前 言

本刊一年四期收录 Web of Science 核心合集数据库等有关冰雪运动、奥林匹克教育、体育教育、体育人工智能、体医融合、文化与新闻传播的最新研究。

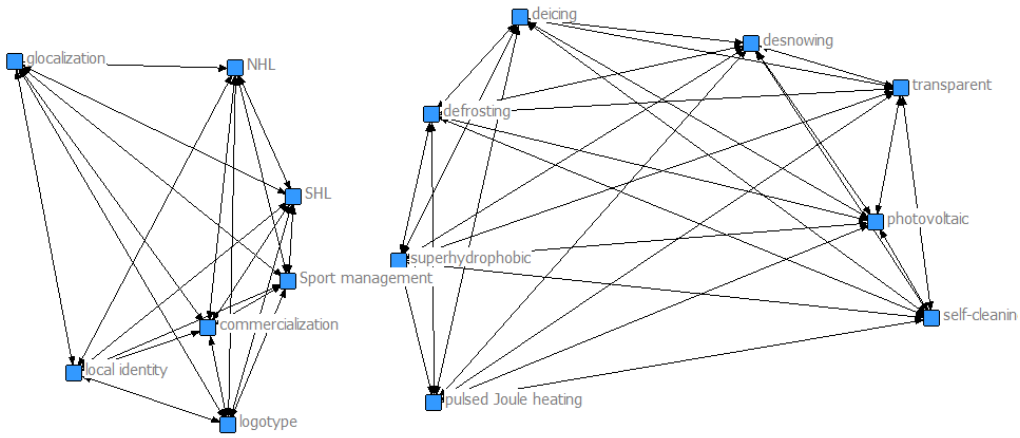
Web of Science 核心合集包括 Science Citation Index Expanded (SCIE)、社会科学引文索引 (SSCI)、艺术和人文引文索引 (AHCI)、Emerging Sources Citation Index (ESCI)、Conference Proceedings Citation Index (CPCI)、Book Citation Index (BKCI)等，是科学及学术研究的全球原创引证索引。其涵盖超过 250 个自然科学、社会科学、艺术和人文学科。

本刊旨在利用 Web of Science 核心合集平台为广大师生提供有关目前热点的最新研究内容。本期选录冰雪运动方面的文献 11 篇，奥林匹克教育方面的文献 7 篇，体育教育方面的文献 12 篇，体育人工智能方面的文献 10 篇，体医融合方面的文献 12 篇，文化与新闻传播方面的文献 9 篇。

目 录

冰雪运动

本期冰雪运动学术研究共检索到英文相关文献 74 篇，研究热点主要集中在雪场设置、人工造雪技术、各冰雪运动训练技术等方面。就检索导出的数据采用书目共现分析系统（Bicomb V2021）对文献信息进行提取，包括期刊、关键词、标题、发文年份等，相同含义的字段去重且批量合并，同时去除没有实质意义的字段，对所提取的字段进行频次统计，形成高频矩阵，并使用社会网络分析软件 Ucinet 绘制成知识图谱，进行共词聚类分析。检索结果如下：1）关键词共词分析。提取关键词 185 个，经过数据清洗后关键词有 176 个，词频为 2 及以上的关键词有 7 个，累计百分比为 8.65%，高频关键词有冰球、创伤预防、滑雪小镇、高山滑雪、气候变化、速度滑冰等，生成可视化知识图谱（见下图）。2）来源期刊分析。涉及期刊 45 种，其中载文 2 篇及以上的期刊有 5 种，累计百分比为 20%，刊载冰雪运动前三位的期刊分别为：European journal of sport science（JCR 学科分区 Q2），Physician and sportsmedicine（JCR 学科分区 Q2、Q3），Journal of climate（JCR 学科分区 Q1）。3）交叉学科分析。引用文献总计 2050 篇，最多的频次为 2 次，频次排名前三的文献分别为 *The Impact of Different Competitive Environments on Pacing and Performance*、*Objectifying Tactics: Athlete and Race Variability in Elite Short-Track Speed Skating*、*Incidence, Nature, and Causes of Ice Hockey Injuries - A 3-Year Prospective-Study of a Swedish Elite Ice Hockey Team*。



Wang, Wenxin; Zhao, Changming; Zhang, Haiyang. Composite Ski-Resort Registration Method Based on Laser Point Cloud Information[J]. MACHINES, MAY 2022.

ABSTRACT

The environment of ski resorts is usually complex and changeable, and there are few characteristic objects in the background, which creates many difficulties for the registration of ski-resort point cloud datasets. However, in the traditional iterative closest point (ICP) algorithm, two points need to have good initial positions, otherwise it is easy to get caught up in local optimizations in registration. Aiming at this problem, according to the topographic features of ski resorts, this paper put forward a ski-resort coarse registration method based on extraction, and matching between feature points is proposed to adjust the initial position of two point clouds. Firstly, the feature points of the common part of the point cloud datasets are extracted based on the SIFT algorithm; secondly, the Euclidean distance between the feature normal vectors is used as the pairing condition to complete the pairing between the feature points in the point cloud datasets; then, the feature point pair is purified by using the included angle of the normal vector; finally, in the process of coarse registration, the rotation matrix and translation vector between point clouds are solved by the unit quaternion method. Experiments demonstrate that the proposed coarse registration method based on the normal vector of feature points is helpful to the smooth completion of the subsequent fine registration process, avoids the phenomenon of falling into local optimization, and effectively completes the ski-resort point cloud registration.

Auganaes, Sondre Bergtun; Buene, Audun Formo; Klein-Paste, Alex. Laboratory testing of cross-country skis-Investigating tribometer precision on laboratory-grown dendritic snow[J]. TRIBOLOGY INTERNATIONAL, APR

2022.

ABSTRACT

Small differences in ski-snow friction results in large time gaps, and glide testing is therefore an important part of racing. To test ski-snow friction without the influence of changing weather, snow conditions and skier position is therefore valuable. In this study, a full-scale ski-snow tribometer was developed and we investigated the degree of precision obtainable for different snow types, speeds, between separate ski tracks and snow surface preparations. The precision within new snow test tracks was 1.45%, and changing between parallel tracks added another 1.03% to the precision. Measurements across several dendritic snow testbeds were associated with a further 2.39% contribution to the precision. On aged snow, better precision was obtained within and between tracks on the same snow surface.

Litchfield, Carly; Connelly, Denise M.; Hay, Melissa E.; Kinsella, Elizabeth Anne. Being an Older Adult Skier: The Phenomenology of Masters Alpine Ski Racers[J]. JOURNAL OF AGING AND PHYSICAL ACTIVITY, APR 2022.

ABSTRACT

This research examined the lived experience of older adult Alpine skiers in their continued participation in competitive ski racing. The aim was to gain an understanding of the meaning of the experiences for older adults as they continued to compete in Alpine ski racing. Masters skiers between the ages of 69 and 82 years participated in individual interviews. Data collection and analysis were iterative processes informed by phenomenological methods and visual mind mapping. The overarching theme identified in participants' accounts was the significance of the identity of "Being" a Ski Racer. Supporting subthemes were Enjoying the Feeling of Ski Racing, Adapting in the Sport, and Skiing as a Lifestyle. These insights offer the opportunity to encourage and support

the holistic experiences of older adults who maintain their athletic identity as they age. This research highlights how inclusion of older adults' stories may foster critical reflexivity and challenge assumptions about aging.

Moscovici, Daniel. Ski Resort Closures and Opportunities for Sustainability in North America[J]. LAND, APR 2022.

ABSTRACT

More than half of the ski resorts in North America have closed since the early building booms-many facing a warming climate and pressures to find water to make artificial snow. Researching and documenting all resorts between 1969-2019, we find that 59% of all resorts in North America have closed since the resort boom of the 1960s and 70s (65% in the United States, 31% in Canada). This shift has left some states or provinces with only one or no resorts remaining. To proactively persevere with a variable climate, less water, and a need for more energy to make snow, we suggest mountains holistically plan for sustainability. Recommendations include third party environmental certification, commitment to sustainability at the management level, communication to customers about sustainability practices and implementing unique models for remaining open and competitive. These practices include resort consolidation, multi-mountain passes, and/or unique ownership models. We believe that ski resorts must focus on positive environmental practices, sustainability planning, and climate change adaptation if they want to remain viable and competitive in the coming decades.

Javet, Marie; Frohlich, Stefan; Bruhin, Bjorn; Frey, Walter O.; Romann, Michael; Sporri, Jorg. Swiss-Ski Power Test Results in Youth Competitive Alpine Skiers Are Associated With Biological Maturation and Skiing Performance[J]. INTERNATIONAL JOURNAL OF SPORTS PHYSIOLOGY AND

PERFORMANCE, JUN 2022.

ABSTRACT

Purpose: To explore reasonable application purposes and potential confounders of the Swiss-Ski Power Test (SSPT) that is, since 2004, annually performed by all youth competitive alpine skiers of the under-16-years age category in Switzerland. Methods: Preseason SSPT results (8 individual tests on anaerobic and aerobic capacity, muscle strength, and speed and coordination) of 144 skiers (57 female and 87 male) age 14.5 (0.7) years were analyzed along with anthropometry and biological age. Skiing performance was quantified as the actual performance points according to the Swiss national ranking. After the SSPT tests, skiers were prospectively monitored over 12 months using the Oslo Trauma Research Center questionnaire. Data were analyzed using multivariate analysis of variance, Pearson correlations, and multiple linear/binary logistic regression models. Results: Biological maturation and SSPT results differed between sexes and age ($P < .05$). For males, SSPT results in the subdisciplines Swiss Cross, 1-leg 5-hop, and standing long jump were correlated to maturity offset, while for females only the obstacle run was related. High box jump and Swiss Cross scores were associated with skiing performance ($P < .05$). However, none of the SSPT subdisciplines was related to traumatic and overuse injuries ($P < .05$). Conclusions: The SSPT is a broadly implementable and cost-effective field test providing a general fitness profile of youth skiers. Around the growth spurt, differences in biological maturation should be considered. While SSPT results showed association with skiing performance, the test in its current form is limited for identifying injury-relevant physical deficiencies. Consequently, more specific tests may be required.

Zhang, Lin; Li, Xiong; Wang, Xin; Chen, Long; Zhao, Tianyu. Performance and Biomechanics in the Flight Period of Ski Jumping: Influence of Ski Attitude[J]. BIOLOGY-BASEL, MAY 2022.

ABSTRACT

Simple Summary The adjustment of ski attitude during the flight period of ski jumping aims to improve the aerodynamic performance and thus enlarges the flying distance. Previous studies have measured the aerodynamic forces of an isolated ski through wind tunnel experiments; however, less information on the aerodynamic moment and underlying flow structures was provided. The biomechanic relation between the aerodynamics of the ski and the athlete's ankle was also unknown. Using Computational Fluid Dynamics (CFD) methods, this research investigated the aerodynamic characteristics and related flow structures of a full-scale ski jumping ski in 125 attitudes. A convenient database for the aerodynamic forces and moments of the ski was established and the association between the aerodynamics of the ski and the control of the athlete's ankle is discussed. The performance of ski jumping is underpinned by multi-disciplinary principles, in which the aerodynamics of the ski dominates the flying distance and affects the biomechanics of the athletes' ankle during the flight period. Conventional research on this topic was supported by wind tunnel experiments. Here, the aerodynamics of a full-scale ski jumping ski was calculated via Computational Fluid Dynamics (CFD) methods and good agreement with experimental data was achieved. The impacts of the angle of attack, yaw angle, and roll angle on the aerodynamic performance are explained. The inclusion of yaw angle can enhance the lift generation, which originates from the formation of a tilted multi-vortex system and the induced low-pressure footprints on the upper surface of the ski. Our results thus establish a database for the aerodynamic forces and moments of the ski and the associations between our findings and the skills in ankle control are discussed.

Castaneda-Babarro, Arkaitz; Etayo-Urtasun, Paula; Leon-Guereno, Patxi. Effects of Strength Training on Cross-Country Skiing Performance: A Systematic Review[J]. INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH, JUN 2022.

ABSTRACT

Traditionally, cross-country skiing has been known for having a strong endurance component; however, strength demands have significantly increased in recent years. Given this importance, several studies have assessed the effects of strength training in cross-country skiing. Therefore, the aim of this systematic review was to analyze the results of those studies. A detailed search of four databases (Pubmed, Scopus, Web of Science and Cochrane Library) was conducted until February 2022, according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement. Ten eligible studies were selected from the 212 records identified, all of them including young well-trained skiers and interventions of 6-12 weeks. Results showed that maximal strength training may improve some important variables: for instance, performance, double-poling economy and maximal strength. However, this type of training failed to change other indicators such as peak oxygen consumption. Concurrent training, which combines endurance and maximal strength training, seems to be effective to improve performance. The mechanisms responsible for the improved economy of double poling might be due to a lower percentage of maximal strength during double poling at a given workload, which could increase performance. Future studies should include longer interventions which analyze a more varied sample.

Stuart, Andrew; Cochrane-Snyman, Kristen C.. Strength Training and Development in Competitive Speed Skating[J]. STRENGTH AND CONDITIONING JOURNAL, JUN 2022.

ABSTRACT

Speed skating is a time trial-based sport that requires skill, strength, power, and capacity. The unique demands of the sport require a thorough need analysis to better understand the physical requirements, potential injuries, and periodization to successfully prepare athletes. This article will focus on the overall development of the short-distance to middle-distance speed skater to provide coaches, athletes, and strength and conditioning professionals an understanding of the biomechanical, physiological, and energy system demands of the sport and to identify common injuries that are sustained from repeated efforts.

Hext, Andrew; Hettinga, Florentina Johanna; McInernery, Ciaran. Tactical positioning in short-track speed skating: The utility of race-specific athlete-opponent interactions[J]. EUROPEAN JOURNAL OF SPORT SCIENCE, MAY 2022.

ABSTRACT

In short-track speed skating, tactical positioning is essential for success as the race format (head-to-head) prioritises finishing position over finishing time. At present, our understanding of this phenomenon is based on measuring the similarity between athletes' intermediate and final rankings. However, as this approach groups athlete performances across races, each lap's estimate of tactical importance ignores the athlete-opponent interactions specific to each race. Here, we examine the utility of race-specific athlete-opponent interactions for investigating tactical positioning. Using intermediate and final rankings of elite 1,000 m short-track speed skating competitors collected from

2010/11-2017/18 (n = 6,196, races = 1,549), we compared the current method to a novel approach that accounted for race-specific athlete-opponent interactions. This approach first applied the current method to each race independently before using these values to form (1) discrete, empirical distributions of each lap's tactical importance and (2) race-specific tactical positioning sequences. Our results showed that accounting for race-specific athlete-opponent interactions provided a higher measurement granularity (i.e. level of detail) for investigating tactical positioning in short-track speed skating, which better captured the complexity of the phenomenon. We observed 61 different tactical positioning behaviours and 1,269 unique tactical positioning sequences compared to the current approach's nine-point estimates of tactical positioning importance. For this reason, we recommend that researchers and practitioners account for race-specific athlete-opponent interactions in the future as it offers a deeper understanding of tactical positioning that will enhance both strategic and tactical decisions.

Leger, Taylor; Renaud, Philippe J.; Robbins, Shawn M.; Pearsall, David J.. Pilot Study of Embedded IMU Sensors and Machine Learning Algorithms for Automated Ice Hockey Stick Fitting[J]. SENSORS, MAY 2022.

ABSTRACT

The aims of this study were to evaluate the feasibility of using IMU sensors and machine learning algorithms for the instantaneous fitting of ice hockey sticks. Ten experienced hockey players performed 80 shots using four sticks of differing constructions (i.e., each stick differed in stiffness, blade pattern, or kick point). Custom IMUs were embedded in a pair of hockey gloves to capture resultant linear acceleration and angular velocity of the hands during shooting while an 18-camera optical motion capture system and retroreflective markers were used to identify key shot events and

measure puck speed, accuracy, and contact time with the stick blade. MATLAB R2020a's Machine Learning Toolbox was used to build and evaluate the performance of machine learning algorithms using principal components of the resultant hand kinematic signals using principal components accounting for 95% of the variability and a five-fold cross validation. Fine k-nearest neighbors algorithms were found to be highly accurate, correctly classifying players by optimal stick flex, blade pattern, and kick point with 90-98% accuracy for slap shots and 93-97% accuracy for wrist shots in fractions of a second. Based on these findings, it appears promising that wearable sensors and machine learning algorithms can be used for reliable, rapid, and portable hockey stick fitting.

Fu, Ming; Yang, Tao; Zhong, Qun; Dong, Jixue. An Extraction System of Ice and Snow for Sports Technical Index Using Internet of Things[J]. WIRELESS COMMUNICATIONS & MOBILE COMPUTING, MAY 2022.

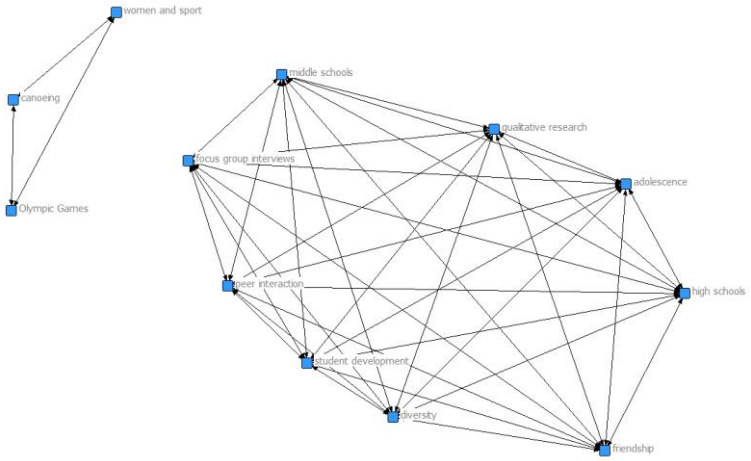
ABSTRACT

With the economic development in recent years and the holding of the 2022 Winter Olympics, ice and snow sports have been widely popularized and promoted around the world. More and more outdoor sportsmen are appearing, and the movement is an extremely intense outdoor sport, so it is very popular among outdoor enthusiasts, but physical injuries can easily occur during exercise. Therefore, aiming at this problem, this paper studies the extraction system of the movement technical indicators. This paper is aimed at studying the extraction system of the movement technical indicators based on the Internet of Things. This paper proposes the development of the Internet of Things and the importance of the movement sports, describes the concepts of the two in detail, and proposes a wireless sensor network method using Internet of Things. The experimental results show that the average opening percentage of Chinese ski resorts in 2016 was around 8.5%. By 2021, the opening percentage of Chinese ski resorts will

reach a maximum of around 37%. It can be seen that China is paying more and more attention to the movement sports, and the development of the movement is becoming more and more important. From the data in Table 4, it can be seen that 50 ice and snow sports enthusiasts believe that the favorable influence of ice and snow sports is that people can understand the ice and snow culture and make it inheritable. This can improve people's physical fitness and is conducive to healthy development.

奥林匹克教育

本期奥林匹克教育学术研究共检索到英文相关文献 57 篇，研究热点主要集中在奥林匹克价值观、学校教育与奥林匹克文化、特殊奥林匹克运动会等方面。就检索导出的数据采用书目共现分析系统（Bicomb V2021）对文献信息进行提取，包括期刊、关键词、标题、发文年份等，相同含义的字段去重且批量合并，同时去除没有实质意义的字段，对所提取的字段进行频次统计，形成高频矩阵，并使用社会网络分析软件 Ucinet 绘制成知识图谱，进行共词聚类分析。检索结果如下：1）关键词共词分析。提取关键词 233 个，经过数据清洗后关键词有 222 个，词频为 2 及以上的关键词有 9 个，累计百分比为 8.19%，高频关键词有奥林匹克运动会、皮艇、女性体育、精英运动员、体育等，生成可视化知识图谱（见下图）。2）来源期刊分析。涉及期刊 42 种，其中载文 2 篇及以上的期刊有 7 种，累计百分比为 38.6%，刊载奥林匹克教育相关内容前三位的期刊分别为：International journal of environmental research and public health（JCR 学科分区 Q2、Q1），International journal of performance analysis in sport（JCR 学科分区 Q3），Sustainability（JCR 学科分区 Q2、Q3、Q4）。3）交叉学科分析。引用文献总计 2050 篇，最多的频次为 2 次，频次排名前三的文献分别为 *Where is Safeguarding in Sport Psychology Research and Practice*、*Weight loss in combat sports: physiological, psychological and performance effects*、*Factors related to rapid weight loss practices among international-style wrestlers*。



Zhang, Honglu; Powell, Darren. Governing Olympic education: Technologies of policy announcements and outsourcing[J]. INTERNATIONAL REVIEW FOR THE SOCIOLOGY OF SPORT, May 2022.

ABSTRACT

The Chinese government views the Olympic Games as a critical platform to present national pride on a global scale. Olympic education also has an important role to play for China, as it is a requirement for any Olympic host country. In the context or preparations for the 2022 Beijing Winter Olympics, this original ethnographic research examines the governance of Olympic education, with a focus on how relationships between China's government and a range of stakeholders (e.g. private sectors, academics, and individual teachers) 'worked' to shape the implementation of Olympic education in two Beijing primary schools. Utilising Foucault's notion of governmentality, we demonstrate that Olympic education was a significant tactic for Chinese government to realise their ambition of the great rejuvenation of China. Here, the state employed two technologies of government: policy announcements and outsourcing. In tension with common assumptions about China - and Chinese education - being purely authoritarian, our research illuminates how hybrid socialist-neoliberal rationalities worked to shape Olympic education in schools.

Park, Sungjoo; Lim, Dayoun. Applicability of Olympic Values in Sustainable Development[J]. SUSTAINABILITY, May 2022.

ABSTRACT

Sustainable development (SD) refers to development that can meet present needs, without compromising the ability of future generations to meet theirs. For global citizens to acquire and understand SD-related knowledge and cultivate the ability to apply and practice the principles of sustainability, Education for Sustainable Development (ESD)

is essential. This study examines how ESD can be promoted through the Olympic Value Education Program (OVEP)-an initiative by the International Olympic Committee (IOC) for spreading the Olympic spirit. It draws inferences for addressing the shortcomings of the current ESD models. To that end, it analyzes the relationship between ESD and the OVEP, their relationships with SD, concepts, content, goals, and methods, by reviewing existing literature. The study found that the OVEP can act as a tool for ESD and has the potential to allow the effective acquisition of sustainability capabilities. Additionally, it found that since Olympic value education and SD have common goals, they can develop harmoniously to promote ESD.

Forrest, David; Tena, J. D.; Varela-Quintana, Carlos. The influence of schooling on performance in chess and at the Olympics[J]. EMPIRICAL ECONOMICS, Jun 2022.

ABSTRACT

At the macro-level, it is hard to test the hypothesis that increased schooling in a country will raise labour productivity but sectoral analyses may be tractable. In sports, output is homogenous in that countries' achievements are measurable in the same way. We examine country performances at the Chess Olympiad and the Olympic Games, contrasting tournaments where players in the first use only their minds but most in the second supply substantial physical effort or work with costly physical capital. Modelling success in either leads to a set of results familiar from sports literature: country performance depends on economic resources, represented by population size and per capita income. Supplementary variables capture over-performance by communist/ former communist countries. We then introduce a measure of average years of schooling. This significantly reduces the role of income, especially in chess. It also takes power away from the 'communist' variables, especially at the Olympics. These results suggest

that much of any effect from income is mediated through schooling: investment in education is associated with elevated productivity. Increased productivity is observed in both settings, one a knowledge-intensive sub-sector and the other dependent to a significant extent on either raw physical strength or expensive capital input.

Gu, Song; Xue, Lan. Relationships among Sports Group Cohesion, Psychological Collectivism, Mental Toughness and Athlete Engagement in Chinese Team Sports Athletes[J]. INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH, May 2022.

ABSTRACT

Background: Cohesion is an important factor affecting sports performance. This study constructed a mediating model to explore the mechanism of cohesion toward psychological collectivism, mental toughness, and athlete engagement of Chinese team sports athletes, and to investigate the mediating effect of psychological collectivism and mental toughness on cohesion and athlete engagement. Methods: A total of 326 active Chinese athletes (54% males, 46% females) aged 14 to 26 years (M = 19.63, SD = 6.51) from eight sports were investigated by questionnaire. Results: The athlete engagement can be predicted significantly and positively by cohesion and its dimensions, and ATG-T is more important in advantage analysis. Direct and indirect paths indicate that cohesion affects athlete engagement, through the mediating effects of psychological collectivism, the mediating effects of mental toughness, the serial multiple mediating of psychological collectivism and mental toughness. The mediating effect model had a satisfactory goodness of fit and explained 50.5% of the variance in athlete engagement, and the SEM revealed the mechanism of cohesion in Chinese athlete engagement to a certain extent. Conclusion: Psychological collectivism is the embodiment of high-quality cohesion in Chinese team sports. The increase in cohesion and psychological

collectivism can improve Chinese athletes' ability to cope with stressful situations in sports, which may allow them to achieve a better performance through athlete engagement.

Hwang, Bora; Miyazaki, Akiyo; Henry, Ian. Identifying Contextual Factors That Informed Planning and System Development for School-Based Tokyo 2020 Olympic and Paralympic Education: A Realist Evaluation[J]. INTERNATIONAL JOURNAL OF THE HISTORY OF SPORT, Apr 2022.

ABSTRACT

The role and significance of Olympic and Paralympic education has become increasingly evident in the activities of Olympic and Paralympic host cities. The development of Olympic and Paralympic education as a compulsory element has become a key policy aim for host cities and nations, with long-term planning and strategies needed for successful delivery. However, there remains a paucity of studies assessing the ways of planning and developing Olympic and Paralympic education mediated by contextual factors. Tokyo 2020 Olympic and Paralympic education has been implemented in schools nationwide as a national campaign and represents the first occasion in which Paralympic education is promoted in parallel with Olympic education. This study conducted a realist evaluation to analyse the history of education and sport policy in Japan, thus identifying contextual factors that informed planning and system development issues for school-based Tokyo 2020 Olympic and Paralympic education. This study suggests a methodological approach to identifying and evaluating contextual elements and mechanisms that are relevant in the development of Olympic and Paralympic education.

Wonjun Choi; Mi Ryoung Chung; NaRi Shin; Peachey, Jon Welty. Assessing the Link between Program Components and Outcomes in an Olympic-Themed Sport-for-Development Initiative[J]. INTERNATIONAL JOURNAL OF SPORT MANAGEMENT, Mar2022.

ABSTRACT

The purpose of this study was to assess the relationship between sport, cultural, and educational components and the development of friendship, determination, courage, and equality among children in a local, sport-for-development (SFD) initiative. The three-month program was launched at a local Boys and Girls Club for children in third through fifth grade. A mixed-methods approach was used in the present study. Post-program interviews with children and their parents, combined with direct observations, revealed that the program played some role in developing all four outcomes. However, quantitative findings based on pre- and post-surveys indicated that over the three months, the children developed only respect for equality through the sport-based context. Qualitative findings also suggested that the physical/sport component was related more to the development of friendship and courage, whereas the cultural component combined with educational lessons contributed more to respect for equality. Finally, special events had the greatest influence on the participants' determination.

O'Neal, Suzanne K.; Thomas, Jodi. Relationship of single leg stance time to falls in Special Olympic athletes[J]. PHYSIOTHERAPY THEORY AND PRACTICE, Mar 2022.

ABSTRACT

Background: The single-leg stance test is included in the FUNfitness (FF) screening for Special Olympic athletes to determine if balance education and/or referrals are needed.

There are limited data regarding the use of the single-leg stance test for people with intellectual disabilities.

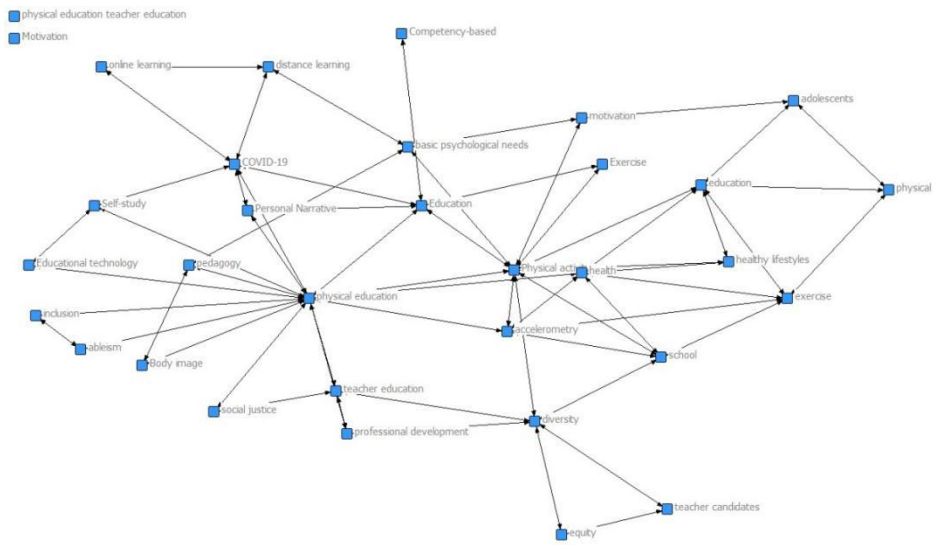
Method: Data were collected for this prospective study as part of the FF screens during the 2018 Special Olympics summer games. Each athlete completed the SLS test on the right (R) and left (L) lower extremity (LE), with eyes opened (SLS-EO) and closed (SLS-EC), and asked if they had fallen in the past year.

Results: A total of 178 athletes completed the test. Data analysis revealed a weak relationship between falls and SLS-EO (R LE r_s = -0.170 and L LE r_s = -0.185) and SLS-EC (R LE r_s = -0.169 and L LE r_s = -0.187), all of which were significant ($p < .05$). Sensitivity and specificity of the SLS-EO were low for both the R LE (74.5% and 42.2%, respectively) and L LE (74.5% and 42.7%, respectively). Sensitivity rose slightly with SLS-EC (R LE = 80.9% and L LE = 89.1%), while specificity decreased (R LE = 22.9% and L LE = 25.2%). The positive predictive values for SLS-EO and SLS-EC ranged from 27.3% to 31.8%. The SLS test demonstrated poor accuracy in identifying fallers in SO athletes with area under the curve values ranging from 0.610 to 0.623.

Conclusions: These results indicate that the SLS test, or cutoff scores used, may not be the most appropriate for this population.

体育教育

本期体育教育学术研究供检索到英文相关文献 177 篇，研究热点主要集中在体育活动与智力培养、体育教育与健康教育内容与方法、体育教学模式优化、体育运动促进等方面。就检索导出的数据采用书目共现分析系统（Bicomb V2021）对文献信息进行提取，包括期刊、关键词、标题、发表年份等，相同含义的字段去重且批量合并，同时去除没有意义的字段，对所提取的字段进行频次统计，形成高频矩阵，并使用社会网络分析软件 Ucinet 绘制成知识图谱，进行共词聚类分析。检索结果如下：1）关键词共词分析。提取关键词 497 个，经过数据清洗后关键词为 496 个，词频为 2 以上的关键词有 33 个，累计百分比 24.80%，高频关键词有体育教育、体育、体育活动、教育学、教师教育、体育练习、动机、健康等，生成可视化知识图谱（见下图）。2）来源期刊分析。涉及期刊 59 种，其中载文 3 篇以上的期刊有 17 种，累计百分比为 72.88%，刊载体育教育前三位的期刊分别为：Research quarterly for exercise and sport（JCR 学科分区 Q3、Q4），Journal of teaching in physcical education（JCR 学科分区 Q2、Q3），Sport education and society（JCR 学科分区 Q2、Q3）。3）交叉学科分析。引用文献总计 5476 篇，最多的频次为 7 次，频次排名前三位的文献分别为 *Personal and social development in physical education and sports: A review study*、*The educational benefits claimed for physical education and school sport: an academic review*、*Queer men, affect, and physical education*。



Real-Perez Mateo, Gavala-Gonzalez Juan, Artacho Silva Mar. "Cognition, Intelligence and Movement": Extracurricular Physical Activity as a Promoter of Intelligence in Schoolchildren[J]. SUSTAINABILITY, Apr 2022 , vol.14, issue7.

ABSTRACT

The main objective of this study was to assess the existence of significant relationships between motor capacity, academic performance and intelligence in a sample of 67 pre-adolescent children, between the ages of 8 and 11 years. Speed tests were carried out (10 x 5 m shuttle run and plate tapping test), and academic grades in Spanish Language and Literature, Mathematics, Natural Sciences, Foreign Language (English) and Physical Education were considered. The Raven test was administered to estimate the intelligence of the subjects. The results showed significant correlations, mainly between the motor capacities and intelligence variables but not with academic performance. Significant differences were also observed in subjects who participated in sports, with better results in motor capacities and intelligence tests compared to those who did not. The data reveal that engaging in intense physical activity and sports in general may improve academic performance.

Chen Minwei, Zhou Yunzheng. Analysis of Students' Sports Exercise Behavior and Health Education Strategy Using Visual Perception-Motion Recognition Algorithm[J]. FRONTIERS IN PSYCHOLOGY, May 13. 2022, vol.13.

ABSTRACT

This study aims to explore the future development path of the college health education and health education's impact on students' sports exercise. Specifically, artificial intelligence (AI) algorithm is combined with intelligent robotics technology to acquire and analyze students' sports exercise behaviors. As a result, a new development model is

formulated for college health education. First, it explores students' sports exercise and health education situation in Chinese higher institutions and uncovers the underlying problems. Then it puts forward the corresponding modification suggestions. Second, the AI algorithm and the Kinect sensor-mounted intelligent robot capture the human skeleton features to obtain smooth skeleton joint points data. At the same time, a visual perception human motion recognition (HMR) algorithm is established based on the Hidden Markov Model (HMM). Afterward, the proposed HMM-based HMR algorithm is used to recognize students' sports exercise motions by analyzing human motion skeleton images. The experimental outcomes suggest that the maximum reconstruction error of the HMR algorithm is 10 mm, and the compression ratio is between 5 and 10; the HMR rate is more than 96%. Compared with similar algorithms, the proposed visual perception HMR algorithm depends less on the number of training samples. It can achieve a high recognition rate given only a relatively few samples. Therefore, the proposed (AI + intelligent robot)-enabled HMM-based HMR algorithm can effectively identify the behavior characteristics of students in sports exercise. This study can provide a reference for exploring college students' health education development path.

Guo Chunding, Yang Junxia. Construction of University Sports Flipped Classroom Based on Sports Skills Learning and Mobile Edge Computing-Driven Neural Network[J]. WIRELESS COMMUNICATIONS & MOBILE COMPUTING, Apr 7. 2022, vol.2022.

ABSTRACT

In order to make students more interested in PE learning in PE teaching, it is necessary for PE educators to change the traditional way of thinking, take students as the main body of PE learning, be guided by teachers themselves, and use mobile edge computing

and neural network technology as technologies. It enables students to carry out intelligent physical education independently. Whether the teaching is effective does not mean whether the teacher has completed the teaching content seriously, but whether the students have learned something, or whether the students have learned well. Based on the actual teaching practice of flipped sports classroom, this paper takes the "effectiveness" of sports classroom teaching as the breakthrough point, mainly adopts the research methods of comparative analysis, mobile edge computing, and neural network, and combines relevant domestic and foreign research results on the teaching of sports flipped classroom at home and abroad. An in-depth and comprehensive analysis of the effectiveness was carried out. The research results show that it is reliable to build a university sports flipped classroom with a neural network driven by motor skill learning and mobile edge computing as the carrier.

Xu Biao. College Physical Education Teaching and Content Optimization Based on Computer Information Technology[J]. SCIENTIFIC PROGRAMMING, Apr 13. 2022, vol.2022.

ABSTRACT

Curriculum plays a central role in the cultivation of professional talents in colleges and universities and is the carrier of the goal of talent cultivation. Curriculum reform is the core of physical education teaching reform. In the context of social needs, curriculum reform should aim at cultivating professional talents. The overall reform should be guided by social needs to improve the suitability and effectiveness of curriculum reform. This paper aims to study the analysis and content optimization of physical education teaching based on the background of computer information technology. In order to maximize the professional function of physical education teaching and better provide

basic guarantee for physical education, this paper firstly carries out a conceptual analysis of physical education and content optimization. Secondly, this paper expounds the advantages of computer information technology and then deeply studies the network computer server cluster method. Then it optimizes the case design of the teaching content of the special course of physical education. The cluster analysis results of college physical education teachers and experts show that, in terms of teachers, 36% of teachers are satisfied with the physical education textbooks, ranking first.

Bracero-Malagon Jose, de Mier RocioJuarez-Ruiz, Reigal Rafael E. Logical Intelligence and Mathematical Competence Are Determined by Physical Fitness in a Sample of School Children[J]. FRONTIERS IN PSYCHOLOGY , May 12. 2022, vol.13.

ABSTRACT

Previous research has shown positive relationships between fitness level and different cognitive abilities and academic performance. The purpose of this study was to explore the relationships between logical-mathematical intelligence and mathematical competence with physical fitness in a group of pre-adolescents. Sixty-three children (50.79% girls; 49.21% boys) from Castro del Rio (Cordoba, Spain), aged between 11 and 12 years (M = 11.44, SD = 0.64), participated in this research. The Superior Logical Intelligence Test (SLIT) and the EVAMAT 1.0-5 battery were used. Physical fitness was evaluated by the horizontal jump test, the 4x10 meter speed-agility test, and the Course Navette test. The analyses showed positive relationships between physical fitness with logical-mathematical intelligence and mathematical competence. Specifically, linear regression analyzes indicated that the 4x10 speed-agility test significantly predicted mathematical competence (R-2 = 0.16; beta = -0.41) and the horizontal jump test significantly predicted logical-mathematical intelligence (R-2 = 0.24; beta = 0.50).

These results are in agreement with previous research, highlighting the importance of improving physical fitness from an early age due to its benefits for intellectual and academic development.

Cho Ooksang, Choi Wonseok, Shin, Yuchul. The effectiveness of school physical education on students' cognitive competence: a systematic review and meta-analysis[J]. JOURNAL OF SPORTS MEDICINE AND PHYSICAL FITNESS, Apr 2022, vol.62, no.4,pp. 575-584.

ABSTRACT

INTRODUCTION: School physical education plays an important role in improving the cognitive competencies of students. The theoretical background related to how school physical education positively influences students' cognitive domains has been consistently structured; however, there are few previous studies that have systematically analyzed how physical education interventions produce positive outcomes related to learners' cognitive competencies. The aim of the present study was to analyze the effectiveness of physical education interventions on students' cognitive competencies.

EVIDENCE ACQUISITION: The study involved searching for related quantitative research studies through electronic research databases including SPORTDiscus, ScienceDirect, and MEDLINE Patent Applications and conducting a screening process considering the purpose of the meta-analysis. The present study assessed for a risk of bias, extracted data, and conducted a meta-analysis to determine the effectiveness of physical education interventions.

EVIDENCE SYNTHESIS: According to the results of the meta-analysis, school physical education has a significant impact on students' cognitive competencies such as intelligence and academic achievement. In terms of the characteristics of the interventions, the effectiveness of aerobic exercise rooted in physical education was

more significant than that of model-based physical education or traditional physical education.

CONCLUSIONS: Based on the results of the meta-analysis, the present study concluded that school physical education has a statistically significant impact on changing students' cognitive conditions; however, there is need for a follow-up study on how the contents of school physical education and the methods of teaching have distinct effects on students' cognitive competencies.

Gil-Espinosa Francisco Javier, Nielsen-Rodriguez Adriana, Romance Ramon. Smartphone Applications for Physical Activity Promotion from Physical Education[J]. EDUCATION AND INFORMATION TECHNOLOGIES, May 2022.

ABSTRACT

Smartphone applications (apps) are thought to be an adequate instructional strategy not only to improve the quality of the teaching in physical education (PE), but also to effectively promote leisure-time physical activity (PA) of adolescent students in this context. Although the use of smartphone apps has been generalized in PE, little is known about the curricular approach of smartphone apps to be implemented by teacher to teach specific curricular contents in PE lessons. Therefore, the aim of this research was threefold: a) to conduct a systematic search for smartphone apps focused on PA and sport; b) to assess the features, content and quality of every included smartphone app; and c) to analyze the relationships between every selected app and the secondary PE curriculum. Systematic searches were completed on Google Play Store from January 2021 to March 2021. Apps were included when they met: main goal focused on PA and sport; permitted use by underage; they are free; user scores of at least 4. The app

selection process was carried out by several reviewers and concordance measures were estimated. Additionally, an app quality assessment was independently conducted by three reviewers. A total of 18 apps focused on PA were included. Particularly, eight apps were suitable for fitness, health and quality of life curricular content; two for sports content; four for body expression content; and four apps for outdoor PA content. The mean quality score was 4.00. Apps could be helpful for teachers to implement the secondary PE curriculum and effectively promote PA among adolescent students.

Lourenco Joana, Rodrigues Catarina, Flores Fabio. Physical Activity Time and Intensity in Physical Education During the COVID-19 Pandemic[J]. PERCEPTUAL AND MOTOR SKILLS, Jun 2022, vol.129, no.3,pp. 946-961.

ABSTRACT

With the COVID-19 outbreak, schools have experienced difficulty providing moderate-to-vigorous physical activity (MVPA) to their students, which should normally account for at least 50% of children's physical education (PE) class time. We aimed to determine the intensity of physical activity (PA) within PE classes at various grade levels to compare children's in-class PA with the World Health Organization's (WHO) recommended guidelines. Thus, 301 students (1st to 12th grade) participated in the investigation. Children were evaluated during the PE classes with different typologies and durations. We assessed PA intensity using accelerometry and grouped data into either sedentary-to-light PA (SEDLI) or MVPA. Each child was assessed using both the time spent in PA (hours:minutes:seconds) and the percentage of time spent in PA versus other class activities. We found that, in the second-grade level group (fifth and sixth grades), girls spent more time in MVPA intensity than boys. Additionally, two-hour PE classes doubled the SEDLI for students in the third-grade group, and polythematic

classes (those with more than one sport) promoted more MVPA level time than monothematic classes (only one sport). Concerning PA intensity during PE classes, 31-43% of the PE class total time was spent in MVPA but presented short duration and did not usually persist for 10 consecutive minutes (59% of the time). Children spent a large amount of time at the SEDLI intensity, considered insufficient for PA health benefits. Finally, to meet WHO guidelines for PA intensity, PE classes will need to increase MVPA time and reduce non-active periods between activities.

Froberg Andreas, Lundvall Suzanne. Sustainable Development Perspectives in Physical Education Teacher Education Course Syllabi: An Analysis of Learning Outcomes[J]. SUSTAINABILITY, May 2022, vol.14, no.10.

ABSTRACT

Although school education, including the subject of physical education (PE), has the potential to contribute to the visions set out by the 2030 Agenda and its sustainable development goals (SDGs), little attention has been directed towards sustainable development perspectives in PE teacher education (PETE). In this explorative paper, we aimed to investigate how sustainable development perspectives are reflected in Swedish PETE course syllabi, focusing on learning outcomes. The source of data was 496 learning outcomes retrieved from PETE course syllabi at the eight Swedish PETE institutions that examine PE teachers for compulsory school grades 7-9 and upper secondary school. A qualitative thematical analysis was performed, and two educational resources developed to support how to use education in achieving SDGs were used as a guiding framework. The findings show eight learning outcomes (<2%) explicitly related to sustainable development perspectives. We found these learning outcomes in courses dealing with outdoor education, movement and health didactics, and work environment

and ergonomics. Our further analysis suggests that 37 learning objectives (19% as cognitive, 43% as socio-emotional, and 38% as behavioural) and 31 competencies (35% within knowledge and understanding, 32% within skills and applications, and 32% within values and attributes) could be linked to our themes of learning outcomes. These learning objectives and competencies of the SDGs were for good health and well-being, quality education, gender equality, reduced inequalities, peace, justice, and strong institutions. The main findings signal a possibility to work with the conceptualisation of sustainable development perspectives and SDGs in PETE. PETE educators should be encouraged to critically reflect on what it can mean to include sustainable development perspectives in PETE course syllabi.

Tsangaridou Niki, Pieroua Mikaela, Kyriakides Ermis. Teaching Physical Education in Early Years: Focusing on Teachers' Practices[J]. JOURNAL OF TEACHING IN PHYSICAL EDUCATION , Apr 2022, vol.41, no.2, pp. 278-287.

ABSTRACT

Purpose: To examine early childhood teachers' practices of teaching physical education. Method: Eleven early childhood educators participated in the study. Data were collected using two systematic observation instruments, a modified version of the Task Structure System and the Dynamic Model of Educational Effectiveness. Three 40-min lessons were observed for each teacher. The data were analyzed using descriptive statistics. Results: The findings showed that most childhood educators more often employed certain generic, rather than content-specific, practices in their physical education lessons. Application, structuring, and questioning were observed in most lessons, while skill demonstration, emphasis on critical elements, and congruent and specific feedback were not frequently observed. Additionally, the generic practices of orientation and modeling

were observed in only a few lessons. Conclusions: By investigating and understanding the practices that early childhood teachers employ during physical education lessons, teacher educators can support teachers in ways that provide more meaningful experiences for children.

Bergentoft H, Annerstedt C, Barker D. Teachers' actor-oriented transfer of movement pedagogy knowledge in physical education[J]. PHYSICAL EDUCATION AND SPORT PEDAGOGY, Jun 2022.

ABSTRACT

Background Physical education (PE) teachers in practically all countries are expected to help their students develop movement capability. To achieve this objective, teachers need certain knowledge and competencies. The question of how PE teachers should develop their capacities to achieve this task has received only limited research attention. Aim The broad objective of this paper is to contribute to the literature on how PE teachers can develop knowledge and competencies in the area of movement capability related to students' learning. The specific aim is to identify aspects of the design of instruction in physical education that enhance teachers' actor-oriented transfer of movement pedagogy knowledge, during a collaborative professional development intervention. Method The study is an analysis of three conducted learning studies in PE at upper secondary schools in Sweden. The studies involved seven PE teachers from two different schools. Our empirical material consists of (a) notes from team meetings (n = 14), (b) lesson plans (n = 9), (c) video-recorded and transcribed lessons (n = 9), and (d) results of students' learning outcomes (n = 9). Findings PE teachers' analysis of their own teaching sequences in teams supported their actor-oriented transfer of movement pedagogy knowledge, which developed their abilities to further elaborate their instruction in new teaching situations. Moreover, teachers gained insights into how to

further develop the quality of instructional design as expansions of earlier experiences. Lastly, a relationship between PE teachers' actor-oriented transfer and students' increased learning of movements was found. Conclusion Our conclusion is that collaborative professional development for PE teachers, which supports actor-oriented transfer, should be offered to enhance teachers' movement pedagogy knowledge.

da Silva Renne H, Nobre Glauber C, Pessoa Maria Luiza F. Physical Activity during School-time and Fundamental Movement Skills: a Study among Preschoolers with and without Physical Education Classes[J]. PHYSICAL EDUCATION AND SPORT PEDAGOGY, Jun 2022.

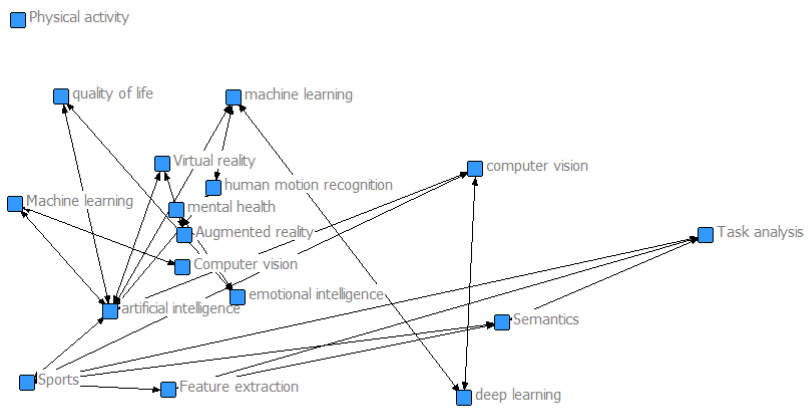
ABSTRACT

Purpose To analyze associations between physical activity (PA) during school hours and fundamental movement skills (FMS) of young children with and without PE classes. Methods This cross-sectional study examined 201 children of both sexes (102 girls, 50.7%), aged 3-5 years old (4.51 +/- 0.79), who were engaged (n = 129) or not (n = 72) in physical education (PE) classes weekly. Light (LPA) and moderate-to-vigorous physical activity (MVPA) were assessed by accelerometer during school hours over five consecutive days, and FMS was assessed using the TGMD-2. To verify the association between PA (LPA and MVPA) and FMS (locomotor and object control scores) in both PE and NPE groups, multiple linear regression analysis was used. Results MVPA during school hours was significantly associated with object control performance in the PE group (beta = 0.14 p = .025). A model with LPA and MVPA explained 4% of the object control performance variability. Conclusion The positive association observed between MVPA and object control skills on those preschoolers involved in PE classes highlight that opportunities in structured PE classes should be used as a central strategy to

promote motor development in preschool settings.

体育人工智能

本期体育教育学术研究供检索到英文相关文献 195 篇，研究热点主要集中在人工智能促进运动训练、可穿戴设备的体育应用、计算机大数据辅助体育运动康复保健与全民健身等体育领域的应用等方面。就检索导出的数据采用书目共现分析系统（Bicomb V2021）对文献信息进行提取，包括期刊、关键词、标题、发表年份等，相同含义的字段去重且批量合并，同时去除没有意义的字段，对所提取的字段进行频次统计，形成高频矩阵，并使用社会网络分析软件 Ucinet 绘制成知识图谱，进行共词聚类分析。检索结果如下：1）关键词共词分析。提取关键词 563 个，经过数据清洗后关键词为 563 个，词频为 2 以上的关键词有 31 个，累计百分比 13.68%，高频关键词有人工智能、体育、体育运动、教育、任务分析、智能体育、生活质量等，生成可视化知识图谱（见下图）。2）来源期刊分析。涉及期刊 96 种，其中载文 3 篇以上的期刊有 15 种，累计百分比为 52.82%，刊载体育人工智能前三位的期刊分别为：Computational intelligence and neuroscience（JCR 学科分区 Q2、Q3），Wireless communications & mobile computing（JCR 学科分区 Q3），Mathematical problems in engineering（JCR 学科分区 Q4、Q3）。3）交叉学科分析。引用文献总计 8502 篇，最多的频次为 6 次，频次排名前三位的文献分别为 *Flexible triboelectric generator*、*Microsoft COCO: Common Objects in Context*、*Emerging Technologies for 5G-IoV Networks: Applications, Trends and Opportunities*。



Dong Yinghui. Analysis of Intelligent Physical Education Teaching Scheme Based on 5G Communication plus VR Technology[J]. MOBILE INFORMATION SYSTEMS, Apr 23. 2022, vol.2022.

ABSTRACT

In order to improve the physical quality of college students and increase students' interest and focus on physical education teaching, this study constructs a smart physical education teaching scheme system platform by combining 5G communication + VR technology. Students can download sports teaching videos in the system platform, and then conduct 3D decomposition and playback of sports actions through matching VR glasses, guide and correct students' body actions from a professional perspective, arouse students' interest with interesting teaching courses, make them actively study, explore the improvement methods of various sports actions, and realize extracurricular discussion. Through the follow-up analysis of students by questionnaire survey and other methods, it is concluded that the reformed teaching system has a positive impact on students' physical quality, extracurricular exercise, and entertainment ideology, and comprehensively improved the all-round and healthy development of students' body and mind.

Tang Yuxin, Zan Shengfeng, Zhang Xiaowen. Research on System Construction and Strategy of Intelligent Sports in the Implementation of National Fitness[J]. COMPUTATIONAL INTELLIGENCE AND NEUROSCIENCE, May 10. 2022, vol.2022.

ABSTRACT

This paper studies the construction and development strategy of intelligent sports system

in the context of Chinese National Fitness Program with methods of literature review and model construction. The research shows that there are four dilemmas in the implementation of intelligent sports in national fitness: data security, market monopoly, legal supervision, and product iteration. However, there are also three promoting factors in this regard, including policy guarantee, market demand, and industrial upgrading. Following the principles of scientificity, effectiveness, public welfare, and collaboration, this paper designs a system for intelligent sports in national fitness. The construction of the national fitness intelligent sports system mainly consists of four modules, including basic framework construction, function design, content design, and operation analysis. With the systematic analysis of the status quo of intelligent sports application in national fitness, this paper puts forward intelligent sports development strategies in the implementation of national fitness from four aspects: optimizing the top-level design of government, speeding up industrial transformation and upgrading, constructing market supervision mechanism, and establishing a talent training system.

Naik Banoth, Hashmi Mohammad Farukh, Bokde Neeraj Dhanraj. Thulasya A Comprehensive Review of Computer Vision in Sports: Open Issues, Future Trends and Research Directions[J]. APPLIED SCIENCES-BASEL, May 2022, vol.12, no.9.

ABSTRACT

Recent developments in video analysis of sports and computer vision techniques have achieved significant improvements to enable a variety of critical operations. To provide enhanced information, such as detailed complex analysis in sports such as soccer, basketball, cricket, and badminton, studies have focused mainly on computer vision techniques employed to carry out different tasks. This paper presents a comprehensive review of sports video analysis for various applications: high-level analysis such as

detection and classification of players, tracking players or balls in sports and predicting the trajectories of players or balls, recognizing the team's strategies, and classifying various events in sports. The paper further discusses published works in a variety of application-specific tasks related to sports and the present researcher's views regarding them. Since there is a wide research scope in sports for deploying computer vision techniques in various sports, some of the publicly available datasets related to a particular sport have been discussed. This paper reviews detailed discussion on some of the artificial intelligence (AI) applications, GPU-based work-stations and embedded platforms in sports vision. Finally, this review identifies the research directions, probable challenges, and future trends in the area of visual recognition in sports.

Huang Qiong, Wang Fubin. Prevention and Detection Research of Intelligent Sports Rehabilitation under the Background of Artificial Intelligence[J]. APPLIED BIONICS AND BIOMECHANICS, May 4. 2022, vol.2022.

ABSTRACT

Artificial intelligence can bring convenience to human life. In the field of sports rehabilitation, the application of artificial intelligence is becoming more and more in-depth. This paper is aimed at studying the prevention and detection of sports rehabilitation in the context of artificial intelligence and proposing a compliance control method for lower limb rehabilitation robots based on artificial neural networks. In this paper, a double closed-loop control system is designed: the outer loop is an adaptive impedance control model based on sEMG feedback, and the purpose is to adjust the predicted desired joint trajectories. In the inner loop, a sliding mode iterative learning controller is designed to suppress periodic disturbance and abnormal jitter and achieve stable tracking of the target trajectory. Finally, the control method is simulated and verified by matlab/simulink, and a statistical experiment is done on the patient's recovery.

The experimental results show that the use of artificial intelligence technology can effectively increase the sensitivity of the control system and improve the recovery rate of patients. Compared with the traditional sports rehabilitation control system, the sensitivity is increased by 22.7%, and the patient recovery rate is increased by 10.4%, which is of great significance in the field of sports rehabilitation.

Yu Huan, Cai Zongsen, Xie Wuyang. Research on the Construction of Intelligent Sports Health Management System Based on Internet of Things and Cloud Computing Technology[J]. WIRELESS COMMUNICATIONS & MOBILE COMPUTING, May 5. 2022, vol.2022.

ABSTRACT

Intelligent sports health management refers to the whole process of comprehensively monitoring, analyzing, evaluating, providing health consultation and guidance, and intervening in health risk factors for individuals or groups. The rise of Internet of Things technology has played an obvious role in the health management of intelligent sports and realized the integration and optimal allocation of intelligent sports resources. At the same time, in the field of information technology, the emergence of cloud computing as a new computing mode enables people to directly obtain software and computing power through network applications, so as to innovate the intelligent sports health management system and improve the intelligent sports health management system. Cloud computing mainly realizes the storage capacity of massive data and distributed computing capacity through processor computing, virtualization technology, distributed storage technology, broadband Internet technology, and automatic management technology. Based on Internet of Things and cloud computing technology, taking intelligent sports management as the research carrier, an intelligent sports health management system is

designed, which provides a new attempt to use advanced information technology to assist intelligent sports health management system.

Luo Le. A Sports Digital Training System Based on Middle and Bottom Visual Information[J]. MOBILE INFORMATION SYSTEMS, May 18. 2022, vol.2022.

ABSTRACT

Physical exercise has become increasingly popular in China in recent years, and the number of individuals participating in physical activities is growing year after year. Therefore, they are facing the problem of a serious shortage of sports resources, especially in the central and western regions where a complete physical education teaching system has not been established yet. The introduction of sports digital training alleviates this problem to a great extent. This approach uses advanced computer technology for digital training, collects people's sports information, and formulates suitable sports programs for different groups. The system can collect people's action videos at the same time by two cameras, analyze the athletes' actions from the side and face by using the software, and compare the professional athletes' actions with the collected video action for in-depth analysis. The sports digital training system proposed in this study focuses on collecting the bottom visual information of sports. The visual information in the middle and low levels is mainly used to describe the content of video segments, i.e., key primitives, including motion trajectory, motion action, and tracking motion, and establishes a sports digital training system based on the bottom visual information. In addition to the completion of basic functions of a sports digital training system, the system also adds the functions of video segmentation, action freezing, speed calculation, table display, local locking, and tracking, which can accurately collect the bottom visual information of people's sports and realizes the digital sports training.

Chang Chun, Chen Kaihua, Cao Jianjun. Analyzing the Effect of Badminton on Physical Health and Emotion Recognition on the account of Smart Sensors[J]. APPLIED BIONICS AND BIOMECHANICS, Apr 4. 2022, vol.2022.

ABSTRACT

Emotional ability is an important symbol of human intelligence. Human's understanding of emotions, from subjective consciousness to continuous or discrete emotional dimensions, and then to physiological separability, has shown a trend of gradually diverging from psychological research to the field of intelligent human-computer interaction. This article is aimed at studying the effects of smart sensor-based emotion recognition technology and badminton on physical health. It proposes a method of using smart sensor technology to recognize badminton movements and emotions during the movement. And the impact of emotion recognition based on smart sensors and badminton sports on physical health is carried out in this article. Experimental results show that the emotion recognition technology based on smart sensors can well recognize the changes in people's emotions during badminton sports, and the accuracy of emotion recognition is higher than 70%. At the same time, experiments show that badminton can greatly improve people's physical fitness and strengthen people's physique.

Liu Chaonan, Chang Zenghui. Sensor and Attitude Analysis of Track and Field Training Action Recognition Based on Artificial Intelligence[J]. JOURNAL OF SENSORS, May 17. 2022, vol.2022.

ABSTRACT

In order to provide effective information support to athletics training and to increase the effectiveness of athletics training, in-depth analysis of motion recognition sensors and attitudes based on artificial intelligence was conducted. First of all, the basic conditions

of type analysis, cognitive technology, and the current situation were studied, and the basic theory related to it was studied, and on this basis, a human position analysis and recognition system based on artificial intelligence movement training sensors was developed. We studied the technology in depth. Experiments have shown that the approach data collected by the system's inertia node is transmitted wirelessly to the computer-side software to restore the trend and identify each trend and parameter with high accuracy. During the 30-minute test, the static error was within 1 degrees and the dynamic error was within 5 degrees, which is acceptable and adheres well to dynamic conditions. The system can overcome the limitations of traditional wired or optical methods and be widely used in sports training, human-computer interaction monitoring, rehabilitation medicine, games, film, and television production.

Pan Shaohong. A Method of Key Posture Detection and Motion Recognition in Sports Based on Deep Learning[J]. MOBILE INFORMATION SYSTEMS, Apr 25. 2022, vol.2022.

ABSTRACT

Moving target recognition and analysis is an important research direction in the field of computer vision, which is widely used in our life, such as intelligent robot, video surveillance, medical education, sports competition, and national defense security. By analyzing the video of weightlifting, this paper extracts the key postures of athletes' training, so as to assist coaches to train athletes more professionally. Based on DL (Deep Learning), a key pose extraction method of sports video (RoI_KP for short) based on classified learning of regions of interest is proposed. By fine-tuning CNN (Convolutional Neural Network), a network model suitable for video classification of weightlifting in the region of interest is obtained. Finally, according to the classification results, the selection strategy of classification results is designed to extract key poses.

According to the characteristics of different modal information, different DNN (deep neural network) is adopted, and various depth networks are combined to mine the multi-modal spatio-temporal depth features of human movements in video. Experimental results show that the method proposed in this paper is very competitive.

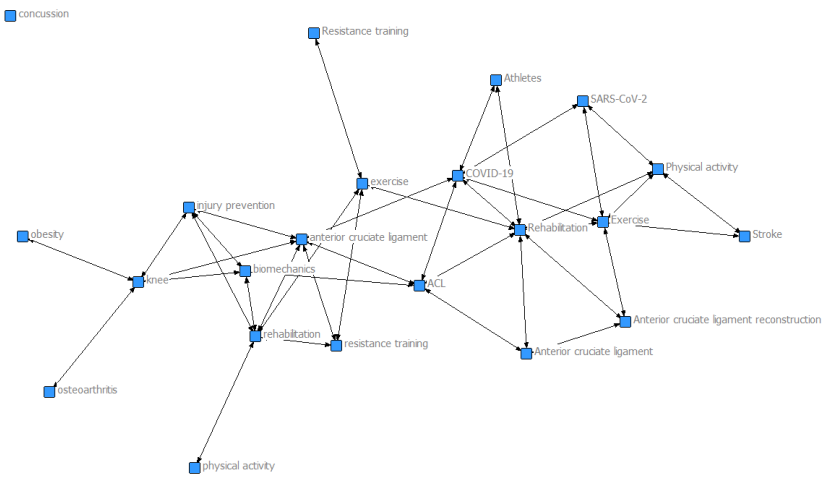
Zong Xing, Zhang Chenfei, Wu Dengpan. Research on Data Mining of Sports Wearable Intelligent Devices Based on Big Data Analysis[J]. DISCRETE DYNAMICS IN NATURE AND SOCIETY, Apr 14. 2022, vol.2022.

ABSTRACT

Traditional motion data mining models have some problems, such as poor dynamic data capture effect, low information classification effect rate, poor quantitative representation effect, and so on. Based on this, this paper studies the mining method of dynamic motion data based on neural network, constructs a data mining model based on discrete dynamic modeling technology, and realizes the collection of data information from the aspects of motion characteristics and types combined with multilayer sensors. Neural network algorithm is used for comprehensive analysis to realize multivariate analysis and objective evaluation of all data of dynamic motion process and accurate analysis and evaluation according to different data characteristics of different types of motion data. The results show that the data mining model based on discrete dynamic modeling technology and wearable sensor technology has the advantages of high feasibility, high intelligence, and wide application range.

体医融合

本期体医融合学术研究共检索到英文相关文献 593 篇，研究热点主要集中为心血管疾病高危患者和脂肪肝患者开具运动处方、前交叉韧带重建后重返赛场、对长期疾病患者的体育活动和久坐行为干预等方面。就检索导出的数据采用书目共现分析系统（Bicomb V2021）对文献信息进行提取，包括期刊、关键词、标题、发文年份等，相同含义的字段去重且批量合并，同时去除没有实质意义的字段，对所提取的字段进行频次统计，形成高频矩阵，并使用社会网络分析软件 Ucinet 绘制成知识图谱，进行共词聚类分析。检索结果如下：1）关键词共词分析。提取关键词 2286 个，经过数据清洗后关键词有 321 个，词频为 5 及以上的关键词有 33 个，累计百分比为 10.88%，高频关键词有康复、锻炼、体育活动、中风、膝关节前交叉韧带等，生成可视化知识图谱（见下图）。2）来源期刊分析。涉及期刊 261 种，其中载文 5 篇及以上的期刊有 20 种，所载文献累计百分比为 41.31%，刊载体医融合前三位的期刊分别为：BMC Sports Science Medicine and Rehabilitation（JCR 学科分区 Q3、Q4） International Journal of Environmental Research and Public Health（JCR 学科分区 Q1、Q2），Physical Therapy in Sport（JCR 学科分区 Q2） 。3）学科交叉分析。引用文献总计 25560 篇，最多的频次为 20 次，其次是 14 次，这两篇文献分别为 *Consensus statement on concussion in sport-the 5th international conference on concussion in sport held in Berlin, October 2016*、*2016 Consensus statement on return to sport from the First World Congress in Sports Physical Therapy, Bern*。



Wu PF, Chang YW, Chen TB, et al. Physical Activity Behaviour up to 1 year Post-rehabilitation among Adults with Physical Disabilities and/or Chronic Diseases: Results of the Prospective Cohort Study ReSpAct[J]. BMJ OPEN, Jun 2022, vol.12, no.6.

ABSTRACT

Background Little is known of physical activity behaviour among adults with a disability and/or chronic disease during and up to 1 year post-rehabilitation. We aimed to explore (1) dose characteristics of physical activity behaviour among adults with physical disabilities and/or chronic diseases during that period, and (2) the effects of personal characteristics and diagnosis on the development of physical activity over time. Methods Adults with physical disabilities and/or chronic diseases (N=1256), enrolled in the Rehabilitation, Sports and Active lifestyle study, were followed with questionnaires: 3-6 weeks before (T0) and 14 (T1), 33 (T2) and 52 (T3) weeks after discharge from rehabilitation. Physical activity was assessed with the adapted version of the Short Questionnaire to ASsess Health enhancing physical activity. Dose characteristics of physical activity were descriptively analysed. Multilevel regression models were performed to assess physical activity over time and the effect of personal and diagnosis characteristics on physical activity over time. Results Median total physical activity ranged from 1545 (IQR: 853-2453) at T0 to 1710 (IQR: 960-2730) at T3 min/week. Household (495-600 min/week) and light-intensity (900-998 min/week) activities accrued the most minutes. Analyses showed a significant increase in total physical activity moderate-intensity to vigorous-intensity physical activity and work/commuting physical activity for all time points (T1-T3) compared with baseline (T0). Diagnosis, age, sex and body mass index had a significant effect on baseline total physical activity. Conclusion Physical activity is highly diverse among adults with physical disabilities and/or chronic diseases. Understanding this diversity in physical activity can help

improve physical activity promotion activities.

Slater LV, Hart JM. Quantifying the Relationship between Quadriceps Strength and Aerobic Fitness Following Anterior Cruciate Ligament Reconstruction[J].PHYSICAL THERAPY IN SPORT, May 2022, vol.55. pp.106-110.

ABSTRACT

Objective: To quantify the relationship between quadriceps strength and aerobic fitness following ACLR. Methods: 42 individuals with ACLR (29F/13M, 20.2 +/- 3.3years, 71.8 +/- 17.4 kg, 171.1 +/- 9.**4** cm, 21.9 +/- 21.5months post-surgery) and 38 healthy controls (24F/14M, 20.1 +/- 1.4years, 69.8 +/- 10.2 kg, 172.9 +/- 8.7 cm) completed quadriceps strength testing using an instrumented dynamometer then completed an incremental treadmill test to determine aerobic fitness (VO2max). Bivariate Pearson's correlations were calculated between strength and VO2max. Significant correlations were retained for a regression analysis. Results: Healthy controls demonstrated significantly greater VO2max compared to the ACLR group (d 1/4 0.56). Unilateral strength variables were significantly correlated with VO2max ($P < 0.006$) for both groups. Normalized peak isokinetic knee extensor torque was retained in the model, which explained 20.5% of the variance in healthy VO2max and 37.2% of the variance in ACLR VO2max. Conclusions: Aerobic fitness was reduced in the ACLR group in comparison to the healthy controls, despite unrestricted return to activity and similar activity levels between groups. Unilateral quadriceps strength was significantly correlated with aerobic fitness, which may be an indicator that greater unilateral strength may be a proxy for assessing aerobic fitness. Furthermore, sports medicine professionals may consider incorporating techniques and exercises during rehabilitation to improve cardiovascular fitness following ACLR.

Wan T, Hong KD, Lu SY, Exercise Prescription Intervention Rehabilitation Suggestions for Fatty Liver Patients[J].EVIDENCE-BASED COMPLEMENTARY AND ALTERNATIVE MEDICINE, Apr 2022, vol.2022.

ABSTRACT

In this study, the exercise prescription intervention rehabilitation suggestions for fatty liver patients were summarized as follows: first, basic exercises (brisk walking and jogging.), sports (swimming, badminton, and cycling), traditional Chinese medicine exercises (Taichi boxing and eight-section brocade), the aim of which is to improve overall physical strength and endurance of the body; second, exercise intensity, duration, and frequency; third, exercise precautions; and fourth, exercise prescription selection and suggestion.

Byrd MM, Kontos AP, Eagle SR,et al. Preliminary Evidence for a Relationship Between Anxiety, Anger, and Impulsivity in Collegiate Athletes With[J].JOURNAL OF CLINICAL SPORT PSYCHOLOGY, Jun 2022, vol.16, no.2, pp.89-108.

ABSTRACT

This study used an exploratory mixed-method sequential design to examine anger, impulsivity, and anxiety following sport-related concussions (SRC). Ten college athletes (M = 20.10 years, SD = 2.92) completed four measures 1-10 days postconcussion (Visit 1) and 11-20 days postconcussion (Visit 2). At return to play or 30 days postconcussion, the athletes completed a semistructured interview (follow-up) to assess their lived experiences of the emotional sequelae of concussions. All participants indicated experiencing some level of anxiety at Visit 1, with half the participants scoring above the measure's threshold for probable clinical diagnosis of anxiety. The results found a significant decrease in symptoms and anxiety at Visit 2. Inductive coding revealed

frustration, irritability, impulsive behavior, and fear of the unknown as themes pertaining to athletes' experiences. The findings highlight the need for sports medicine and sport psychology professionals to provide athletes with information to normalize their emotional responses during recovery.

D'Ascenzi F, Cavigli L, Pagliaro, A, et al. Clinician Approach to Cardiopulmonary Exercise Testing for Exercise Prescription in Patients at Risk of and with Cardiovascular Disease[J]. BRITISH JOURNAL OF SPORTS MEDICINE, Jun 2022.

ABSTRACT

Exercise training is highly recommended in current guidelines on primary and secondary prevention of cardiovascular disease (CVD). This is based on the cardiovascular benefits of physical activity and structured exercise, ranging from improving the quality of life to reducing CVD and overall mortality. Therefore, exercise should be treated as a powerful medicine and critical component of the management plan for patients at risk for or diagnosed with CVD. A tailored approach based on the patient's personal and clinical characteristics represents a cornerstone for the benefits of exercise prescription. In this regard, the use of cardiopulmonary exercise testing is well-established for risk stratification, quantification of cardiorespiratory fitness and ventilatory thresholds for a tailored, personalised exercise prescription. The aim of this paper is to provide a practical guidance to clinicians on how to use data from cardiopulmonary exercise testing towards personalised exercise prescriptions for patients at risk of or with CVD.

Ghaddaf AA, Alomari MS, Alsharef JF,et al. Early versus Late Weightbearing in Conservative Management of Acute Achilles Tendon Rupture: A Systematic Review and Meta-analysis of Randomized Controlled Trials[J].INJURY-INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED,Apr 2022,vol.53, pp.1543-1551.

ABSTRACT

Background: Achilles tendon rupture (ATR) is one of the most frequently encountered injuries in Sports Medicine. ATR can be managed surgically or conservatively followed by early functional rehabilitation or cast immobilization. The aim of the present systematic review and meta-analysis was to provide an update about the role of early weightbearing (WB) versus late WB on the clinical outcomes of adults with acute ATR.Methods: We performed a systematic literature search in Web of Science, Ovid, Medline/PubMed, and CENTRAL. We included randomized controlled trials (RCTs) that compared early WB, defined as weight bearing within 4 weeks of treatment, to late WB for individuals with acute (< 14 days) ATR. We sought to evaluate the following outcomes: re-rupture rate, Achilles Tendon Rupture Score (ATRS), return to pre injury sport activity, time to return to work, and adverse event rate. The standardized mean difference (SMD) was used to represent continuous outcomes while the risk ratio (RR) was used to represent dichotomous outcomes.Results: A total of 9 RCTs that enrolled 1046 participants were deemed eligible. There was no significant difference between early WB and late WB in terms of re-rupture rate (RR = 0.75, 95% CI 0.49 to 1.16), ATRS (SMD = 0.06, 95% CI -0.03 to 0.16), return to pre-injury sport activity (RR = 1.05, 95% CI 0.86 to 1.28), time to return to work (SMD = 0.03, 95% CI -0.20 to 0.26), or adverse event rate (RR = 1.87, 95% CI 0.53 to 6.63).Conclusion: This meta-analysis shows no difference in the functional outcomes and patient-reported outcomes between early functional rehabilitation and cast immobilization for conservatively treat

individuals with acute ATR.

Hadley CJ, Rao S, Tjoumakaris FP,et al. Safer Return to Play After Anterior Cruciate Ligament Reconstruction: Evaluation of a Return-to-Play Checklist[J]. ORTHOPAEDIC JOURNAL OF SPORTS MEDICINE,Apr 2022,vol.10,no.4.

ABSTRACT

Background: Questions remain regarding the traditional protocols used in rehabilitation and clearance for return to sports after anterior cruciate ligament reconstruction (ACLR). Purpose/Hypothesis: To investigate the impact on injury rates after return to sports by developing and validating a Safer Return to Play Following ACL Reconstruction Checklist consisting of subjective and objective functional tests that can be quickly and easily implemented into a sports medicine practice. It was hypothesized that patients who successfully passed the checklist before returning to sports would experience lower rates of ipsilateral and contralateral knee injuries at a 2-year follow-up as compared with patients who returned to play before completing the checklist. Study Design: Cohort study; Level of evidence, 2. Methods: First, a systematic review was performed to generate a list of the most common outcome measures used to assess return to play after ACLR. To refine our checklist, we conducted a survey with an expert panel of 10 medical professionals utilizing the Delphi technique. After the creation of the checklist, validation was performed by prospectively evaluating patients who had undergone ACLR for injury of the ipsilateral or contralateral knee, with a minimum 2-year follow-up. Results: After our systematic review of 60 studies, 7 criteria were included in the final checklist. During the period studied, October 2014 to December 2017, a total of 222 patients met the inclusion criteria and were enrolled in the study. At a minimum 2 years of follow-up, there were 146 patients who successfully passed the checklist and 38 who did not. Overall, 24 (16.4%) patients who had passed the checklist sustained an

injury to either knee, as compared with 10 (26.3%) from the group that did not pass the checklist (P = .162). Of the group that passed the checklist, 8 (5.5%) patients sustained an injury to the ipsilateral knee, as compared with 7 (18.4%) in the group that did not pass (P = .017). Conclusion: Prospective validation of our checklist demonstrated that patients who successfully passed the checklist before returning to play experienced a significantly lower incidence of ipsilateral anterior cruciate ligament injury as compared with patients who did not pass the checklist.

Demers I, Corriveau G, Morneau-Vaillancourt G,et al. A Clinical Practice Guide to Enhance Physical Activity Participation for Children with Developmental Coordination Disorder in Canada[J]. PHYSIOTHERAPY CANADA,Jun 2022.

ABSTRACT

Purpose: This clinical practice guide (CPG) aims to provide evidence-based recommendations for promoting and enhancing the participation and integration of children with developmental coordination disorder (DCD) into physical activities that take place in the home, school, community, or rehabilitation clinic contexts. Method: A panel of key stakeholders relevant to these contexts (parents, instructors, rehabilitation professionals) developed evidence-based recommendations using a consensus methodology after reviewing results from a recent systematic review of relevant literature. The quality of the evidence on which the recommendations were based was evaluated (2011 Oxford Centre for Evidence-Based Medicine Levels of Evidence scale) as was the strength of the final CPG recommendations (American Society of Plastic Surgeons Grade Recommendation Scale). Results: Recommendations (n= 50; 36% supported by robust, empirically derived evidence) for the different stakeholder groups fell into three categories: 1) Choose an appropriate activity for your child, 2) Harmonize the activity with the child's interests and abilities, and 3) Help the

child learn new movements prior to the activity. CONCLUSIONS: This comprehensive CPG provides concrete recommendations, based on the currently available evidence, that can be used by stakeholders to address the physical activity participation and integration needs of children with DCD in a variety of contexts.

Devaprakash D, Graham DF, Barrett R,et al. Free Achilles Tendon Strain During Selected Rehabilitation, Locomotor, Jumping, and Landing Tasks[J]. JOURNAL OF APPLIED PHYSIOLOGY,Apr 2022,vol.132,pp.956-965.

ABSTRACT

A better understanding of the strains experienced by the Achilles tendon during commonly prescribed exercises and locomotor tasks is needed to improve efficacy of Achilles tendon training and rehabilitation programs. The aim of this study was to estimate in vivo free Achilles tendon strain during selected rehabilitation, locomotor, jumping, and landing tasks. Sixteen trained runners with no symptoms of Achilles tendinopathy participated in this study. Personalized free Achilles tendon moment arm and forcestrain curve were obtained from imaging data and used in conjunction with motion capture and surface electromyography to estimate free Achilles tendon strain using electromyogram-informed neuromusculoskeletal modeling. There was a strong correspondence between Achilles tendon force estimates from the present study and experimental data reported in the literature (R-2 > 0.85). The average tendon strain was highest for maximal hop landing (8.8 +/- 1.6%), lowest for walking at 1.4 m/s (3.1 +/- 0.8%), and increased with locomotor speed during running (run 3.0 m/s: 6.5 +/- 1.6%; run 5.0 m/s: 7.9 +/- 1.7%) and during heel rise exercise with added mass (BW: 5.8 +/- 1.3%; 1.2 BW: 6.9 +/- 1.7%). The peak tendon strain was highest during running (5 m/s: 13.7 +/- 2.5%) and lowest during walking (1.4 m/s: 7 +/- 1.8%). Overall findings provide a preliminary evidence base for exercise selection to maximize anabolic tendon

remodeling during training and rehabilitation of the Achilles tendon.

NEW & NOTEWORTHY Our work combines medical imaging and electromyogram-informed neuromusculoskeletal modeling data to estimate free Achilles tendon strain during selected rehabilitation, locomotor, jumping, and landing tasks in trained middle-distance runners. These data may potentially be used to inform Achilles tendon training and rehabilitation to maximize anabolic tendon remodeling.

Souto LR, Borges MS, Marcolino AM, et al. Effectiveness of Adjunctive Treatment Combined with Exercise Therapy for Patellofemoral Pain: a Protocol for a Systematic Review with Network Meta-analysis of Randomised Controlled Trials[J]. BMJ OPEN, May 2022,vol.12,no.5.

ABSTRACT

Introduction Patellofemoral pain (PFP) is a chronic condition that affects up to 25% of the general population and has a negative impact on functionality and quality of life due to the high levels of pain experienced by these patients. In order to improve pain and function, rehabilitation programmes that combine adjunctive treatments with exercise therapy are often used in research and clinical settings. However, despite the variety of adjunctive treatments available, their effectiveness when compared with exercise therapy has yet to be elucidated. Thus, the aim of this study is to evaluate the effectiveness of adjunctive treatments plus exercise therapy versus exercise therapy, and determine the relative efficacy of different types of adjunctive treatments plus exercise therapy for individuals with PFP. Methods and analysis A systematic review and network meta-analysis will be conducted based on the Cochrane Collaboration recommendations and reported in line with Preferred Reporting Items for Systematic Review and Meta-Analysis guidelines. We will search Embase, PubMed (MEDLINE), CENTRAL, CINAHL, PEDro, SPORTDiscus, Web of Science and OpenGrey. It will be

included randomised controlled trials that compared adjunctive treatment plus exercise therapy to placebo adjunctive treatment plus exercise therapy or exercise therapy. The outcomes of interest will be pain and function, with no restrictions on language, setting or year of publication. Study selection will be performed by two independent reviewers, based on the eligibility criteria. Risk of bias will be assessed using the Physiotherapy Evidence Database scale and the evidence summarised via the Grading of Recommendation, Assessment, Development and Evaluation approach. A Bayesian network meta-analysis will be performed to compare the efficacy of different adjunctive treatments plus exercise therapy. Consistency between direct and indirect comparisons will be assessed. Ethics and dissemination No ethical statement will be required for this systematic review and meta-analysis. The findings will be published in a relevant international peer-reviewed journal and presented at conferences. PROSPERO registration number CRD42020197081.

Villers J, Cardenas A, Gipson T, et al. The Immediate Effect of Adding Lumbar Mobilization to A Static Stretching Program on Hamstrings Range of Motion: An Exploratory Study[J]. JOURNAL OF SPORTS SCIENCE AND MEDICINE, Jun 2022,vol.21,pp.253-259.

ABSTRACT

A contributing risk factor and a byproduct of a hamstrings strain is limited hamstrings range of motion (ROM). Some evidence supports static stretching (SS) and lumbar spinal mobilization therapy (LSMT) as an effective means for increasing hamstrings ROM. However, the efficacy of combining LSMT and SS for increasing hamstrings ROM is unknown. The objective of the study is to quantify the immediate effects of the combination of LSMT and SS compared to LSMT and SS on hamstrings ROM in a healthy population. Thirty participants were randomized by block lateral lumbar PA

mobilization at L-4); (2) SS; or (3) combination of LSMT and SS. Hamstrings ROM was measured pre- and postintervention by the active knee extension test (AKET). There was no group-by-time interaction effect (p = 0.871). Within group analysis revealed a significant statistical change and a large effect size: LSMT (p = .037, RCI = 3.36, d = 0.771); SS (p = 0.035, RCI The findings suggest that the combination of LSMT and SS does not have a further effect on hamstrings ROM compared to the individual results of LSMT or SS.

Young HML, Yates T, Davies MJ, et al. Physical Activity and Sedentary Behaviour Interventions for People Living with both Frailty and Multiple Long-term Conditions: a Scoping Review Protocol[J]. BMJ OPEN, May 2022,vol.12,no.5.

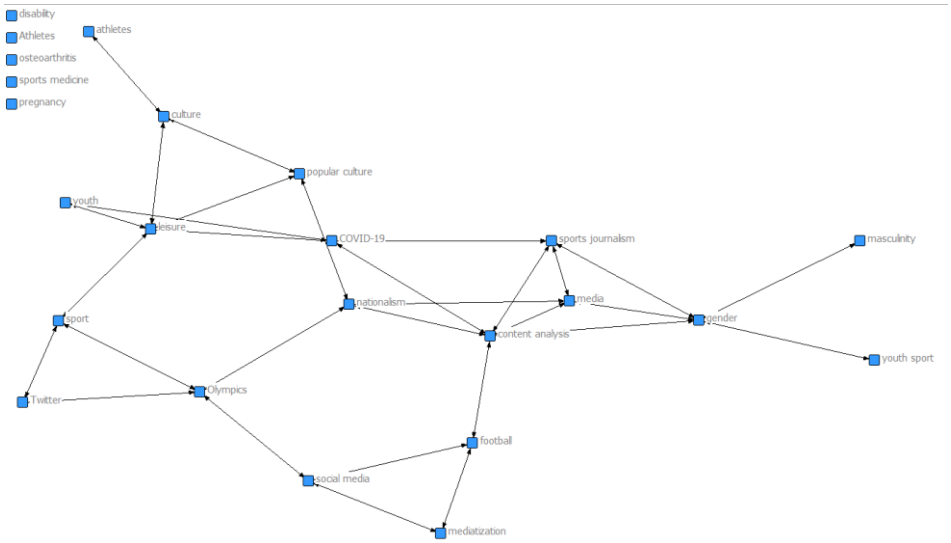
ABSTRACT

Introduction The number of people living with multiple long-term conditions (MLTCs) is predicted to rise. Within this population, those also living with frailty are particularly vulnerable to poor outcomes, including decreased function. Increased physical activity, including exercise, has the potential to improve function in those living with both MLTCs and frailty but, to date, the focus has remained on older people and may not reflect outcomes for the growing number of younger people living with MLTCs and frailty. For those with higher burdens of frailty and MLTCs, physical activity may be challenging. Tailoring physical activity in response to symptoms and periods of ill-health, involving family and reducing sedentary behaviour may be important in this population. How the tailoring of interventions has been approached within existing studies is currently unclear. This scoping review aims to map the available evidence regarding these interventions in people living with both frailty and MLTCs. Methods and analysis We will use a six-stage process: (1) identifying the research questions; (2) identifying relevant studies (via database searches); (3) selecting studies; (4) charting the data; (5)

collating and summarising and (6) stakeholder consultation. Studies will be critically appraised using the Mixed Methods Appraisal Tool. Ethics and dissemination All data in this project will be gathered through database searches. Stakeholder consultation will be undertaken with an established patient and public involvement group. We will disseminate our findings via social media, publication and engagement meetings.

文化与新闻传播

本期文化与新闻传播学术研究共检索到英文相关文献 435 篇，研究热点主要集中在民族传统体育文化传播、疫情期间的媒体生态系统、北京 2022 年冬奥会筹备阶段的媒体化和公众接受度等方面。就检索导出的数据采用书目共现分析系统（Bicomb V202007）对文献信息进行提取，包括期刊、关键词、标题、发文年份等，相同含义的字段去重且批量合并，同时去除没有实质意义的字段，对所提取的字段进行频次统计，形成高频矩阵，并使用社会网络分析软件 Ucinet 绘制成知识图谱，进行共词聚类分析。检索结果如下：1）关键词共词分析。提取关键词 852 个，经过数据清洗后关键词有 749 个，词频为 3 及以上的关键词有 33 个，累计百分比为 7.8%，高频关键词有社交媒体、体育、足球、新冠肺炎、性别等，生成可视化知识图谱（见下图）。2）来源期刊分析。涉及期刊 102 种，其中载文 5 篇及以上的期刊有 6 种，累计百分比为 30.27%，刊载文化与新闻传播前三位的期刊分别为：Communication & Sport（JCR 学科分区 Q2，Q3），International Journal of Environmental Research and Public Health（JCR 学科分区 Q2、Q1），Sport in Society（JCR 学科分区 Q4、Q3）。3）交叉学科分析。引用文献总计 9889 篇，最多的频次为 8 次，其次是 6 次，这两篇文献分别是：*Reflecting on reflexive thematic analysis*、*Using thematic analysis in psychology*。



Ehrlen V. Mediatization and Self-Organized Leisure Sports: A Finnish Perspective[J]. COMMUNICATION & SPORT, May 2022,vol.18, no.20.

ABSTRACT

Participation in leisure sports is undergoing a transformation that is guided by societal and cultural changes as well as recent developments in, and the use of, digital sports media and technologies. This paper discusses how changes in leisure sports participation can be understood using mediatization as a theoretical framework. This theoretically informed analysis of change is contextualized within Finnish climbing and trail running subcultures. The paper proposes that mediatization contributes to the diversification of the sporting landscape, enables fluidity in sports communities, and strengthens commercialization of leisure sports. Additionally, the paper outlines how the dynamics of de- and reinstitutionalization of leisure sports are connected to the rise of digital media and communication.

Tian B, Meng B, Wang J, et al. Spatio-Temporal Patterns of Fitness Behavior in Beijing Based on Social Media Data[J]. SUSTAINABILITY, Apr 2022,vol.14, no.7.

ABSTRACT

Fitness is an important way to ensure the health of the population, and it is important to actively understand fitness behavior. Although social media Weibo data (the Chinese Tweeter) can provide multidimensional information in terms of objectivity and generalizability, there is still more latent potential to tap. Based on Sina Weibo social media data in the year 2017, this study was conducted to explore the spatial and temporal patterns of urban residents' different fitness behaviors and related influencing factors within the Fifth Ring Road of Beijing. FastAI, LDA, geodetector technology, and GIS spatial analysis methods were employed in this study. It was found that fitness

behaviors in the study area could be categorized into four types. Residents can obtain better fitness experiences in sports venues. Different fitness types have different polycentric spatial distribution patterns. The residents' fitness frequency shows an obvious periodic distribution (weekly and 24 h). The spatial distribution of the fitness behavior of residents is mainly affected by factors, such as catering services, education and culture, companies, and public facilities. This research could help to promote the development of urban residents' fitness in Beijing.

He XH, Tian SH. Analysis of the Communication Method of National Traditional Sports Culture Based on Deep Learning[J]. SCIENTIFIC PROGRAMMING,Apr 2022,vol.2022.

ABSTRACT

Like the Chinese nation, China's national traditional sports culture has a long history and is a treasure of Chinese national culture, reflecting the life, customs, wisdom, and pursuit of the people of all ethnic groups in China. The dissemination of national traditional sports culture is not only a necessary method for our country's cultural export but also a necessary means to maintain the diversity of world sports culture. However, there are still serious deficiencies in the dissemination of national traditional sports culture in our country, and some traditional national sports cultures are not even known to the public. Starting from the two communication methods of sports events and network communication, this paper studies the three mature national traditional sports cultures of martial arts (Wushu), Go, and Chinese chess and proposes a quantitative method for communication methods and communication effects. We further analyze the role of national traditional sports culture in cultural communication.

Antunovic D, Bartoluci S. Sport, Gender, and National Interest During the Olympics: A Comparative Analysis of Media Representations in Central and Eastern Europe[J]. INTERNATIONAL REVIEW FOR THE SOCIOLOGY OF SPORT, May 2022.

ABSTRACT

Researchers have documented patterns in sports media coverage across a variety of geographical and media contexts extensively, but relatively few studies focus on the Central and Eastern European region. This study examines the agenda diversity of European public service media in Hungary, Croatia, and Slovenia on their sport-related Facebook accounts during the 2020 Tokyo Olympic Games. A content analysis identified featured sports, gender balance, and the role of national interest in the events and athletes represented. Sports agenda diversity was driven by the hegemony of men's football and national success at the Olympics. Gender imbalance in media coverage persists in the region even on public service broadcasters' social media accounts. Women received coverage only when representing the home nation at an Olympic event. The hegemony of men's football is a transnational phenomenon, while Olympic coverage emphasizes sports that share historical associations with national identity. Sports agenda diversity in the three countries is heterogeneous and regionally distinct. In practice, broadcasters might temporarily minimize gender imbalance in Olympic coverage, but in ways that routinizes the national focus. Theoretical developments in agenda setting in coverage of international events should account both for transnational patterns in public service media in the region and local particularities.

Pearson E, Misener L.Informing Future Paralympic Media Approaches: The Perspective of Canadian Paralympic Athletes[J]. COMMUNICATION & SPORT, May 2022.

ABSTRACT

Media coverage of the Paralympic Games can affect how athletes with impairment and disability sport are perceived by the public. Researchers investigating media representations of disability sport have focused on how Paralympic athletes and disability sport are represented by the media. Limited research, however, has examined how Paralympic athletes perceive these representations of themselves and the meanings they attribute to such representations. The purpose of this study was to examine how Paralympic athletes make meaning of discourses of disability within Paralympic coverage. This involved semi-structured photo-elicitation interviews with eight Canadian Paralympic athletes. A reflexive thematic analysis (RTA) was used to analyze the data utilizing Foucault's notions of discourse, power, and technologies of the self. The findings demonstrate that Paralympic athletes made meaning of the discourses of disability within Paralympic media coverage by drawing on their lived and media experiences. Athletes with more media experience articulated problematizations of dominant discourses of disability in Paralympic media coverage and engagement in technologies of the self. Knowledge generated from this study offers media personnel an informed understanding of how Paralympic athletes understand representations of disability and disability sport. This knowledge may offer insight and inform future media approaches of disability sport and the Paralympic Games.

Ihle H.How Gender Affects the Newsworthiness of Sports News on German TV: An Application of the News-factors Approach to Understanding Gender-biased Sports News Presentation[J].INTERNATIONAL REVIEW FOR THE SOCIOLOGY OF SPORT, Jun 2022.

ABSTRACT

Gender inequalities in sports media are well-documented. This study focuses on sports news composition and how gender influences the prominence of sports news stories. The news-factors approach offers a causal explanation for the lower prominence (i.e. newsworthiness) of women's sports in TV sports reporting. Following this theory's perspective, athletes' gender is supposed to work as a moderating variable on news values of news factors in sports reports. The content analysis of seven German sports news programs reveals whether the same news factors are treated unequally with regard to women's and men's sports in TV news coverage. The results show that women's sports are presented as less newsworthy than men's sports, although news factors do not differ significantly by gender. However, the moderation effect of gender does not cause lower newsworthiness. That means, e.g., sports women's successes are equally emphasized as the success of male athletes in sports news on TV, and gender does not lower the credits female athlete's success receive in any given news stories. Instead, the results suggest that gender works as a news factor of its own, reducing not the news value of certain news factors but the overall newsworthiness of women's sports in TV coverage. Thus, the results demonstrate that gender inequality in sports media does not necessarily come from journalists perceiving female athletes' performance as inferior but from presenting women's sports less often and in a far less prominent way than men's sports.

Gentile PC, Buzzelli NR, Sadri SR, et al. Sports Journalism's Uncertain Future: Navigating the Current Media Ecosystem in the Wake of the COVID-19 Pandemic[J].JOURNALISM STUDIES,May 2022.

ABSTRACT

In March 2020, the sporting landscape was paused indefinitely due to the COVID-19 pandemic. To understand how the job function and routines of newspaper sports journalists were impacted during the initial U.S. outbreak (March to July 2020), semi-structured in-depth interviews with 23 members of United States (US) print sports media were conducted. Interviewee responses elucidated three main themes: the future of sports journalism is unknown and frightening for those working in the industry, COVID-19 illustrates the importance of interpersonal relationships to produce quality stories, and COVID-19 validates the importance of quality sports journalism. Additionally, interviewees also shed light on the impact that videoconference interviews, specifically those conducted over Zoom, have on the sports journalism field. Even though it was deemed a useful tool during the pandemic, sportswriters feared that teams will continue to limit access by relegating all interviews to Zoom, thus drastically changing the norms of sports journalism. The theoretical implications of these findings are discussed.

Shi L, Zhang LW. A Smarter and Greener Olympics: Mediatization and Public Reception in the Preparation Stage of the Beijing 2022 Winter Olympics[J].COMMUNICATION & SPORT, Jun 2022.

ABSTRACT

In the post-COVID-19 era, the mediatization of sports mega-events is timely and notable. This study focuses on the 2022 Olympic Winter Games in Beijing and investigates how mediated processes influenced the Olympics. The data were gathered in two ways: we

examined 783 WeChat posts from three salient Chinese media institutions, namely, the Beijing 2022 Winter Olympics Organising Committee (BOCOG), China Central Television (CCTV), and Beijing Television (BTV), as well as conducted 21 semi-structured interviews with BOCOG staff and members of the general public. We discovered that the Games were narrated around two major themes-the development of technology and "going green"-both of which were heavily influenced by the country's national agenda. As a result, the Chinese public was thoroughly immersed in the tech-savvy Olympics scenario, and the Green Olympics concept was widely shared in their daily practices. This study adds to the literature by incorporating communicative figuration as an analytical framework to improve the quantitative and qualitative dimensions of media saturation theory. Additionally, this research sheds light on the study of sports mediatization in China in the context of a pandemic.

Ismail H, Khoo S, Idrus MM.Newspaper Coverage of Paralympic Athletes: A Multimodal Discourse Analysis[J].SAGE OPEN,Apr 2022,vol.12,no.2

ABSTRACT

This study examines representations of athletes with impairments who competed at the 2012 London and 2016 Rio Paralympic Games. Discourse analysis from a linguistic perspective was employed to investigate gendered descriptions of disabled persons and the emotional expressions of Paralympic athletes, as printed in verbal and visual texts found in Malaysian English Language newspapers. Emotional expressions displayed in visual texts were analyzed through visual semiotics. Additionally, corpus assisted analysis was employed to triangulate the findings where necessary. Findings indicated that disability sport had little in common with non-disability sport in terms of coverage volume. Written depictions of perceived impairment most frequently used medical terms to describe both female and male athletes and were concentrated in the lead paragraphs.

There were more pictures of athletes that focused on faces rather than on impairments. Finally, analyses prominently revealed that emotional elements were an integral part of the Paralympic sports news narrative, with all positive emotion words for males, and facial affect for both females and males also positive. Many pictures depicted smiles and happy expressions at medal award ceremonies.