tennis national team. This is the quite reliable period to notice the different diagnostic problems of low back pain. Piriformis syndrome is neuromuscular disorder, that occurs when the sciatic nerve is compressed or irritated by the piriformis muscle causing pain and numbness in the buttocks.

The piriformis muscle is external rotator of the hips, arises from inside of the pelvis in the region of sacrum and sacroiliac joint.(1) The belly of the muscle passes over the sciatic nerve and the most important criteria is to exclude sciatica resulting from compression of spinal nerve roots, as by herniated disc.(2) The syndrome may be due to anatomical variations in the muscle –nerve relationship, or more often from overuse or strain. While the piriformis muscle shortens or spasms due to trauma or overuse it can strangle the sciatic nerve beneath the muscle and this condition is referred to as nerve entrapment or neuropathies, known as piriformis syndrome refers to symptoms not originating from spinal roots or disc compression.

Methods

This is retrospective study based upon 122 cases which has been involved in sport as active or passive recreational players. The main goal was to make adequate differential diagnosis according to objective finding as well as image technique like NMR.

Results

According to presented data about 40% of cases were with piriformis muscle increased in size which correlate with onset of typical symptoms. In all patients were evident disproportionately weak hip abductors/gluteus muscles, combined with very thigh adductor muscles that cause piriformis muscle to shorten and contract.(3)

Discussion

Indications include sciatica with examination that reveals tenderness over the sciatic notch. The diagnosis is largely clinical with unique tests. Diagnostic procedures such as CT, MRI, ultrasound and EMG are mostly useful in excluding other conditions. Symptom relief can be obtained by non-steroid anti-inflammatory drugs, stretching exercises, physical therapy, orthokinetic insoles as well as gait correction.

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A STUDY OF ORGANIZING AND TRAINING FACTORS OF TABLE TENNIS TEAM AT PRIMARY SCHOOLS IN KAOHSIUNG, TAIWAN

Abstract

Introduction

This study was mainly to understand table-tennis organizing and training as well as its factors in Kaohsiung's primary schools with table-tennis teams. This study also tried to explore whether teachers' different backgrounds might influence their viewpoints on the issue of table tennis organizing and training factors.

Methods

The questionnaire method was adopted and primary school teachers were the subjects in this study. A self-designed questionnaire "Implementation Factors in Table Tennis Training Programs in Kaohsiung City's primary schools", was used in this study. The questionnaire consisted of three main parts: subjects' background, the current table-tennis situation, and its implementation factors. The collected data were analyzed by way of descriptive statistics, T test and one-way ANOVA.

Results

Results of the study were as follows:

1. Primary schools with table-tennis teams were 29.55% of the total primary school numbers in Kaohsiung City (26 out of 88).
2. Administration support, table tennis professional teachers' and coaches' exertion and well-built training place and equipment concluded the continuity of the teams.
3. Financial shortage was an obstacle factor to the table tennis teams in Kaohsiung.
4. Professional coaches, substantial budget, and parental support were required as the teams in Kaohsiung are founded.
5. Factors were followed in order: parental agreement, training places and facilities, professional coaches, administration support, curriculum assistance of team player, and financial resources.
6. No significant differences existed in terms of gender, coach qualification, school size, years of experience, and position at the schools.
7. Teachers' profession background appeared the most essential in parental support that is emphasized as the teams were established.

Key words: table tennis, sport team, organizing and training

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THE REACTION TIME TO VISUAL STIMULI IS A PREDICTIVE PARAMETER OF THE TABLE-TENNIS SKILLS, BOTH IN ATHLETES AS IN CHILDREN NEOPHYTES

Abstract

Take home message

Reaction time in athletes is correlated with their standings score, and its value in neophytes is a predictive parameter of future skill.

Introduction

Is it possible in TableTennis an early identification of future talents?

Are there some psycho-physiological parameters able to correlate with athletes skill?

Is there a method to discriminate in children neophytes, between the future sportsman and the ones intended to be only gamers?

Our study answers positively to all these questions.

Methods

The investigator has personally made three VisualBasic software that operate on a standard PC. They are used to operationally define three variables, respectively: the speed of reaction to a visual stimulus, the precision in the spatial detection and the coordination in temporal preview.

We used this software to measure such parameters in a group of athletes in Italian standings, and in a control group of no-athletes.

Being the reaction time the parameter more correlated with skill, after we made a longitudinal measurement in a group of neophytes children before and after a formation course in TableTennis (performed by Italian Federation technicians): after it, children attended to a tournament to discriminate their skill.

Results

It was shown that all three of these tests are able to discriminate with confidence interval = 0.01 between the population of athletes and of non-athletes.

It was then determined that there is a strong correlation between natural logarithm of reaction time to visual stimulus and the classification of athletes ($r = 0.71$ significant $\alpha = 0.01$).

In children, we saw how the course makes the reaction time shorter in the whole sample (p -value 75%), but this effect does not appear in the sub-group of the fastest ones, (whose quick reaction time was less than the average in the first measure) and appears in a strong and almost proportional way ($r = 0.97$ significant $\alpha = 0.01$) in the subgroup of the slower children (but without never reaching the average reaction time of the first subgroup).

Children whose Reaction Time was already short before the course, got more points in the tournament, placing themselves in all high position.

Children whose Reaction Time was longer before the course, got less points in the tournament placing themselves in the last positions.

Discussion

The psycho-physiological parameters here used seem to be useful to discriminate in skill between non-athletes and athletes of TableTennis, and in the latter group to verify the potential in standings of each athlete.

The parameter reaction time here used appears to be able in children to predict their skill to carry out successfully the competitive activity of TableTennis.

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THE ANALYSIS OF TECHNIQUES AND TACTICS FOR TABLE TENNIS

Abstract

Introduction

The purpose of this study is to explore the techniques and tactics of the first three hits in table tennis game and give recommendations to coaches and athletes regarding to the application of tactics and enhance of technique training.

Methods

We developed an “Analytic Model of The First Three Hits” as the base of analysis. A computer system analysing the techniques and tactics applied in table tennis games was developed according to the proposed model by the tools of Microsoft VB.net, Access database and Interact 9. Video records derived from the female games in national college table tennis competition in Taiwan in 2010 were selected as the analytic samples. Interact 9 was used as a coding tool to analyse the players’ tactics and the coding results were input to the computer system. The tables of tactics were created by the systems. Also, the clips of tactics can be easily displayed through the system.

Results

We found that serve was valuable for the execution of tactics. The active offense such as forehand smash and flip smash was able to create more competitive advantages. The results also showed the female players had higher mistake rates of forehand chop and this needed to be enhanced.

Discussion

This study developed an analytic model and a computer system to analyse how table tennis players execute tactics by applying their techniques. This system can provide quick and detailed information about the advantages and weakness of players. The results can be referred by coaches and athletes to enhance their trainings.

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**THE STUDY OF THE RELATIONSHIP AMONG LEADERSHIP BEHAVIOR, TEAM COHESION,
ORGANIZATIONAL CLIMATE AND SATISFACTION COLLEGE TENNIS COACH**

Abstract

Introduction

The purpose of this study is to discuss tennis coach's leadership types, team cohesion, organizational climate, and satisfaction.

Methods

The sample of this study is to investigate the college student athletes in Taiwan by using convenient sampling to collect questionnaires. According to the research purpose and hypothesis, using independent t-test, one-way ANOVA, and linear regression analyze the data.

Results

Personal relationship, cohesion, care behavior, well relationship, and conflict phenomenon can effectively predict satisfaction.

Discussion

College tennis athletes can reflect the relationship between coach's leadership and team cohesion. Besides, coach's leadership style, care behavior and authority, and personal relationship, cohesion, care behavior, well relationship, and conflict phenomenon can effectively predict satisfaction. College tennis coach, athletes, and can utilize result of this study as reference to use as application.

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A STUDY ON TEAM SUPPORT AND TEAM DEDICATION OF COLLEGE TABLE TENNIS PLAYERS IN TAIWAN

Abstract

Introduction

The purpose of this study lies in understanding the significance of team support and team dedication of college table tennis players.

Methods

The subjects of this study were the table tennis players who participated in college sports team in 2007. The research instruments were the Perceived Team Support and Team Dedication Questionnaire. Descriptive statistics, independent sample t- test, one- way ANOVA, Pearson's product-moment correlation were employed for statistical analysis.

Results

The conclusions of the research include:

1. College table tennis players were aware of the support from their team members most.
2. Table tennis players showed no significant difference in realizing team dedication among gender, practice time per week, seniority in school team, current grade and age.
3. There was a significant difference among college table tennis players in terms of the past experience as gifted athletes, the duration of training time, the best team results, and the seniority in high school sports team.
4. According to the team dedication indicator, the sense of community among college table tennis players was the highest.
5. No significant difference could be found among college table tennis players on whether they had been gifted athletes or not in terms of their gender and the seniority in high school sports team.
6. A significant difference had been found among college table tennis players on the number of training times per week, the duration of training, the best team result and their current grades.
7. There had been a correlation between team support and team dedication among college table tennis players.

Key words: college, table tennis, team support, team dedication

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A STUDY OF SPECTATING MOTIVATION AT 2009 TAIPEI DEAFLYMPICS

Abstract

Introduction

The purpose of this study was to understand motivation factors of 2009 TAIPEI DEAFLYMPICS spectators, and to compare difference between demographic factors and motivation factors.

Methods

The questionnaire was used in this study. The subject was 2009 TAIPEI DEAFLYMPICS spectators. Descriptive statistic, one-way MANOVA were used in the data analysis.

Results

The results of this study were: motivation factors of spectators indicated that attraction of game was the most important factor followed by achievement and interaction, sport appreciation and learning; motivation factors of spectators were significant differences with age and married status.

Discussion

Spectators play an important role in sport events. To understand the motivation of spectators is very important topic for the sport event managers. Attraction of game was the top rate motivation to watch game. Thus, the sport event managers of table tennis need to arrange the match which was equal level of teams to play each other in order to provide spectator exciting match and promote willingness to participate game.

Key words: 2009 TAIPEI DEAFLYMPICS, table tennis, spectator, motivation

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AN EVALUATION OF TRAINING AND TACTICS OF CHINESE TABLE TENNIS PLAYERS

Abstract

Introduction

Training and tactical effectiveness can be regarded as one of reasons of Chinese Table Tennis Team success in the Olympic Games and World Championships. Analysis is acted as a premise to get tactical applications better, by which the development of training for the athletes can be mastered for the improvement of their performance.

Methods

Literature, investigation, statistics, experiments and logics were used in the paper. Some ways to diagnose table tennis tactics and training were given for the service to the Chinese Table Tennis Team.

Results

The followings are the results of this paper.

1. The evaluation methods of tactics and training is proved to be effective and feasible.
2. Knowing opponents and setting up playing schemes of ours in the matches and improving training efficiency can be made through the study.
3. A strong scientific support to the preparation of Chinese Table Tennis Team for the Olympic Games has seen given by the study results.

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INVESTIGATION AND ANALYSIS OF PRIMARY SCHOOL STUDENTS' ATTITUDES TOWARD TABLE TENNIS

Abstract

Introduction

After depth investigation of primary students' attitudes to table tennis, the author analysis the advantages and disadvantages in development of table tennis among primary students, combined with the plasticity characteristics of physical and psychological development of children, raise useful recommendations to promote table tennis among primary school students.

Methods

Questionnaires: During 2010, the author has released 7200 pieces of questionnaires in 72 primary schools of 24 capital cities in China, 100 pieces for each school (half boys, half girls), retaken 7132 pieces, retaking rate is 99.06%, among these pieces of questionnaires, 6420 pieces was effective, effective rate is 90.02%. It is available to the Statistical standards.

Results

According to the study, 80% of the students like table tennis on different levels, the main reason is "feeling very exciting to play", more than 70% of the students have experience of playing table tennis, nearly 60% students have their own favorite table tennis players, but less than 30% students have participated in the formal competition; the development of table tennis class in different of China is uneven, the chief reason that these students have no chance to play table tennis are "no spare time" and "no people to teach", above 70% students are willing to learn if given the opportunity to play table tennis, more than half of the students accept that they can have more friends, become clever, be more strong and healthy by playing table tennis.

Discussion

In summary, it has both material basis and theoretical basis to promote the participation in table tennis of primary school students. The problems are how to raise the consciousness of primary school students' participation in exercise and playing table tennis and properly guide their participation by different methods with making full use of various resources.

Feasible suggestions: 1, enhance the propaganda of table tennis among primary school students;2, cooperate with the education sector, encourage primary schools bring table tennis into their physical education system or extracurricular activities;3, hold different types of primary schools students competition of table tennis;4, encourage table tennis enthusiasts to organize community interest group consisted of primary school students;5, further promote the development of mass table tennis, create a good social and family environment for the participating of table tennis for primary school students.

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COMPARISON OF ANAEROBIC THRESHOLD, OXYGEN UPTAKE AND HEART RATE BETWEEN SPECIFIC TABLE TENNIS AND CONVENTIONAL ERGOMETERS: CORRELATION WITH TABLE TENNIS PERFORMANCE

Abstract

Take home message

Oxygen uptake (VO₂) and heart rate (HR) at anaerobic threshold (AnT) intensity measured during specific table tennis test are statistically different to values measured in conventional ergometers, and VO₂, HR and AnT intensity should not be used for table tennis performance prediction.

Introduction

Anaerobic threshold (AnT) has been widely employed for endurance evaluation, training prescription and performance prediction. However AnT has been few applied in specific table tennis evaluation; it is not known if the results obtained by specific table tennis test are similar to results obtained by conventional ergometers, or if the AnT is capable to predict table tennis performance.

The purposes of the study were: 1) to compare the VO₂ and HR correspondent to anaerobic threshold intensity among incremental tests performed in specific table tennis procedure (ST), treadmill (TT), cycloergometer (CE) and arm cranking ergometer (AE); 2) to correlate the AnT intensity among ST, TT, CE and AE; to verify the use of VO₂ and HR measured at AnT and the AnT intensity to predict the table tennis performance.

Methods

Eleven Brazilian male table tennis players of national level (19.4±0.7 years; body mass of 70.8±3.9 kg) participated of the study. The athletes underwent four maximal incremental tests performed in ST using a Tibhar RoboPro Plus ball throwing machine and in a TT, CE and AE; and also a simulated tournament among players to determine the table tennis performance ranking. During incremental tests, blood samples were collected after each exercise stage of 3-min to determine the AnT, which corresponded to the fixed blood lactate concentration of 3.5 mmol/L. The VO₂ and HR were also measured during incremental tests. The data were analyzed using One-way Anova, Pearson correlation and Spearman correlation tests. The results are shown in mean ± standard error of mean.

Results

The AnT was corresponded to 42.8±5.6 ball.min⁻¹, 131.9±6.6 W, 64.5±6.1 W and 11.1±0.3 km.h⁻¹ to ST, CE/AE and TT respectively. The VO₂ and HR measured at AnT in ST (37.2±1.7 ml.kg⁻¹.min⁻¹ and 182.8±7.2 bpm, respectively) were similar to values obtained in CE (29.8±1.9 ml.kg⁻¹.min⁻¹ and 157.2±7.1 bpm) and TT (36.3±1.0 ml.kg⁻¹.min⁻¹ and 166.0±10.2 bpm), but it was significantly different to AE (18.2±1.1 ml.kg⁻¹.min⁻¹ and 132.7±4.7 bpm). AnT intensity in ST was only significantly correlated with AE (r=0.89), while VO₂ was significantly correlated with CE (r=0.92) and TT (r=0.81). However, the variables measured during incremental ST, CE, AE and TT tests were not significantly correlated with the table tennis performance ranking analyzed by the Spearman correlation test.

Discussion

The results obtained in present study showed that there are significant differences among specific table tennis and conventional ergometers evaluations; low correlations among them; and any of the parameters showed significant correlation with table tennis performance. These results indicate the importance of use specific test to evaluate the anaerobic threshold in table tennis players and that the parameters measured should not to predict the table tennis performance.

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PHYSICAL SELF-CONCEPT AND LIFE SATISFACTION AMONG MIDDLE-AGE AND SENIOR POPULATION PARTICIPATING IN TABLE TENNIS

Abstract

Introduction

The study intended to explore the impact of participating in table tennis on physical self-concept and life satisfaction of mid-agers and senior citizens.

Methods

Two hundred and eleven participants (99 male and 112 female, over 40 years old) from traditional markets and contestants of 2009 Taiwan Evergreen Table Tennis Championship were surveyed. All participants were administered with Physical Self-Concept Inventory and Life Satisfaction Inventory.

Results

Results showed: 1. participants engaging in table tennis have significantly higher life satisfaction and physical self-concept than non-exercisers; 2. a significantly positive relationship was found between participation of table tennis and overall physical selfconcept; 3. no significant differences were found on life satisfaction with regard to different gender and age of participants; 4. a significant difference was found on physical self-concept with regard to different gender of participants, while no significant difference was found on physical self-concept with different age.

Key Words: physical activity, self-concept, life satisfaction, aging

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ANTHROPOMETRIC PROFILE OF INTERNATIONAL YOUNG TABLE TENNIS PLAYERS

Abstract

Take home message

With the exception of arm girth (relaxed and tensed) there are no anthropometric differences between male and female young table tennis players.

Introduction

A great number of programs for talent identification in sports include anthropometric and body composition analyses (de Hoyo et al., 2008). Although in many sports body size represents a key point for the athlete's performance and significant differences can be observed between male and female athletes, this does not seem the case of table tennis.

Methods

A total of 35 table tennis players aged between 11 and 13 years all of them participants in 2007 Eurokids Training Camp held in Murcia (Spain), took part in this study. Anthropometric analysis was conducted following the ISAK procedures. Body mass, height, BMI, skinfolds (biceps, triceps, subscapular, pectoral, iliac crest, abdominal, thigh, and calf), girths (arm relaxed and tensed, thigh, and calf), and bone diameters (wrist, elbow and knee) were assessed. In addition, body fat percentage somatotype were calculated using the formulas proposed by Faulkner (1968) and AsiaHeath and Carter (1990), respectively. Descriptive analysis of all data registered was performed using the software SPSS v.15. Also, an independent t-test was developed to test for differences between male and female players. Confidence interval was set at 95% with significance at $p < 0.05$.

Results

Significant differences were found in arm girths (relaxed and tensed) between female and male players ($p < 0.05$). In addition, higher values of height, body mass, abdominal and ilio crestal skinfolds, sums of 4 and 6 skinfolds, and % body fat were observed in females although no significant differences were reached. On the other hand, only BMI was higher (slightly) in males than in females. Somatotype analysis revealed a balanced mesomorphy for female players and ectomesomorph profile for male players.

Discussion

Anthropometric profile of both young female and male players is very similar. New studies focused on the importance of anthropometric parameters in table tennis performance the are needed to clarify its inclusion in talent identification programs.

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