



Abstract Book

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The welcome message from the conference president

On behalf of the Asian Exercise and Sports Science Association, I extend a warm welcome to all esteemed researchers and professors gathered here. As we convene the 8th International Sports Science Conference virtually, our aim is to foster a global platform that transcends boundaries, connecting researchers and facilitating the exchange of scientific advancements in this field. This initiative seeks to promote greater interaction among researchers and students alike.

In the face of challenging times, characterized by the enduring impact of Covid-19, conflicts, and socio-economic issues, we, as researchers, remain steadfast in our commitment to enhancing societal well-being through our scientific endeavors in both the public and professional spheres of sports. Our mission encompasses not only the physical and mental preparation of individuals for a healthier lifestyle but also the training of professional athletes for competitive endeavors, both of which contribute to societal advancement.

It is with deep gratitude that I acknowledge the valuable contributions of all esteemed researchers participating in this conference. Your dedication to knowledge sharing is instrumental in advancing our collective journey.

Wishing you all success.

*Dr. Alireza Amani
President of The Conference
March 09, 2024*



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A Literature Review on Volleyball Culture

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Abstract: An article with the keyword "volleyball culture" on CNKI was selected for discussion. This article uses the method of quality review to analyze the concept and research status of volleyball sports culture, establish research themes and concepts, and discuss future research and development directions in this field. The current research on volleyball culture in China involves: the characteristics, values, and functions of volleyball culture; Constructing volleyball culture; The construction of campus volleyball culture. Research has found that the commercialization of volleyball culture is significant, and future research on volleyball culture needs to focus on diversity. Integrated development is the future research trend of volleyball culture.

KEY WORDS : volleyball culture, sports, volleyball sports

Reference:

- [1] Gray cook. Movement- Functional Movement Systems[M]. Zhang Yingbo, Liang Lin, Zhao Hongbo, translated. Beijing: Beijing Sport University Press, .4-2011:3
- [2] Guo Cheng. Study on the motor function of the shoulder [D]. Capital Institute of Physical Education, .2022

Research on the Promotion and Dissemination of Volleyball Culture

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Research purpose: Volleyball, as one of the three major balls, does not have as strong a mass base as basketball and football; In order to achieve higher and faster development of Chinese volleyball, a broad public base is crucial. How can we expand the audience of volleyball? How can volleyball be quickly infiltrated and recognized? The spirit of volleyball has become an important part of Chinese culture, surpassing the scope of basic sports culture. It is a manifestation of the spirit of volleyball athletes and the spirit of the Chinese people. It is necessary to have a subtle spiritual and cultural impact on the student community. Through the promotion and dissemination of volleyball culture, it can be deeply influenced in daily life, forming established behaviors, expanding volleyball participation in the reserve main force, and enriching volleyball talent reserves; Protecting and inheriting traditional excellent volleyball culture, and strengthening confidence in sports culture; Promote the parallel development of volleyball and foot basketball, actively implement the strategy of becoming a sports powerhouse, and promote the construction of a sports powerhouse.

Research method: Mainly using literature review and logical analysis methods, search for relevant articles through China National Knowledge Infrastructure (CNKI), and carefully study and organize articles with high relevance to this article based on current reality. In the process of organizing and summarizing the data, logical methods are used to classify and compare the data collected by CNKI, in order to provide corresponding theoretical support.

Research results: Volleyball sports belong to a category of sports, and volleyball culture is a subordinate term of sports culture, which includes volleyball spirit, material, institutional culture, etc. Spiritual culture is the core of culture, and volleyball is influenced by volleyball culture. After careful study, analyze the existing problems based on actual situations: ① It is difficult to master the basic volleyball techniques, as the volleyball technique has a high starting point and the foundation of the volleyball masses is relatively weak; ② The construction function of volleyball is insufficient, whether on campus or in society, there is a lack of specialized venues, and the venues are non project-based, with very few volleyball venues truly used for volleyball sports; ③ The limitations of volleyball professors are that they have not yet left the campus, and professional volleyball teachers are all employed on campus; ④ Fewer amateur and popular volleyball competitions are organized; ⑤ Diversified volleyball is less popular, and snow volleyball requires extremely high courts, mostly in the northeast region. Beach volleyball is mainly located in coastal cities, and the popularity of sitting volleyball is lower. Currently, indoor hard volleyball and air volleyball are more widely used.

Research conclusion and suggestions: Pay attention to the development of volleyball, promote the promotion of volleyball culture, and assist in the construction of a sports powerhouse. The following are several suggestions: ① Vigorously promote the construction of volleyball campus culture, starting from students, and expanding the participation group through cultural influence in schools of different age groups; Integrating volleyball ideological and political content into campus physical education courses, such as the development history of domestic and foreign volleyball sports, outstanding volleyball athletes, and the spirit of "selfless dedication, unity and cooperation, hard work, and self-improvement" in women's volleyball Qi Li cooperates to promote community cultural construction, and the government, society, and community form a joint effort to build specialized volleyball sports venues; ③ Form a women's volleyball team spirit propaganda group with senior volleyball experts to deeply promote volleyball culture on campus, government agencies, and other units, using the charm of volleyball culture to infect and attract; ④ Strengthen the publicity of volleyball through various channels, and use traditional media and new era media channels to transmit positive volleyball culture online and offline, such as: use Internet energy efficiency, social platforms (microblog, WeChat official account), official reports; ⑤ Let professional skills go out of the campus, utilize the "campus+community" to form interactive communication, cooperate and win, organize volleyball exchange matches to enhance the popularity of the competition, and invisibly increase the participation of the masses.

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Teaching games for understanding approach in high school: perceived enjoyment at different age groups

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Purpose: In physical education lessons, in which large groups of students participate at the same time to the activities proposed by the teacher, it is important to limit the idle time as much as possible and increase the students' motivation. Thus, the approach called “teaching games for understanding”^[1] may be of particular interest in this setting. This approach consists in leading students to learn sport skills and tactical aspects through playing games, rather than using exercises focused on skill development. The purpose of this study was to analyze how the teaching games for understanding method can affect enjoyment during physical education lessons in high school students of different grades.

Methods: 66 first and second grade students (57 males, age: 14.9 ± 0.8 years; height: 171.6 ± 7.0 cm; weight: 65.0 ± 11.7 kg; 9 females, age: 15.11 ± 1.1 years; height: 160.6 ± 11.5 cm; weight: 63.9 ± 13.9 kg), and 40 third and fourth grade students (33 males, age: 17.7 ± 0.9 years; height: 177.6 ± 6.1 cm; weight: 69.9 ± 11.4 kg; 7 females, age: 17.3 ± 0.8 years; height: 162.4 ± 4.0 cm; weight: 60.3 ± 14.8 kg) and 19 fifth grade students (all males, age: 18.4 ± 0.5 years; height: 177.8 ± 5.7 cm; weight: 76.2 ± 14.1 kg) were involved. All groups learned handball's base techniques (such as throwing, catching, saving, dribbling the ball) and the basic tactical components of the sport, practicing only games (variations of traditional games and facilitated versions of handball), with no specific technical or tactical exercises. After the last lesson, students completed an anonymous questionnaire based on a 7-point likert scale, corresponding to the interest/enjoyment subscale of the IMI scale.^[2]

Results: There were significant differences between all examined age groups in the interest/enjoyment subscale, in favor of the younger students (first and second grade students vs third and fourth grades: 5.19 vs 4.57, $p < 0.05$, ES=0.45; third and fourth grade students vs fifth grades: 4.57 vs 4.13, $p < 0.05$, ES= 0.39; first and second grade students vs fifth grades: 5.19 vs 4.13, $p < 0.05$, ES= 0.77).

Conclusions: The results show that the teaching games for understanding approach, used to teach handball in high school physical education classes, is effective in motivating young students towards physical activity, while higher grade students, in particular fifth grades, do not seem to particularly appraise that teaching method. Possibly, a more analytical approach, based on technical and tactical exercises, may be preferable for students of that age group. A reason may be related to the fact that older students have already developed the basic techniques needed to play handball, and they feel the need for specific technique training in order to improve further. Thus, they do not enjoy as much as younger students games focused on technique development, that are less complex than handball itself.

This study highlights that, during physical education classes in the high school, the teaching games for understanding approach is an effective strategy for teaching specific sports skills in younger students, while a different approach, such as the analytic approach, may be preferable for older grade students.

Key words: high school, students, teaching games for understanding, handball, enjoyment, competence, IMI scale, physical education, motivation

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2. Ostrow K. S, Heffernan N. T. Testing the validity and reliability of intrinsic motivation inventory subscales within ASSISTments. *Proceedings of the international conference on artificial intelligence in education* (Springer) 2018: 381–394

Effects of the linear vs. variable training approaches on perceived enjoyment and technical competence in high school students

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Purpose: During high-school physical education classes, it is important that students perceive high enjoyment and competence, in order to promote an active lifestyle and decrease the future incidence of sport dropouts. The purpose of this study was to compare the impact of a linear approach (keeping constant technical parameters during exercises, in a block exercise structure) and a variable approach (varying continuously technical parameters during the exercises, in a randomized exercise structure) when teaching basketball in high school physical education classes, on students' enjoyment and perceived competence.

Methods: 119 male students (age: 16.4 ± 1.7 years; height: 174.7 ± 7.2 cm; weight: 68.4 ± 12.4 kg) and 16 female students (age: 16.1 ± 1.4 years; height: 161.4 ± 8.8 cm; weight: 62.2 ± 13.9 kg) were involved. Group A was composed by 88 students (77 males, 11 females, from 5 different classes) and performed 3 basketball training sessions (2 hours per week, for 3 weeks) characterized by a variable training approach, while group B was composed by 47 students (42 males, 5 females, from 3 different classes) and followed the same training schedule, using a linear training approach. After the last basketball class, students completed an anonymous questionnaire based on a 7-point likert scale on enjoyment and perceived competence, corresponding to the interest/enjoyment and the competence subscales of the IMI scale.^[1]

Results: Group A showed a mean enjoyment of 4.83 ± 1.38 (on a maximum of 7) and a perceived competence of 4.59 ± 1.78 (on a maximum of 7), while group B had an enjoyment of 5.40 ± 1.18 and a perceived competence of 5.12 ± 1.40 . There was a significant difference ($p < 0.05$) in the perceived enjoyment between groups ($ES = 0.41$) and an almost significant difference ($p = 0.06$) in the perceived competence between groups ($ES = 0.30$).

Conclusions: The results demonstrate that a linear training approach may be preferable in high school compared to a variable approach as it allows students to perceive higher enjoyment and competence after 3 basketball classes. These findings may be related to a higher success rate during linear exercises, compared to a differential structured lesson, that promotes a more positive approach towards physical education lessons, reducing the amount of failure experienced by students during these activities.

These results are interesting, as it is known that a variable technical approach tends to more effectively enhance motor skill learning, mainly regarding skill transfer, compared to a linear technical approach;^[2] it is important to consider though that in a school context it may be more important to focus on perceived enjoyment and competence rather than objectives improvements in sport performance, as those aspects appear important in promoting an active lifestyle.

This study highlights that, during physical education classes in a high school, a linear technical approach is preferable when compared to a differential approach as it stimulates more perceived enjoyment and competence in students.

Key words: high school, students, linear training, variable training, enjoyment, technical competence, basketball, IMI scale, physical education

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Quantitative study on the attacking effect of Chinese Men's Volleyball Team and the Top Four Men's volleyball team in 2023 World Men's Volleyball League

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ABSTRACT:

Since entering the 21st century, the online competition of volleyball is becoming more and more fierce. The secondary attack players not only play an important role in blocking to reduce the defensive pressure of the back row, but also pay more and more attention to their role in the offensive end. By using the method of literature, video observation and mathematical statistics, this paper makes a comparative analysis of the side attack effect between the Chinese men's volleyball team and the top Four men's volleyball team in 2023 World Men's Volleyball League. The results show that, in terms of serving, although the error rate of the Chinese men's volleyball secondary attackers is lower, the break rate and score rate are lower than that of the opponents. In terms of fast ball, the Chinese team's secondary attackers are not aggressive enough, and the probability of being defended by the other team is high, so they can not effectively convert the attack into points. In the flat fast ball, the Chinese team has a high error rate, the coordination between the setter and the assistant attacker is insufficient, and the impact on the opponent is not enough; The Chinese team and the top four teams are less to choose the back fly tactic, or even no back fly, because volleyball is becoming more and more simple and efficient, and the back fly tactic is less effective.

KEY WORDS: Volleyball; Chinese Men's volleyball Team; Secondary offensive player; Offensive effect

Reference:

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Quantitative study on attacking effect of Chinese and foreign Women's volleyball team

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ABSTRACT:

Volleyball is one of the three big ball sports. Nowadays, volleyball is developing towards a complete, high, fast and changing situation. As one of the indispensable positions on the court, auxiliary attack is mainly based on fast attack, which shoulders the role of fast attack to cover the attack of teammates in other positions, and can form various running attack tactics with the main attack players and the receiving and setting players. The attack of the secondary attack players is the main part of the tactical attack of a team, which directly affects the result of the game. This paper takes the side attack effect of the Chinese Women's Volleyball team and the top four teams in the 2022 World Volleyball Championship as the research object, and compares and analyzes the side attack effect of the Chinese Women's Volleyball team and the top four teams in the 2022 World Volleyball Championship through literature, video observation and data statistics, etc. The following conclusions are drawn: 1. In terms of service, the Chinese side attack service error rate is low, but the service quality effect is general. 2. In terms of spiking, compared with the top four teams, the effectiveness of Chinese team's spiking is average, but the error rate is low.

KEY WORDS: Volleyball; China Women's Volleyball Team; Secondary attack; smash

Reference:

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Research on the Sustainable Development Factors and Advancement Path of Youth Volleyball Players' Reserve Talents in Hubei Province

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ABSTRACT:

The sustainable development of volleyball reserve talents is the embodiment of the comprehensive strength of volleyball in China, and the problems arising in the process of cultivating the sustainable development of volleyball reserve talents may cause fluctuations in the athletic performance of high-level volleyball players in Hubei Province. In this paper, through the literature method and expert interview method, while exploring the factors affecting the sustainable development of volleyball reserve talents in Hubei Province, we draw on the successful experience of the reserve talents training system of other projects, and put forward the development countermeasures for the cultivation of reserve talents of volleyball in Hubei Province, which is centered on the principle of sustainable development. The study found that in the process of volleyball in Hubei Province, there are problems such as the selection system is not scientific enough, the training method is single, and the social security is insufficient, etc. To address these problems, the corresponding countermeasures are proposed. To solve these problems, corresponding paths are proposed: constructing a perfect reserve talent cultivation system, improving the quality of training, perfecting the competition system, strengthening social security. These measures can help promote the development of youth volleyball in Hubei Province. These measures can help to promote the sustainable development of reserve talents of youth volleyball players in Hubei Province, so as to improve the overall level of volleyball in Hubei Province.

KEY WORDS Volleyball reserve talent, Sustainable development, Influencing factors

Reference:

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Study on the advantage, value and path of the integration of sports events and tourism in Yangtze River Delta region

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With the improvement of economic development and income level, and the continuous improvement of people's material living standards, people's attention has gradually changed from meeting the basic needs of life to pursuing a higher quality of life. In this context, the integration of sports events and tourism industry can not only meet the growing needs of the people for a better life, but also contribute to the further improvement of the economic level of the Yangtze River Delta region. By using the method of literature, expert interview and field research, this paper discusses the value, advantages and path of sports events and sports integrated development in the Yangtze River Delta region, aiming to provide theoretical guidance for the integrated development of sports events and tourism in this region, and provide strong support for the integrated development of China's sports industry and tourism industry. Through field research and expert interviews, it is known that the Yangtze River Delta region has profound historical and cultural deposits, superior geographical location and rich ecological resources, which provides carriers and development opportunities for the integration of physical and tourist activities. The value of development and integration is reflected in the value of industry, brand and cultural tourism. Based on this, it is suggested to improve the organization and coordination mechanism of the event and strengthen the industrial integration and linkage development. Integrate the advantages of tourism product development to enhance the tourism impact of brand events; Integrate all kinds of local cultural resources, and strive to activate the source of development. In order to promote the effective integration of sports events and tourism industry in the Yangtze River Delta region, it provides a solid foundation and strong support for the coordinated development of China's sports and tourism industry.

KEY WORDS Yangtze River Delta region, Sports event, travel

Reference:

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Research on water sports resource endowment and development strategy in the Pearl River Delta region

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With the rapid development of the economy , the people's sports consumption demand is growing day by day, and water sports have gradually become a popular choice for people. The water sports industry is a series of economic activities that provide related products and services to the public in the form of competition, leisure, entertainment, etc. as the carrier of rivers, lakes and oceans. The development of water sports in the Pearl River Delta region is in line with the development direction of regional industrial policies, which can improve the level of consumption, promote industrial integration, improve the environment along the line, and give play to regional advantages. This study analyzes the resource advantages of the development of water sports industry in the Pearl River Delta region by using the method of literature reviews and expert interviews, and puts forward the development strategy of water sports industry, aiming to provide theoretical guidance for the development of water sports industry in this region and help it develop in high quality. The results show that there are economic advantages, realistic advantages, humanistic advantages and natural advantages in carrying out aquatic projects in the Pearl River Delta region. Therefore, This paper puts forward the following development strategies: straighten out the top-level planning and design, practice multi-party coordination; Add water competition types, improve the construction of competition system; To consolidate the foundation of competitive sports and cultivate competitive sports talents, so as to promote the high-quality development of water sports in the Pearl River Delta region, and provide a solid foundation and strong support for the construction of China's water sports development system and promote the development of water sports events.

KEY WORDS Pearl River Delta region, water sports, development strategy

Reference:

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Multiple substance misuse, physical activity, and sport-participation; analysis of the association among university students in post-pandemic period

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Background: Multiple substance misuse (MSM); which includes simultaneous alcohol drinking and cigarette smoking is serious health threatening behavior. COVID-19 pandemic induced negative changes in MSM, and decrease of physical activity (PA), and sports participation (SP). **Aim:** The aim of this study was to evaluate the associations which may exist between MSM, PA and SP in University students in the first year following COVID-19 pandemic.

Methods: Participants were university-level students (n = 611; 45% females; 19-22 years of age) from Croatia and Bosnia and Herzegovina, who were tested on sociodemographic factors, SP, PA (predictors) and MSM (criterion) at the beginning of the 2021/22 academic year (first post-pandemic year). Logistic regressions for binomized criterion (MSM use vs. MSM non-use) were calculated to evaluate the associations between predictors and criterion. Differences between participating countries, and genders were also evaluated. **Results:** Results showed higher prevalence of MSM in males (OR: 1.65, 95%CI: 1.23-2.11). Logistic regression evidenced significant association between PA and MSM, with lower prevalence of MSM in those students who had higher PA (OR: 1.44, 95%CI: 1.22-1.67). However, gender stratified analyses showed that protective effects higher PA against MSM were characteristic only for females (OR: 1.55, 95%CI: 1.11- 2.01), with no significant association in males (OR: 1.23, 95%CI: 0.90-1.66). No association between sport participation and MSM were evidenced.

Conclusion: Our findings are encouraging with regard to potential protective effects of higher PA against MSM in female students. This is particularly important knowing that we studied vulnerable population (considering the stress imposed on them), and the fact that we observed them in the specific period (first year after COVID-19 pandemic). Further studies should continuously monitor eventual changes in the associations between studied variables in forthcoming years.

Keywords: physical activity

Research on the application of water sports athletes in water physical training

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With the continuous development of competitive sports events, water sports have attracted much attention, thus putting forward higher requirements for athletes' sports training. Water training, which originated from rehabilitation medicine, has a remarkable effect on the development of athletes' athletic ability after being introduced into the field of competitive sports. This paper uses the method of literature, field investigation and interview to understand the application effect of this training method in aquatic events, and analyzes the application value of this training method. The aim is to provide the basis for enriching the training methods of water sports and promote the further development of water physical training in the field of water sports. Through the scientific and comprehensive research method, it is found that after the water physical training, the overall physical quality and technical level of the water sports athletes have achieved remarkable results; For water sports athletes injured in competition or sports, water physical training is helpful to promote their rehabilitation process; Aquatic physical training has multiple physiological and physical effects on aquatic athletes. Therefore, by optimizing the cardiovascular system, improving the core stability and muscle strength, reducing the joint burden and accelerating the rehabilitation process after injury, the training method promotes the overall functional performance of athletes, provides beneficial guidance and scientific basis for coaches and athletes in the field of water sports, and provides a valuable reference for future in-depth research.

Key words: physical training in water; Water sports; Water sports field

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The application of performance evaluation in the ideological and political evaluation of physical education courses

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The purpose of this paper is to explore the application of performance evaluation in the ideological and political evaluation of physical education courses. Through the collation and analysis of relevant literature, this study summarizes the connotation and value of performance evaluation, as well as the connotation and value of ideological and political education in physical education courses. In the part of rationality analysis, we believe that performance evaluation is of great significance in the ideological and political evaluation of physical education courses. First of all, the performance evaluation can evaluate the moral education level of students, and provide an effective evaluation method for the ideological and political education of physical education courses. Secondly, the expressive evaluation emphasizes the situationality, which can help students experience the ideological and political content in physical activities and enhance their personal experience and participation in ideological and political education. In addition, the integration of expressive evaluation into teaching can promote the cultivation of students' self-directed learning Xi and self-evaluation ability. Next, this paper proposes the design steps of expressive evaluation applied to the ideological and political evaluation of physical education courses. First of all, the evaluation objectives should be clarified, and the focus and direction of the evaluation should be determined. Secondly, the evaluation tasks should be designed, and specific tasks that reflect the ideological and political content should be formulated, such as moral choices and value expressions in sports activities. Finally, the evaluation rules should be formulated, and the evaluation criteria and scoring system should be clarified to ensure the objectivity and fairness of the evaluation. In terms of implementation steps, this article proposes five steps. First, explain the objectives of the evaluation, so that students clearly know the purpose and requirements of the evaluation.

Second, publish the evaluation tasks so that students have a clear understanding of the specific tasks to be completed. Then, explain the evaluation rules, clarify the evaluation criteria and scoring system, and ensure that students understand the evaluation process. Then, the evaluation task was implemented to allow students to fully demonstrate their ideological and political literacy in sports activities. Finally, evaluation and feedback are carried out, and the evaluation results and suggestions are given to students in a timely manner to promote their further development. At the same time, this paper also points out the problems that need to be paid attention to when applying performance evaluation to the ideological and political evaluation of physical education courses. First, evaluating the design can be time-consuming and resource-intensive, and the feasibility of implementation needs to be fully considered. Secondly, the content of evaluation depends on the subjective judgment of teachers, and it is necessary to ensure the objectivity and fairness of evaluation. Finally, teachers' teaching ability also has a certain impact on the validity and accuracy of evaluation, so teachers need to have relevant evaluation ability and professional knowledge. In summary, performance evaluation has important application value in the ideological and political evaluation of physical education courses. Through reasonable design and implementation, expressive evaluation can effectively evaluate students' moral education level and ideological and political literacy, and promote their experience and practice of ideological and political content in sports activities. However, in the process of application, it is necessary to pay attention to the feasibility of the evaluation design, the objectivity of the evaluation content and the teaching ability of teachers. Future research can further explore how to optimize and improve the application of performance evaluation in the ideological and political evaluation of physical education courses.

KEY WORDS: performance evaluation; Ideology and politics in physical education courses; Teaching evaluation

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Study on the causes and countermeasures of stuck wheel phenomenon in high-level men's volleyball competition

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In competitive event group competitions, there are often significant changes in the competitive performance of both sides, resulting in significant fluctuations in their scores. This situation is referred to as the "periodic fluctuation phenomenon of competitive performance" in sports training, and in the field of volleyball, it is called the "card wheel phenomenon". This article uses expert interviews and the Delphi method to select ten well-known domestic volleyball experts to define the phenomenon of "lagging in volleyball matches"; Using video observation and technical statistical methods, this study focuses on the phenomenon of lagging in the men's group of the 2022 Chinese University Volleyball League, and obtains statistical data; Using mathematical statistics and SPSS 24.0 statistical software to conduct statistical analysis on competition data; Using the survey questionnaire method, a survey questionnaire was designed for the research subjects on the causes and treatment measures of the phenomenon of jamming during competitions. The survey questionnaire includes two sections: coach questionnaire and athlete questionnaire. Summarize and summarize the causes of the phenomenon of card wheel, the measures for handling the universality of each team, and the relationship between the occurrence of card wheel phenomenon and the victory or defeat of the game. This study has reference value for improving the ability of coaches and athletes to handle card wheel phenomenon. By solving the card wheel phenomenon, maintaining the smoothness of the game and improving the viewing effect of the game.

Key words: Carousel phenomenon; volleyball competition; competitive performance

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The Minutes of Play Before and During a 2-Minute Suspension in Semi-Professional Male and Female Handball

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Illegal actions penalized with 2-minute suspensions or a red card did not affect match outcomes in Icelandic semi-professional handball across four seasons (Laxdal & Ivarsson, 2023). The objective of the current study was to analyze the scoring of teams in numerical superiority and the penalized team for four minutes that commences two minutes before the 2-minute suspension begins. This was tested separately in female (n=10) and male (n=17) teams in a dataset including five seasons of play (2018-2022) after the 2016 rule changes. The number of suspensions was 3,122 after excluding the ones that overlapped with another suspension or started in the first or last 2 minutes of a match. The analysis was done using team performance over a season as the unit of analysis. The distribution of goals was not normally distributed for the penalized team or the team with numerical superiority for each minute within the four-minute period of interest, so non-parametric Wilcoxon procedures were used. The median goals per minute for the female teams receiving suspension (vs. opponents) were 0.267* (0.341), 0.359 (0.271), 0.187* (0.463) and 0.275* (0.464), with the team suspended scoring significantly fewer goals during all but the second minute period ($p \leq .017$). For males, median goals per minute for the teams receiving suspension (vs. opponents) were 0.304* (0.347), 0.396** (0.269), *0.222 (0.525) and *0.333 (0.465), with the team suspended scoring significantly fewer goals in the 1st, third, and 4th minute period ($p \leq .005$), but significantly more goals in the second period** ($p = .002$). Significant differences were observed using a Friedman test for both the team ($p < .001$) and their opponents ($p < .001$) in the number of goals scored during the four minutes for both males and females. The scoring pattern is similar for females and males during these minutes of interest. It was expected that scoring during a 2-minute suspension would differ in favor of the team with numerical superiority since teams receiving suspension restart the set play in defense, giving the opponents time and opportunity to score. However, results showing the team later to be penalized to score more (significant for male and $p = .051$ for female) in the minute before the suspension raises questions. One explanation is that the team is experiencing the benefits of aggressive defensive play in the minute before the team is finally penalized.

KEY WORDS exclusions, Scandinavia, team handball, time series

Reference:

Laxdal, A., & Ivarsson, A. (2023). Breaking up the play: The relationship between legal stops and winning in team handball. *International Journal of Sports Science & Coaching*, 18(1), 240–244. <https://doi.org/10.1177/17479541211070787>

Research on the status quo and sustainable development path of ice and snow sports in the Tsinghua University Primary School

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Abstract:Objective: After the Winter Olympics, the development of ice and snow in Chinese campus has entered an important period. In order to have a clearer understanding of the current situation and the main problems of snow and ice on campus in China, it can provide reference for further guidance of the sustainable development of snow and ice on campus.

Methods: In this study, literature analysis, questionnaire survey, field investigation and logical analysis were used to investigate and analyze the current situation and problems of the first batch of ice and snow characteristic schools in Haidian District of Beijing by taking the Tsinghua University Primary School as the investigation object, and the solutions were proposed.

Results: According to the situation of the school and students, the Tsinghua University Primary School put forward the slogan of "13th Five-Year Plan" and "three ones of Sports every day"; Ice and snow activities and courses such as basic skating and skiing, ice hockey, speed skating, ice and snow knowledge competitions are set up. The course content is mainly technical movements, and the teaching materials are mainly selected by teachers. 80% of the students learned about ice and snow sports because of the ice and snow courses, and 58% of the students participated in ice and snow sports because of their interest, and the participation time was not more than 60 minutes; Most of the ice and snow teachers are young men with a certain level of sports, and their teaching years are short. 50% of students involved in extra-curricular snow and ice activities are not able to properly wear protective gear.

Conclusion: The affiliated primary school of Tsinghua University has formulated long-term development plans according to the different characteristics of the school and students, and set up the implementation system of "one group, one session, one center". However, there is no perfect concrete implementation measures, and inconsistency often occurs in the implementation process. Students mainly understand and participate in ice and snow sports through the school's publicity and ice and snow courses. However, due to the constraints of teachers and venues, there are still few types of ice and snow courses on campus. The whole teachers are younger, and the difference of teaching ability and level among teachers is high. Students don't pay enough attention to safety.

Suggestion: According to the students' curriculum feedback and project characteristics, the school should formulate the curriculum outline according to the students' development each semester; Adopt school-enterprise cooperation to set up various types of ice and snow courses; Pay attention to the professional skills of teachers and conduct teaching training from time to time; Strengthen safety education, adopt the way of home-school cooperation, improve the safety awareness of parents and students.

Key words: ice and snow sports; Snow and ice policy; School physical education; Snow and ice on campus

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Research on the status quo and optimization strategy of beach volleyball reserve talent cultivation under the background of sports education integration

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In order to deepen the training status of beach volleyball reserve talents and its influencing factors under the background of disintegrating teaching and integration, this study adopts the method of literature, questionnaire, expert interview and field investigation to conduct a comprehensive research on the training status of beach volleyball reserve talents for the first National Student (youth) Games. From the athletes, coaches and external environment three aspects of the discussion, the purpose is to find out the problems and put forward the corresponding improvement measures, to provide reference and inspiration for the development of beach volleyball competitive talents. It is found that in the process of the selection and training of beach volleyball reserve talents under the background of the integration of sports and education, the level of athletes is facing systemic challenges, the comprehensive quality and treatment of coaches need to be improved, and the external environment of beach volleyball needs to be further constructed. Therefore, the way out of the future beach volleyball reserve talent training should focus on the reasonable arrangement of young beach volleyball players' learning and training time, the implementation of the future development policy of beach volleyball players, the strengthening of coach team building and the establishment of a reasonable reward mechanism, and the enhancement of the importance of beach volleyball project and financial support.

Key words: integration of physical education, Beach volleyball, Reserve talents

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Digital technology empowering sports health industry: Connotation, Value and application

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Objective: The Outline of "Healthy China 2030" Plan proposes to comprehensively promote the transformation and upgrading of the health industry to meet the growing health needs of the people. At present, digital technology, as the core driving force of social progress, deeply penetrates and reconstructs various industries, and the sports health industry is also undergoing the transformation and upgrading from traditional to intelligent. Based on the analysis of the connotation and value of digital technology enabling the sports health industry, this paper discusses the innovative application of digital technology in the sports health industry and the countermeasures and suggestions for integrated development, in order to provide ideas for realizing the vision goal of "Healthy China 2030".

Methods: Literature and logic analysis were used in this study.

Results: Empowering the sports health industry with digital technology means using cloud computing, big data, artificial intelligence, virtual reality, Internet of Things and other digital technologies to transform and optimize the content and form of service mode, management process, monitoring and evaluation of the sports health industry, which has the characteristics of individuation, intelligence, interactivity and innovation. The value is as follows: First, digital technology is put into the production process, effectively promoting the optimization of the internal structure of the sports health industry. With the help of digital means to optimize the internal structure of the industry, open up the information barriers between upstream and downstream industries and consumers, and effectively improve the supply of industrial services. Second, digital technology promotes the upgrading of industrial chains and reshapes supply chains. With the support of the Internet platform, the supply chain can be effectively simplified, industrial channels can be expanded, services can be improved, and a variety of new business forms and models can be promoted. Third, digital technology promotes industrial reform and expands the new business model of sports and health industry. With the support of digital technology, various social media platforms have broken the restrictions of time and space, enriched the diversified forms of sports and health business, and expanded the scope of audience.

The applications are as follows: (1) digital technology provides virtual and remote services, breaking through geographical and time restrictions, and users can obtain online guidance and remote monitoring through the Internet. (2) The use of virtual reality and augmented reality technology to simulate scenarios and improve the effect of sports rehabilitation through immersive virtual experience. (3) Collect and analyze sports health data, establish an intelligent decision-making system, provide individuals with precise sports prescription, sports risk prediction, health management programs, and guide scientific training. (4) Build virtual sports scene based on digital technology, combine virtual social, gamification and other elements, expand the consumption space of sports health industry.

Conclusion: Driven by digital technology and supported by modern information network, the digital, networked and intelligent level of sports health industry has been improved, the vitality of sports health market players has been stimulated, and the innovative development of new economy and new business forms has been promoted. To realize the comprehensive development of the digital sports health industry, we still need to pay attention to several key points: improve the top-level design of the digital sports health industry, and create a high-quality external environment for development; Establish and improve the supervision and management mechanism, optimize the internal market atmosphere of the digital sports health industry; Consolidate the construction of digital infrastructure, and improve the digital sports health sharing platform.

Key words: digital technology; Sports health industry; Connotation; Value; application

Research on the Contradictions and Countermeasures of Youth Beach Volleyball Players ' Learning and Training Competition under the Background of Sports and Education Integration

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In order to deepen the current situation of learning and training competitions for young beach volleyball players under the background of disintegration and education integration, we should focus on deepening the reform of sports schools and strengthening the cultural education of young athletes, so as to solve the contradiction between learning and training competitions in the cultivation of reserve talents for competitive sports. This paper adopts the methods of field investigation, expert interview and questionnaire survey to investigate and analyze the current situation of learning, training and competition of beach volleyball players in the first National Student (Youth) Games, aiming to find out the problems and put forward corresponding improvement measures. The results of the study show that : (1) the learning time of young beach volleyball players is not sufficient, the learning foundation is poor, and the interest is lacking. (2) The training time is long, the intensity is big, the training condition waits for improving. (3) The frequency of competition is high and intensive, the schedule of competition is unreasonable, and the recovery of athletes is insufficient, which can easily lead to sports injury. Therefore, in the process of cultivating reserve talents for young beach volleyball players, it is suggested to rationally allocate daily learning and training time, formulate targeted teaching plans, improve the scientific level of training, strengthen the implementation of policies, improve the competition system, and strengthen the ideological education of athletes.

Key words: Integration of sports and education; youth, beach volleyball; learning and training competition

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Research on the Reform and Innovation of an Integrated Teaching Model: Infusing the Spirit of Chinese Women's Volleyball into Physical Education and Health Curriculum

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As the spirit of Chinese women's volleyball becomes a crucial representation of sportsmanship, this study aims to explore the possibility of incorporating this spirit into secondary school physical education and health courses. The primary objective is to promote the in-depth development of ideological and political education in the new era. The research background includes an examination of contemporary educational policies and standards for physical education and health, emphasizing the critical role of sportsmanship in core subject competency. Supported by policies promoting the integration of ideological and political education across all levels of education, this research takes the spirit of Chinese women's volleyball as a core element in the fusion of physical education and ideological education, particularly within secondary school curricula. The study focuses on the physical education and health curriculum of 101 Middle School, aiming to design an integrated teaching model infusing the spirit of Chinese women's volleyball into the curriculum. The research also involves evaluating the effectiveness of student practice in embodying sportsmanship through the developed assessment system. Conceptual clarification and a review of the current status of physical education courses, the spirit of Chinese women's volleyball, and the integration of ideological and political education frame the research. The study employs literature reviews, expert interviews, and surveys, complemented by action research for practical reflection and improved cooperation and innovation among teachers. By conducting the research, the following conclusions are drawn: 1. Substantial Significance of Infusing the Spirit of Chinese Women's Volleyball: Integrating the spirit of Chinese women's volleyball into secondary school physical education and health courses effectively cultivates sportsmanship qualities such as unity and tenacity, contributing to the fundamental task of fostering moral character in students. 2. Feasibility of Integrating Physical Education and Ideological Education: The practical phase of the study indicates that, with policy support from the Ministry of Education for the integration of ideological and political education in schools, infusing the spirit of Chinese women's volleyball into physical education courses is feasible and likely to enhance the moral education effects of the discipline. 3. Crucial Role of Teacher Cooperation and Innovative Teaching Models: The designed stages of collaborative teaching, cooperative coordination, and independent teaching provide effective methods for curriculum integration. The cooperation and innovation of teachers are essential for the successful infusion of ideological elements into the curriculum. And provide recommendations:

1.Promote Best Practices in Integrating Physical Education and Ideological Education: Disseminate successful teaching models and experiences from this research to more schools, facilitating the widespread development of integrated physical education and ideological education in primary and secondary schools.2.Enhance Teacher Training and Support: Organize training sessions and workshops to increase teachers' understanding of infusing ideological elements into physical education courses, enhancing their teaching capabilities, and encouraging more teachers to participate in the integrated development of physical and ideological education.3.Continuously Improve and Optimize Teaching Designs: Collect feedback from students and teachers during implementation to continually improve and optimize teaching designs, ensuring the effectiveness and sustainability of the teaching model.4.Strengthen the Development of Evaluation Systems: Further refine the evaluation system for assessing the cultivation of sportsmanship qualities in students. Comprehensive assessments should be conducted to evaluate students' performance in ideological elements, providing a basis for future teaching improvements.

KEY WORDS:Physical Education class, Spirit of Chinese Women's Volleyball, Teaching Mode.

Investigation and analysis of the current situation of volleyball in Nanhai No. 1 Middle School

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This paper selects the current situation of volleyball in Nanhai No. 1 Middle School as the research object, and uses the literature method, questionnaire survey method and logical analysis method. The main contents of the survey include: the basic situation of physical education teachers in Nanhai No. 1 Middle School, the opening and evaluation of volleyball courses in Nanhai No. 1 Middle School, the volleyball court equipment of Nanhai No. 1 Middle School, the construction of the volleyball team of Nanhai No. 1 Middle School, and the extracurricular activities of students. Through the research, it is found that the proportion of physical education teachers with volleyball as the special topic is very small, the teaching content involves imperfect technology, too short class time, good field conditions but the utilization rate is too low, the number is too small, the leadership does not pay attention, and the volleyball team construction is not perfect. It is recommended to increase the professional volleyball training and assessment of physical education teachers, increase the class time of volleyball and improve the content of volleyball teaching, fully tap the school's venue and teaching resources, and improve the utilization rate of the venue.

KEY WORDS: Volleyball, Development status, Nanhai No. 1 Middle School

Do Legal Stops Impact Defensive Efficiency in Handball? Mixed Models Regression Analysis

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In a recent study on semi-professional handball, male winning teams fouled the opponent significantly more often than losing teams, but it was not the same for females (Laxdal & Ivarsson, .(2023). One limitation is the outcome-based approach addressed by this research's methods. By analyzing the process minute by minute, a more direct relationship between stopping the play legally and defending successfully can be observed. The objective was to analyze how legal stops affect the team's defensive efficiency in the process of play without regard to the final outcome. The dependent variable was goals scored by the opponent, and the independent variable was legal stops committed by the team. The events of 1016 male and female Icelandic handball matches from five seasons of play were used in the analysis. The data was registered into HBStatz match statistics software by a trained technician live during the matches and scanned for quality purposes post-match. Legal stops and opposition scoring (goals conceded) were analyzed and reported for home and away teams. The events were analyzed in six 10-minute time slots from minute 0-60, with the halftime interval at minute 30. Five matches were removed due to 10-minute slots without goals or legal stops. Mixed model regression analyses were performed (home and away teams separately), including match as a random effect to model the number of goals conceded each legal stop could prevent. The home team's number of legal stops was a significant ($p < .001$) predictor of goals conceded (4.449 - 0.148 legal fouls, 95% CI -0.169 to -0.126). Similarly, the away team's number of legal stops was also a significant predictor of ($p < .001$) goals conceded (4.786 - 0.124 legal fouls, 95% CI -0.147 to -0.101). Therefore, each additional legal stop performed per 10-minute period reduces the number of goals conceded by 0.148 for the home team and by 0.124 for the away team. The results show the direct and weighted relationship between performing legal stops to prevent conceding goals. This should be looked into in more detail with specific regard to sex and if the number of legal stops performed is subject to diminishing returns beyond optimal values.

KEYWORDS: foul, offense, team handball, time-series

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Comparative analysis of serving effect between Chinese men's volleyball team and match opponents in 2022 Men's Volleyball World Championships

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In today's world volleyball game, serving is an important personal technology, the good or bad serving technology is related to the team's victory or defeat, serving from the pure means of scoring to become a technical form of scoring and losing points. High-quality serve can not only score points directly, but also effectively destroy the opponent's attack, reduce the success rate of the opponent's receiving serve and disrupt the opponent's organization of the strategic plan of the attack, and lay a solid foundation for the team's anti-reverse. Both sides of the game are constantly improving the aggressiveness of the serve, but also constantly improve the stability of each player's serve, so as to reduce the error rate of the serve. Therefore, the world's strongest teams are constantly researching the serve, improving the serve technology, and striving for the first serve to lay the foundation for the better play of technology and tactics. This paper mainly adopts the technical statistical method to conduct a comparative study on the effect of serving between the Chinese men's volleyball team and three world high-level men's volleyball teams in the 2022 World Championships. The study shows that: 1. Chinese men's volleyball team is in a disadvantageous position compared with the overall serving effect of the game opponent, which directly affects the victory or defeat of the game, and is the key link that causes Chinese men's volleyball team to lose three times in three battles, which is very unfavorable for the development of Chinese men's volleyball team. 2. Chinese men's volleyball team is in a disadvantageous position compared with the effect of the different serving styles of the game opponent, the performance of the vigorously jumping serve and the jumping float ball serve are lower, and the stability is poorer, and it doesn't cause threat to the opponent's first attack system. 3. Compared with the effect of serving in different positions of Chinese men's volleyball team, there is a gap between each position and the opponent, especially there is a big gap between the effect of serving in the position of the second passer and the second passer of the setter. For the Chinese men's volleyball team to better improve the effect of serving, targeted training to provide data reference.

KEY WORDS: 2022 Men's Volleyball World Championship; Chinese Men's Volleyball; Serve; Effectiveness

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Water Competencies for drowning prevention and its implementation in physical education classes for an elementary school

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Water competencies, also known as water skills or aquatic skills, refer to the ability to swim and navigate in water safely. These competencies are essential in physical education for several reasons:

Safety: Water activities, such as swimming and water sports, are common components of physical education programs. Proficiency in water competencies ensures that individuals can engage in these activities safely, reducing the risk of accidents and drowning.

Health and Fitness: Water-based exercises provide a unique and effective way to enhance overall physical fitness. Swimming, for example, is an excellent full-body workout that improves cardiovascular endurance, muscle strength, and flexibility. Water competencies enable individuals to participate in aquatic exercises and enjoy the associated health benefits.

Lifesaving Skills: Knowing how to swim and having other water competencies can be crucial for personal safety and the safety of others. In emergency situations, individuals with strong water competencies are more likely to respond effectively, potentially preventing accidents or rescuing others.

Recreation and Leisure: Water-based activities, such as swimming, snorkeling, and kayaking, are popular recreational pursuits. Proficiency in water competencies allows individuals to enjoy a wide range of aquatic leisure activities, contributing to a well-rounded and active lifestyle.

Life-Long Skill: Learning water competencies is a life-long skill that can be valuable in various situations throughout one's life. Whether for personal enjoyment, fitness, or safety reasons, the ability to navigate water confidently is an asset that can be maintained and utilized over the years. In this study, we outline the 15 items that make up water competencies. In particular, with regard to water competencies, it is necessary to consider not only whether or not a specific problem can be cleared, but also the circumstances in which the problem occurs. While this is different from general sports competitions, which exclude external influences as much as possible, it requires special attention because accurately defining water competencies can save lives. We report on the content of swimming lessons in elementary school physical education classes to acquire these water competencies.

KEY WORDS water competence, elementary school, physical education,

Reference:

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Design and analysis of the teaching plan of the University Volleyball General Course incorporating the spirit of the women's volleyball team

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Abstract: Comprehensively promoting the ideological and political construction of university courses is a strategic measure to thoroughly Carry Out General Secretary Xi Jinping's important exposition on education and the spirit of the National Education Conference, and to carry out the basic task of establishing morality and fostering people. By using the methods of literature, expert interview and Behavior Research, this paper systematically studies the design and analysis of the teaching plan of the volleyball general course integrated with the spirit of women's volleyball in colleges and universities, its conclusion: to carry out the basic task of making a moral person in the volleyball general course, teachers need to store a large number of related stories about the spiritual connotation of women's volleyball in their brains, and it is difficult to design teaching plans according to the course contents, in the classroom with heuristic education to solve the problem, with a simple and innovative teaching mode to make the curriculum salt into water, moisten things quietly teaching effect.

Key words: University Volleyball Course, the spirit of the women's volleyball team, Design and analysis of the teaching plan

Quantitative study on free serve receiving effect between Chinese Women's volleyball team and top four teams in Tokyo Olympic Games

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With the improvement of volleyball rules and the appearance of free men, the volleyball competition has changed from focusing on attack to balance of attack and defense, and the role of free men has become more and more prominent. This study takes the effect of free serve receiving between the Chinese Women's volleyball team and the top four teams in Tokyo Olympic Games as the research object, and compares and analyzes the effect of free serve receiving between the Chinese women's volleyball team and the top four teams by means of literature, video statistics, mathematical statistics and comparative analysis. The study draws the following conclusions: 1. the free players of Chinese Women's volleyball team have certain advantages in age, but they are lacking in competition experience compared with the top four teams. 2. There is no obvious difference between the free players of Chinese women's volleyball team and the top four teams in the way of receiving service, mainly using the way of front hands cushion. 3. In terms of service receiving effect, the Chinese Women's volleyball team has no advantage compared with the top four teams, both in the total number of service receiving and the rate of service receiving are significantly lower than other teams.

KEY WORDS: China Women's Volleyball Team; Free defender; Service receiving effect

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Research on the Organization of Beach Volleyball Events in the First Student Youth Games

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Teenagers are the future of the country and the hope of the nation, and promoting their health is an important part of building a strong sports country and a healthy China. In November 2023, the first National Student Youth Games was held in Guangxi. The successful holding of the first Student Youth Games is not only a symbol of deepening the integration of sports and education, but also a platform to showcase the achievements of the development of sports and education integration. This article adopts the methods of literature review, questionnaire survey, field investigation, and interview to conduct in-depth interviews and research on the management personnel, leaders, coaches, and athletes of the first National Student Youth Games beach volleyball competition. The aim is to comprehensively evaluate the organizational effect and competitive level of the first National Student Youth Games beach volleyball competition, and to conduct in-depth analysis of the main influencing factors that restrict the development of beach volleyball reserve talents in China. We hope to propose effective strategies and suggestions to improve the level of beach volleyball competitions and promote the development of reserve talents in beach volleyball in China. The research results show that the age of male and female players is relatively young, and their height is conducive to the development of rear row defensive players. There are relatively few offensive players in the front row, and most athletes are national beach volleyball masters. The purpose of integrating sports and education in this competition is gradually clear, a good beach volleyball competition atmosphere has been established, competition planning is reasonable, and cooperation and communication in sports competitions between mainland China and Hong Kong and Macao regions are strengthened. However, there is an imbalance of participating players. The promotion of the competition is relatively low.

Keyword : Student Youth Games; Beach volleyball; Event organization

Muscle Thickness of Lateral Abdominal Muscles in Sitting and Standing Positions During Abdominal Drawing-In Maneuver and Abdominal Bracing Among Chronic Low Back Pain Individuals

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Strengthening the lateral abdominal muscles (LAM) such as transverse abdominis (TrA), internal abdominal oblique (IO), and external abdominal oblique (EO) enhances spinal stability and helps to alleviate low back pain (LBP). The abdominal drawing-in maneuver (ADIM) and abdominal bracing (AB) are movements used to exercise LAM as part of core stability exercises. However, knowledge of which functional position (sitting versus standing) effectively engages contraction of the LAM is limited. The study aims to determine the effects of the functional positions (sitting and standing) and types of exercises (ADIM, AB) on LAM thickness among chronic LBP individuals using real-time ultrasound imaging. Twenty-four adults (12 males, 12 females) with non-specific chronic LBP were assessed in sitting and standing positions while performing ADIM and AB exercises. Real-time ultrasound imaging was used to measure the thickness of the TrA, IO, and EO during the ADIM and AB. Wilcoxon signed-rank test was performed to compare the muscle thickness of TrA, IO, and EO at rest and during the ADIM and AB. The muscle thickness of TrA and IO was significantly greater during ADIM when compared to AB ($p < 0.05$). The thickness of TrA and IO showed an increase during ADIM compared to rest, with TrA also exhibiting a greater thickness during ADIM than AB in both positions ($p < 0.05$). Additionally, IO thickness increased during AB compared to rest in both positions while EO thickness had a significant increase during ADIM compared to rest and AB in the standing position ($p < 0.05$). ADIM activates the TrA muscle in LBP individuals than AB. However, the findings of this study may be considered when devising exercise regimes for subjects with LBP.

KEYWORDS: lateral abdominal muscles, abdominal drawing-in maneuver, abdominal bracing, real-time ultrasound imaging

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Investigating the positive effects of regular exercise on strengthening willpower and personal development

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The American Psychological Association defines willpower as: the ability to resist short-term temptations in order to achieve long-term goals. Willpower plays a very important role in the quality of human life. Research shows that people use willpower for self-regulation and self-control. (Muraven, Baumeister & Tice, 1999) Also, academic research shows that willpower can be strengthened through training. In connection with the level of will, athletes and soldiers of special forces have an average of 5 points more than the average of the society. It means that they have a stronger and higher will than others. (1) In ancient Iran, sports were used to strengthen the will, and Iranian people thought of sports as a tool for progress, fighting laziness, and a measure of individual credit. (4) Sports programs in prisons can help inmates feel empowered and more confident. This feeling may make prisoners less inclined to commit crimes and become positive and useful members of society in the future. (2) Also, the studies conducted on students emphasize the positive and effective impact of exercise on people's performance and will. (3) Our survey research shows that regular and preferably daily performance of a beneficial activity plays an important role in strengthening people's will. In particular, people who exercised regularly even briefly during the week or daily, based on their own statements, had higher self-control and willpower than people who exercised irregularly or did not exercise at all. People who had regular daily exercise had higher self-control and self-restraint skills against the obstacles, problems, challenges and tensions of life, unlike people who had removed exercise from their life plan due to weakness of will, stress, anxiety and mental disorder. Research results show that regular daily exercise, even short, has a positive effect on strengthening willpower in people.

KEYWORDS: Social Science, Sport, Willpower

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The Impact of the Pickleball Training on Maximum Oxygen Consumption (VO₂max) Among Young Adults

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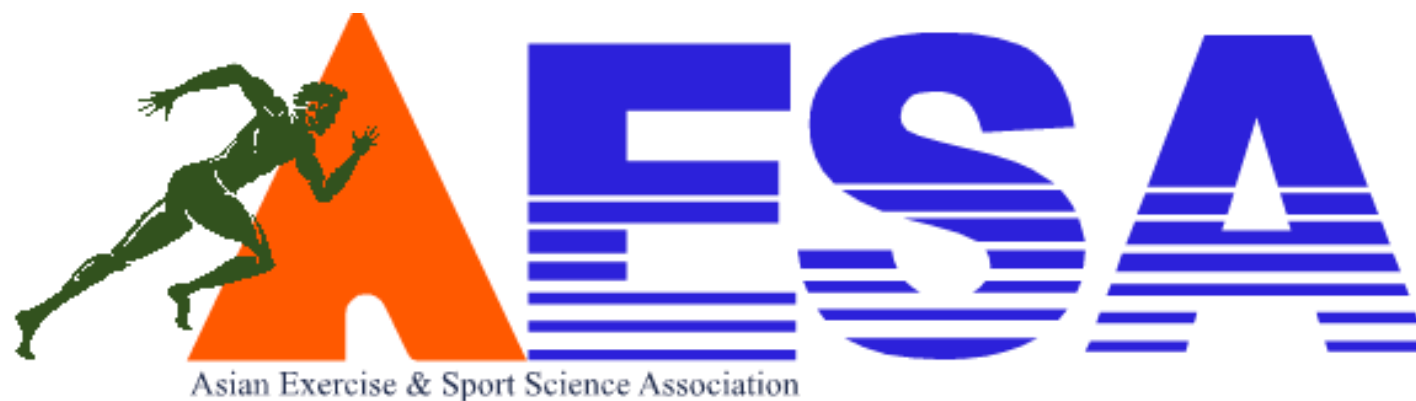
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Pickleball is a fast-growing sport worldwide. Thousands of people are drawn to this beautiful sport daily, and for this reason, it is necessary to conduct necessary research on the impact of this sport on physiological factors. The aim of this research is to investigate maximum oxygen consumption after a period of pickleball training. 10 amateur pickleball players, aged 20 to 30, with a body mass index of 25 to 30 and moderate activity levels participated in this study. The maximum oxygen consumption of these players during two stages, before and after a training period, was measured. The Metalyzer device was used with a treadmill based on the Bruce protocol to measure maximum oxygen uptake. The training program consisted of three sessions per week for three months, with each session lasting 60 minutes, including warm-up, playing, and cooldown. Maximum oxygen consumption before and after this research period was evaluated. One-way ANOVA was applied for statistical analysis. The results of this research showed that the average oxygen consumption (VO₂max) increased from 37.5 ml/kg/min to 40.3 ml/kg/min. The results of this research demonstrate the positive effect of a period of pickleball training on maximum oxygen consumption. This research proves that Pickleball can also have a positive effect on the cardiovascular health aspect of players. Further investigation is needed to evaluate other relevant factors.

KEYWORDS: Pickleball, VO₂max, Oxygen, Endurance, Fitness

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