PARALLEL ORAL PRESENTATION SESSION RUNDOWN

3 November 2026 (Tuesday)

Parallel Oral Presentation Session 1-1

Time: 12:10-12:55

Venue: C-LP-11

Session Chair: Prof. CHENG Shu Kei Andy *(The Education University of Hong Kong)*

O1-1-1 **Integrating Mobile Health and Outdoor Exercise Facilities to Sustain Physical Activity in Older Adults With Prefrailty and Frailty: A Pilot Randomized Controlled Trial**

Prof. Andy CHENG (The Education University of Hong Kong)

O1-1-2 **Comparing physical activity during and outside school hours among primary school children in England: an analysis of the Active Lives Children and Young People Survey**

Douglas Koon-Hung WONG (Loughborough University)

O1-1-3 **Beyond the Winning Formula: How Institutional Philosophy Shapes University Sport**

Ms. Mahrunisa Fathiyah (National University of Singapore)

3 November 2026 (Tuesday)

Parallel Oral Presentation Session 1-2

Time: 12:10-12:55

Venue: D1-LP-08

Session Chair: Dr. ZHENG Chen *(The Education University of Hong Kong)*

O1-2-1 Effects of a 5:2 Diet Combined With Multicomponent Structured Exercise on Metabolic Health Among Older Adults With Central Obesity: A Randomized Controlled Trial

Dr. ZHENG Chen (The Education University of Hong Kong)

O1-2-2 Effectiveness of a Behavioral Change Technique-Based Intervention on Weight Loss in College Students with Overweight/Obesity: A Real-World Study

Dr. Xiaoyuan ZHANG (Peking University)

O1-2-3 Bidirectional associations between physical activity and sleep in children with attention-deficit/hyperactivity disorder: A micro-longitudinal study

Mr. Ming CHEN (The Education University of Hong Kong)

3 November 2026 (Tuesday)

Parallel Oral Presentation Session 1-3

Time: 12:10-12:55
Venue: D2-LP-08
Session Chair: Dr. JIANG Shan *(The Education University of Hong Kong)*

O1-3-1

新质生产力引领大学体育的数智化革新与转型：北京大学的创新实践探索

赫忠慧教授 (北京大学)

O1-3-2

职前体育教师数字素养框架的学科化构建与专家共识验证

任雅琴博士 (Guangzhou Sport University)

O1-3-3

Conversational Artificial Intelligence for Scalable Mental Health Support: A Systematic Review and Network Meta-analysis of Randomised Controlled Trials

Dr. JIANG Shan (The Education University of Hong Kong)

3 November 2026 (Tuesday)

Parallel Oral Presentation Session 2-1
(Short Oral Presentations)

Time: 16:00-16:45

Venue: D1-LP-08

Session Chair: Dr. NG Yau Yin Johan *(The Education University of Hong Kong)*

O2-1-1	**Time perception during intensive high-performance soccer training: implications for session-RPE and training-load interpretation** *CAI Xinyu (The Education University of Hong Kong)*
O2-1-2	**When Time Flies in Training: Exploring Subjective Time, Internal Load and Skill Performance in Collegiate Basketball** *YU Tianhe (Hebei University of Chinese Medicine)*
O2-1-3	**From the Court to Life: Active Ageing Experiences among Older Chinese Women Basketball Participants** *Ms. Hua Chen ZHU (University of Macau, Faculty of Education)*
O2-1-4	**Becoming a Female Physical Education Teacher: An Autoethnography of Gendered Bodies and Everyday Pedagogical Practice in Chinese Higher Education** *Dr. Zhao Kaixi (Shanxi University of Finance and Economics)*
O2-1-5	**'He had bitten off more than he could chew': the publicised struggles versus lived challenges of the Chinese 'creek football star'** *LI, You (Xiamen University of Technology)*
O2-1-6	**Young Children's Perspectives on Physical Activity: A Scoping Review on Why, How, and What** *Mr. Haowei ZHANG (The Education University of Hong Kong)*
O2-1-7	**How Social Justice is conceptualized in the Chinese Physical Education and Health Curriculum: A Critical Discourse Analysis** *Mr. Zhuohong ZHUANG (The University of Auckland)*

3 November 2026 (Tuesday)

Parallel Oral Presentation Session 2-2
(Short Oral Presentations)

Time: 16:00-16:45
Venue: D2-LP-08
Session Chair: Prof. WANG Lijuan *(Shanghai University of Sport)*

O2-2-1	**在支持与依赖之间：人工智能与中国职前健康与体育教育教师的专业发展** *陈诗旭 (福建师范大学)*
O2-2-2	**专门用途汉语教材的主题类别分析 ——以体育汉语教材为例** *邱子豪 (The Education University of Hong Kong)*
O2-2-3	**合作学习模式促进体育理论课中学生深度学习的个案研究** *党林秀博士（福建师范大学）*
O2-2-4	**从标准化训练到个性化培养：基层篮球数字化实践与反思** *张俊威（深圳市龙岗区宝龙科技城实验学校集团碧新小学）*
O2-2-5	**粤港澳三地中小学在职体育教师继续教育供给生态研究** *叶家成博士 (The Education University of Hong Kong)*
O2-2-6	**不同强度身体活动与中学生久坐行为对睡眠质量的影响研究** *欧阳静姿 (Guangzhou Sport University)*
O2-2-7	**中学生体育课动机与行为选择及健康结果的关系** *郑炜奇 (Shaanxi Normal University)*

3 November 2026 (Tuesday)

Parallel Oral Presentation Session 2-3
(Short Oral Presentations)

Time: 16:00-16:45
Venue: D2-LP-10
Session Chair: Dr. JIANG Shan *(The Education University of Hong Kong)*

O2-3-1	Campus-Embedded Stair-Climbing Exercise Snacks for Insufficiently Active College Students: A Randomized Controlled Trial *Mr. Rongji Zhao (Tongji University)*
O2-3-2	From public estates to school micro-spaces: enhancing youth physical activity in Hong Kong through two basketball programmes *Ms. Ying FUNG (InspiringHK Sports Foundation)*
O2-3-3	STAGE: Spatio-Temporal Adversarial Graph Encoder for Dual-Person Competition Recognition in Table Tennis *Dr. Wenlong MA (Shanghai University of Sport)*
O2-3-4	The effect of the 5:2 diet combined with multicomponent structured exercise on body composition and physical fitness in older adults with abdominal obesity: A randomized controlled trial *Miss ZHANG Haiqin (The Education University of Hong Kong)*
O2-3-5	Differential Effects of Acute Exercise Intensity on Sleep Continuity and Frontal NREM Slow-Wave Activity: A Randomized Crossover Trial *GENG Ya-Xuan (Beijing Normal University)*
O2-3-6	Active Resistance Training for Disuse-Induced Skeletal Muscle Atrophy: A Neuromuscular Coupling Perspective *Duan Haijun (Beijing Normal University)*
O2-3-7	Association of Sleep Duration, Bedtime, and Their Combined Patterns with Choice Reaction Time in Older Adults:A Cross-Sectional Study Based on the Sixth National Physical Fitness Monitoring in China *Mr. Xiao (China Institute of Sport Science)*

4 November 2026 (Wednesday)

Parallel Oral Presentation Session 3-1

Time: 08:30-09:30

Venue: D1-LP-08

Session Chair: Dr. CHUNG Ming Yan Louisa *(The Education University of Hong Kong)*

O3-1-1 Students' Expectancy–Value–Cost Motivational Profiles in Physical Education and Their Associations with Behavioral Choices and Health Outcomes

Mr. Lilin CHEN (Central China Normal University)

O3-1-2 Health Equity and Inclusion: Predictors of Sport Participation and Sport Identity Among South Asian and Chinese Adolescents in Hong Kong

Mr. ASLAM Hamza Saghir (Hong Kong Baptist University)

O3-1-3 Artificial Intelligence in Food Planning: A Critical Review Through the Lens of Behavioural Feedback Theory

Dr. CHUNG Ming Yan Louisa (The Education University of Hong Kong)

4 November 2026 (Wednesday)

Parallel Oral Presentation Session 3-2

Time: 08:30-09:30
Venue: D1-LP-06
Session Chair: Mr. CHAN Ching Yat Roy *(The Education University of Hong Kong)*

O3-2-1 AI-Driven Real-Time Gesture Analytics in Basketball
Mr. CHAN Ching Yat Roy (The Education University of Hong Kong)

O3-2-2 个人与社会责任教学模式（TPSR）在中国初中体育课中的应用效果与实施困境
党林秀博士（福建师范大学）

O3-2-3 Development and Validation of a Short Form of the PE Teacher Feedback Literacy Scale (PE-TFLS-SF): A Rasch-Based Psychometric Evaluation
Xiancheng ZENG (Macao Polytechnic University)

4 November 2026 (Wednesday)

Parallel Oral Presentation Session 3-3

Time: 08:30-09:30
Venue: D1-LP-07
Session Chair: Dr. NG Yau Yin Johan *(The Education University of Hong Kong)*

O3-3-1 WISH-HK: A Prospective Pilot Study of an Approach-Motivated Walk-and-Talk Intervention for Adolescent Girls in Hong Kong Secondary Schools

Jinghua CHEN (Independent Researcher)

O3-3-2 The Institutional Trajectory of Liangjiang Women's Physical Education School in Modern China, 1922–1951

Dr. ZHAO Feng (Waseda University)

O3-3-3 Personalizing Lifestyle Prescription for Metabolic Syndrome: A Bayesian and Component Network Meta-Analysis of Exercise and Diet

Mr. Jingfeng Chen (The Education University of Hong Kong)

4 November 2026 (Wednesday)

Parallel Oral Presentation Session 4-1

Time: 11:35-12:50
Venue: D1-LP-07
Session Chair: Dr. KAM Wai Keung Kevin *(The Education University of Hong Kong)*

O4-1-1 Reimagining Meaningful Physical Education in the Hong Kong Chinese Context: A Qualitative Study of Culturally Grounded Pedagogy
Dr. KAM Wai Keung Kevin (The Education University of Hong Kong)

O4-1-2 Mapping the Research Landscape of Bilingual Physical Education: A Scoping Review
JungHuan, Huang (National Taiwan Normal University)

O4-1-3 Good Advice, No Action? Understanding the Adoption of AI-Generated Lifestyle Recommendations
Prof. Patrick Lau (Hong Kong Baptist University)

O4-1-4 3～6岁幼儿梯度体力活动、体质与静息态脑电发育的实证研究
甄志平教授 (Beijing Normal University)

O4-1-5 单动篮球投篮的动力链时序与末端代偿机制：基于肘–腕运动学协同的量化分析
高英铭博士 (The Education University of Hong Kong)

4 November 2026 (Wednesday)

Parallel Oral Presentation Session 4-2

Time: 11:35-12:50
Venue: D2-LP-09
Session Chair: Dr. LIANG Xiao Shawn *(The Education University of Hong Kong)*

O4-2-1 The Environmental Footprint of Trail Running: A Scoping Review of Ecological Impacts and Mitigation Measures
Ms. Yanmei ZHANG (Beijing Sport University)

O4-2-2 Tai Chi as an Adjunct to Cognitive Behavioral Therapy for Insomnia Improves Self-Reported Sleep Outcomes in Older Adults With Chronic Insomnia
Dr. Angus Pak-hung YU (The Chinese University of Hong Kong)

O4-2-3 青少年每日中高强度身体活动时段分布的特征及与体质健康的关联
王丽娟教授（上海体育大学）

O4-2-4 低频到校特殊学生的体育课堂融入：一项基于同伴支持的个案实践观察
张俊威（深圳市龙岗区宝龙科技城实验学校集团碧新小学）

O4-2-5 The timing of exercise on sleep in children with ADHD: A pilot randomised controlled trial
Dr. LIANG Xiao (The Education University of Hong Kong)

4 November 2026 (Wednesday)

Parallel Oral Presentation Session 4-3

Time: 11:35-12:50
Venue: D2-LP-10
Session Chair: Dr. NG Yau Yin Johan *(The Education University of Hong Kong)*

O4-3-1 Health and Well-Being Indicators Associated with 24-Hour Movement Guideline Adherence in Children and Adolescents: A Systematic Review and Meta-Analysis
Ms. Wenxuan MA (The Education University of Hong Kong)

O4-3-2 青少年24h静息–活动节律特征及其与肥胖的关系研究
李晨林 (Shanghai University of Sport)

O4-3-3 Associations between 24-hour movement behaviours, fundamental movement skills, executive function, and socio-emotional well-being in young children
Dr. NG Yau Yin Johan *(The Education University of Hong Kong)*

O4-3-4 Mechanisms of motor unit remodeling following prolonged bed rest and immobilization: implications for motor rehabilitation
WANG Junpeng (Beijing Normal University)

O4-3-5 Effects of Exercise Interventions on Behavioral, Psychological, and Physical Outcomes Across Eating Disorders: A Systematic Review and Three-Level Meta-Analysis of Randomized Controlled Trials
Ms. Yujia QU (The Education University of Hong Kong)

4 November 2026 (Wednesday)

Parallel Oral Presentation Session 5-1

Time: 14:40-15:30

Venue: D1-LP-06

Session Chair: Dr. SUN Fenghua Bob *(The Education University of Hong Kong)*

O5-1-1 **Effects of Cognitively Engaging Physical Activity and Combined Cognitive Training and Physical Activity on Inhibitory Control and Prefrontal Function in Children with ADHD: A Randomized Controlled Trial**

Dr. SUN Fenghua Bob (The Education University of Hong Kong)

O5-1-2 **健康行为、社会参与及客观身体功能与中国中老年人躯体—心理—认知多重共病发生风险的关联**

何望龙 (China Institute of Sports Science)

O5-1-3 **An Incremental Cycling Protocol to Task Failure Induces Intensity-Specific Alterations in Vastii Motor Unit Properties**

Yanfeng LI (Beijing Normal University)

4 November 2026 (Wednesday)

Parallel Oral Presentation Session 5-2

Time: 14:40-15:30
Venue: D1-LP-07
Session Chair: Dr. JIANG Shan *(The Education University of Hong Kong)*

O5-2-1 大学瑜伽课程与泰戈尔诗剧融合式美育教学实践探索
亓昕 (Peking University)

O5-2-2 Research on Motion Heart Rate Detection Method Based on Photoplethysmography and Human Acceleration
Dr. Jiarui HE (The Chinese University of Hong Kong)

O5-2-3 Parental Role Modeling and Children's Physical Activity: A Longitudinal Analysis Using CHNS Data
Miss DU Zhengyun (Beijing Sport University)

4 November 2026 (Wednesday)

Parallel Oral Presentation Session 5-3

Time: 14:40-15:30
Venue: D2-LP-08
Session Chair: Dr. LEUNG Ka Man Carman *(The Education University of Hong Kong)*

O5-3-1 Association Between Parental Support or Restriction and the 24-Hour Movement Behavior Time Allocation in Children and Adolescents: A National Large-Sample Survey Analysis

QIU Yanping (Shanghai University of Sport)

O5-3-2 Effects of Combined Aerobic and Resistance Exercise on Body Composition and Cognitive Function in Older Adults Obesity: A Randomized Controlled Trial

Yue CHENG (The Education University of Hong Kong)

O5-3-3 Effects of exercise on sleep quality in university students: A systematic review and meta-analysis of randomized controlled trials

Jie SHU (Peking University)

POSTER PRESENTATION SESSION

2 November 2026 (Monday)

Poster Session 1

Time: 16:30-17:30
Venue: E-P-02M

P1-1 A Physical Literacy–Oriented Instructional Model for Futsal in Secondary Schools
CHEN Yulin

P1-2 Introduction: Developing and Refining a Volleyball-Specific Empowering Coaching Model: A Qualitative Study
ZHU Zhihang (The Education University of Hong Kong)

P1-3 Community Tennis for Healthy Ageing in Hong Kong: Pilot Evidence on Fitness and Psychosocial Outcomes
Mr. CHAN Chun Ngai (Lingnan University)

P1-4 Physiological and Neuromuscular Profiles of Elite Hong Kong Orienteers: International Benchmarking and Determinants of Field-Based Aerobic Performance
Mr. KONG Yu Hin (The Education University of Hong Kong)

P1-5 How to Cultivate Esports Spectators' Subjective Wellbeing? Testing the Spectator Wellbeing Process Model Across Two Empirical Studies
Dr. Adam Yuchen SHI

P1-6 Intentional interpretation of exercise behaviour among oldest-old adults (85+) under the paradigm of the corporeal turn
CHEN Lin (The Education University of Hong Kong)

P1-7

Ankle-Focused Tai Chi in Young Adults with Chronic Ankle Instability: Engagement, Experience and Patient-Reported Outcomes

QIAN Qian (Loughborough University)

P1-8

Beyond Emotional Suppression: Evaluating a Brief Play and Movement Intervention for Primary School-Age Children Anxiety in Hong Kong

YIP Chi Hang (The Education University of Hong Kong)

P1-9

The Effects of Mindful Self-Care on Well-Being in Adult Populations: A Systematic Review

Nana LIU (The Education University of Hong Kong)

P1-10

美国常青藤联盟学生运动员管理研究

丁思劼（香港教育大学）

P1-11

Active Video Gaming Versus Discretionary Activities for Adolescent Recess-Time Physical Activity: A Crossover Study During the COVID-19 Pandemic

Mr. WONG Ching Long Don (The Education University of Hong Kong)

P1-12

学龄前儿童24小时运动行为与执行功能的纵向关联分析

王莎女士（香港教育大学）

P1-13

Beyond the Classroom: A Partnership Model for Authentic Learning in Sport Management Education

Mr. Peter CHEUNG Kim Tan (Hong Kong Metropolitan University)

P1-14

Adherence to 24-Hour Movement Guidelines, Body Fat and Cardiorespiratory Fitness among Neurodivergent Children in Hong Kong

Mr. Jinghao SUI

P1-15
Association between Physical Activity Level Assessed by the Doubly Labeled Water Method and Accelerometer-Derived Physical Activity Intensity in Community-Dwelling Older Adults
YUNDUO Shao (Tohoku University)

P1-16
Effects of a 4-Week Group-Based Exercise Intervention on Executive Function, Sleep, and Quality of Life in Children with ADHD
LIU Zhining (The Education University of Hong Kong)

P1-17
Timing of physical activity and associations with obesity among Chinese adolescents
Ting LI (Shanghai university of sport)

P1-18
Finite element analysis of lateral ankle ligament strain in four basketball sprain cases
Hengshuo ZHANG (Loughborough University)

P1-19
Bridging Sport Coaching in Esports Practice: A Scoping Review
Wing Hang WANG (The Education University of Hong Kong)

P1-20
国际学校武术分层培养的实践与启示 —— 以弘立书院“6+1”梯队为例
黄达博士（中国传媒大学）

P1-21
未来排球人才：中日韩青少年运动员培养体系的比较研究
舒睿翔

P1-22
从赛场影响力到健康公平：运动员参与体育与健康教育的四方演化博弈
陈诗旭博士 （福建师范大学）

P1-23
Biopsychosocial Factors Associated with Well-being Among Children and Adolescents with Intellectual Disabilities
Dr. Tracy Chor-wai TANG (The Chinese University of Hong Kong)

P1-24 **植物乳杆菌补充剂对运动表现和恢复的影响———一项系统评价和叙述性综合分析**
纪彦屹博士（香港教育大学）

P1-25 **学校环境与青少年体育活动之间的关系：系统综述与Meta分析**
沙漠 (香港教育大学)

P1-26 **足球伤病机器学习预测模型的方法学可信度：基于PROBAST+AI的系统评价**
江懿锦（北京体育大学）

3 November 2026 (Tuesday)

Poster Session 2

Time: 12:55-13:40
Venue: D1-LP

P2-1
Acute Postural Control and Balance Enhancements Following Flywheel Side Lunge Post-activation Performance Enhancement (PAPE)
Mr. Indy Man Kit HO (Technological and Higher Education Institute of Hong Kong; University of Zagreb)

P2-2
Bidirectional Prospective Associations Between Screen Addiction and Negative Emotions Among Junior High School Students: Implications for Whole-School Health Promotion
Miss BAN Mingwei (ShenZhen University)

P2-3
中国大陆个人与社会责任教学模式（TPSR）实证研究的系统综述与荟萃分析
朱文豪（福建师范大学 ）

P2-4
中学生日常健康行为模式的潜在类别及其学年内动态转变
潘镇辉先生（广州体育学院）

P2-5
骑行诱导疲劳下股肌放电编码与持续性内向电流变化
殷然先生（北京师范大学）

P2-6
冯有真：近代中国国际体育赛事报道“第一人”
黄达博士（中国传媒大学）

P2-7
Time Perception, Expertise and Sustained Engagement in Table Tennis: A Proposal Study
Miss ZhaoJie (Zhejiang University, Hangzhou, China)

P2-8 The Impact of AI-Assisted Technological Scaffolding on Table Tennis Performance and Self-Regulated Learning: Preliminary Findings and RCT Protocol
Ms. Zilin HE (The Education University of Hong Kong)

P2-9 **WHOOP 可穿戴设备在基层教练训练决策中的接受度与使用障碍研究**
王子博涵（香港理工大学）

P2-10 Research of the effect of rope ladder training on the basic footwork technique of adolescent female sabre fencers
Ye ZHANG (The Education University of Hong Kong)

P2-11 Experiential Anti-Doping Education via Role-Playing Script Games
Mr. HO Yik Kiu Kenneth (The Education University of Hong Kong)

P2-12 **同伴排斥的數字生態毒性：體育與社會適應的非線性調節**
邓万里教授（兴义民族师范学院）

P2-13 Effects of Rock Climbing on Health-Related Physical Fitness in Children with Autism Spectrum Disorder
Prof. Jing QI

P2-14 SEND Students in Mainstream Schools are More Active and Physically Fit than Those in Special Schools
Dr. James Ho-pong WAN

P2-15 **“双减”背景下课外体育活动参与度与初中生体育学业成绩的关联研究**
郝志斌（广州体育学院）

P2-16 **中国体育舞蹈运动员的动机及其对职业生涯的影响**
倪旸（广州南方学院 ）

P2-17 Group-Based Versus Individual-Based Fitness Training for People with Physical Disabilities in Hong Kong: A Randomized Controlled Trial Protocol

Ms. SO Ting Yuet (Hong Kong Metropolitan University)

P2-18 Metabolic Adaptation in Intermittent Energy Restriction: Evidence from a Systematic Review and Meta-Analysis

Ms. Jaclyn Hei TSANG

P2-19 Temporal associations of the intensity of daily physical activity with sleep in primary school students

ZHANG Chang

P2-20 Effects of Self-Determination Theory–Based Digital Physical Education Homework on Homework Motivation and Physical Fitness in Junior High School Students

XU Honghan (Beijing Normal University)

P2-21 Physical Activity for Healthy Ageing: Personality Traits, Affective Function, and Brain Connectivity in Older Adults

Dr. Peggy Pui-lai OR (The Education University of Hong Kong)

P2-22 Retrospective Descriptive Analysis and Comparisons of Risk Factors Between Injured and Non-injured Hong Kong Rugby Union Players Using the Machine Learning Approach

Miss Nicole Ka Ching LEE (Technological and Higher Education Institute of Hong Kong; The Chinese University of Hong Kong)

P2-23 EcoFit Youth Project: Empowering Underprivileged Children through Health and Physical Education and Sustainable Cooking

Ms. Kwok Bo Ping Eva (The Education University of Hong Kong)

P2-24 Why Time Flies – And Why Time Drags: Reframing Subjective Time in Physical Education

Finley GEERLINGS (The Education University of Hong Kong)

P2-25 The Benefits of AI-Adaptive Dance-based Exercise Intervention: A Narrative Review

Ms. MA Kaiting (The Education University of Hong Kong)

P2-26 Community Environments and Active Transport in Relation to Physical Activity and Movement Skills among Children in Bangladesh

Mr. Hamza Saghir ASLAM (Hong Kong Baptist University)

P2-27 Effects of an 8-Week Combined Cognitive Training and Physical Activity on Inhibitory Control in Children with ADHD: A Randomized Controlled Trial

Miss Kunyi Huang (The Education University of Hong Kong)

P2-28 Effects of a Preschooler-focused Physical Activity Intervention on Promoting Parent-Child Activity Levels and Relationship: Preliminary Results of an Exploratory Cluster Randomized Controlled Trial

Dr. Whitney Wing Yin, AU (The University of Hong Kong)

4 November 2026 (Wednesday)

Poster Session 3

Time: 12:50-13:50
Venue: D1-LP

P3-1 Motor Performance and Reaction Speed in an Esports Multiplayer Online Battle Arena (MOBA) Training
Maorun ZHANG (Lingnan University)

P3-2 Physical Activity Interventions and Theory Use Among Adults With Physical Disabilities: Systematic Review
Ms. Yuxin Zou (Shanghai University of Sport)

P3-3 **“育人”视域中的体育教育：基础教育体育课程知识的价值论反思**
颜旭（广州体育学院）

P3-4 SmartCourt: Integrating Digital Technology, Computer Visioning, and Performance Analytics in Sport Education and Research
Mr. Yuxin ZUO (The Education University of Hong Kong)

P3-5 Aligning School and Family Interventions: ACT and Positive Discipline for Adaptive Perfectionism in Chinese Secondary Students
Ms. HUANG Xiaofen (The Education University of Hong Kong)

P3-6 Gender Differences in the Effects of High-Intensity Interval Training and Moderate-Intensity Continuous Training on Serum Uric Acid Levels in Sedentary College Students
TANG Xiao (Shenzhen University)

P3-7 **学龄儿童书包负担与腰背痛关系的系统综述**
周漫璐女士（香港教育大学）

P3-8
Effects of Graded Vestibular Rotational Stimulation on Motor and Cognitive Behaviors in Mice
WEI Tianhe (Beijing Normal University)

P3-9
AI驱动个性化反馈与大学生体育学习投入：基于自我决定理论的动机机制框架
马傑驹（广州体育学院）

P3-10
From Certification to Professional Practice: Lessons from Football Referee Development in Japan
Mr. FU Ming (Capital University of Physical Education and Sports; Waseda University)

P3-11
Coach-Athlete Attachment Dimensions across China-based and UK-based Training Contexts: The Mediating Role of Psychological Safety in University Badminton
Rachel Yuanyuan GUO (Loughborough University)

P3-12
Behavioral alterations and serum C-terminal agrin fragment elevation following hindlimb unloading in mice: implications for exercise and health under simulated microgravity
Zixi DENG (Beijing Normal University)

P3-13
社区体育干预对久坐成年人身心健康的影响
王伟（广州体育学院）

P3-14
Acute Vestibular Perturbation Reduces Spatial Navigation Efficiency in Healthy Young Adults
LIU Ruofan (Beijing Normal University)

P3-15
An Investigation into the Consumption Behavior of Urban Marathon Participants from the Perspective of AISAS
Miss Hao ZHAO (Shandong University of Finance and Economics)

P3-16 身体技术与文化整合：中医“治未病”理念融入大学生运动队损伤预防的可行性、逻辑与体系构建
涂智兴先生（福建医科大学）

P3-17 Para-karate for Visually-impaired Adults in Hong Kong: A Participatory Action Research
CHAN Ka Man (The Education University of Hong Kong)

P3-18 Perceived Impact of Major Sport Events from Hong Kong Citizens
Ms. Zoe Sau Ni WONG (Technological and Higher Education Institute)

P3-19 Equity in school physical education across Southeast Asia: a scoping review
Zhe ZHANG

P3-20 大学生群体中的身体素养与主观幸福感：一项范围综述
林梓洋（香港教育大学）

P3-21 中学体育学业水平考试数智化评价的教师接受应用研究
吴震霖（广州体育学院）

P3-22 The Association between Sugar-Sweetened Beverage Intake, Sedentary Time, and Depressive Symptoms among U.S. Adults
TONG Xiangyue (The Education University of Hong Kong)

P3-23 Differential effects of exercise on executive functions in neurodevelopmental disorders: an umbrella review and meta-meta-analysis
Changhui PENG (Shanghai University of Sport)

P3-24 运动学指标对篮球投篮命中率影响的系统评价与Meta分析
宋爽博士（香港教育大学）

P3-25 Building Resilience through Movement: A Capacity-Building Programme for SEN and Emotional Health Sports Coaching

Mr. SIU Ka Man Tom (The Education University of Hong Kong)

P3-26 Compositional movement and functional changes after pickleball in pre-frail older adults: implications for healthy aging

Dr. Ziwei ZENG

P3-27 Associations between Physical Activity and Mental Well-Being in Children and Adolescents with Special Educational Needs: The Mediating Effects of Physical Self-Concept and Social Connectedness

Dr. Ruiyuan TAO

P3-28 Social Media and Sense of Belonging in Hong Kong Amateur Taekwondo Athlete Peer Networks: A Qualitative Study

Brigitta C.Y. WAN (Hong Kong Metropolitan University)

P3-29 Effects of Exercise Interventions on Mental Health Outcomes in Children with Neurodevelopmental Disorders: A Systematic Umbrella Review and Meta-meta-analysis

Changhui PENG (Shanghai University of Sport)

P3-30 **青少年数字成瘾的体育运动剂量效应与非线性拐点研究**

侯文志博士（兴义民族师范学院）

P3-31 **认知参与型乒乓球干预对ADHD儿童执行功能与协调能力影响**

时星宇（上海体育大学）

06
ABSTRACT COMPENDIUM

KEYNOTE ABSTRACTS

KEYNOTE 1:

From Discipline to Profession in Sport and Exercise: The Australian Journey and Reflections for Asia

Ms. Anita HOBSON-POWELL

What turns an academic discipline into a profession governments trust and fund? This keynote traces how exercise physiology in Australia evolved from a loosely defined field of university-trained exercise specialists into a recognised allied health profession: funded through Medicare, insurers and national schemes, trusted by doctors and chosen by patients.

The presenter draws on more than 25 years of leadership: as Chief Executive Officer of Exercise & Sports Science Australia (ESSA), President of the National Alliance of Self Regulating Health Professions (NASRHP), Chief Allied Health Officer for the Australian Government's Department of Health, Disability and Ageing, and now Chief Executive Officer of Medical Deans Australia and New Zealand. From these roles, she offers an insider's account from the vantage points of advocate, standard-setter, government adviser and educator.

The presentation follows the journey from ESSA's founding in 1991 to the first Medicare item for exercise physiology in 2006, and to more than 10,000 accredited professionals today. It argues that recognition rested on three foundations: unity, standards and demonstrable public benefit. Particular attention is given to the universities' decision to put a shared national standard ahead of institutional individuality. That decision enabled course accreditation, competency standards, mandatory continuing professional development, and enforceable conduct requirements. The keynote also explains two further factors. First, Australia's model of assured self-regulation, benchmarked through NASRHP, gives government confidence without the cost of a new statutory regulator. Second, economic evidence of investing in the profession.

From the government side of the table, the presentation sets out the questions decision-makers ask of professions seeking recognition. It identifies where applications most commonly stumble and describes how health practitioner regulation in Australia is evolving. It then considers what this means for health professional education.

KEYNOTE 2:

Applying the Human-Machine-Environment (HME) System Theory to Elite Sports
「人–機–環」系統理念在競技體育中的應用

Prof. HONG Ping

Modern elite sport is no longer won by talent or effort alone; it is decided at the intersection of human potential, engineered technology, and environmental mastery. As competitive margins shrink to hundredths of a second, the decisive advantage lies in how well we integrate—not isolate—the athlete, the equipment, and the setting. In this keynote, I will present the Human–Machine–Environment (HME) system theory as a unifying framework for understanding and advancing high-performance sport as a complex, open giant system. I will argue that the future of sports science is systems science, and that the HME lens is essential for any nation seeking a sustainable competitive edge in the era of artificial intelligence and digitalization.

Rooted in aerospace and manufacturing human-factors engineering, the HME paradigm reframes competitive sport around three dynamically interacting subsystems. The human (人) pillar places the athlete at the center, weaving together genetic talent identification, physiological and functional evaluation, internal and external load monitoring, recovery and regeneration, nutrition, psychology, and AI-driven kinematic, kinetic, and tactical analysis to maximize endogenous driving force. The machine (机) pillar spans the full spectrum of sport technology—from drag-reduction helmets, ice skates, and aerodynamically optimized apparel to wind tunnels, six-degree-of-freedom simulators, wearable sensors, and intelligent training platforms—that simultaneously augment power output and minimize resistance. The environment (环) pillar unifies real and simulated contexts, including venue and climate monitoring, altitude-simulated training, and all-season simulation bases, with the explicit goal of converting the uncertainty of opponents and conditions into controllable certainty.

Drawing on China's technological preparation for the Beijing 2022 Winter Olympics, I will show how these three pillars are coupled in practice—

through domain-specific "champion models," the complementary pathways of increasing driving force and reducing resistance (both governed by F = ma), and the integration of innovation-, transformation-, industry-, and talent-cultivation chains. This coupling, enabled by the "new-type nationwide system" and indigenous equipment innovation, is what transforms scientific support from a research mode into an operational and developmental mode.

The keynote closes by looking ahead: how digital twins, big-data analytics, and artificial intelligence will sharpen the real-time coupling of human, machine, and environment, and how the lessons of elite sport can be extended to youth athletic development, injury prevention, and public health. I will also reflect on the practical and ethical challenges of scaling such an integrated model beyond elite programs. Attendees will leave with a transferable systems paradigm and a concrete roadmap for embedding multidisciplinary science into the next generation of high-performance preparation.

KEYNOTE 3:

What Works, What Lasts? Balancing Effectiveness and Implementation in Physical Activity Interventions for Young People

Prof. Lauren SHERAR

Physical activity provides wide-ranging physical, mental, social and developmental benefits for children and adolescents. Yet despite these well-established benefits, participation levels remain low globally, with many young people failing to meet recommended physical activity guidelines. Over the past three decades, researchers, practitioners and policymakers have invested considerable effort in designing, implementing and evaluating interventions to increase physical activity. While this work has generated valuable insights and numerous well-designed programmes, systematic reviews consistently show that intervention effects are typically small, often short-lived and rarely sustained at scale.

This raises an important question: are we placing too much emphasis on developing interventions that demonstrate effectiveness under research conditions, and too little on whether they can be successfully implemented, sustained and valued in real-world settings?

This presentation will review the current evidence base and explore how we can better balance intervention effectiveness with implementation, scalability and sustainability. Several school-based interventions will be used as case studies to illustrate both successes and limitations. While schools remain an important setting, the presentation will argue that future efforts must extend beyond the school gates to recognise the multiple environments in which young people live, learn, travel and socialise.

Particular attention will be given to the need to consider population sub-groups throughout intervention design, implementation and evaluation. Children and adolescents are not simply miniature adults, and interventions may operate differently according to age, biological age, gender, socioeconomic circumstances, cultural background and individual needs.

The presentation will also discuss the complex systems that influence physical activity behaviour and the implications this has for intervention development and evaluation.

Finally, the presentation will challenge the assumption that physical activity and health outcomes should always be the primary indicators of success. Outcomes that matter to young people and the organisations that support them, such as enjoyment, social connection, confidence, belonging and engagement, may be equally important in determining whether programmes are sustained. The value of co-designing interventions and evaluations with young people, practitioners and community organisations will be highlighted, alongside the benefits of working through existing grassroots programmes rather than creating entirely new initiatives.

By focusing not only on what works, but also on what lasts and what matters to end users, we may be better placed to develop interventions that achieve meaningful and sustainable impact for young people.

INVITED SPEAKERS SESSION ABSTRACTS

INVITED SPEAKERS SESSION 1

Physical Activity for Promoting Health and Preventing Falls in Older Age

Prof. Anne TIEDEMANN

Physical activity is key to maximising health and wellbeing across the lifespan but is particularly crucial in older age due to the increased risk of chronic health conditions with increasing age. Physical activity also improves cognition, social connectedness and mental wellbeing and prevents the onset of disability in later life. Balance-specific exercise, a subset of physical activity, is essential for the prevention of falls in older age. Despite these significant benefits, older people are the most inactive segment of society. There is a need for more effective strategies to promote uptake and adherence to physical activity and fall prevention exercise programs.

We all know that regular physical activity is good for our bodies and minds, however knowledge does not always translate to action. The WHO Global Action Plan on Physical Activity (GAPPA) recognises that to increase physical activity across the population requires a systems-based approach – there is no single policy solution to this complex issue. GAPPAs four objectives are to create: 1. Active Societies, 2. Active Environments, 3. Active People and 4. Active Systems, and it recommends 20 policy actions that address the cultural, environmental and individual determinants of inactivity.

This presentation will outline current international guidelines on physical activity for promoting health and preventing falls in older age. It will also overview some of Professor Tiedemann's research, relevant to GAPPA policy action 3.5, physical activity programs and opportunities, evaluating scalable approaches to promoting fall prevention exercise and physical activity more broadly, among people aged 50+. This will include the Coaching for Healthy AGEing (CHAnGE) trial that evaluated the effect of a physical activity and fall prevention intervention, including telephone-based health coaching and activity trackers, on falls and physical activity; the Coaching and Exercise

for Better wAlking (COmEBAcK) trial evaluating the effectiveness of two physical activity interventions, involving health coaching, text messages and technology on daily steps among adults with self-reported walking difficulty; and the Active Women over 50 trial, testing the effectiveness and cost-effectiveness of a remotely delivered physical activity behaviour change coaching and information program among 1000 women aged 50+ years.

This presentation will highlight the need for greater consideration of individual abilities, preferences and barriers and enablers of behaviour change if we are to boost population uptake in physical activity among older people.

INVITED SPEAKERS SESSION 1

The limits to endurance performance: mind or muscle?

Prof. Samuele MARCORA

The Psychobiological Model (PBM) challenges the traditional physiological assumption that endurance performance is directly limited by locomotor muscle fatigue. Because athletes retain significant locomotor muscle power at the point of exhaustion, the PBM argues that the limits of endurance are primarily psychological rather than strictly cardio-metabolic and neuro-muscular. The PBM posits that endurance is a goal-directed behavior determined by two interacting psychological constructs:

Perception of Effort (the conscious sensation of how hard it is to drive the muscles and breathe) and Potential Motivation (the maximum effort an individual is willing to exert to achieve success in the task). According to this model, an athlete decides to stop or slow down during endurance exercise under one of two conditions: when the perception of effort required to sustain the desired pace exceeds their potential motivation, or when the effort is perceived as maximal and sustaining the desired pace seems impossible. Biologically, perceived effort does not seem to be generated by afferent feedback from fatigued muscles, heart, or lungs. Instead, it is generated by corollary discharges, internal brain signals originating from the central motor command required to drive the muscles. As muscles fatigue, the brain must increase its central motor command to maintain the desired pace, which drives up the conscious perception of effort. Furthermore, the continuous mental effort required to resist the urge to quit relies on inhibitory control within the brain's premotor areas, further amplifying perceived exertion over time. Ultimately, both physiological variables (like physical training or heat) and psychological variables (like mental fatigue or motivational self-talk) impact performance because they directly alter the perception of effort or potential motivation. To push the ultimate limits of endurance performance, athletes must utilize psychobiological interventions (e.g. learning psychological skills, caffeine supplementation or brain stimulation and training) to minimize perceived effort alongside traditional physical conditioning and nutritional strategies developed to reduce muscle fatigue.

INVITED SPEAKERS SESSION 2

A New Era of Exercise Psychology: Updated Evidence on Cognitive Function and Brain Health

Prof. CHANG Yu-kai

Exercise psychology increasingly recognises cognitive function and brain health as important components of mental health. Experimental studies, research syntheses, and physical activity guidelines support the cognitive benefits of exercise, prompting questions about who benefits, which exercise characteristics matter, when improvements occur, and how these effects arise. This presentation reviews advances in this field, focusing on acute exercise and research from the Physical Activity and Cognitive Neuroscience Laboratory. The presentation integrates foundational evidence with a recent umbrella review of 30 systematic reviews with meta-analyses involving 18,347 participants. The findings indicate that a single exercise bout can improve attention, executive function, memory, and information processing. Cognitive benefits were most evident following exercise, and the overall effects did not differ significantly according to age, cognitive status, exercise intensity, modality, or duration. These findings support the relevance of acute exercise across diverse populations while highlighting the need to establish optimal approaches for individual cognitive needs. Complementary experimental research examines inhibitory control and neuroelectric responses in adults with differing genetic risk for Alzheimer's disease. Both carriers and noncarriers of the apolipoprotein E ε4 allele showed improved cognitive performance and increased amplitudes of event-related potentials following acute exercise compared with rest. These findings suggest that enhanced allocation of attentional resources may contribute to improvements in inhibitory control, providing insight into the mechanisms underlying immediate cognitive benefits. Together, this evidence supports acute exercise as a promising strategy for transient cognitive enhancement. Future research should clarify dose-response relationships, investigate neural and physiological mechanisms, and determine how laboratory findings translate into everyday cognitive functioning. Integrating behavioural assessment with neuroelectric and neuroimaging measures can inform exercise approaches tailored to individual needs across different stages of the human lifespan.

Advancing this research will strengthen the scientific basis for incorporating cognitive function and brain health into exercise psychology, education, and health promotion.

INVITED SPEAKERS SESSION 2

Building Professional Practice Pathways in Exercise and Sport Science Around the World – Opportunities for Asia

Dr. Kade DAVISON

Sport and exercise science graduates are increasingly recognised as regulated professionals in the health and sport workforce. An increasing number of countries in Europe, North America, and Oceana have national qualification systems recognised by governing bodies. In Australian for example the Accredited Clinical Exercise Physiologists (ACEPs) are comprehensively integrated into primary, secondary and tertiary healthcare, and accreditation as a Sport Scientist is required for an individual to work with athletes in national-level competition. A recent Australian report found that around 10,000 ACEPs provided clinical exercise services to 1.16 million people in 2025 (around 4.2% of the population).

China faces the same opportunity at far greater scale. Matching Australia's coverage of ACEPs working with the population would require approximately 500,000 clinical exercise physiologists to serve around 60 million people each year. The Healthy China 2030 blueprint identifies physical activity as a key lever for population health. Delivering safe, effective exercise to people with complex chronic disease, including the more than 140 million people with diagnosed diabetes, requires a large, well-qualified Clinical Exercise Physiology workforce.

This presentation will outline how Australia and other countries have established the Clinical Exercise Physiology profession including developing standards, accreditation and health system integration. It will also explore how China can build on the work of other countries to define the educational requirements for this profession, using resources such as the International Clinical Exercise Physiology Professional Standards, established by the International Confederation of Sport and Exercise Science Practice. To build this critical national exercise workforce requires national and international collaboration through existing and new networks to establish local professional standards, guidelines and a leadership framework for the

profession. Universities and academic leaders play a key role in this work to adapt existing work to the local context, develop the governance and advocacy processes needed to influence policy, and establish the educational programs to deliver this workforce.

INVITED SPEAKERS SESSION 3

Impact of high-intensity interval training with citrulline supplementation on physical performance and skeletal muscle in older adults with obesity

Prof. Philippe NOIREZ

Aging is associated with a progressive decline in skeletal muscle mass, function and strength (known as sarcopenia), as well as an increase in adiposity (obesity). These changes can all have a devastating impact on the quality of life of older adults. Separately, both sarcopenia and obesity are considered to be a health burden. Furthermore, the combination of these two diseases, known as sarcopenic obesity, appears to present additional health risks. Therefore, effective strategies are needed to improve the quality of life of older individuals with obesity. Our studies conducted in animals and in vitro suggest that citrulline supplementation is a promising intervention for countering obesity- and age-related muscle dysfunction. Citrulline is a non-proteinogenic amino acid and an intermediate in the urea cycle. It is also produced from arginine during nitric oxide synthesis. Following a meal, enterocytes can synthesise citrulline from amino acids such as glutamine, ornithine and arginine. We have also demonstrated the effectiveness of high-intensity interval training in improving functional capacity, lean mass, muscle power and waist circumference in obese older adults. High-intensity interval training also increases markers of mitochondrial biogenesis, fusion, and mitophagy. Furthermore, combining citrulline with high-intensity interval training results in greater increases in muscle strength and significant reductions in fat mass. We therefore propose that combining high-intensity interval training with citrulline supplementation is an effective way to improve the health of older adults with obesity. Thus, combining citrulline supplementation with exercise strategies could be an effective approach to tackling sarcopenic obesity.

INVITED SPEAKERS SESSION 3

让每个孩子在运动中健康成长——KDL的中国探索与实践

Prof. WANG Xiaozan

KDL以“知之、行之、乐之”为核心理念，将“懂运动文化、有运动能力、热衷于运动”作为体育育人的目标。本报告基于华东师范大学KDL团队的长期研究与实践，围绕课程与教学改革、特殊儿童运动干预、家校社协同、健康促进和数智体育五个领域，阐述其促进儿童健康成长的实践体系，并结合具体科研数据呈现效果评价结果。在课程与教学领域，依据儿童发展规律与课程标准，开发幼儿与小学体育与健康课程，形成课程内容、教学资源与教师专业发展相配套的实施路径。面向注意缺陷多动障碍、动作发展迟缓和孤独症儿童，结合能力评估与支持需要，探索结构化、个别化的运动干预及同伴、家庭参与模式。依托儿童友好社区与健康促进行动，促进学校、家庭和社区的协作，支持日常运动参与和服务的持续实施。数智体育通过知识图谱、动作资源库、智能备课和运动监测，为教学决策、过程反馈和差异化教学提供支持。在此基础上，报告结合相关实证研究，围绕儿童运动能力、身体活动参与及社会互动等指标，评价课程与干预项目的有效性，分析不同儿童群体、支持方式和实施情境中的成效及适用条件，并讨论研究证据对课程优化与干预调整的启示。KDL的探索强调，儿童健康促进应将文化理解、能力发展与运动热情培育相结合，通过课程建设、差异化支持和参与环境优化推动体育育人目标的落实。本报告旨在呈现科研与实践相互促进的发展路径，为儿童体育教育、融合参与和健康促进提供中国情境下的实践经验与实证依据。

INVITED SPEAKERS SESSION 4

Why Sleep Matters: Advances in Understanding Sleep, Health, and Learning in Children

Prof. Dagmara DIMITRIOU

Sleep is fundamental to children's development, yet its contribution to learning, emotional wellbeing and everyday functioning is often overlooked in educational and clinical practice. Sleep has strong relationships across developmental domains, encompassing cognition, language, motor development, social interaction and emotional regulation. Our research at the Sleep Education and Research Laboratory at UCL, examines how sleep interacts with neurodevelopmental differences and the environments in which children grow. It brings together experimental studies, community research and cross-cultural evidence to consider why sleep should be central to understanding and supporting children's health and learning.

Our experimental research demonstrates that sleep supports memory consolidation in typically developing children, with improvements in newly learned material following sleep compared with equivalent periods of wakefulness. However, comparisons involving children with Down syndrome and Williams syndrome reveal different patterns of learning and retention. These findings challenge assumptions that sleep contributes to learning uniformly across developmental profiles and highlight the relevance of learning schedules, opportunities for consolidation and individual developmental needs.

The talk also considers sleep difficulties across neurodevelopmental conditions, including autism, and their implications for assessment and support. Recent community research on children with dyslexia identified substantial parent-reported sleep difficulties, with 66% of the sample exceeding the questionnaire threshold for problematic sleep. These findings extend attention to a population whose sleep needs have received relatively limited research consideration. They also underline the importance of examining sleep alongside anxiety and learning difficulties, while distinguishing associations from evidence of causation.

Beyond individual characteristics, our cross-cultural research highlights the contribution of family practices, parental expectations and wider social environments to children's sleep. Recent qualitative work with children in India and the United Kingdom places children's own perspectives at the centre of this discussion. Their accounts connect sleep with health, mood and daytime functioning, while identifying the influence of technology and family routines. Together, these studies support culturally responsive approaches that acknowledge how sleep is understood and experienced within everyday family life.

Finally, this talk considers implications for educational and clinical practice, including early recognition of sleep difficulties, integration of sleep assessment into developmental evaluations, and accessible sleep education developed with children, families and professionals. Methodological challenges, including reliance on parent reports and the need for longitudinal and intervention studies, will also be considered. Understanding children's and young people sleep requires a developmental, individualised and culturally informed approach, supported by closer collaboration between research, education and healthcare.

INVITED SPEAKERS SESSION 4

Research Progress and Future Perspectives on Exercise-induced Neuroplasticity for Brain Protection

Prof. HOU Lijuan

Brain is one of the most complex organs in the human body, and its structural and functional analysis is considered the "ultimate frontier" of human self-awareness and exploration of nature. Driven by the strategic layout of the "China Brain Project," Chinese scientists have conducted systematic research focusing on "understanding the brain, simulating the brain, and protecting the brain." They have made breakthrough progress in areas such as the principles of brain cognition, mechanisms and interventions for brain diseases, brain-like computation, and applications of brain-machine intelligence technology. Exercise is not only an indispensable part of daily life but is also crucial for promoting brain health and quality of life. It enhances cognitive function and reduces the incidence of mental disorders by promoting neurogenesis and regeneration, increasing synaptic plasticity, regulating neuronal functional activity, and reshaping the small molecule homeostasis of the neuronal microenvironment. This article will systematically summarize the innovative technological developments in sports neuroscience research, review the mechanisms of neural plasticity that exercise utilizes to protect the brain, and explore the role of exercise in the prevention and treatment of major neurodegenerative diseases. This aims to provide new ideas for future theoretical innovations and clinical applications in the field of exercise-induced brain protection.

PARALLEL ORAL PRESENTATION ABSTRACTS

PARALLEL ORAL PRESENTATION SESSION 1-1

O1-1-1 Integrating Mobile Health and Outdoor Exercise Facilities to Sustain Physical Activity in Older Adults With Prefrailty and Frailty: A Pilot Randomized Controlled Trial

Prof. Andy CHENG (The Education University of Hong Kong)

Background and Objectives:

Physical activity (PA) can prevent or delay frailty, yet many interventions for older adults have limited success in sustaining PA behaviour. This study examined the feasibility and acceptability of an integrative mobile health (mHealth) intervention using community outdoor exercise facilities (OEFs), and explored its potential effects on PA, mental well-being, and exercise self-efficacy among older adults with prefrailty or frailty.

Methods:

A two-arm, single-blinded pilot randomized controlled trial recruited 38 inactive, community-dwelling adults aged >55 years with prefrailty or frailty. Participants were randomized to an intervention (n=19) comprising four weekly educational workshops, an mHealth app, and unsupervised OEF-based exercise, or an active control (n=19) receiving four health education and exercise workshops. Outcomes were assessed at baseline, post-intervention, and 3-month follow-up. Generalized estimating equations were used to examine changes in PA, exercise self-efficacy, and mental well-being. Intervention acceptability was also explored through questionnaires and semi-structured interviews.

Results:

Thirty-four participants (89%) completed the study. Workshop attendance exceeded 90%, while adherence to outdoor practice and app engagement was 71% and 69%, respectively. Both groups increased PA immediately post-intervention, but only the intervention group maintained improvements at 3 months. The intervention group demonstrated significant improvements in OEF use, self-reported PA, and mental well-being, with higher exercise self-efficacy immediately post-intervention. Participants generally valued the integrated app, workshops, and outdoor exercise approach.

Conclusions:

Integrating mHealth support with freely accessible community OEFs is feasible and shows promise for sustaining PA and supporting mental well-being among older adults with prefrailty or frailty. This scalable approach may facilitate active ageing by connecting digital health support with existing community exercise infrastructure.

O1-1-2 **Comparing physical activity during and outside school hours among primary school children in England: an analysis of the Active Lives Children and Young People Survey**

Douglas Koon-Hung WONG (Loughborough University)

Background and Objectives:

National guidance in England recommends that children average 60 minutes of moderate-to-vigorous physical activity (MVPA) per day, with 30 minutes accumulated during school hours and 30 minutes outside school. Although national statistics report progress towards these recommendations separately, comparisons within the same children are lacking. This study therefore compared MVPA during and outside school hours within primary school children and to examined differences by gender, family affluence, and area of deprivation.

Methods:

A cross-sectional secondary analysis of the Active Lives Children and Young People Survey (2023-24) included 46,675 children in school Years 1-6 (aged 5-11 years). Estimation incorporated survey weights, school-level clustering, and stratification, representing an estimated 4.03 million children in England. Weekly minutes of MVPA during and outside school hours were compared within children and across sociodemographic groups.

Results:

Children accumulated 152.3 minutes of MVPA per week during school hours (~30.5 minutes/day) and 387.5 outside school (~55.4 minutes/day). Overall, 40.3% met the in-school 30-minute expectation and 56.4% met the out-of-school expectation, while 37.6% (an estimated 1.51 million children) met neither. Boys accumulated 16.2 more minutes of MVPA per week than girls during school and 72.6 more minutes outside school. The difference between settings was 78.8 minutes per week greater among children from high-affluent than medium-affluent families. In-school MVPA did not differ by area of level deprivation, whereas differences were evident outside school.

Conclusions:

Primary-aged children in England accumulate substantially more MVPA outside than during school hours. Inequalities in MVPA by gender, family affluence, and area deprivation were less pronounced during school hours. Increasing opportunities for physical activity within schools may therefore provide an equitable approach to increasing MVPA across the primary school population.

O1-1-3 Beyond the Winning Formula: How Institutional Philosophy Shapes University Sport

Ms. Mahrunisa FATHIYAH (National University of Singapore)

Background and Objectives:

In the pursuit of a "winning formula", institutions of higher learning often seek to strengthen university sport through investments in dedicated sport faculties, high-performance centres or scholarship programmes. However, there is relatively little discussion on how comprehensive universities without these structures or comparable resources can intentionally cultivate a strong sporting culture. This paper reflects on the experience of the National University of Singapore (NUS) to explore an alternative perspective: that sustained success in university sport may be shaped less by organisational structures than by an institution's underlying philosophy towards sport. It aims to propose a conceptual framework illustrating how a university-wide commitment to sport can foster both sporting excellence and holistic student development.

Methods:

This paper adopts a reflective practitioner case study approach, drawing on the author's experience in university sport administration and institutional development at NUS. The proposed framework was developed through reflective analysis of institutional policies, programme documentation, organisational practices and observed outcomes, identifying recurring stakeholder contributions that collectively support participation, athlete development, student leadership and governance. These interconnected elements were synthesised into a conceptual framework describing how diverse parts of the university contribute to a shared sporting culture.

Results:

The paper proposes a University Sport Ecosystem Framework illustrating how stakeholders—including student affairs, admissions, residential life, academic faculties, facilities management, student-led organisations and external partners—collectively contribute to a university-wide sporting culture. Rather than functioning independently, these stakeholders are united by a shared institutional philosophy that recognises sport as an integral component of holistic education. Within this ecosystem, elite athlete development, student leadership, community participation and institutional governance are viewed as complementary and mutually reinforcing, creating an environment that supports both student development and sustained sporting excellence.

Conclusions:

This paper suggests that sustained success in university sport may be better understood as the product of institutional philosophy and alignment rather than any single programme or organisational structure. While illustrated through the NUS experience, the framework is not intended as a prescriptive model. Instead, it offers a practical conceptual lens through which comprehensive universities may reflect on and strengthen their own sporting ecosystems. By shifting the conversation from replicating a "winning formula" to cultivating an enduring institutional philosophy, the paper offers a practical conceptual framework for university leaders and sport practitioners seeking to strengthen institutional practice and develop sustainable university sport ecosystems across Asia.

PARALLEL ORAL PRESENTATION SESSION 1-2

O1-2-1 Effects of a 5:2 Diet Combined With Multicomponent Structured Exercise on Metabolic Health Among Older Adults With Central Obesity: A Randomized Controlled Trial

Dr. ZHENG Chen (The Education University of Hong Kong)

Background and Objectives:

Central obesity increases metabolic risk in older adults. Although the 5:2 diet may improve metabolic health and multicomponent structured exercise (MSE) may reduce body mass while preserving lean mass, evidence on their combined effects remains limited. This randomized controlled trial evaluated the individual and combined effects of the 5:2 diet and MSE on body mass and metabolic health in older adults with central obesity.

Methods:

A total of 120 older adults aged 60–75 years with central obesity were recruited and randomly assigned to one of four groups for a 14-week intervention, including (1) 5:2 diet group: 500–600 kcal on two non-consecutive days weekly; (2) MSE group: three 70-minute sessions weekly on non-consecutive days; (3) combined 5:2 diet and MSE group; (4) control group. The outcomes included waist circumference, body weight, body mass index (BMI), fasting glucose, insulin, HOMA-IR, HDL-C, LDL-C, total cholesterol, triglycerides, leptin and adiponectin. Between-group differences over time were evaluated using linear mixed-effects models.

Results:

A total of 107 participants completed the 14-week intervention. Compared with controls, both the combined 5:2 diet plus MSE and the 5:2 diet-alone groups exhibited significantly greater reductions in body weight, BMI, and waist circumference (all $p < 0.05$). Notably, muscle mass declined significantly only in the diet-alone group ($p < 0.05$). Both exercise groups showed improved lipid profiles and adipokines levels, with increased HDL and adiponectin, and decreased total cholesterol and leptin (all $p < 0.05$), whereas no significant changes were detected in fasting glucose, insulin, or insulin resistance.

Conclusions:

This study shows that the 5:2 diet, with or without MSE, improves body composition, lipid profiles, and adipokines in older adults with central obesity, but does not improve glycemic outcomes. Adding structured exercise to the 5:2 diet may further enhance metabolic health.

O1-2-2 **Effectiveness of a Behavioral Change Technique-Based Intervention on Weight Loss in College Students with Overweight/Obesity: A Real-World Study**

Dr. Xiaoyuan ZHANG (Peking University)

Introduction:

Overweight and obesity are highly prevalent among college students and pose significant public health risks. Although exercise and dietary interventions are effective, their benefits often diminish when implemented in complex real-world settings, primarily due to poor long-term adherence. This study evaluated the effectiveness of a novel university course integrating core Behavior Change Techniques (BCTs) to improve body composition and health-related fitness in overweight or obese college students.

Methods:

In this real-world, single-arm, prospective study, 177 overweight or obese students (135 male, 42 female) participated in a 16-week university course that included a 16-week intervention. The intervention incorporated evidence-based BCTs, including goal setting (personalized weight-loss and exercise targets), self-monitoring (recording diet and exercise via WeChat groups), social support (peer supervision in small teams), feedback and monitoring (biweekly personalized feedback from researchers), and incentives (course credit linked to adherence and outcomes). Body composition (weight, BMI, body fat percentage, and waist circumference) and health-related fitness were measured at baseline and post-intervention and compared using paired t-tests or Wilcoxon signed-rank tests for non-normally distributed data.

Results:

After the 16-week intervention, participants achieved a mean weight loss of 6.09 ± 9.61 kg (P<0.001), with significant reductions in BMI (−1.89 ± 2.53 kg/m^2), body fat percentage (−1.85 ± 4.44%), and waist circumference (−6.07 ± 10.09 cm) (all P<0.001). Significant improvements were also observed in cardiorespiratory endurance, lower-body explosive power, flexibility, and balance (P<0.001). Overall, physical activity levels increased (P<0.001), and the intervention demonstrated feasibility with an adherence rate of 86.3%.

Conclusions:

A university course incorporating a 16-week BCT-based intervention appears to be an effective and feasible approach for promoting weight loss and improving health outcomes among overweight or obese college students in real-world settings. This model may offer a scalable and replicable way to integrate health promotion into the education system.

O1-2-3 Bidirectional associations between physical activity and sleep in children with attention-deficit/hyperactivity disorder: A micro-longitudinal study

Mr. CHEN Ming (The Education University of Hong Kong)

Background:

Physical activity (PA) and sleep are crucial for health in children with attention-deficit/hyperactivity disorder (ADHD). However, the temporal dynamics between these two modifiable behavioural factors remain poorly understood. Prior studies examining the PA and sleep of children with ADHD have relied on mean values such as daily PA levels and average sleep duration, which mask day-to-day variations.

Methods:

This micro-longitudinal observational study included 301 children with ADHD aged 6–12 years (mean age 8.72 ± 1.49 years; 76.7% boys). PA and sleep were assessed using an ActiGraph GT9X accelerometer worn on the non-dominant wrist for 7 consecutive days. A sleep log was completed by their parents to record bedtime and wake-up times. Raw accelerometry data were processed in R using GGIR to derive daily light physical activity (LPA), moderate-to-vigorous physical activity (MVPA), and sleep parameters. Multilevel models were used to examine inter- and intraindividual associations between physical activity and sleep.

Results:

Our results demonstrated a reciprocal relationship between PA and wake-up time, indicating that higher MVPA was associated with an earlier wake-up time (β = -0.006); habitual early wake-up time (MVPA: β = -12.624) and waking up earlier than usual (intra-individual) were significantly associated with increased next-day PA (LPA: β = -3.398; MVPA: β = -3.428). Furthermore, at the inter-individual level, both habitual LPA and MVPA were associated with shorter sleep latency (β = -0.003; β = -0.002, respectively), while longer sleep latency significantly predicts a reduction in next-day LPA (β = -11.911).

Conclusions

PA and sleep are bidirectionally linked in children with ADHD: higher habitual PA notably reduces sleep latency, while earlier wake-up times and shorter sleep latency, conversely, drive increased next-day PA. The findings highlight the importance of targeting both modifiable behavioural factors to promote a virtuous cycle in these clinical populations

PARALLEL ORAL PRESENTATION SESSION 1-3

O1-3-1 新质生产力引领大学体育的数智化革新与转型：北京大学的创新实践探索

赫忠慧教授 (北京大學)

新质生产力这一概念是习近平总书记对新时期我国经济社会发展的理论概括和战略部署，以及对马克思主义生产力理论的继承与发展。在此背景下，大学体育教育如何抓住新质生产力带来的机遇，推动高质量发展，已成为学界关注的热点话题。然而，关于新质生产力与大学体育教育关系的研究仍显不足。为填补这一空白，本文以北京大学为典型案例，探讨其在体育教育的数智化革新与转型中的实践探索。通过分析北京大学在数智化体育六大关键领域中的实践与成效，揭示了新质生产力如何在不同生态系统层次中推动大学体育教育的发展，包括：体育课堂教学智能监测、沉浸式学习情境、运动技术可视化测评、体育锻炼智能监测、体育与健康数据平台和体育场馆的智能化管理。本文针对现实挑战提出相应的应对策略，为勾勒数智化时代大学体育教学的新范式提供理论参考与实践指导。

O1-3-2 职前体育教师数字素养框架的学科化构建与专家共识验证

任雅琴博士 (Guangzhou Sport University)

目的：

构建适用于中国职前体育教师的数字素养框架，明确其构成要素，检验其信度与效度，为后续体育教师专业发展与教学实践提供指导意义。

方法：

采用结构化文献与框架比较形成初始指标，经12名专家完成两轮改良e–Delphi咨询；随后选取200名职前体育教师进行框架试用检验，综合运用问卷调查与半结构化访谈评估框架的信度、可读性与适用性。

结果：

建了体育数字化意识、体育数字技术知识与技能、体育数字化教学能力、体育数字社会责任、体育数字化专业发展5个一级维度、15个二级维度及43个观测点的数字素养框架。德尔菲专家咨询显示，专家权威系数分别为0.862和0.879，协调系数具有统计学意义（$p < 0.05$），表明专家意见高度一致，框架具有较高的科学性与可靠性。试用检验中，量表整体Cronbach‘s α系数为0.935，信度良好；职前体育教师数字素养平均得分为74.22分（SD=11.58），处于中等水平。维度得分呈现“社会责任与意识较高、知识与教学能力较低”的结构性特征，揭示从认知向教学行为转化的关键瓶颈。定性访谈进一步印证了框架的实践适切性，并推动了观测点的精细化修订。

结论：

本框架系统整合了数字素养的通用要求与体育学科的具身性、动态性与伦理特异性，体现了从技术认知到教学创新、从个体能力到社会责任的素养发展路径。框架为职前体育教师数字素养的分层评估、场景化培训提供了理论依据与操作参照，亦为全球体育教师数字素养研究提供了中国情境的经验参照。

O1-3-3 Conversational Artificial Intelligence for Scalable Mental Health Support: A Systematic Review and Network Meta-analysis of Randomised Controlled Trials

Dr. JIANG Shan (The Education University of Hong Kong)

Background:

Conversational artificial intelligence (AI) may offer scalable, low-intensity mental health support across healthcare, educational and community settings. However, its effectiveness may differ across intervention categories and outcome domains. We compared the effects of different conversational AI interventions on mental health outcomes.

Methods:

We searched 11 electronic databases for randomised controlled trials published between 1 January 2010 and 14 March 2026. Eligible interventions provided two-way natural-language interaction using rule-based, retrieval-based, machine-learning, natural-language-processing or generative mechanisms. Outcomes included depression, anxiety, psychological stress or distress, well-being, quality of life and resilience. Pairwise meta-analyses used three-level random-effects models and Hedges' g. Outcome-specific network meta-analyses compared intervention categories using standardised mean differences. Risk of bias and confidence in network evidence were assessed using RoB 2 and CINeMA, respectively.

Results:

Sixty-eight trials involving 12,097 participants were included, of which 58 contributed to pairwise meta-analysis. Conversational AI reduced pooled negative symptom severity across depression, anxiety, and stress or distress ($g = -0.291$, 95% CI −0.383 to −0.198). Effects on positive outcomes were smaller and imprecise ($g = 0.103$, 95% CI −0.020 to 0.227). Supportive or coaching AI generally ranked favourably in connected symptom and well-being networks. Free-form AI showed promising effects on anxiety and stress or distress, although estimates had wide confidence intervals. Evidence for quality of life and resilience was sparse or disconnected. Most studies raised some risk-of-bias concerns.

Conclusions

Conversational AI provides modest and scalable support for reducing negative mental health symptoms. However, effectiveness varies by intervention category and outcome, while evidence for broader functioning remains limited. Clearer intervention classification and stronger evidence on quality of life and resilience are needed to inform implementation across health, educational and community settings.

PARALLEL ORAL PRESENTATION SESSION 2-1
(Short Oral Presentations)

O2-1-1 Time perception during intensive high-performance soccer training: implications for session-RPE and training-load interpretation

CAI Xinyu (The Education University of Hong Kong)

Background and Objectives:

Time is fundamental to how athletes experience, tolerate, and regulate exercise, yet duration in sport is often treated purely as elapsed clock time. This study examined whether subjective time perception during intensive high-performance soccer training altered session-rating of perceived exertion (session-RPE) estimates and provided insight into autonomic physiology and training-load interpretation.

Methods:

Nineteen male players from the Hong Kong SAR China under-20 men's representative team were studied during an intensive 4-day training block. Players reported rating of perceived exertion (RPE), enjoyment, and retrospective session duration across the block, while heart rate variability (HRV) was assessed before and after training on days 1–3. Fitness profiling included a 3-minute run test and critical speed, and GPS provided external-load context. Session-RPE workload was calculated using both chronological duration (sRPE-c) and perceived duration (sRPE-p). An exploratory GPS-predicted sRPE (sRPE-GPS) reference was also generated to contextualise observed internal-load estimates.

Results:

sRPE-p was lower than sRPE-c on all monitored days (all $p < 0.001$) with players consistently perceiving sessions as shorter than clock time (~ 70% of chronological duration). Use of GPS total distance significantly predicted sRPE-c ($r = 0.471$, $p = 0.004$), providing an external-load-informed reference against which observed internal-load estimates could be interpreted. HRV differed across days 1–3, with post-session RMSSD and SDNN lowest on day 1 and highest on day 3 (both $p < 0.01$). Suppressed day-1 post-training HRV coincided with the additional fatigue burden of fitness and sprint testing. On day 3, post-session RMSSD and SDNN were negatively associated with perceived duration, indicating that players with more favourable HRV experienced the session as shorter.

Conclusions

Subjective time altered session-RPE estimates and was associated with HRV during intensive high-performance soccer training. Perceived duration was not interchangeable with clock time or reducible to RPE. It may provide a useful marker of how athletes experience training when internal-load estimates diverge from clock-based and external-load-informed expectations.

O2-1-2 When Time Flies in Training: Exploring Subjective Time, Internal Load and Skill Performance in Collegiate Basketball

YU Tianhe (Hebei University of Chinese Medicine)

Background and Objectives:

Training load monitoring has become an important component of basketball coaching, yet relatively little attention has been given to how athletes experience training psychologically. While internal load measures such as heart rate and rating of perceived exertion are widely used, subjective time perception may provide an additional indicator of engagement and training quality. This presentation introduces an ongoing study examining whether the experience of time during basketball skill training is associated with internal load, technical performance, and enjoyment.

Methods:

An ongoing 12-week monitoring study is being conducted with non-elite collegiate female basketball players in China. Repeated measures include heart rate, module-specific and session rating of perceived exertion, technical performance, and player technical level during common basketball skill drills. Additional measures of subjective time perception and retrospective session evaluation are being incorporated to explore associations between temporal experience, physiological responses, and skill performance.

Results:

Preliminary observations suggest meaningful differences in physiological and perceptual responses across basketball skill modules and between players of differing technical levels. The completed study will investigate whether players who experience training sessions as passing more quickly also demonstrate different physiological responses, greater technical success, higher enjoyment, and more favourable retrospective evaluations.

O2-1-3 From the Court to Life: Active Ageing Experiences among Older Chinese Women Basketball Participants

Ms. Hua Chen ZHU (University of Macau, Faculty of Education)

Background:

Population ageing has increased attention to the role of sport participation in health and social interaction in later life. However, less is known about the development and meanings of long-term sport participation experiences among older women. From a life course perspective, this study explores older Chinese women basketball participants' experiences and their relationship with active ageing in later life.

Methods:

This study was grounded in a constructivist paradigm and situated within a relativist ontology and a constructivist epistemology. Fifteen Chinese women aged 60 to 73 years with long-term basketball experience were recruited through snowball sampling during national middle aged and older adults' basketball invitational tournaments. Data were collected through face-to-face semi-structured interviews and analysed using reflexive thematic analysis.

Results:

Five primary themes were identified: (1) Developing emotional connections with basketball; (2) Navigating opportunities and challenges through basketball; (3) Sustaining relational connections through basketball; (4) Adjusting basketball participation across life transitions; and (5) Reimagining ageing through basketball. Participants' basketball experiences presented a dynamic process of adaptation across the life course. They engaged in basketball across different contexts and developed lasting emotional connections through long-term participation. In response to physical changes and life responsibilities, participants adapted their participation patterns and roles to maintain their connections with basketball. Team relationships supported sustained participation and extended social interactions beyond the court. Through this process of adaptation, participants' basketball experiences became intertwined with active ageing experiences, supporting health independence, emotional regulation, social interaction, and more positive perceptions of ageing in later life.

Conclusion:

This study suggests that older women's sport experiences should be understood within the developmental context of the life course. Future research could compare sport experiences across cultural contexts and sports to deepen understanding of the relationship between sport participation and active ageing.

O2-1-4 **Becoming a Female Physical Education Teacher: An Autoethnography of Gendered Bodies and Everyday Pedagogical Practice in Chinese Higher Education**

Dr. ZHAO Kaixi (Shanxi University of Finance and Economics)

In global higher education, university physical education (PE) takes diverse forms. In many Western contexts, PE is commonly offered as an elective subject. In contrast, university PE in China is compulsory for most non-sport majors and is expected to improve students' physical fitness while contributing to the national agenda of building a "leading sporting nation" (Zhao, Liu, & Zhang, 2026). Within this context, university PE is not only a site for developing physical competence but also an everyday pedagogical space where bodies, gender and professional identities are continually produced and negotiated.

Although previous research has examined gender in physical education through students' experiences, curriculum design and pedagogical reform, considerably less attention has been paid to the everyday embodied experiences of physical education teachers themselves. In particular, little is known about how female physical education teachers negotiate their bodies, professional legitimacy and pedagogical practices during the transition into university teaching.

This study adopts the autoethnographic approach to examine my first year as a female physical education teacher in a Chinese university. Informed by feminist perspectives on embodiment, gender as social practice and feminist praxis, the study draws on reflective journals, autobiographical memories and everyday teaching experiences. Through four interconnected autoethnographic narratives, the paper explores how preparing the pedagogical body, responding to students' bodily vulnerability, negotiating gendered pedagogical interactions, and teaching through the body became everyday sites through which gender, embodiment and professional legitimacy were continually negotiated.

The analysis demonstrates that becoming a female physical education teacher extends beyond acquiring pedagogical knowledge and teaching skills. It is an embodied process in which professional legitimacy, bodily visibility, authority, care and interpersonal boundaries are continually negotiated through everyday teaching practice. The narratives show that everyday pedagogical decisions may simultaneously challenge and reproduce dominant gender norms, even when teachers consciously seek to create more equitable learning environments. These findings suggest that gender-responsive pedagogy develops through teachers' continual reflexivity about how their own bodies, language and everyday pedagogical decisions participate in the production of gender.

O2-1-5 'He had bitten off more than he could chew': the publicised struggles versus lived challenges of the Chinese 'creek football star'

LI, You (Xiamen University of Technology)

Sport as a vehicle for social mobility remains a widespread narrative, often framing athletic talent as a meritocratic 'way out' for marginalised youth. This paper seeks to further understand this narrative in less-researched cultural contexts by co-producing knowledge with and about the 'viral creek football star' in China. He is a rural Chinese youth from a minority and underprivileged background, whose viral videos and underdog story garnered nationwide attention in 2020. Drawing on his popular media story and lived experience, we apply the reflexive thematic narrative analysis (RTNA) to compare and map the dissonance between his media-sensationalised struggles and his lived challenges as a tiyusheng (体育生, physical education student). This approach is rooted in a qualitative research paradigm philosophically underpinned by ontological relativism and epistemological interpretivism, foregrounding thick description, in-depth interpretation and reflexivity over quantitative or positivist-informed criteria such as generalisability. By analysing a multi-sourced dataset collected from media coverage, online comments, semi-structured interviews and ethnographic fieldwork, we illuminate the narrative tension and underlying postulates of such storytelling in China. In doing so, four themes are reflexively developed that address his challenges of leveraging sport for social mobility: (1) the capability challenges — skill gaps versus institutional barriers; (2) the fame challenges — disillusionment versus distraction; (3) the career prospect challenges — lack of football gear versus deprivation of opportunity; (4) the narrative identity challenges — the failed saviour versus the stigmatised survivor. Accordingly, we argue that public fixation on underdog-leapfrogging narratives in sport may hinder broader

recognition of the less glamorous yet more common career struggles faced by grassroots athletes. In China, this is often complicated by the still-prevailing ideology of zhongwenqingwu (重文輕武, valuing literacy and despising physical labour), which doubly marginalises the tiyusheng identity as both academically inferior and athletically insufficient.

O2-1-6 Young Children's Perspectives on Physical Activity: A Scoping Review on Why, How, and What

Mr. ZHANG Haowei (The Education University of Hong Kong)

This scoping review analyzes empirical studies focusing on children's perspectives on physical activity (PA) in early childhood educational settings. Drawing on Piaget's constructivist theory, which posits that children are active meaning-makers, we provide a descriptive overview of the research conducted by PA educational scholars in recent decades. More specifically, the review aimed to 1) identify the purposes that motivated researchers to investigate children's PA perspectives; 2) investigate the methods that researchers used to explore children's perspectives; and 3) analyze how children conceptualized PA and the emotional valence (positive, negative) they associated with PA experiences. Eighteen articles were included and analyzed according to three sets of categories. Researchers commonly sought to identify children's affective responses and cognitive understandings regarding PA, and used children's perspectives to inform pedagogical and curriculum practices. Researchers used multiple methods to document children's PA perspectives, with interviews, drawings, and observations as the most frequently used approaches. Children conceptualized PA in relation to play, physical movement, social interaction, health, and learning. The emotional valence of children's PA experiences was positive in most studies, although negative experiences were also identified in certain studies. We encourage researchers from different regions to tackle diverse research purposes and employ multiple methods when exploring children's PA perspectives to document them more comprehensively. We argue that children's own perspectives should guide how educators create supportive and developmentally appropriate environments that promote children's participation in PA.

O2-1-7 How Social Justice is conceptualized in the Chinese Physical Education and Health Curriculum: A Critical Discourse Analysis

Mr. Zhuohong ZHUANG (The University of Auckland)

Background and Objectives:

Social justice has been a longstanding concern in Physical Education (PE) and Health and Physical Education (HPE) scholarship for over four decades. However, existing scholarship has predominantly examined how social justice is understood and enacted within Western liberal-democratic contexts, while comparatively little attention has been paid to how it is conceptualized in non-Western contexts. Although Chinese PE and Health curriculum standards do not explicitly employ the term "social justice", concerns related to equity, diversity, participation, and student development are embedded throughout the curriculum discourse. This study objective examines how social justice is conceptualized in the Chinese PE and Health curriculum standards.

Methods:

Drawing on Critical Discourse Analysis (CDA), this study examines the Physical Education and Health Curriculum Standards for Compulsory Education (2022 Edition) and the General Senior High School Physical Education and Health Curriculum Standards (2017 Edition, revised 2020). A total of 298 clauses were identified and coded. Analysis focused on four linguistic features: grammatical agency, processes, mood, and modality. Social justice-related statements were further analyzed through three complementary theoretical lenses: Gramsci's theory of hegemony, Fairclough's concept of discourse and ideological naturalization, and Fraser's framework of redistribution, recognition, and representation.

Results:

The findings indicate that: (a) social justice is embedded within a value framework that links individual development to broader collective goals. Students' health, interests, needs, agency, and holistic development are consistently connected to wider societal aspirations, including civic development, Healthy China, national fitness, and national rejuvenation. (b) social justice is primarily articulated through the interconnected concepts of fairness, inclusion, difference, and participation, forming a logic of recognizing difference, providing differentiated support (因材施教), and promoting participation. Students' differences in physical conditions, abilities, interests, and learning needs are treated as legitimate grounds for differentiated educational goals, content, pedagogies, and assessment

practices. (c) social justice is naturalized as a curricular commitment through declarative and normative discourse. All 298 analyzed clauses were expressed in declarative mood, while most modality choices conveyed certainty rather than contestation. Grammatical analysis further showed that curricula and teachers were predominantly positioned as providers of educational opportunities, whereas students were primarily constructed as recipients and participants in predefined learning activities. (d) Fraser's framework highlights a strong emphasis on recognition and redistribution. While students are encouraged to participate in learning and physical activity, they are rarely represented as subjects who can define, question, critique, or negotiate what constitutes social justice within the curriculum.

Conclusions:

Social justice is not absent from Chinese PE and Health curriculum standards. Rather, they construct a distinctive conception of social justice towards responses to diverse student needs. The study highlights the importance of examining not only whether social justice is present in curriculum discourse, but also how it is defined, naturalized, and can be enacted in specific socio-cultural contexts in the future, thereby contributing a non-Western perspective to ongoing debates on social justice in PE and HPE.

PARALLEL ORAL PRESENTATION SESSION 2-2
(Short Oral Presentations)

O2-2-1 在支持与依赖之间:人工智能与中国职前健康与体育教育教师的专业发展

陈诗旭 (福建师范大学)

近年来，生成式人工智能逐渐进入教师教育领域，并日益影响职前教师获取资源、组织知识以及理解教学的方式。尽管已有研究开始探讨人工智能在教育中的应用潜力，但关于中国职前健康与体育教育教师专业发展的经验研究仍较有限，尤其缺乏对其使用经验、专业学习及教育意义的质性考察。基于社会文化理论视角，通过目的性抽样选取16名参与者开展半结构式访谈，并运用反思性主题分析法分析资料考察人工智能如何影响中国职前HPE教师的专业发展。

研究发现人工智能帮助参与者获取知识资源提高了备课效率并减轻了负担；促使参与者超越对运动技能教学的单一关注，进一步考虑学生差异和课堂组织，从而拓展对教师角色的理解；参与者并未被动接受人工智能建议，而是依据课程标准、场地器材及学生状态进行调整，体现出教学能动性；过度依赖模板化输出可能压缩独立探索、创造性设计与反思的机会。人工智能在支持专业学习、教学判断与教师角色理解的同时，也可能强化职前HPE教师对现成答案和固定模板的依赖，使其对教学情境的理解趋于表层化，并削弱独立思考与专业判断。研究揭示了人工智能支持下职前HPE教师专业学习的实践机制与发展张力，并为中国体育教师教育中的人工智能融入提供经验启示。

O2-2-2 专门用途汉语教材的主题类别分析 ——以体育汉语教材为例

邱子豪 (The Education University of Hong Kong)

专业运动员来华学习训练乒乓球、羽毛球等中国优势体育项目，需要与训练、课程和赛事情境相适应的汉语能力；然而，现有体育汉语教材的主题设置与专业需求的契合度仍缺乏系统评估。

本研究旨在考察教材主题与体育院校课程需求的匹配状况。研究以《体育汉语》《体育汉语800句》《体育汉语会话》三本教材为对象，采用内容分析法，借助《中国图书馆分类法》体育类目构建分析框架，对教材单元和课文主题进行梳理；同时以上海体育大学面向留学生开设的21个体育类本科专业课程为参照，整理课程主题体系，并开展对比分析。

结果显示，三本教材主题与课程主题的重合率分别为2.48%、29.75%和32.23%。其中，《体育汉语会话》主题广度与匹配度最高；《体育汉语800句》侧重赛事管理与运营，但受短句形式限制，主题展开不足；《体育汉语》偏重日常汉语与背景知识，与专业课程关联较弱。研究还发现，《中图法》在体育商业等交叉学科主题分类上存在局限。

研究表明，将《中国图书馆分类法》引入体育汉语教材内容分析具有可行性，可为体育汉语教材编写、评估与选用，以及专门用途汉语教材研究方法拓展提供实证依据。

O2-2-3 合作学习模式促进体育理论课中学生深度学习的个案研究

党林秀博士（福建师范大学）

随着学习科学的深入研究，教育领域中深度学习再次引起教学实践者的极大关注，同时本科生教育质量问题日益凸显，在此背景探究，推动深度学习、提升教学质量是知识全球化时代“学会学习”的核心诉求。研究基于合作学习模式和深度学习相关理论，采用文献资料法、问卷调查法，课堂观察法、访谈法等方法，通过梳理界定核心概念、整合适配研究工具、开展实证数据收集的递进式流程，选取某高校体育教育领域教师D的授课班级（N=86）为研究对象，结合课堂观察与前后测实验设计，运用NVIVO15.0、SPSS27.0完成数据分析。

研究结果表明：

(1) 学习过程方面：学生深度学习水平显著提升，浅层学习水平显著下降。合作学习模式促进了学生深度学习动机和策略，降低了浅层学习动机和策略。

(2) 学习效果方面：①能力领域。合作学习模式显著提升了学生深度学习能力。两班学生在批判性思维、创造性思维、协作能力、沟通表达能力、自主学习能力和学习毅力六个维度均有显著进步。②情感领域。合作学习模式对学生的学习投入和满意度产生了积极影响。③认知领域。合作学习模式提高了学生的批判性思维倾向。学生在思想开放、分析能力、系统化能力维度具有显著性进步。

结论：

合作学习模式能够有效促进学生的深度学习。

O2-2-4 从标准化训练到个性化培养：基层篮球数字化实践与反思

张俊威（深圳市龙岗区宝龙科技城实验学校集团碧新小学）

背景和目标：

“小篮球” 计划推行与 “双减” 政策落地后，校园篮球参与学生规模持续扩大，但基层教学普遍沿用标准化训练模式：动作要求统一、训练内容统一、人才选拔唯身高论，导致身体条件普通的学生难以获得进阶机会，机械重复的训练也使得中高年级学生参与热情逐年下降。同时，主流数字化训练方案多面向专业梯队，设备成本高、操作门槛高，普通公立小学受经费和师资限制难以落地。一线教学中亟需一套适配基层资源条件、兼顾普及与个性培养的可行路径，本研究即以本校实践为基础，探索低成本数字化支撑下的“课 – 队 – 赛”一体化篮球教学模式。

方法：

本研究采用准实验研究结合行动研究法，以本校 U12、U10 两支男子篮球梯队为研究对象，构建“课堂普及 – 梯队提升 – 赛事检验”的教学闭环，开展为期一学期的教学实践。实践中采用轻量化数字工具：用手机日常拍摄训练与比赛片段，课上即时慢放回放纠正技术动作，赛后逐回合复盘战术决策；选材与训练中打破单一身高标准，根据学生球场表现划分组织型、突破型、投射型等特点，针对性设计个性化训练内容与发展重点。

结果：

经过一学期实践，队伍竞技水平与育人效果均有明显提升：U10 梯队首次参加区级青少年篮球联赛便取得小组第三名，创下学校参赛最佳战绩；队伍战术打法更灵活，不再局限于固定套路，学生在场上自主处理球、主动配合的次数明显增多。多名身高不突出但战术意识好的学生进入主力阵容，获得了此前被标准化选拔排除的成长机会。实践同时发现，基层教练对视频素材的梳理应用能力不足，是当前限制数字化训练效果深化的主要因素。

结论：

基层青少年篮球教育的核心是理念转型，而非高端设备堆砌。借助低成本数字化手段可以有效打破标准化训练的局限，保留青少年的运动个性与创造力。该方案适配普通公立小学的资源条件，对完善校园篮球后备人才培养体系具有积极的实践意义。

O2-2-5 粤港澳三地中小学在职体育教师继续教育供给生态研究

叶家成博士 (The Education University of Hong Kong)

本研究基于《粤港澳大湾区发展规划纲要》及新时代中小学体育教师队伍建设政策，旨在厘清粤港澳三地在职体育教师继续教育的供给现状，识别培训生态中的问题与差异，为构建协同继续教育体系提供数据支撑。研究采用混合研究方法，以公开数据收集与分析为主、辅以半结构化访谈，系统检索粤港澳三地教育行政部门官网及继续教育平台的相关资讯，从政策文件、平台、培训项目三维度进行比较研究，并对广东地区2—3名在职体育教师进行访谈以补充公开数据缺失的信息。研究发现：政策层面，广东侧重学时量化与制度规范，香港强调专业发展与校本培训，澳门以晋升为导向；平台层面，广东兼具统一性与地方特色，香港功能划分明确，澳门资源整合度最高；培训项目层面，各地培训开展形式与课程内容各有侧重。信息公开层面，广东保密性较高，香港公开程度最高，澳门介于两者之间。研究表明，三地因制度环境差异形成了各具特色的发展路径，未来可探索课程互认、资源共享与联合研修等合作模式，并应加强培训数据的开放共享，以促进大湾区体育教育质量的协同进步。

O2-2-6 不同强度身体活动与中学生久坐行为对睡眠质量的影响研究

欧阳静姿 (Guangzhou Sport University)

背景和目标：

青少年睡眠不足已成为全球性公共卫生问题，我国中学生因学业负担重、电子产品使用频繁，睡眠问题尤为突出。身体活动不足和长时间久坐是影响睡眠质量的两大可改变生活方式因素，但既往研究多聚焦于总体活动量，较少区分学习相关活动与休闲娱乐活动、剧烈强度与中等强度活动的差异化影响。本研究旨在探究中学生不同领域、不同强度身体活动及久坐行为与睡眠质量的关系，为制定精准化健康干预策略提供实证依据。

研究方法：

青少年睡眠不足已成为全球性公共卫生问题，我国中学生因学业负担重、电子产品使用频繁，睡眠问题尤为突出。身体活动不足和长时间久坐是影响睡眠质量的两大可改变生活方式因素，但既往研究多聚焦于总体活动量，较少区分学习相关活动与休闲娱乐活动、剧烈强度与中等强度活动的差异化影响。本研究旨在探究中学生不同领域、不同强度身体活动及久坐行为与睡眠质量的关系，为制定精准化健康干预策略提供实证依据。

结果：

研究对象睡眠质量总分为8.09±4.97，以PSQI＞5作为睡眠问题检出界值，本样本估计睡眠问题检出率约为73.3%，提示该群体睡眠质量普遍较差，睡眠障碍问题突出。每周总体力活动能量消耗均值为2383.03±1793 MET–min/周，个体间活动量差异较大。每日久坐时间均值为471.4分钟，提示该群体日均久坐时间较长。描述性趋势分析显示，身体活动水平较高的群体，其PSQI总分呈偏低趋势，而久坐时间较长的群体，其PSQI总分呈偏高趋势。

结论：

中学生睡眠质量状况普遍较差，增加休闲性身体活动、减少久坐行为对改善睡眠具有协同保护作用。建议学校在“双减”政策下切实保障体育活动时间，家庭应合理限制孩子课余屏幕使用时间，共同促进青少年身心健康发展。

O2-2-7 中学生体育课动机与行为选择及健康结果的关系

郑炜奇 (Shaanxi Normal University)

背景：

体育课动机与学生的行为参与、行为选择及健康结果密切相关。在青少年身体活动不足和久坐行为日益普遍的背景下，理解其动机尤为重要。情境期望价值理论认为，成就动机既包含期望信念、任务价值等积极成分，也包含感知成本这一消极成分，但既有研究主要关注积极动机，忽视了学生的感知成本。

目的：

基于情境期望价值理论，检验学生体育课期望、任务价值和感知成本与课堂行为参与、未来锻炼意愿及心肺健康之间的关系。

方法：

以990名学生为对象，使用稳健最大似然估计和完全信息最大似然法处理缺失数据进行分析，进一步通过结构方程模型检验学生体育课动机和有关学习结果之间的关系。

结果：

模型拟合可接受，$\chi^2(474)=2291.26$，$p<.001$，CFI=.908，TLI=.907，RMSEA=.071，SRMR=.064。任务价值显著正向关联课堂行为参与（β=.648）和未来锻炼意愿（β=.543）；期望信念显著正向关联未来锻炼意愿（β=.177）和心肺健康（β=.351）；感知成本显著负向关联课堂行为参与（β=−.106）。

结论：

任务价值是课堂参与和未来锻炼意愿最重要的关联因素，表明当学生认为体育活动重要、有趣且有用时，更可能积极参与课堂并形成未来锻炼意向。期望信念与心肺健康的联系更为突出，而感知成本主要限制学生的课堂行为参与。体育教学应增强成功信念和任务价值并降低感知成本。

PARALLEL ORAL PRESENTATION SESSION 2-1
(Short Oral Presentations)

O2-3-1 **Campus-Embedded Stair-Climbing Exercise Snacks for Insufficiently Active College Students: A Randomized Controlled Trial**

Mr. Rongji ZHAO (Tongji University)

Background:

Insufficient physical activity and psychological distress are common among university students, while lack of time may limit participation in structured exercise. This study evaluated the feasibility and preliminary effects of a pragmatic, campus-embedded stair-climbing exercise-snack intervention on perceived stress, psychological distress, fatigue, sleep quality, and cardiac autonomic function in insufficiently active college students.

Methods:

In this 10-week parallel randomized controlled trial, 42 insufficiently active college students were randomly assigned in a 1:1 ratio to an intervention or control group (n=21 per group). The intervention group completed two to three brief stair-climbing bouts per day, each lasting no more than 10 minutes and separated by at least 30 minutes, within their usual campus routines. Controls maintained their usual behaviour. Outcomes assessed at baseline and post-intervention included the Perceived Stress Questionnaire (PSQ; primary outcome), Kessler Psychological Distress Scale (K10), Fatigue Scale-14 (FS-14), Pittsburgh Sleep Quality Index (PSQI), resting heart rate (RHR), and heart rate variability assessed using the standard deviation of normal-to-normal intervals (SDNN). Baseline-adjusted change scores were analysed with statistical significance set at $p < 0.05$.

Results:

From baseline to 10 weeks, the intervention group showed reductions in PSQ (71.1 ± 15.8 to 64.0 ± 15.2; $p = 0.034$), K10 (20.5 ± 8.3 to 18.0 ± 6.7; $p = 0.027$), FS-14 (9.4 ± 2.9 to 8.6 ± 2.7; $p = 0.044$), and PSQI (6.8 ± 3.6 to 6.2 ± 2.9; $p = 0.031$), whereas controls showed no significant changes. Descriptively, RHR decreased by 5.0% and SDNN increased by 13.6% in the intervention group, with no meaningful changes in controls. Adherence exceeded 90%, and no exercise-related adverse events occurred.

Conclusion:

The campus-embedded stair-climbing programme was feasible and safe and was associated with favourable changes in perceived stress, psychological distress, fatigue, sleep quality, and cardiac autonomic function. These findings support exercise snacks as a potentially scalable and low-cost strategy for promoting student health in university settings.

O2-3-2 From public estates to school micro-spaces: enhancing youth physical activity in Hong Kong through two basketball programmes

Ms. Ying FUNG (InspiringHK Sports Foundation)

Background and Objectives:

Hong Kong's severe spatial constraints restrict young people's access to sports facilities and limit opportunities for daily physical activity. Although more sports programmes at different levels have been organised to encourage youth participation, the underlying shortage of sporting space and facilities remains unresolved. This presentation shares practical experiences from the delivery of two community-based basketball programmes organised by a local charity in Hong Kong, which aim to provide basketball training for underprivileged adolescences and promote 3x3 basketball in kindergartens and primary schools. The presentation demonstrates how these programmes generate social impact and inform professional practice in land-scarce settings.

Methods:

Using an autoethnographic approach, the authors critically reflect on first-person leadership across two flagship initiatives: the WELL DUNK! Public Estate Basketball League and Training Programme (providing structured regional training for underprivileged adolescents aged 13–18 in public housing estates) and the Jockey Club Believe & Bounce Basketball Programme: InspiringHK Dream Factory (adapting 3x3 basketball to kindergarten and primary school micro-spaces to foster fundamental movement skills).

Results:

The successful delivery of these two programmes synthesised insights from elite athletic practice, cross-sector leadership and urban placemaking. However, sporting space constraints remained the major challenge identified during programme delivery. Key operational strategies were identified for engaging families, schools and estate management. For instance, maximising impact required broader community-engagement activities that built participants' social awareness and empowered them to make a positive

difference in their communities. In addition, building the capacity of high-quality coaches proved critical, as coaches acted as key gatekeepers who guided participant development and contributed to overall project success.

Conclusion:

These initiatives offer actionable, transferable insights for practitioner-researchers in Asian cities facing similar high-density pressures. By bridging ground-level programme delivery with regional health policy, this work highlights sustainable, community-anchored strategies to expand youth physical activity in space-limited environments.

O2-3-3 **STAGE: Spatio-Temporal Adversarial Graph Encoder for Dual-Person Competition Recognition in Table Tennis**

Dr. Wenlong MA (Shanghai University of Sport)

Recognizing adversarial group activities in high-speed sports like table tennis remains a significant challenge due to the millisecond-scale interaction between opponents and the complex trajectory of the ball. Traditiona methods primarily focus on collaborative semantics, which are unsuitable for capturing the zero-sum dynamics inherent in competitive duels. In this paper, we propose STAGE (Spatio-Temporal Adversarial Graph Encoder), a novel hierarchical framework designed to explicitly model two-player confrontational interactions. STAGE processes information across four distinct semantic scales: Skeleton Feature Extraction (Scale 1), Individual Action Modeling (Scale 2), Adversarial Interaction Coupling (Scale 3),and Tactical Situation Reasoning (Scale 4). By bridging the gap between fine-grained joint coordinates and high-level tactical intentions, the framework enables a panoramic analysis of match situations categorized into proactive control, balanced confrontation, and passive constraint. Furthermore, we introduce TTAdvantage-5K,the first dedicated skeleton-based dataset in this domain. Extensive experiments demonstrate that STAGE achieves state-of-the-art accuracies of 87.2% on TTAdvantage-5K and 94.3% on the VD Olympic split, significantly outperforming existing baselines while maintaining exceptional computational efficiency (297M FLOPs).

O2-3-4 The effect of the 5:2 diet combined with multicomponent structured exercise on body composition and physical fitness in older adults with abdominal obesity: A randomized controlled trial

Miss ZHANG Haiqin (The Education University of Hong Kong)

Background:

Abdominal obesity is increasingly common in older adults and is closely linked to metabolic disease. Moreover, individuals ≥60 years of age with obesity exhibit a heightened risk of falls. The 5:2 diet provides similar benefits to daily caloric restriction, with potentially high adherence. Multicomponent structured exercise (MSE) reduces fat, counteracts sarcopenia, and improves physical stability. Therefore, combining exercise with dietary intervention is crucial for preserving muscle and function.

Objectives:

This randomized controlled trial examined their individual and combined effects on body composition and physical fitness.

Methods:

A total of 120 older adults (aged 60–75) with abdominal obesity were randomly allocated to one of four groups for a 14-week intervention: (1) 5:2 diet group, (2) MSE group, (3) Combined group (5:2 diet + MSE); and (4) Control group. The primary outcomes were body mass (BM) and waist circumference (WC). Secondary outcomes included body mass index (BMI), fat mass (FM), muscle mass, grip strength, 30-second sit-to stand test (30 s ST), and VO2max. Linear mixed-effects models were used for data analysis.

Results:

One hundred seven participants completed the 14-week interventions. Compared to the control groups, the combined group achieved greater reductions in BM, BMI, FM, and WC, while a significant decrease in muscle mass was found solely in the 5:2 diet group (all $p < 0.05$). Compared to the control groups, the combined group significantly improved both right and left grip strength, and 30 s ST (all $p < 0.05$).

Conclusion:

For older adults with abdominal obesity, the 5:2 diet alone may comprise muscle, whereas the addition of MSE may potentially lead to fat loss without sacrificing muscle while delivering meaningful improvements in physical functions. For this population, combining the 5:2 diet with multicomponent structured exercise is recommended, as it promotes fat loss while preserving muscle and concurrently enhances physical function.

O2-3-5 Differential Effects of Acute Exercise Intensity on Sleep Continuity and Frontal NREM Slow-Wave Activity: A Randomized Crossover Trial

GENG Ya-Xuan (Beijing Normal University)

Background and Objectives:

Acute exercise may affect subsequent sleep, but whether exercise intensity differentially influences sleep continuity, architecture, and electrophysiological markers of sleep homeostasis remains unclear. This randomized crossover study compared moderate-intensity continuous training (MICT), high-intensity interval training (HIIT), and sedentary control (CON) on sleep continuity and frontal NREM slow-wave activity (SWA).

Methods:

Healthy men (n=23) completed CON, MICT, and HIIT in randomized order with washout periods. Exercise intensity was verified by heart rate, blood lactate, and perceived exertion. Whole-night polysomnography assessed sleep onset latency (SOL), sleep efficiency (SE), total sleep time (TST), and sleep architecture. Frontal EEG spectral analysis quantified NREM SWA (0.5–4 Hz) and N3 delta power. Linear mixed-effects models tested condition and condition-by-time effects.

Results:

Significant condition effects were found for SE ($p=0.017$) and SOL ($p=0.002$). SE was higher after MICT than CON and HIIT (both $p<0.05$), while SOL was shorter after MICT ($p<0.01$) and HIIT ($p<0.05$) than CON. N2%, N3%, WASO, and TST were unaffected by condition. NREM SWA showed significant condition and time effects (both $p<0.001$), but no condition-by-time interaction ($p=0.966$). First-90-min SWA did not differ significantly among conditions ($p=0.056$), nor did SWA dissipation ($p=0.841$). N3 delta power differed by condition ($p=0.001$), with higher values after MICT than CON ($p<0.05$) and HIIT ($p<0.001$), and after CON than HIIT ($p<0.05$).

Conclusion:

Acute exercise intensity differentially affects sleep continuity and NREM electrophysiology with limited changes in conventional sleep-stage measures. Both MICT and HIIT shortened SOL, whereas MICT additionally improved SE and increased N3 delta power. Spectral EEG measures may therefore detect exercise-related NREM changes not apparent from conventional sleep architecture.

O2-3-6 Active Resistance Training for Disuse-Induced Skeletal Muscle Atrophy: A Neuromuscular Coupling Perspective

DUAN Haijun (Beijing Normal University)

Background:

Prolonged bed rest, limb immobilization, and simulated microgravity reduce skeletal muscle contractile activity and mechanical loading. These conditions cause disuse-induced skeletal muscle atrophy, loss of strength, impaired motor control, and delayed functional recovery. However, declines in strength often exceed changes in muscle mass or morphology, indicating that structural alterations alone do not fully explain functional deterioration.

Objectives:

This review examines disuse-induced muscle atrophy through the framework of neuromuscular coupling and evaluates how active resistance training may preserve or restore neuromuscular function.

Review Focus:

Neuromuscular coupling integrates central neural drive, motor unit recruitment and discharge behaviour, neuromuscular transmission, and muscle-fibre contractile responses. Evidence across disuse models indicates that impairment can occur throughout this neural-to-muscle pathway. Active resistance training maintains mechanical loading through voluntary contraction against external resistance. It may also strengthen proprioceptive feedback and central-peripheral regulation, thereby supporting motor unit activation, neuromuscular coordination, and force production.

Conclusion:

A neuromuscular coupling perspective helps explain why muscle weakness after disuse can be disproportionate to muscle loss. Active resistance training is therefore a promising countermeasure that targets both muscular and neural contributors to functional decline. Future research should clarify dose-response relationships and identify coupling-based indicators for individualized training prescription in prolonged bed rest, limb immobilization, and simulated microgravity.

O2-3-7 Association of Sleep Duration, Bedtime,and Their Combined Patterns with Choice Reaction Time in Older Adults:A Cross-Sectional Study Based on the Sixth National Physical Fitness Monitoring in China

Mr. XIAO (China Institute of Sport Science)

Background and Objectives:

Sleep duration and timing may jointly characterize sleep behavior in older adults, but their associations with neurobehavioral function remain unclear. This study examined the associations of sleep duration, bedtime, and combined bedtime–sleep-duration patterns with choice reaction time among older adults.

Methods:

This cross-sectional study included 48,303 adults aged 60–79 years from the Sixth National Physical Fitness Monitoring in China. Sleep duration was classified as short(<7 h),normal(7–8 h),or long(>8 h),and bedtime as early(<21:00),normal(21:00–22:00),or late(>22:00).Eight combined sleep patterns were derived. Choice reaction time was objectively assessed using a standardized reaction-time test. Multivariable linear regression with HC3 robust standard errors was used to estimate adjusted mean differences in reaction time. Quantile regression and sensitivity analyses were performed to assess robustness.

Results:

Compared with normal sleep, long sleep was associated with a 13.31-ms longer choice reaction time(95%CI,9.07–17.55;P<0.001),whereas short sleep was associated with a 9.90-ms shorter reaction time(95%CI,−17.45 to−2.35;P=0.010),although the latter association was not robust in sensitivity analyses. Compared with the normal bedtime–normal sleep pattern, normal bedtime–long sleep(β=11.25 ms;95%CI,5.89–16.62),early bedtime–long sleep(β=18.41 ms;95%CI,11.61–25.22),and late bedtime–long sleep(β=15.51 ms;95%CI,6.29–24.74)were associated with longer reaction time(all P<0.001). No significant differences were observed among these three long-sleep patterns. Quantile regression indicated that the association with long sleep was more evident at the 50th and 75th conditional quantiles.

Conclusion:

Long sleep was consistently associated with longer choice reaction time among older adults, irrespective of bedtime. These findings suggest that long sleep may be more consistently associated with slower information processing than bedtime alone; however, the cross-sectional design precludes causal inference.

PARALLEL ORAL PRESENTATION SESSION 3-1

O3-1-1 Students' Expectancy–Value–Cost Motivational Profiles in Physical Education and Their Associations with Behavioral Choices and Health Outcomes

Mr. Lilin CHEN (Central China Normal University)

Background:

Motivation in physical education (PE) energizes, directs, and sustains students' engagement and is closely associated with their behavioral choices and health outcomes. As physical inactivity and sedentary behavior become increasingly prevalent among adolescents, identifying motivational patterns and their behavioral and health correlates is important. Situated expectancy–value theory conceptualizes motivation as comprising positively valenced expectancy beliefs and task values and negatively valenced perceived costs. However, PE research has focused mainly on positive components, with less attention to cost and to how these components combine within students.

Purpose:

This study identified expectancy–value–cost profiles in PE, examined associations of gender and body mass index (BMI) with profile membership, and compared behavioral engagement, future exercise intention, and cardiorespiratory health across profiles.

Methods:

Participants were 990 students. They completed measures of expectancy, task values, perceived costs, behavioral engagement, and future exercise intention. BMI was classified into five categories, and cardiorespiratory health was assessed using 1000-m runs for boys and 800-m runs for girls. Confirmatory factor analysis, latent profile analysis, multinomial logistic regression, and adjusted comparisons were conducted.

Results:

The measure showed good internal consistency (McDonald's ω = .860), and the eight-factor model had acceptable fit (CFI = .937, TLI = .923, RMSEA = .068). Three profiles were identified: low expectancy–value/high cost (14.0%), moderate expectancy–value/moderate cost (51.6%), and high expectancy–value/low cost (34.3%). Girls were more likely than boys to belong to the low expectancy–value/high-cost profile. BMI showed limited associations, although students with obesity were less likely than those with moderate-to-severe thinness to belong to the high expectancy–value/

low-cost profile. Behavioral engagement, future exercise intention, and cardiorespiratory health improved progressively across profiles.

Conclusion:

PE motivation was heterogeneous. The high expectancy–value/low-cost profile was associated with the most adaptive outcomes. Interventions should strengthen expectancy and task value while reducing perceived costs, particularly among girls and students with obesity.

O3-1-2 Health Equity and Inclusion: Predictors of Sport Participation and Sport Identity Among South Asian and Chinese Adolescents in Hong Kong

Mr. ASLAM Hamza Saghir (Hong Kong Baptist University)

Background and Objectives:

Adolescence is critical for sport identity, sustaining sport participation and health. Second-generation South Asian immigrant adolescents in Hong Kong face unique barriers, such as linguistic exclusion, discrimination, and restricted facility access, resulting in lower participation and health inequities versus Chinese peers. Aligned with fostering inclusive active societies, this study investigates how psychological, social, and environmental factors predict sport identity and participation among adolescents aged 12 to 15. It examines sport identity as a mediator and explores variations across ethnicity, gender, and socioeconomic status to inform equitable policy.

Methods:

A cross-sectional survey will target 700 adolescents (350 South Asian, 350 Chinese). Participants will complete validated instruments measuring psychological, social, and environmental variables. Data will be analyzed using correlation and regression to assess relationships. Mediation analysis will test sport identity's mediating role, while multi-group analyses will evaluate differences across demographics.

Results:

Analyses are expected to reveal significant positive associations between all predictors, sport identity, and sport participation. Mediation analysis is anticipated to demonstrate that sport identity accounts for the relationships between these multilevel predictors and participation. Multi-group comparisons are expected to identify distinct culturally, gender, and SES-specific patterns impacting health and wellbeing.

Conclusion:

This study provides foundational evidence on multilevel predictors of sport participation among under-studied South Asian immigrant youth. By revealing how these factors interact to drive inclusion, the findings advance understanding of health disparities. Ultimately, this research will inform targeted policies to foster equitable, active, and healthy societies in diverse urban Asian settings.

O3-1-3 Artificial Intelligence in Food Planning: A Critical Review Through the Lens of Behavioural Feedback Theory

Dr. CHUNG Ming Yan Louisa (The Education University of Hong Kong)

Background and Objectives:

Behavioural Feedback (BF) theory posits that sustained behaviour change depends on a continuous four-stage loop: goal setting, self-monitoring, feedback comparison, and self-regulatory action. Despite rapid proliferation of AI-powered food planning tools, it is unclear whether they genuinely instantiate BF theory or merely replicate its surface architecture. This review critically examines that question and proposes design directions for theory-grounded AI.

Methods:

Four categories of AI food planning application were evaluated against the four BF components using peer-reviewed evidence. The analysis was contextualised by a programme of empirical BF research: a 12-week RCT in teledietetics (n = 50 Hong Kong adults), a classroom-based dietary education study (n = 95 secondary students), and an app-based monitoring trial in young adults (n = 305). Theory of Planned Behaviour modelling was applied to identify the psychological mechanisms linking BF to sustained dietary change.

Results:

AI tools perform strongly on self-monitoring and automated feedback delivery. However, goal-setting protocols and self-regulation scaffolding remain largely underdeveloped and infrequently validated in clinical settings. The empirical BF work demonstrated no significant between-group difference at Week 12 ($p = 0.573$), but by Week 24 the BF group maintained significantly greater weight loss (88% vs 25%; OR = 24, $p < 0.001$). Perceived behavioural control was the sole unique predictor of dietary intention, explaining 37.7% of variance and correctly classifying 81.6% of cases.

Conclusion:

The alignment between current AI tools and BF theory is technical rather than theoretical. Closing this gap requires embedding validated behaviour change protocols into AI design and measuring self-regulation as a primary outcome. Theory-grounded AI holds transformative potential across sport nutrition, physical education, and public health — when design and evidence standards rise to match the technology.

PARALLEL ORAL PRESENTATION SESSION 3-2

O3-2-1 AI-Driven Real-Time Gesture Analytics in Basketball

Mr. CHAN Ching Yat Roy (The Education University of Hong Kong)

This project aims to develop an intelligent, objective, and automatic assessment system for evaluating basketball techniques using Time-of-Flight (ToF) sensors, mmWave radar, edge computing, and artificial intelligence algorithms. Traditional physical education and sports assessments often depend on subjective visual judgment, which may result in inconsistent feedback and limited opportunities for personalized improvement. To address this limitation, the system can capture and analyze the body posture of basketball players during key movement phases, including dribbling, shooting and layup.

The system compared a trainee's basketball skill sequence with a trainer-defined "perfect" posture model. Within a complete motion sequence, critical postures can be identified and evaluated. Each posture is assigned an individual score based on posture accuracy, movement alignment, and similarity to the reference standard. These individual scores can be combined to generate an overall performance score, allowing trainees to understand their technical strengths and weaknesses in real time.

A user-friendly electronic dashboard and application interface is developed to present posture scores, summary feedback and performance metrics clearly. By integrating hardware sensing technologies with AI-based motion analysis, the system can provide immediate, data-driven feedback that supports skill correction and learning efficiency. The initial focus of the project is basketball training, but the project will be extended to other sports and related movement-based activities.

The system is expected to support training for approximately 300 undergraduate and postgraduate students, enhance learning engagement, improve assessment consistency, and promote the use of intelligent sports analytics in physical education and athlete development.

O3-2-2 个人与社会责任教学模式（TPSR）在中国初中体育课中的应用效果与实施困境

党林秀博士（福建师范大学）

引言：

当前中学体育教学往往过度强调基本技能的传授，而忽视了学生在体育运动中责任感的发展。这种失衡常导致学生被动学习，并阻碍终身体育锻炼习惯的养成。然而，TPSR 模式在促进社会责任与培养全面发展方面已显示出成效。

研究目的：

本研究旨在比较 TPSR 模式与技能掌握式教学模式在真实体育教学情境中的有效性，并识别 TPSR 模式在实施过程中可能面临的挑战。

研究方法：

本研究采用准实验设计，选取 87 名七年级学生（实验组 42 人、对照组 45 人）开展为期 13 周的教学干预。通过问卷调查、体质测试、技能考核与半结构化访谈收集数据，并运用 SPSS 进行统计检验，以考察两种教学模式的有效性。

研究结果：

(1) TPSR 模式在培养学生的自我控制、自我责任与关心他人方面发挥了积极且显著的作用；(2) 两种教学模式对学生体质与运动技能的提升效果无显著差异，但实验组学生在实验后的提升幅度更大；(3) TPSR 模式对学生的消极兴趣具有明显的抑制作用；同时，在体育参与、自主探索、关注体育等维度上，激发了学生更多积极的态度与行为。教师在实施中面临的困境包括：(1) 大班教学中难以把握学生的个体差异；(2) 学生对新教学模式中的交流发言环节存在抵触情绪；(3) 缺乏有效的迁移评估工具等。

结论：

TPSR 模式能够增强初中体育课中的责任培养与体育参与度，但在大班差异化教学、学生互动率偏低以及技能迁移评估工具等方面仍存在挑战。要最大化该模式的成效，需要师生持续协作，不断改进与调适体育教学实践。

Conclusion:

The TPSR model enhances responsibility cultivation and sports engagement in junior high PE, though challenges persist regarding differentiated instruction in large classes, low student interaction rates, and assessment tools for skill transfer. Maximizing the model's efficacy requires sustained teacher-student collaboration to refine and adapt instructional practices in physical education.

O3-2-3 **Development and Validation of a Short Form of the PE Teacher Feedback Literacy Scale (PE-TFLS-SF): A Rasch-Based Psychometric Evaluation**

Xiancheng ZENG (Macao Polytechnic University)

Teacher feedback literacy is foundational to effective instruction, yet PE teacher feedback literacy has only been measured using long-form instruments, which constrain large-scale research and routine professional development monitoring. This study developed and validated a short form of the PE Teacher Feedback Literacy Scale (PE-TFLS-SF) for in-service PE teachers. A sample of 363 in-service PE teachers (M = 37.460, SD = 9.875) completed the 10-item PE-TFLS-SF. Psychometric properties were evaluated using Confirmatory Factor Analysis, Rasch analysis, and Differential Item Functioning, with criterion-related validity assessed via correlations with self-efficacy and burnout. CFA supported a well-fitting unidimensional structure. Rasch analysis supported essential unidimensionality and strong measurement precision, and DIF analysis confirmed measurement invariance across gender, teaching stage, and teaching experience. Criterion-related validity was supported by theoretically expected correlations with teacher self-efficacy and burnout. The PE-TFLS-SF is the first validated short-form instrument for PE teacher feedback literacy. It enables efficient screening and targeted professional development, bridging feedback literacy theory with PE practice.

PARALLEL ORAL PRESENTATION SESSION 3-3

O3-3-1 WISH-HK: A Prospective Pilot Study of an Approach-Motivated Walk-and-Talk Intervention for Adolescent Girls in Hong Kong Secondary Schools

Jinghua CHEN (Independent Researcher)

Background and Objectives:

Physical inactivity is highly prevalent among Hong Kong adolescents, particularly adolescent girls. The UK-based Walking In ScHools (WISH) feasibility study showed promising increases in school-time light physical activity. However, the definitive scale-up across Ireland and Northern Ireland did not demonstrate significant improvements in device-measured physical activity. Despite these findings, WISH provides a valuable foundation for further refinement, particularly in relation to attendance, intervention exposure, and school-level implementation. Building on this evidence, the present study proposes WISH-HK, an adapted peer-led Walk-and-Talk intervention designed to examine whether walking can become a socially engaging, enjoyable, and repeatable routine for adolescent girls in Hong Kong secondary schools.

Methods:

A prospective two-arm cluster pilot study will evaluate a 12-week, peer-led Walk-and-Talk intervention for adolescent girls in Hong Kong secondary schools, with schools allocated to WISH-HK or usual practice. Older female students will lead 10–15-minute sessions using co-designed conversation themes and, where permitted, a school-approved online community with shared goals to support between-session interaction. Feasibility outcomes will include walk delivery, attendance and repeat participation. The motivational-social pathway will assess approach motivation, enjoyment, perceived value, peer support, team identity and subjective time perception alongside accelerometer-measured school-time activity. An a priori power analysis used d=0.46, 80% power and α=0.05.

Results:

Earlier WISH evidence showed short-term gains in school-time light physical activity, whereas the scaled trial reported no significant device-measured effect and highlighted limitations in attendance and delivery. These findings informed WISH-HK's co-designed social-motivational adaptation. The initial power analysis estimated 154 participants (77 per group), before adjustment for clustering and attrition.

Conclusion:

WISH-HK will examine whether a low-cost, peer-led Walk-and-Talk model can strengthen the appeal, delivery and sustained participation of school-based walking while supporting physical activity among adolescent girls. If feasible, it will provide preliminary evidence for a scalable Hong Kong implementation study and inform context-sensitive school-based physical activity practice across Asia.

O3-3-2 The Institutional Trajectory of Liangjiang Women's Physical Education School in Modern China, 1922–1951

Dr. ZHAO Feng (Waseda University)

Women's physical education played an increasingly important role in China's modernization and nation-building during the first half of the twentieth century. While existing scholarship has examined women's sport, educational reform, and prominent individuals, relatively little attention has been paid to women's physical education institutions as historical actors. This study examines the institutional trajectory of Liangjiang Women's Physical Education School (1922–1951), one of the most influential women's physical education institutions in modern China, to explore how its development was shaped by changing social, political, and transnational contexts.

Adopting a historical institutional perspective, this study draws on archival documents, newspapers, school publications, and memoirs to reconstruct Liangjiang's institutional development and analyze its evolving relationship with women, society, and the state.

The study demonstrates that Liangjiang evolved from a private women's physical education school into a nationally influential institution through successive stages of institutional formation, expansion, internationalization, wartime transformation, and postwar state incorporation. Rather than treating gender, nationalism, internationalization, and state intervention as separate themes, this article argues that they constituted interconnected dimensions of Liangjiang's institutional development. Initially established to expand opportunities for women's physical education and professional training, Liangjiang gradually assumed broader national and international functions before becoming increasingly subject to state intervention during wartime and, ultimately, incorporation into the post-1949 state educational system.

This study argues that Liangjiang's history represents a process of institutionalization through which a private educational initiative became an influential intermediary institution linking women's education, society, and the state. Its trajectory demonstrates that institutionalization simultaneously expanded opportunities for women's physical education, reshaped women's social roles, and generated new institutional vulnerabilities by increasing dependence on state authority. By examining Liangjiang as a case study, this article offers a new institutional perspective on the history of women's physical education, institutional change, and state formation in modern China.

O3-3-3 Personalizing Lifestyle Prescription for Metabolic Syndrome: A Bayesian and Component Network Meta-Analysis of Exercise and Diet

Mr. Jingfeng CHEN (The Education University of Hong Kong)

Background:

Metabolic syndrome (MetS) comprises central adiposity, dyslipidaemia, hypertension and impaired glucose regulation, and is associated with increased risk of cardiovascular disease and type 2 diabetes. Exercise, dietary modification, and combined exercise-dietary interventions are recommended for MetS management, but their comparative effects on individual cardiometabolic risk factors remain uncertain.

Objectives:

We aim to evaluate comparative effects of exercise, dietary, and combined exercise-dietary interventions on individual MetS components.

Methods:

PubMed, Embase, Cochrane CENTRAL, Web of Science, and Scopus were searched from inception to December 2025 for randomized controlled trials among adults with MetS. The primary outcomes were waist circumference (WC), systolic blood pressure (SBP), diastolic blood pressure (DBP), fasting blood glucose (FBG), triglycerides (TG), and high-density lipoprotein cholesterol (HDL-C). Comparative effects were estimated using Bayesian random effects network meta-analysis. Component network meta analysis was used to examine whether the effects of combined exercise and dietary interventions were consistent with additivity while certainty of evidence was assessed using confidence in network meta-analysis framework.

Results:

Seventy-eight trials with 8,452 participants were included. All four exercise-only interventions led to significant reductions in SBP and DBP. Moderate-intensity continuous training (MICT) produced the largest SBP reduction, whereas combined exercise produced the largest DBP reduction. No dietary-only interventions significantly lowered SBP or DBP. Of exercise-only interventions, resistance training was most effective for lowering FBG. The most effective combined interventions were combined exercise and Mediterranean diet for reducing WC, MICT with caloric restriction for reducing TG levels, and MICT with a low-carbohydrate diet for reducing FBG levels.

Conclusion:

In adults with MetS, exercise interventions improve blood pressure, whereas combined exercise-dietary interventions lead to greater improvements in WC, and TG and FBG levels. No single intervention was most effective for all MetS components.

PARALLEL ORAL PRESENTATION SESSION 4-1

O4-1-1 Reimagining Meaningful Physical Education in the Hong Kong Chinese Context: A Qualitative Study of Culturally Grounded Pedagogy

Dr. KAM Wai-keung Kevin (The Education University of Hong Kong)

Meaningful Physical Education(MPE) has emerged as a student-centred pedagogical approach that prioritises meaningful movement experiences through social interaction, challenge, enjoyment, motor competence, personal relevance, and reflection. However, existing conceptualisations have largely been developed within Western educational traditions, with limited attention to cultural contexts. Recent work has highlighted the need to explore how meaningfulness in physical education may be interpreted through local cultural values and educational philosophies in Hong Kong.

This study examines the implementation of a culturally grounded physical education framework that integrates MPE, Play with Purpose, and Chinese cultural values. The framework positions PE as a context for developing not only physical competence and game understanding, but also moral cultivation, relational learning, and whole-person development through movement experiences.

Adopting a qualitative multiple-case study design, the research will involve four Hong Kong primary and secondary schools. Data will be collected through lesson observations, semi-structured interviews with PE teachers, student focus groups, and teacher reflective journals. Reflexive thematic analysis will be employed to explore how teachers enact the framework, how students experience meaningfulness, and how Chinese cultural values are negotiated within games, play, and physical activity contexts.

The study is expected to demonstrate that meaningfulness in PE extends beyond enjoyment and skill development to include collective responsibility, respect, self-cultivation, and ethical participation. Findings will contribute to the international MPE literature by offering an empirically grounded, culturally responsive perspective from Hong Kong and advancing a model of Culturally MPE that bridges contemporary pedagogies with Chinese educational traditions.

O4-1-2 Mapping the Research Landscape of Bilingual Physical Education: A Scoping Review

JungHuan, HUANG (National Taiwan Normal University)

Background:

Bilingual physical education (PE) has gained increasing attention alongside policies promoting bilingual and multilingual education across diverse educational contexts. PE is considered a suitable context for bilingual learning because its physically active, interactive, and multimodal nature provides opportunities for authentic language use alongside subject-matter learning. However, research on bilingual PE remains fragmented across student outcomes, pedagogical approaches, and teacher-related challenges, with limited understanding of the breadth and characteristics of the evidence base.

Purpose:

This scoping review aims to examine what is known from the existing literature on bilingual PE and identify the characteristics and gaps in the current evidence base.

Methods:

Following Arksey and O'Malley's (2005) framework, four electronic databases (ERIC, Scopus, Web of Science, and Airiti Library)were searched. Studies were screened in two stages using predefined inclusion and exclusion criteria. The final corpus (n = 51) comprised worldwide. Data were charted and synthesised thematically in accordance with PRISMA-ScR.

Results:

Fifty-one studies clustered into seven areas, with research concentrated on pedagogical strategies and curriculum design, teacher competence and preparation, and language and cognitive outcomes; policy and institutional contexts, student motivation and affect, physical activity and motor outcomes, and conceptual frameworks were less represented. Key gaps included limited rigorous evaluation, little attention to long-term or out-of-school outcomes, and reliance on self-report measures. Existing evidence suggests that physical activity is generally maintained, while language and motivational outcomes remain mixed and teacher preparedness remains a persistent challenge.

Conclusion:

Bilingual PE appears feasible without necessarily compromising physical activity participation. Language learning and motivation may benefit, although outcomes vary with pedagogical design and student characteristics. Teacher preparation emerges as a key challenge, highlighting the need to develop language proficiency, PE pedagogical content knowledge, and their integration in bilingual instruction. Further comparative research is needed.

O4-1-3 Good Advice, No Action? Understanding the Adoption of AI-Generated Lifestyle Recommendations

Prof. Patrick LAU (Hong Kong Baptist University)

Artificial intelligence is increasingly used to generate personalized recommendations for physical activity, diet, sleep, stress management, and other lifestyle behaviors. These systems can produce advice that appears relevant, credible, and tailored to individual needs. However, positive perceptions of AI-generated recommendations do not necessarily lead to behavioral adoption. Users may appreciate a recommendation, intend to follow it, or express satisfaction with the system without integrating the advice into their everyday lives.

This talk explores the gap between the acceptability of AI-generated lifestyle recommendations and their actual adoption. Drawing on emerging evidence from digital health, human–AI interaction, and behavior change research, it considers adoption as a process involving perception, intention, and enactment. Whether users act on AI advice depends not only on the technical performance of the system, but also on the clarity, credibility, feasibility, and adaptability of the recommendation. Individual factors such as motivation, trust, self-efficacy, health literacy, AI literacy, and perceived autonomy interact with contextual conditions, including time, resources, routines, physical environments, and social support.

These issues are especially relevant to sport, health, and education, where recommendations must often be translated into repeated and sustained behaviors. Future AI-supported interventions should therefore move beyond one-way advice delivery toward systems that allow users to question, negotiate, and adapt recommendations in response to changing goals and constraints. Evaluation should similarly extend beyond satisfaction, perceived usefulness, and intention to include real-world uptake, behavioral enactment, adherence, and maintenance.

The talk argues that the success of AI-generated lifestyle recommendations should not be judged solely by whether they are accurate or personalized, but by whether users can understand, adapt, and act on them in safe, feasible, and meaningful ways.

O4-1-4 3～6岁幼儿梯度体力活动、体质与静息态脑电发育的实证研究

甄志平教授 (Beijing Normal University)

研究目的：

3～6岁是幼儿体质发育、骨骼成熟与大脑神经可塑性发展的关键窗口期，体力活动是影响幼儿体质健康与脑功能发育的核心可控因素。目前国内针对城市学龄前儿童不同强度体力活动、体质水平与脑电活动特征的协同关联研究仍较为薄弱，缺乏系统实证数据支撑与量化机制阐释。基于此，本研究聚焦北京市3～6岁幼儿，系统分析其体力活动、体质指标与静息态脑电的发育特征，探究不同梯度体力活动与体质、脑电节律的量化耦合关系，以期弥补幼儿运动健康与脑科学交叉领域研究不足，为构建科学化、精准化的幼儿体力活动干预体系、促进幼儿体质提升与脑潜能开发提供理论与实证依据。

研究方法：

以北京市3所不同办园性质幼儿园232名3～6岁幼儿为研究对象。采用中文版短版国际体力活动问卷测评幼儿不同强度体力活动水平，依据《国民体质测试标准（幼儿部分）》开展身体素质测试，结合专业仪器统一检测幼儿身体成分、骨密度及静息态脑电活动特征。采用描述性统计、独立样本t检验、单因素方差分析剖析各指标的年龄、性别分化特征，运用Pearson相关分析、典型相关分析及线性回归揭示体力活动与体质、脑电活动的内在关联。

研究结果：

幼儿体力活动存在显著性别与年龄差异，男童各强度体力活动水平整体高于女童，其中中高强度体力活动存在显著性别差异（$p<0.05$），且体力活动水平随年龄增长显著提升。幼儿体质发育存在明显性别与年龄异质性，身体成分、身体素质、骨密度均呈显著性别差异（$p<0.05$）；除BMI、体脂百分比及坐位体前屈外，幼儿身体成分、身体素质多数指标存在显著年龄差异（$p<0.05$），男童力量、速度、爆发力更具优势，女童柔韧性更佳。幼儿骨密度随年龄小幅增长但无显著年龄差异，且不同体质水平幼儿脑地形图能量分布存在显著差异。相关性分析表明，体力活动与幼儿身体成分呈显著正相关（典型相关系数=0.454，$p<0.05$）；中、重度体力活动与幼儿灵敏、平衡素质负相关，重度体力活动可正向预测力量、爆发力素质，与骨密度Z值呈微弱负相关；同时，重度、中高强度体力活动与θ波绝对功率、重度体力活动与α波绝对功率、轻度体力活动与θ波相对功率均呈显著正相关。

研究结论：

城市幼儿体力活动与体质发育存在显著的年龄、性别分化特征，不同强度体力活动可差异化调控幼儿体格、骨骼、运动素质及脑电神经节律，且体质发育状态与脑功能活动密切相关。本研究阐明了幼儿“体力活动—体质—脑发育”的协同耦合关系，丰富了幼儿运动促身心发展的实证体系，可为优化幼儿户外体育活动方案、推进幼儿体质健康与脑潜能协同发展提供科学参考。

O4-1-5 **单动篮球投篮的动力链时序与末端代偿机制：基于肘–腕运动学协同的量化分析**

高英铭博士 (The Education University of Hong Kong)

背景和目的：

尽管单动投篮已成为现代三分球的主流技术，但既往研究多局限于单关节运动学，缺乏对多关节协同及深层神经控制策略的量化解析。本研究旨在结合动力链与非控制流形（UCM）分析，量化单动投篮的运动学特征，并验证末端代偿机制在维持命中率中的作用。

方法：

利用Xsens惯性动捕系统（60Hz）采集10名高水平青年男篮运动员的300次定点三分投篮数据。通过将动作时间轴标准化为0–100%周期，全面分析受试者的关节角度与角速度，计算峰值时序、变异系数（CV）及多关节协同指数（ΔV）。

结果：

动力链时序数据显示，受试者髋关节与膝关节角速度峰值分别发生于周期的57.8%与59.2%，肩、肘、腕关节峰值依次发生于71.0%、76.2%与79.7%，肘腕峰值延迟为3.5%。运动学统计表明，肘关节角速度峰值最高（511.0°/s），且变异系数最低（31.4%）；腕关节变异系数最高（70.6%）。UCM分析显示，命中试次的协同指数显著大于零（ΔV>0），而未命中试次常伴随协同指数下降或呈负值（ΔV<0）。

结论：

单动投篮的精准度建立在肘部高度稳定与腕部调节基础之上。其并非源于消除动作变异，而是神经系统利用远端关节柔性代偿近端误差的结果，此发现为篮球变异性训练提供了生物力学支撑。

PARALLEL ORAL PRESENTATION SESSION 4-2

O4-2-1 The Environmental Footprint of Trail Running: A Scoping Review of Ecological Impacts and Mitigation Measures

Ms. Yanmei ZHANG (Beijing Sport University)

Objectives:

The rapid expansion of trail running has triggered significant ecological challenges. This study aims to systematically map the literature on the environmental impacts of trail running and the mitigation measures adopted by various stakeholders, thereby addressing the currently highly fragmented research landscape.

Methods:

Guided by the PRISMA-ScR framework, we conduct a scoping review. Following a systematic search and screening of 720 independent records, 28 studies were ultimately included for analysis. The extracted data was synthesized using descriptive statistics and thematic analysis.

Results:

Existing research is geographically concentrated in Europe and North America, focusing primarily on diagnosing environmental damage (e.g., soil erosion, microplastic pollution) rather than empirically evaluating management solutions. Current mitigation strategies are predominantly reactive and overly reliant on voluntary ethics, highlighting a severe governance gap among event organizers, land managers, and policymakers.

Conclusion:

Future studies must quantify cumulative ecological impacts over time and incorporate the socio-cultural dimensions of athlete behavior. Fostering the sustainable development of trail running urgently requires integrated, collaborative governance frameworks that combine scientific ecological monitoring with inclusive stakeholder participation.

O4-2-2 Tai Chi as an Adjunct to Cognitive Behavioral Therapy for Insomnia Improves Self-Reported Sleep Outcomes in Older Adults With Chronic Insomnia

Dr Angus Pak-hung YU (The Chinese University of Hong Kong)

Background:

Approximately 29% older adults live with chronic insomnia. Cognitive Behavioral Therapy for Insomnia (CBTI), the recommended first-line treatment, has been shown to produce clinically significant improvements in insomnia symptoms. However, up to 40% of patients report inadequate symptom improvement following treatment. The updated European Insomnia Guideline suggests that exercise, when used as an adjunct to CBTI, may further enhance sleep outcomes. Tai Chi is a safe and accessible mind-body exercise that has demonstrated beneficial effects on insomnia symptoms.

Objectives:

This study aimed to evaluate the effects of Tai Chi as an adjunct to CBTI on self-reported sleep outcomes in older adults with chronic insomnia.

Methods:

In this assessor-blinded, parallel-group randomized controlled trial, Chinese older adults aged ≥60 years with chronic insomnia, as defined by DSM-5-TR criteria, and engaging in fewer than 150 minutes of moderate-intensity physical activity per week were recruited. A total of 142 participants were randomly assigned in a 1:1 ratio to either a CBTI group, which attended six weekly 90-minute sessions, or a combined CBTI plus Tai Chi (CBTI+TC) group, which received the same CBTI program alongside twice-weekly 75-minute Bafa Wubu Tai Chi sessions over the six-week intervention period. Self-reported sleep outcomes were assessed using 7-day sleep diary. Self-reported sleep outcomes were assessed using a 7-day sleep diary. Data were analyzed according to the intention-to-treat principle using generalized estimating equations, with baseline values included as covariates.

Results:

Significant group-by-time interaction effects were observed for sleep onset latency, total sleep time, sleep efficiency, and number of awakenings (all $P < 0.05$), indicating that the addition of Tai Chi training to CBTI resulted in greater improvements in sleep outcomes compared with CBTI alone.

Conclusion:

Tai Chi enhanced the sleep benefits of CBTI in older adults with chronic insomnia and may serve as a safe adjunctive therapy.

O4-2-3 青少年每日中高强度身体活动时段分布的特征及与体质健康的关联

王丽娟教授（上海体育大学）

目的：

在学业压力较大、身体活动时间有限的背景下，以小时为单位检验我国青少年每日中高强度身体活动（MVPA）时段分布特征及与体质健康的关系，旨在明确利于体质健康促进的身体活动时段，提高青少年身体活动的效率。

方法：

采用加速度传感器测量1375名青少年的每小时MVPA时长，依据《国家学生体质健康标准（2014年修订）》测量体质健康。采用多元线性回归分析不同时段MVPA与青少年体质健康的关联性。

结果：

上学日，初中生的MVPA峰值集中于06:00~06:59、12:00~12:59与18:00~18:59，高中生的MVPA峰值集中于06:00~06:59、12:00~12:59、17:00~17:59与21:00~21:59。初中生在09:00~10:59与14:00~15:59的MVPA与体质健康得分显著正相关（PFDR均＜0.05），高中生在09:00~10:59、15:00~15:59与17:00~17:59的MVPA与体质健康显著正相关（PFDR均＜0.05）。在周末，初、高中生的MVPA均于12:00~12:59出现峰值，并分别于16:00~16:59与17:00~17:59再次出现MVPA峰值。初中生08:00~09:59与16:00~17:59的MVPA与体质健康显著正相关（PFDR均＜0.05），高中生08:00~08:59与17:00~17:59的MVPA与体质健康显著正相关（PFDR均＜0.05）。

结论：

青少年MVPA与体质健康之间的关联存在着明显的时段分布特征，且不同学段间存在一定差异。研究建议，学习日可依托体育课、大课间及课后活动重点加强青少年上下午及傍晚时段的MVPA，周末可通过家庭体育作业、固定时段打卡等方式引导青少年提升早晨至傍晚时段的MVPA。

O4-2-4 低频到校特殊学生的体育课堂融入：一项基于同伴支持的个案实践观察

张俊威（深圳市龙岗区宝龙科技城实验学校集团碧新小学）

背景和目标

普通公办小学的随班就读工作中，存在一类容易被忽视的情况：学生因校外康复等安排，每周仅到校极少数时间，与班级和课堂联结微弱。体育课的高动态环境对他们既是融入机会，也可能变成排斥现场。这一问题不仅关乎个别学生的课堂适应，也折射出普通学校融合教育中「包容性参与」的真实困境。本报告基于笔者在一线教学中遇到的真实个案，尝试回答：在无特教资源支持的条件下，体育教师能否用最简单的方式，帮助一个每周只来一天的特殊学生稳定参与体育课堂?

方法：

实践周期为一个完整学期。该生为自闭症谱系学生，每周到校一天，情绪稳定、无攻击或自伤行为，主要困难在社会交往和课堂常规适应。干预策略聚焦「降低门槛」而非「教授技能」：挑选两名性格温和的同班学生组成固定陪伴搭档，陪同其参与慢跑、拍球等低结构活动；在操场边角划出固定活动区域，减少噪音与大范围移动刺激；教师作为观察者和支持者，不施加任务压力；课后与家长简短沟通。全程以田野记录、课后沟通和家长反馈作为主要资料来源，未依赖标准化量表测评。

结果：

一学期下来，该生每次到校均能顺利进入活动状态，未出现回避或情绪波动；两名陪伴学生从「老师安排」逐渐转为自觉行动；班级其他学生习以为常，未见标签化言论；家长反馈孩子到校意愿提升。但每周仅一天的频率也带来明显局限：行为干预难以连续固化，返校后常有消退现象，教师亦因缺乏特教知识而时有无力感。这恰恰是基层融合教育最真实的困境。

结论：

对于低频到校的特殊学生，「固定同伴+固定空间」这两项零成本策略已构成可用的支持框架。基层融合不能只靠教师的善意硬扛——几个对的人、一块安静的场地、持续地做，是必要的，但远远不够。普通教师的特教素养缺口和低频干预难固化的问题，最终要靠制度和专业支持补位。该经验对资源条件相近的公办小学具有直接借鉴价值。

O4-2-5 The timing of exercise on sleep in children with ADHD: A pilot randomised controlled trial

Dr. LIANG Xiao (The Education University of Hong Kong)

Background:

Attention-Deficit/Hyperactivity Disorder (ADHD) is a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning and development. Healthy sleep is essential for children's physical, psychological and cognitive functions. It was reported that sleep disturbances are associated with ADHD and its symptoms, with approximately 71% of children with ADHD experiencing sleep problems. This study aims to evaluate the effects of morning versus afternoon exercise on sleep in children with ADHD.

Methods:

Sixty children aged 6–12 years (Mage = 8.62±1.37) with a formal diagnosis of ADHD were assigned to three groups: a 6-week morning exercise group (n=20), an afternoon exercise group (n=20), and a control group (n=20; treatment as usual). The intervention consists of 60-minute sessions, five times per week, focusing on moderate-to-vigorous physical activity (MVPA) through activities such as basketball, badminton, and table tennis. Sleep quality was measured using the self-reported Pittsburgh Sleep Quality Index (PSQI) and objectively assessed via actigraphy for 7 consecutive days. After the intervention, two participants dropped out of the intervention in the afternoon exercise group, 18 participants finished the intervention.

Results:

The results showed no pre-post-test differences in PSQI total scores across the three groups ($F = 1.402$, $p = 0.255$, $\eta 2 = .031$). The morning exercise group, but not the afternoon exercise group or the control group, showed significant improvement in sleep quality ($F = 4.476$, $p = 0.039$, $\eta 2 = .079$). However, there were no significant group differences in the actigraphy parameters.

Conclusion:

Morning exercise improves sleep quality in children with ADHD.

PARALLEL ORAL PRESENTATION SESSION 4-3

O4-3-1 Health and Well-Being Indicators Associated with 24-Hour Movement Guideline Adherence in Children and Adolescents: A Systematic Review and Meta-Analysis

Ms. Wenxuan MA (The Education University of Hong Kong)

Background:

Physical activity, recreational screen time, and sleep are interrelated daily behaviors addressed together in integrated 24-hour movement guidelines. Evidence on how adherence to these guidelines relates to health and well-being indicators in children and adolescents remains incompletely quantified.

Objectives:

This review synthesized associations between 24-hour movement guideline adherence and health and well-being indicators, examining both the number of guidelines met and specific adherence combinations.

Methods:

PubMed, Web of Science, Embase, PsycINFO, and Scopus were searched from inception to February 2026. Eligible observational studies assessed adherence to all three movement guidelines and reported health or well-being indicators in children and adolescents aged 3–17 years. Risk of bias and evidence certainty were assessed using Joanna Briggs Institute tools and GRADE. Random-effects meta-analyses estimated full-adherence proportions and pooled associations, using participants meeting no guidelines as the reference group.

Results:

Fifty-one articles representing 47 independent source populations were included. Across 43 non-overlapping samples comprising 398,573 participants, the pooled full-adherence proportion was 5.18% (95% CI: 3.79%–7.07%). Compared with meeting no guidelines, full adherence was associated with higher total health-related quality of life (HRQoL; SMD = 0.43, 95% CI: 0.30–0.56) and higher positive subjective well-being scores (SMD = 0.84, 95% CI: 0.49–1.18). Self-rated health associations varied across adherence combinations, with the strongest favorable association observed for physical activity + sleep (OR = 3.08, 95% CI: 1.77–5.36).

Conclusion:

Few children and adolescents met all three 24-hour movement guidelines. Full adherence was associated with higher total HRQoL and positive subjective well-being scores, whereas self-rated health associations varied across combinations. These findings support considering physical activity, recreational screen time, and sleep jointly to promote active lifestyles and well-being. Further longitudinal studies are needed to clarify temporal relationships and inform policy and practice.

O4-3-2 青少年24h静息–活动节律特征及其与肥胖的关系研究

李晨林 (Shanghai University of Sport)

目的：

探析我国青少年24h静息–活动节律（rest–activity rhythm，RAR）特征及其与身体质量指数（BMI）、脂肪质量百分比（体脂率）、骨骼肌质量指数（肌量）和估算基础代谢率（eBMR）的关联。

方法：

以广州市和武汉市461名12～18岁青少年为对象开展横断面研究，通过三轴加速度计测量的原始加速度数据计算日间稳定性（IS）、昼夜变异性（IV）、最大日间活动水平（M10），日间活动中点时间（M10中点）、最低夜间活动水平（L5）、夜间活动中点时间（L5中点）、相对振幅（RA）参数以反映节律特征，使用多频生物电阻抗测量肥胖指标。采用学段分层多元线性回归检验RAR与肥胖的关联及其学段差异。

结果：

(1) 我国青少年的节律整体呈现“高相对振幅、中等稳定性、高碎片化”特征，高中生的节律较初中生表现出更为弱化和紊乱的趋势；

(2) RA与BMI（β=–0.265,P<0.001）和体脂率（β=–0.205,P<0.001）呈显著负相关，并与肌量（β=0.306,P<0.001）和eBMR（β=0.206,P<0.001）呈显著正相关；L5中点与BMI（β=0.194,P<0.001）和体脂率（β=0.107,P=0.015）呈显著正相关，且与eBMR（β=–0.134,P=0.006）呈显著负相关；IS仅与BMI呈显著负相关（β=–0.165,P=0.001）。IV及M10中点与各肥胖指标均无显著关联（P>0.05）。

(3) 学段分层分析提示，仅eBMR存在学段差异，初中生的IS与eBMR呈正相关（β=0.151,P=0.035）、L5中点与eBMR呈负相关（β=–0.170,P=0.017），而高中生均不显著（P>0.05）。

结论：

我國青少年的肥胖防控宜將幹預重點由單純延長活動或睡眠時長，轉向促進穩定連貫的作息與活動節奏，優先提升節律穩定性並減少碎片化。高中生應在改善RAR紊亂的基礎上，同步保障充足睡眠並增加身體活動時間，以進行更全面的幹預。

O4-3-3 **Associations between 24-hour movement behaviours, fundamental movement skills, executive function, and socio-emotional well-being in young children**

Dr. NG Yau Yin Johan (The Education University of Hong Kong)

Background and Objectives:

According to World Health Organization guidelines, a healthy balance in 24-hour movement behaviours (physical activity, sedentary behaviour, and sleep) is beneficial to young children's physical, cognitive, and socio-emotional development. In this study, we evaluated a structural equation model using compositional data analysis to examine direct and indirect pathways between children's 24-hour movement compositions, fundamental movement skills (FMS), executive function (EF), and socio-emotional well-being.

Methods:

Data from 326 kindergarten children (4.0 ± 0.9 years; 53% male) were included. 24-hour movement behaviours measured using accelerometers were transformed into isometric log-ratios (ilr). FMS was operationalised as performance on the single-leg stand test (stability), and proficiency in jump and overhand throw skills (assessed using the Test of Gross Motor Development). Executive function and socio-emotional well-being were measured using the Head-Toes-Knees-Shoulders test and the Strengths and Difficulties Questionnaire, respectively. Analyses, adjusting for children's age and sex, were performed using the lavaan package in R.

Results:

The model demonstrated good fit (CFI = .988, TLI = .972, RMSEA = .026, SRMR = .042). A greater proportion of sleep time (ilr-transformed) was associated with jump (beta = .287) and overhand throw (beta = .311). All three dimensions of FMS were associated with EF (beta = .120 to .236). In turn, higher EF was associated with fewer internalising (beta = -.215) and externalising problems (beta = -.246), and more prosocial behaviours (beta = .218). However, indirect pathways from movement compositions to socio-emotional outcomes through FMS and EF were not significant.

Conclusion:

The results highlight the importance of sleep for motor skill acquisition and overall development. Although physical activity did not play a distinct role in the model, our findings support the pathways linking FMS, EF, and socio-emotional well-being. Together, these results underscore the developmental relevance of healthy 24-hour movement behaviour patterns in early childhood.

O4-3-4 **Mechanisms of motor unit remodeling following prolonged bed rest and immobilization: implications for motor rehabilitation**

WANG Junpeng (Beijing Normal University)

Background:

Prolonged muscle disuse, as occurs during bed rest, limb immobilization, or spaceflight, induces profound neuromuscular deconditioning characterized by muscle atrophy, strength loss, and impaired motor function. Although muscular adaptations to disuse have been extensively studied, the neural mechanisms underlying motor unit remodeling remain incompletely understood. This review aims to synthesize current evidence on the mechanisms driving changes in motor unit recruitment and discharge patterns following prolonged bed rest and immobilization, and to identify their implications for motor rehabilitation.

Methods:

A narrative review of current evidence was conducted focusing on neural and neuromuscular mechanisms of motor unit remodeling following prolonged bed rest and limb immobilization. Evidence was synthesized across multiple levels of the neuromuscular system, including muscle afferent input, spinal motoneuron excitability, persistent inward currents, brainstem monoaminergic modulation, spinal interneuronal networks, common synaptic input, motor unit synchronization, and neuromuscular junction plasticity. Recent findings from high-density electromyography (HD-EMG) studies were also considered to characterize threshold-specific adaptations in motor unit recruitment and discharge behavior.

Results:

Prolonged disuse appears to induce motor unit remodeling through interacting mechanisms at multiple levels of the neuraxis. Reduced afferent input from muscle spindles and Golgi tendon organs may decrease motoneuron pool excitability, contributing to elevated recruitment thresholds and altered rate coding. Downregulation of persistent inward currents, potentially associated

with reduced serotonergic and noradrenergic brainstem drive, may further impair motoneuron intrinsic excitability and repetitive firing capacity. At the network level, altered common synaptic input and motor unit synchronization may disrupt coordinated motor unit activation. Neuromuscular junction remodeling, including changes in acetylcholine receptor organization and synaptic vesicle dynamics, may additionally compromise neuromuscular transmission. HD-EMG evidence suggests that these adaptations may be threshold-dependent, with low- and high-threshold motor units showing differential changes in recruitment thresholds, discharge rates, and derecruitment patterns.

Conclusion:

Motor unit remodeling following prolonged bed rest and immobilization is likely a multilevel adaptive process involving altered sensory feedback, spinal motoneuron excitability, brainstem monoaminergic modulation, spinal network organization, and neuromuscular junction plasticity. These mechanisms provide a neural framework for understanding disuse-induced neuromuscular deconditioning and highlight potential targets for rehabilitation. Interventions including neuromuscular electrical stimulation, task-specific high-intensity or explosive training, and early mobilization may help preserve motor unit function and facilitate functional recovery following prolonged disuse.

O4-3-5 **Effects of Exercise Interventions on Behavioral, Psychological, and Physical Outcomes Across Eating Disorders: A Systematic Review and Three-Level Meta-Analysis of Randomized Controlled Trials**

Ms. Yujia QU (The Education University of Hong Kong)

Objectives:

Eating disorders are severe psychiatric illnesses with rising prevalence, high morbidity, and mortality. Although current treatments benefit some patients, remission rates remain low, highlighting the need for adjunctive strategies. Exercise interventions show promise in improving disordered eating symptoms and psychological outcomes, but prior evidence is mixed and meta-analyses have been limited in scope, methodology, and population coverage. This study aimed to conduct a three-level meta-analysis to evaluate the effects of exercise interventions on multidimensional outcomes across the full spectrum of eating disorder severity, encompassing clinically diagnosed eating disorders, sub-clinical eating disorders, and high-risk groups.

Methods:

A systematic review and meta-analysis were conducted in accordance with the PRISMA guidelines and registered with PROSPERO (CRD420251180711). Six databases were searched up to December 20, 2025. Eligible parallel-group randomized controlled trials evaluating exercise interventions with behavioral, psychological, or physical outcomes were included. Data were analyzed using three-level meta-analytic models, with Hedges' g as the effect size.

Results:

Thirty-five RCTs involving 2,306 participants were included. Within behavioral outcomes, exercise reduced eating disorder symptoms, eating disorder-related psychological traits, and binge eating symptoms, while body image effects were not significant. Among psychological outcomes, anxiety and depression improved, but not quality of life or emotional regulation. Regarding physical outcomes, BMI, muscle strength, and skin folds showed no effects. Subgroup analyses indicated that resistance training was most effective for eating disorder symptoms, clinical binge eating disorder had greater binge eating reductions, and BMI increased in anorexia nervosa but decreased in binge eating disorder.

Conclusion:

Exercise provides clinically meaningful, but non-uniform, benefits across different eating disorders, with the strongest effects on core eating disorder symptom burden and comorbid affective status. These findings suggest that exercise is a potentially valuable adjunct to integrated treatment, but that its therapeutic effects may vary across diagnostic subgroups, outcome domains, and exercise modalities.Eating disorder; Disordered eating symptom; Eating disorder behavior; Exercise intervention; Physical exercise; Three-level meta-analysis

PARALLEL ORAL PRESENTATION SESSION 5-1

O5-1-1 Effects of Cognitively Engaging Physical Activity and Combined Cognitive Training and Physical Activity on Inhibitory Control and Prefrontal Function in Children with ADHD: A Randomized Controlled Trial

Dr. SUN Fenghua Bob (The Education University of Hong Kong)

Background:

Children with attention-deficit/hyperactivity disorder (ADHD) often show impairments in inhibitory control, together with altered prefrontal activation and functional connectivity. This randomized controlled trial examined the effects of 8-week cognitively engaging physical activity (CEPA) and combined cognitive training and physical activity (CTPA) on inhibitory control and prefrontal function in children with ADHD.

Methods:

Children aged 8-13 years with ADHD were randomly allocated to CEPA, CTPA, or control groups. In both CEPA and CTPA groups, the intervention lasted 8 weeks with three 40-minute training sessions per week. Inhibitory control was assessed using Stroop task. Functional near-infrared spectroscopy (fNIRS) was used to examine brain activation during Stroop task and functional connectivity in six prefrontal regions. Outcomes were analyzed using linear mixed models.

Results:

63 children with ADHD completed behavioral and neural data collection (Control, n = 21; CEPA, n = 20; CTPA, n = 22). For Stroop performance, a significant group x time interaction was found in accuracy under congruent condition. Accuray increased significantly in the CTPA group (estimate = 0.076, SE = 0.037, p = .044) and CEPA group (estimate = 0.067, SE = 0.022, p = .004), but not in the control group (estimate = 0.005, SE = 0.016, p = .777). For brain activation, significant group x time interactions were observed during the congruent condition in the right dorsolateral prefrontal cortex, F(2,60) = 4.13, p = .021, and right frontopolar cortex, F (2,60) = 3.72, p = .030. Post hoc contrasts showed greater change for CEPA than CTPA in right dorsolateral prefrontal activation (estimate = 0.001337, SE = 0.000535, p = .046, Cohen's d = 0.72) and greater change for CEPA than control in right frontopolar activation (estimate = 0.001728 in favor of CEPA, SE = 0.000641, p = .027, Cohen's d = 0.81). ROI functional connectivity showed no significant group x time effects across prefrontal connections after FDR correction.

Conclusion:

CTPA and CEPA was associated with overall improvement in Stroop performance among children with ADHD. Neural findings suggest that CEPA may produce greater modulation of right dorsolateral prefrontal cortex and right frontopolar cortex activation than CTPA or control. These findings suggest that CEPA may be suitable to improve inhibitory control of children with ADHD.

O5-1-2 **健康行为、社会参与及客观身体功能与中国中老年人躯体—心理—认知多重共病发生风险的关联**

何望龙 (China Institute of Sports Science)

背景:

慢性躯体疾病、抑郁症状与认知损害常在中老年人中共存。躯体—心理—认知多重共病（PPC–MM）指三个领域中至少两个异常。健康行为、社会参与和客观身体功能的综合研究仍较少。本研究分析三类特征及其累积数量与PPC–MM发生风险的关联。

方法:

基于CHARLS　2011—2020年前瞻性队列，纳入年龄≥45岁、无PPC–MM且协变量与随访完整的5210人。健康行为达标为非当前吸烟、不饮酒或低频饮酒且夜间睡眠6—8小时；社会参与达标为参加≥2类活动；握力、五次椅子起立和平衡构成0—12分功能评分，≥10分为较好身体功能。三项相加为0—3项，并分为0、1和≥2项。采用互补对数链接离散时间生存模型，调整人口社会因素及基线躯体、心理和认知健康状态。

结果:

共12891个人—区间，发生1723例首次PPC–MM事件。每增加1项达标特征，HR为0.790（95%CI：0.741—0.843）；相较0项，1项和≥2项的HR分别为0.813（95%CI：0.725—0.911）和0.607（95%CI：0.527—0.699）。三个领域相互调整后，健康行为、社会参与和较好身体功能的HR分别为0.846（95%CI：0.757—0.946）、0.822（95%CI：0.724—0.934）和0.730（95%CI：0.658—0.808）。

结论:

达标特征数量较多与较低PPC–MM发生风险相关，三个领域相互调整后均保持关联。中老年人健康促进可综合关注健康行为、社会参与和客观身体功能。

O5-1-3 An Incremental Cycling Protocol to Task Failure Induces Intensity-Specific Alterations in Vastii Motor Unit Properties

Yanfeng LI (Beijing Normal University)

Purpose:

To determine the effects of graded cycling exercise to task failure on motor unit (MU) recruitment, discharge rate (DR), and discharge variability in the vastus lateralis (VL) and vastus medialis (VM).

Methods:

Eleven healthy young male university students completed maximal aerobic power (MAP)-normalized graded cycling: 5 min at 40% MAP, 3 min at each intensity from 50% to 90% MAP, and continued cycling at 90% MAP until task failure. Cadence was maintained at 80 rpm, and task failure was defined as cadence below 70 rpm for more than 5 s or voluntary cessation. Before and immediately after cycling, participants performed ramp-hold-release isometric knee extensions at 10%, 25%, 50%, and 70% of maximal voluntary contraction (MVC), while high-density surface electromyography was recorded from VL and VM. Absolute and relative recruitment threshold (RT), derecruitment threshold (DERT), DR at recruitment, derecruitment and steady state, and the coefficient of variation of interspike intervals (CoVisi) were calculated. Relative thresholds were normalized to the MVC measured in the corresponding session. Linear mixed-effects models included condition as a fixed effect and participant as a random intercept. Statistical significance was set at $p < 0.05$.

Results:

(1) Recruitment and derecruitment thresholds: In VL, absolute RT decreased by 44.02 N at 50% MVC ($p < 0.001$), whereas relative RT increased by 7.07 percentage points ($p < 0.001$). Absolute DERT decreased by 93.14 and 205.95 N, and relative DERT decreased by 9.91 and 27.64 percentage points at 50% and 70% MVC, respectively ($p < 0.001$). In VM, absolute RT decreased by 37.22 and 89.64 N and absolute DERT by 41.42 and 111.95 N at 25% and 50% MVC, respectively ($p < 0.001$). Relative DERT decreased by 4.38 percentage points at 25% MVC ($p = 0.013$) and 13.31 percentage points at 50% MVC ($p < 0.001$).

(2) Discharge rates: In VL, DR increased at derecruitment by 1.55 pps at 50% MVC ($p < 0.001$), at recruitment by 3.13 pps at 70% MVC ($p = 0.0063$), and during steady state by 0.90, 0.94, and 1.79 pps at 25%, 50%, and 70% MVC, respectively ($p = 0.0114$, 0.0075, and 0.0424). In VM, DR at derecruitment increased by 0.92, 1.14, and 1.32 pps at 10%, 25%, and 50%

MVC, respectively ($p = 0.0183$, 0.0103, and 0.0165), while steady-state DR increased by 1.01 pps at 25% MVC ($p = 0.0224$) and 2.44 pps at 50% MVC ($p < 0.001$).

(3) Discharge variability: VL CoVisi increased by 5.91 and 4.31 percentage points at 10% and 50% MVC, respectively ($p = 0.005$ and 0.010).

Conclusion:

Graded cycling to task failure elicited a compensatory reorganization of vastii MU recruitment and rate coding, indicating increased MU output supporting post-exercise submaximal knee-extension force.

PARALLEL ORAL PRESENTATION SESSION 5-2

O5-2-1 大学瑜伽课程与泰戈尔诗剧融合式美育教学实践探索

亓昕 (Peking University)

本研究以北京大学创新型瑜伽课程为核心案例，探讨了中国高校中以“具身化学习”为导向的瑜伽课程如何有效促进学生审美养成与身心整体发展。本研究采用严谨的定性案例研究方法，结合详实的课堂观察记录与学生半结构化反思调查，深入梳理了身心实践与跨学科融合在高校体育教育中的多重作用。该课程设计巧妙融入印度诗歌、相关神话背景与体式故事编创等元素，意在突破传统体育教育单一技能训练的模式。研究归纳出三大核心主题，展现了课程的育人成效：第一，身诗结合带来正向体验。瑜伽与诗剧的有机融合为学生带来了显著正向体验，不仅提升了学生的身体自觉，帮助其深化对躯体感知与动作美的理解，还促进了心理平衡，有效帮助学生减压、调节情绪，进而提升了生活幸福感。第二，故事与表演激发跨文化学习。课程设计将瑜伽体式故事化，结合诗剧表演，以沉浸式体验强化学生的跨文化审美体验，培养了学生的思辨能力。第三，合作创意与反思共同体的养成。本研究拓展了高等教育体育、身体美学以及跨文化美育领域的理论边界，对课程范式的探索为高校体育与健康教育改革提供了可直接借鉴的经验模板，推动了“身—心—美—文化”一体化育人目标的实现，能够更好地服务于大学生的全面发展。

O5-2-2 Research on Motion Heart Rate Detection Method Based on Photoplethysmography and Human Acceleration

Dr. Jiarui HE (The Chinese University of Hong Kong)

Background and Objectives:

Heart rate is an important indicator for evaluating human health and exercise status. However, photoplethysmography (PPG) signals collected by wearable devices are easily affected by motion artifacts during exercise, reducing the accuracy of heart rate estimation. This study aims to improve motion heart rate estimation by integrating PPG signals with human acceleration (ACC) signals and utilizing the complementary information between the two modalities

Methods:

A dual-convolutional attention network (DCAN) with a multi-branch encoder-decoder architecture was developed. PPG and ACC signals were sampled at 32 Hz, temporally aligned with a 1-Hz reference heart rate, and preprocessed using outlier suppression and time matching. Convolutional modules extracted multi-scale features, while bidirectional cross-attention modeled interactions between the two modalities. The dataset contained 12 exercise scenarios, with two individuals tested in each scenario. Five-fold cross-validation was used. Performance was evaluated by mean absolute error (MAE) and the proportions of predictions within ±5 and ±10 beats per minute (BPM), with C-RNN and NAS-PPG as comparison models. Ablation experiments assessed the contribution of each branch.

Results:

Across 24 subject-scenario test cases, DCAN achieved an average MAE of 2.51 BPM, representing reductions of 23% and 32% relative to C-RNN and NAS-PPG, respectively. The average accuracies within ±5 and ±10 BPM were 91.17% and 99.83%. DCAN showed more stable performance in most exercise scenarios and demonstrated clear advantages in both low- and high-intensity activities. Ablation analysis indicated that all major branches contributed to overall performance, and the complete architecture achieved the best average results.

Conclusion:

Combining PPG and ACC through multi-scale convolutional encoding and bidirectional cross-attention effectively mitigates motion-related interference and improves the accuracy and robustness of heart rate estimation under different exercise conditions. It provides a feasible approach for wearable exercise heart rate monitoring.

O5-2-3 Parental Role Modeling and Children's Physical Activity: A Longitudinal Analysis Using CHNS Data

Miss. DU Zhengyun (Beijing Sport University)

Background and Objectives:

The family environment plays a central role in shaping children's health behaviors, yet how parental behaviors influences children's exercise participation and through what pathways remains unexplored in the Chinese context. This study examines the "role-modeling effect" of parental behaviors on children's physical activity levels, and investigates the mediating role of family sports support and the moderating role of children's own attitudes toward exercise.

Methods:

Using longitudinal data from the China Health and Nutrition Survey (CHNS, 1989-2015), a sample of 21,940 children aged 3-18 was analyzed. Logit models and multiple linear regression were employed to estimate the effects of parental physical activity and its duration on children's PA, controlling for demographic, educational, income, and urban-rural characteristics. Mediation and moderation models, along with heterogeneity and robustness checks, were used to test underlying mechanisms.

Results:

Parental physical activity positively influences both the likelihood of children's participation in sports and the duration of their physical activity, providing empirical evidence for the family role-model effect. The influence of maternal physical activity is stronger than that of paternal physical activity. This effect is more pronounced among children from rural areas and low-education households, among children aged 6–15 years, and during weekends. Furthermore, family support mediates the relationship between parental and children's physical activity, while children's positive attitudes toward physical activity negatively moderate the role-model effect.

Conclusion:

Parents shape children's physical activity both directly through behavioral demonstration and indirectly by fostering supportive home environments. Findings support policies that enhance parental participation, strengthen maternal engagement, and leverage weekend and interactive family sports to build sustainable physical activity habits among children, offering evidence for family-centered health promotion strategies in Asian contexts.

PARALLEL ORAL PRESENTATION SESSION 5-3

O5-3-1 Association Between Parental Support or Restriction and the 24-Hour Movement Behavior Time Allocation in Children and Adolescents: A National Large-Sample Survey Analysis

QIU Yanping (Shanghai University of Sport)

Objectives:

To examine the distribution of parental support or restriction types in China and to analyze the associations between different types of parental support or restriction and the 24-hour movement behavior time allocation of children and adolescents.

Methods:

This study was based on data from the 2024 Survey on Physical Activity Behaviors and Mental Development of Adolescents. A total of 90,982 children and adolescents and their parents from 115 primary and secondary schools in 10 provinces across China participated in the study. Questionnaires were used to assess parental support or restriction and their children's 24-hour movement behaviors. Compositional data analysis was employed to examine the associations between parental support or restriction and the time allocation of their children's 24-hour movement behaviors.

Results:

(1) Among the types of parental support or restriction regarding children's 24-hour movement behaviors, the proportion of "no support or restriction for any 24-hour movement behavior" was the highest (53.4%), whereas "support or restriction for all 24-hour movement behaviors" accounted for the lowest proportion (1.1%). Regarding specific behaviors, parents paid the most attention to their children's sleep, while support for moderate-to-vigorous physical activity (MVPA) was the lowest.

(2) Significant differences in parental support or restriction types were observed across educational stages (2=4988.006, P<0.001), parent-child relationship (2=235.222, P<0.001), and family socioeconomic status (2=314.734, P<0.001).

(3) Compared with the "no support or restriction for any 24-hour movement behavior" type, parental independent, combined, and overall support or restriction for children's 24-hour movement behaviors not only significantly influenced the targeted behaviors but also resulted in the reallocation of their children's 24-hour movement time.

(4) Parental "support or restriction for all 24-hour movement behaviors" was significantly associated with increased time spent in MVPA and light-intensity physical activity (LPA) and decreased sedentary time, reflecting a time reallocation pattern characterized by replacing sedentary behavior with MVPA and LPA, which is most beneficial for health promotion among Chinese children and adolescents. In contrast, sleep support only" tended to produce a time allocation pattern characterized by replacing MVPA and LPA with sedentary behavior and sleep, which is the least favorable for health.

(5) Under the "support or restriction for all 24-hour movement behaviors" type, the total amount of daily time reallocation among children and adolescents was the highest, reaching 16.8 minutes.

Conclusion:

Parental "support or restriction for all 24-hour movement behaviors" is most conducive to promoting a reasonable and health-enhancing allocation of 24-hour movement time among children and adolescents. In contrast, "sleep support only" is the least favorable. It is recommended that parents adopt coordinated management of MVPA, LPA, sedentary behavior, and sleep, shifting from "single-dimension support or restriction" to "support or restriction across all 24-hour movement behaviors", in order to facilitate the development of healthy lifestyles among children and adolescents.

O5-3-2 Effects of Combined Aerobic and Resistance Exercise on Body Composition and Cognitive Function in Older Adults Obesity: A Randomized Controlled Trial

Yue CHENG (The Education University of Hong Kong)

Background and purpose:

Age-related cognitive decline may be accelerated by chronic inflammation and metabolic dysfunction in older adults with obesity. While exercise is a proven strategy for weight loss and cognitive enhancement in older adults, the efficacy of combined aerobic and resistance exercise remains unclear in this population. This randomized controlled trial aimed to evaluate the effects of a structured combined exercise intervention on body composition and cognitive function among elderly individuals with obesity.

Methods:

Thirty-eight elderly participants with obesity (age ≥60 years, body mass index [BMI] ≥25 kg/m2) in Hong Kong were recruited and randomly assigned to either a combined exercise group (both aerobic and resistance exercise, 90 minutes per session, 3 times per week for 16 weeks; n=19) or a control group (no intervention; n=19). The primary outcome is body weight, and secondary outcomes included BMI, body fat percentage, muscle mass, waist circumference, and cognitive functions (assessed by Sternberg, Flanker, Tapping, and CPT tasks). Data was analyzed using Linear Mixed Models (LMM) with adjustments for baseline values.

Results:

All 38 participants (mean age 65.1 ± 3.7 years; 76% female) completed the 16-week trial. Following the intervention, the exercise group demonstrated greater reductions in body weight (adjusted mean difference -1.70 [95% CI: -2.70 to -0.69] kg, $P<0.001$) and waist circumference (-3.01 [95% CI: -4.44 to -1.58] cm, $P<0.001$) compared to the control group. No significant between-group differences were observed in any cognitive measures (all $P > 0.05$). Notably, participants exhibited high baseline cognitive performance, with accuracy rates exceeding 94% across all tasks. No adverse events related to the study were reported during the intervention period.

Conclusion:

These findings suggest that a 16-week structured combined aerobic and resistance exercise program effectively reduces body weight and waist circumference, providing a feasible and effective strategy for weight management in overweight or obese older adults. However, the intervention did not appear to influence cognitive functions within the intervention period, possibly due to participants' preserved baseline cognitive status.

O5-3-3 Effects of exercise on sleep quality in university students: A systematic review and meta-analysis of randomized controlled trials

Jie SHU (Peking University)

Background:

Poor sleep is prevalent among university students and is associated with poorer mental health, functioning, and academic well-being. Exercise is an accessible, low-cost, scalable strategy for campus health promotion. However, it remains unclear whether effects differ between conventional and mind-body exercise, or according to students' baseline psychological symptoms or sleep problems.

Objectives:

To evaluate the effects of exercise interventions on sleep quality in university students and examine whether effects vary by exercise modality and baseline psychological or sleep status.

Methods:

ubMed, Web of Science, APA PsycINFO, and the Cochrane Library were searched from inception to June 2026 for randomized controlled trials of exercise interventions targeting sleep quality in university students. Random-effects models pooled standardized mean differences as Hedges g. Subgroup analyses compared conventional versus mind-body exercise and asymptomatic students versus those with self-reported psychological symptoms or sleep problems. Leave-one-out sensitivity analyses and assessments of small-study effects were conducted.

Results:

Eighteen trials contributing 19 comparisons were included. Exercise was associated with better sleep quality than control conditions (g=-0.57; 95% CI, -0.76 to -0.39), with substantial heterogeneity (I^2=59%). Beneficial estimates were observed for conventional exercise (g=-0.63; 95% CI, -0.93 to -0.33) and mind-body exercise (g=-0.54; 95% CI, -0.78 to -0.29), with no subgroup difference (p=.66). Benefits were also observed among asymptomatic students (g=-0.50; 95% CI, -0.80 to -0.20) and students with self-reported psychological symptoms or sleep problems (g=-0.63; 95% CI, -0.86 to -0.39), with no subgroup difference (p=.51). Leave-one-out analyses did not materially change the findings. Funnel plot inspection and Egger's test suggested possible small-study effects.

Conclusion:

Exercise may improve sleep quality across exercise modalities and student subgroups. These findings support exercise as an inclusive, scalable component of university health promotion, with relevance to student well-being and campus functioning. However, heterogeneity, possible small-study effects, and methodological limitations warrant cautious interpretation.

POSTER PRESENTATION ABSTRACTS

POSTER SESSION 1

P1-1 A Physical Literacy–Oriented Instructional Model for Futsal in Secondary Schools

CHEN Yulin

Background and Purpose:

Against the backdrop of ongoing curriculum reform in secondary school physical education and the growing emphasis on physical literacy, futsal offers educational value through physical activity, tactical and technical learning, social interaction, and sustained engagement in sport. This study aimed to develop a physical literacy–oriented instructional model for futsal in secondary schools that supports the integrated development of students' physical, cognitive, affective, and behavioral domains.

Methods:

Literature review, policy document analysis, and theoretical model construction were employed. Research on physical literacy, Teaching Games for Understanding (TGfU), Sport Education (SE), and futsal instruction was reviewed to identify key constructs and their underlying mechanisms. Relevant Chinese physical education curriculum and school football policies were also examined to inform the identification, organization, and integration of the model components.

Results:

A five-layer instructional model comprising objectives, content, organization, implementation, and evaluation was developed, with physical literacy embedded throughout the teaching process. The objectives focus on physical competence, motivation and confidence, knowledge and understanding, and sustained participation. Learning content integrates technical and tactical skills, physical fitness, rules, and cooperation. Sport Education is used to strengthen team affiliation, role responsibility, and participation experiences, while TGfU is incorporated to develop tactical understanding, decision-making, and autonomous learning. Multidimensional assessment is employed to provide ongoing feedback and support learning.

Conclusion:

The proposed model theoretically integrates physical literacy goals, futsal content, and classroom pedagogical mechanisms. It is broadly aligned with the holistic educational aims of secondary school physical education in China and may provide a useful framework for futsal teaching practice and subsequent empirical investigation.

P1-2 Introduction: Developing and Refining a Volleyball-Specific Empowering Coaching Model: A Qualitative Study

ZHU Zhihang (The Education University of Hong Kong)

Background and Purpose:

This qualitative study investigated coaching strategies for amateur university volleyball fields in China. It addresses a gap in our understanding of how empowering coaching works in Chinese cultural context. To date, research on the impact of coaching behaviors on college students within East Asian culture remains limited. It is unclear which coaching behaviors are perceived as empowering and which are perceived as disempowering by university amateur volleyball players. To address these gaps, this study addressed two research questions: First, within constrained context, which coaching behaviours do university amateur volleyball athletes perceive as empowering or disempowering? Second, how do these coaching behaviors influence athletes' motivation?

Methods:

This study adopted a constructivist interpretive paradigm and used semi-structured interviews as the data collection method. 40 university amateur volleyball athletes from four Chinese universities participated. The sample included current players and former players who had withdrawn. We utilized reflexive thematic analysis (RTA) to interpret the data, following Braun and Clarke (2019). We incorporated both inductive and deductive elements. To strengthen trustworthiness, we drew on Lincoln and Guba's (1985) credibility criteria, including member checking, negative case analysis, peer debriefing, and analytic memos.

Results:

Four main areas came out of the analysis. First, there were empowering behaviours that supported athletes' needs for autonomy, competence, and relatedness. Second, there were disempowering behaviours that blocked these needs. Third, there were the motivational outcomes that followed from each type of behaviour. Fourth, some new themes appeared that did not fit neatly into the existing framework. These unique findings included the non-egalitarian mentor-friend relationship, expectation of professional authority, athletes' cognitive reframing, the ambivalent cost of trust, and bidirectional modulation of coach presence.

Conclusion:

The study suggests that strategies for volleyball coaching in Chinese amateur universities needs cultural adaption rather than copy of Western models. The Empowering Coaching Framework requires cultural adaptation rather than direct transplantation in Chinese contexts.

These findings extend self-determination theory across cultures and offer practical guidance for coaches working with limited resources and high academic pressure.

P1-3 Community Tennis for Healthy Ageing in Hong Kong: Pilot Evidence on Fitness and Psychosocial Outcomes

Mr CHAN Chun Ngai (Lingnan University)

Background:

Community sport initiatives increasingly support healthy ageing in Hong Kong. Tennis combines motor skill acquisition, physical exertion, and social interaction, but empirical evidence evaluating community-based tennis interventions for local older adults remains limited.

Objectives:

This pilot study evaluated the preliminary efficacy of a 2-month structured community tennis programme on the physical fitness and psychosocial well-being of early older adults.

Methods:

Thirty community-dwelling retired adults who joined the senior tennis community programme held by Hong Kong China Tennis Association (HKCTA) (40% female; aged 58–68 years, average 62.8) completed an 8-week structured tennis intervention consisting of 120 minutes of training per week. Licensed coaches from the HKCTA delivered basic skills training, including serving, hitting, volleying, and gameplay, under the internal guidance for older adults. Pre- and post-intervention assessments evaluated:

- Physical Fitness: Dominant-hand grip strength, sit-and-reach flexibility, Star Excursion Balance Test (SEBT), and a 3-minute step test.
- Psychosocial Metrics: WHO-5, General Self-Efficacy Scale, International Physical Activity Questionnaire, Self-Consciousness Scale-Revised, Social Connectedness Scale-Revised, and DASS21.
- Statistical Analysis: Paired-sample t-tests using SPSS to analyze within-group changes.

Results:

Following the 2-month intervention, participants demonstrated statistically significant improvements with moderate effect sizes in dominant-hand grip strength ($p = 0.0065$) and bilateral sit-and-reach flexibility ($p > 0.02$). Dynamic balance yielded mixed findings, showing significant improvements only in isolated SEBT reach directions. Other measures showed no statistically significant changes.

Conclusion:

A short-term community tennis programme can enhance upper-limb strength and flexibility in early older adults. Although psychosocial improvements were non-significant, favorable trends warrant further investigation through larger, controlled trials to confirm long-term efficacy.

P1-4 Physiological and Neuromuscular Profiles of Elite Hong Kong Orienteers: International Benchmarking and Determinants of Field-Based Aerobic Performance

Mr. KONG Yu Hin (The Education University of Hong Kong)

Background and Objectives:

Sweden is a world-leading nation in orienteering, so comparing Hong Kong athletes to Swedish standards provides diagnostic targets for coaches. This study aimed to 1) establish physiological, neuromuscular and change-of-direction (COD) profiles of elite domestic orienteers and 2) compare them against published international benchmarks.

Methods:

Twelve national-level adult orienteers performed a treadmill maximal aerobic capacity ($\dot{V}O_2max$) running test and the Yo-Yo Intermittent Recovery Test, Level 1. Additionally, they completed isometric mid-thigh pull (IMTP), countermovement jump (CMJ), 30-metre linear sprint (with 10- and 20-metre split time), and 505 COD tests. The best performance of each item was analysed. Single-sample t-tests with Hedges' g effect sizes evaluated benchmark differences and Pearson's correlations assessed within-group relationships.

Results:

Hong Kong orienteers demonstrated a significant $\dot{V}O_2max$ deficit relative to Swedish orienteers during laboratory treadmill testing (59.7 ± 5.3 vs 69.1 mL.kg-1.min-1; $t(10) = -5.81$, $p < .001$, $g = -1.62$), which was further pronounced during Yo-Yo test (48.3 ± 3.4 vs 69.1 mL.kg-1.min-1; $t(7) = -17.24$, $p < .001$, $g = -5.41$). Although peak heart rate was highly correlated across protocols ($r = .90$, $p = .002$), treadmill and Yo-Yo $\dot{V}O_2max$ were not significantly correlated ($r = .57$, $p = .144$). Yo-Yo performance was correlated with CMJ height ($r = .83$, $p = .012$) and relative IMTP strength ($r = .85$, $p = .008$) but not 505 COD time ($r = -.54$, $p = .167$) or COD deficit ($r = .15$, $p = .722$).

Conclusion:

Near-identical peak heart rates across laboratory and field protocols indicate that both tests elicited maximal central cardiovascular strain. The significant association between Yo-Yo performance and lower-body power and strength suggests that field endurance in local orienteers is constrained by peripheral neuromuscular capacity. Training should prioritise not only $\dot{V}O_2max$ but also lower-body force production and deceleration under fatigue.

P1-5 How to Cultivate Esports Spectators' Subjective Wellbeing? Testing the Spectator Wellbeing Process Model Across Two Empirical Studies

Dr. Adam Yuchen SHI

Background and Objectives:

Esports spectatorship is increasingly prominent, yet the psychological mechanisms through which spectating contributes to subjective well-being remain underexplored. Drawing on the spectator well-being process model, this research examined (1) whether spectating activity and changes in team identification predict hedonic, eudaimonic, and social well-being, and (2) how perceived quality, satisfaction, and team identification jointly shape esports spectators' well-being.

Methods:

Two complementary studies were conducted. Study 1 employed a two-wave longitudinal design with 285 esports spectators. Changes in team identification and spectating activity between T1 and T2 were examined as predictors of T2 well-being while controlling for baseline identification and demographic variables. Study 2 used a cross-sectional questionnaire design with 612 esports spectators. Confirmatory factor analysis assessed measurement quality, followed by pathway analysis testing the proposed process linking perceived quality, satisfaction, team identification, and the three well-being dimensions.

Results:

In Study 1, spectating activity was not significantly associated with hedonic, eudaimonic, or social well-being. In contrast, increases in team identification significantly predicted eudaimonic and social well-being, but not hedonic well-being. In Study 2, the measurement model demonstrated good fit (χ^2/df = 1.55, CFI = .98, TLI = .98, RMSEA = .03, SRMR = .03), with satisfactory reliability and validity. All proposed pathways among perceived quality, satisfaction, team identification, and well-being were significant.

Conclusion:

Esports spectators' well-being appears to depend less on short-term spectating behaviour than on the development of psychological identification. The findings also provide empirical support for a four-stage process through which spectating experiences are translated into longer-term well-being outcomes. Practically, esports organisations should enhance viewing quality, satisfaction, and identification to generate more sustainable spectator well-being benefits.

P1-6 Intentional interpretation of exercise behaviour among oldest-old adults (85+) under the paradigm of the corporeal turn

CHEN Lin (The Education University of Hong Kong)

Background and Objectives:

Exercise among adults aged 85 years and older is often explained through behaviorist models, particularly the theory of planned behavior, which emphasizes attitudes, subjective norms, perceived behavioral control, and intention. Such approaches may insufficiently capture the lived bodily experience of advanced age. This paper aims to reinterpret exercise behavior among the oldest-old through phenomenological reduction and the paradigm of the corporeal turn.

Methods:

This conceptual study conducts a phenomenological and philosophical analysis of exercise behavior, drawing on the distinction between the physical body (Körper) and the living body (Leib), as well as the concepts of intentionality, self-acceptance, phenomenological residuum, materialization, and epoché. It also proposes a Natural Attitude–Reduction (NR) coding framework for examining the transition from passive, externally driven motivation to active bodily intentionality.

Results:

The analysis suggests that exercise in advanced old age should not be understood merely as a planned action motivated by health goals or functional maintenance. Rather, it is an intentional experience shaped by bodily aging, pain, mortality awareness, past experience, social expectations, and self-reconciliation. The NR framework distinguishes natural attitudes rooted in habitual and externally imposed assumptions from phenomenological reduction, through which the oldest-old may suspend bodily passivity and develop self-directed, meaning-oriented exercise intentions.

Conclusion:

A phenomenological interpretation moves beyond causal and empiricist accounts of exercise behavior and highlights the living body as the central field of meaning formation. This framework provides a person-centred foundation for understanding exercise among the oldest-old by recognising self-acceptance, bodily consciousness, and intentional meaning as essential dimensions of later-life physical activity.

P1-7 Ankle-Focused Tai Chi in Young Adults with Chronic Ankle Instability: Engagement, Experience and Patient-Reported Outcomes

QIAN Qian (Loughborough University)

Background and Objectives:

Chronic ankle instability (CAI) commonly affects physically active young adults and is associated with recurrent instability and persistent functional limitations. We previously developed a 16-form ankle-focused simplified Tai Chi programme for individuals with CAI. This study examined participant engagement and experience, changes in patient-reported ankle outcomes, and the cardiovascular demand of the programme.

Methods:

Thirty-six participants entered the intervention and 30 completed four weeks of supervised Tai Chi training (three 60-min sessions/week; age 22.7 ± 4.0 years). Each participant's assessments immediately before and after the four-week intervention were analysed as pre- and post-intervention measures. Engagement was evaluated using programme completion and session adherence, and enjoyment using the 18-item Physical Activity Enjoyment Scale (PACES). Pre-post changes in the Cumberland Ankle Instability Tool (CAIT) and Foot and Ankle Ability Measure-Sport (FAAM-Sport) were assessed using paired comparisons. Training heart rate was expressed relative to age-predicted maximal heart rate. Free-text feedback was analysed using inductive qualitative content analysis.

Results:

Thirty participants completed the programme, with 93.3% session adherence. All six non-completions were due to illness or injuries unrelated to Tai Chi. Mean PACES score was 98.0 ± 18.8/126. Following training, CAIT increased by 6.7 points and FAAM-Sport by 9.7 percentage points (both $p < 0.001$). Mean training heart rate was 53.2 ± 4.7% of predicted maximal heart rate. Free-text feedback predominantly reflected enjoyment, supportive programme delivery, learning and accomplishment, and relaxation, while repetition during later sessions was identified as an area for programme refinement.

Conclusion:

Ankle-focused simplified Tai Chi was well attended and positively experienced by young adults with CAI, alongside favourable changes in patient-reported ankle outcomes and manageable cardiovascular demand. These findings support its potential as an engaging and practical rehabilitation exercise for CAI.

P1-8 Beyond Emotional Suppression: Evaluating a Brief Play and Movement Intervention for Primary School-Age Children Anxiety in Hong Kong

YIP Chi Hang (The Education University of Hong Kong)

Background and Objectives:

The World Health Organization identifies childhood anxiety as a leading public health concern, estimating one in seven children experiences a mental health condition — often undetected within school systems. Confucian-influenced Asian educational culture normalizes concealment of distress to preserve social harmony, a pattern the emotional suppression hypothesis suggests internalizes symptom severity over time. Culturally responsive, school-based interventions targeting emotional regulation and resilience remain highly limited across Asia. This study evaluates the feasibility and effectiveness of a structured, therapeutic play-informed, movement-integrated health education program to improve anxiety self-awareness and coping skills among primary school-age children in Hong Kong.

Methods:

A pre-post pilot design enrolled 10 primary school-age children aged 8–11, recruited voluntarily through convenience-purposive sampling from a uniformed youth organization in Hong Kong. The 4-week program, delivered across the summer break, integrated somatic experiencing-based movement activities observed through structured Laban Movement Analysis, with Polyvagal Theory applied for autonomic nervous system tracking. Anxiety was measured using the GAD-7; self-awareness and coping skills via a self-designed questionnaire. Descriptive and inferential statistics assessed change scores.

Results:

Two participants did not complete both questionnaires (N=8). The full sample showed negligible anxiety change ($d = -0.04$; $p > .05$). Excluding one extreme clinical outlier (N=7) revealed a large effect size toward increased post-intervention GAD-7 scores ($d = 0.82$; $p < .05$). Educational efficacy was high across all domains: Attitude ($d = 1.18$; $p < .05$), Knowledge ($d = 0.68$; $p < .05$), and Skill ($d = 0.60$; $p < .05$). Children with elevated baseline suppression profiles demonstrated the greatest symptomatic gains, providing preliminary support for the emotional suppression hypothesis in a Chinese school-age population.

Conclusion:

The program successfully developed coping mechanisms, disrupting cultural emotional concealment. The transient GAD-7 escalation reflects an awareness peak typical of short-term play therapy, where recognition precedes mastery. This model warrants school adoption and extension into an 8–12-week framework to fully resolve early processing spikes.

P1-9 The Effects of Mindful Self-Care on Well-Being in Adult Populations: A Systematic Review

Nana LIU (The Education University of Hong Kong)

Objectives:

Given the acute global burden of mental health issues and the limited availability of specialized care, it is crucial to identify effective strategies to enhance individual well-being. Among the various approaches aimed at improving well-being, Mindful Self-Care (MSC) has emerged as a significant area of interest. To better understand the impact of MSC on well-being, we carried out a systematic review of empirical studies investigating this relationship.

Methods:

A comprehensive literature search was conducted using the electronic databases PubMed, Web of Science, and Scopus, covering the period from their inception to May 12, 2026. The inclusion criteria focused on empirical studies investigating the relationship between MSC practices and well-being outcomes. A total of 22 papers met the eligibility criteria, collectively involving 5,685 participants. The studies were primarily evaluated for various outcomes, including well-being, distress, anxiety, stress, resilience and professional quality of life.

Results:

MSC was generally associated with positive outcomes across various well-being indicators, although results were more equivocal for certain outcomes, particularly resilience, anxiety, and stress.

Conclusion:

Overall, the findings indicate that MSC is beneficial in enhancing individuals' well-being. However, the quality of the studies reviewed was inconsistent, and the number of available studies remains limited. Therefore, further research is necessary, particularly in the form of high-quality randomized controlled trials, to better establish the efficacy of MSC.

P1-10 美国常青藤联盟学生运动员管理研究

丁思劼 (香港教育大学)

背景与目标:

美国常青藤联盟拥有百年高校竞技体育管理经验，其高水平运动队管理模式成熟规范。本研究旨在系统考察其招生、学训与竞赛管理机制，为我国知名高校高水平运动队建设提供经验借鉴与决策参考。

研究方法:

采用文献资料法、专家访谈法、实地考察法、二手数据数理统计法，对常青藤联盟高水平运动代表队的核心管理体系开展实证研究。从美国百年名校运动竞技管理中借鉴，为我国知名高校管理高水平运动队提供借鉴与参考。

结果与结论如下:

基于贵州省2104名初中生的横断面调查数据，利用体育活动等级、网络成瘾、抑郁–焦虑–压力邓量表评估运动干预对行为风险和情绪危机的影响。研究过程中严格控制受试者性别、城乡户口以及抚养情况等人口学异质性并构建4节点限制性立方样条模型进行非线性回归估计。

结果:

(1) 美国常青藤联盟招生管理方来自NCAA、教练员和招生官员。NCAA审核学生运动员入学应具备的学业资格，教练员评价运动员的运动技能、学校招办最终决定录取，这种招生机制在讲究诚信的美国社会运作良好，但若三者操作相对独立，教练员在评价运动员技能上“说了算”，招生官员在最后“拍板”时又缺乏监督机制，就可能导致招生丑闻。常青藤联盟作为百年名校，从不设立运动奖学金来招揽运动员，是他们招生的独特之处。

(2) 通识教育为先，兴趣专业后导的大学本科教育，是常青藤联盟的共性。专业学习优先于运动竞技，这是区别于其他高校的显著特点。无论运动员的运动成绩多么优秀，如果学习达不到规定，可能被拒训或退赛，否则就是违反规定。学习导师制为学校了解运动员，为其制定相应的学习计划，保证学业保驾护航，值得借鉴。

(3) 常青藤联盟学生运动员主导训练时间，专职教练团队协作配合，这种弹性训练管理得益于良好传统和学生训练自觉性与主动性。专职教练员聘用制度，竞技成绩导向管理，激励教练员敬业爱岗。

(4) NCAA主导的竞赛等级制度是常青藤联盟与其他区域联盟竞赛的良好保障。保持竞赛的业余性是常青藤联盟竞技的核心特点。学业优先于竞赛资格，是藤校学生运动员管理的另一特点。每个学校都有鲜明的竞赛文化，以项目为核心建立的“荣誉墙”、“荣誉陈列室”和“名人堂”是常青藤联盟学校体现项目归属感和团队凝聚力的“精神召唤”。

P1-11 Active Video Gaming Versus Discretionary Activities for Adolescent Recess-Time Physical Activity: A Crossover Study During the COVID-19 Pandemic

Mr. WONG Ching Long Don (The Education University of Hong Kong)

Background and Objectives:

Physical inactivity is repeatedly reported among Hong Kong adolescents. This problem was exacerbated during the COVID-19 pandemic as city-wide community services were suspended. Nevertheless, schools maintained operation, which made them the very few environments that provided safe physical activity (PA) opportunities for adolescents. Despite the modifications of schools' scheduling (e.g., reduction of lesson time), recess remains a routinely occurring opportunity that is accessible by students to engage in discretionary activities, including PA. However, little is known about how recess can support students' PA within the scope of pandemic. Moreover, as technology continues to evolve, an on-going evaluation of PA-inducing technologies is required. Therefore, contextualized within the scope of pandemic, this study aims: (1) to understand adolescents' PA behaviors at recess, (2) to evaluate the effect of active video game (AVG) on adolescents' recess PA behaviors, and (3) to compare adolescents' recess PA behaviors with AVG and discretionary activities.

Methods:

A counterbalanced crossover design was adopted. A convenience sample of 82 students from one Hong Kong secondary school were recruited. Twelve subjects were split and assigned to two sequences each day. During first recess, six participated in AVG, while another six participated in discretionary activities; conditions then reversed at the second recess. Wrist-worn accelerometers were used to collect PA data from school start to finish.

Results:

Adolescents spent 68% of recess time in moderate-to-vigorous physical activity (MVPA) during discretionary recess. When AVG was played at recess, adolescents engaged in more MVPA (93% of recess time) and light PA than with discretionary activities. No gender difference was found in both recess conditions.

Conclusion:

Recess represents a meaningful opportunity for adolescents to accumulate MVPA, even when participation is discretionary. Incorporating AVG further optimizes PA engagement compared with discretionary activities and serves as a strategy for promoting PA when conventional opportunities at school and city-wide are constrained.

P1-12 学龄前儿童24小时运动行为与执行功能的纵向关联分析

王莎女士 （香港教育大学）

背景和目标：

探讨24小时运动行为与学龄前儿童执行功能的纵向关联，重点考察工作记忆、抑制控制和认知灵活性，并预测基线时不同运动行为之间固定时长重新分配对1年后执行功能的影响。

方法：

本研究纳入235名3–4岁学龄前儿童，男童占52.8%。采用加速度计测量体力活动和久坐行为，睡眠时间由家长报告。通过特定认知任务评估工作记忆、抑制控制和认知灵活性。所有指标均于基线测量，并于1年后再次评估执行功能。研究采用成分数据分析和等时替代分析，考察不同运动行为的时间构成与后续执行功能之间的关系，以及不同运动行为间固定时长重新分配的预测性影响。

结果：

基线时24小时运动行为构成可显著预测儿童1年后的执行功能表现。中高强度体力活动与抑制控制呈显著正相关，而轻体力活动与视觉空间工作记忆呈显著负相关。将久坐行为、轻体力活动或睡眠中的15分钟重新分配给中高强度体力活动，均与1年后抑制控制能力的显著改善相关。

结论：

24小时运动行为构成对儿童早期执行功能的发展具有重要意义。增加中高强度体力活动时间可能有助于改善学龄前儿童的抑制控制能力。未来教育和健康促进项目应从整体24小时行为模式出发，统筹考虑体力活动、久坐行为和睡眠的时间配置，以促进儿童认知发展。

P1-13 Beyond the Classroom: A Partnership Model for Authentic Learning in Sport Management Education

Mr. Peter CHEUNG Kim Tan (Hong Kong Metropolitan University)

Background and Purpose:

Sport management education must prepare graduates to work effectively in a rapidly changing sport sector. Although classroom-based teaching provides essential theoretical knowledge, students also need structured opportunities to engage with professional practice, develop industry awareness and apply their learning in authentic settings. This poster presents a professional-practice model for integrating sport-industry partnerships into undergraduate sport management education in Hong Kong.

Practice approach:

The model is organised around four connected processes: Connect, Co-design, Challenge and Consolidate. First, universities connect with sport organisations, professional bodies and employers to develop purposeful and sustainable partnerships. Second, partners and educators co-design learning opportunities that align with programme learning outcomes and current workforce needs. Third, students are challenged through authentic activities, including industry seminars, coach-education workshops, exposure to elite-sport environments, event-based learning and engagement with sport professionals. Finally, learning is consolidated through guided reflection, competency development, career preparation and mechanisms that enable students to articulate the value of their experiences.

Key lessons and implications:

The practice model highlights the importance of shared expectations, partnership continuity, student preparation, logistical coordination, alignment with assessment and systematic reflection. It also recognises that industry engagement should extend beyond one-off guest talks or visits, becoming an integrated educational strategy that connects disciplinary knowledge with professional identity and career development. The model provides a transferable framework for universities and sport organisations seeking to strengthen graduate preparation and build more responsive sport management education. It may be particularly relevant in Asian contexts where collaboration among higher-education institutions, professional bodies and the sport industry can support workforce development, quality assurance and sustainable pathways into professional practice.

P1-14 Adherence to 24-Hour Movement Guidelines, Body Fat and Cardiorespiratory Fitness among Neurodivergent Children in Hong Kong

Mr. Jinghao SUI

Background:

Unfavourable 24-hour movement behaviours may compromise physical health among neurodivergent children. This study examined associations of the number of movement recommendations met with body fat and cardiorespiratory fitness and explored the most favourable adherence combination.

Methods:

This cross-sectional study included children aged 6-11 years with autism spectrum disorder and/or attention-deficit/hyperactivity disorder from 18 Hong Kong mainstream primary schools. Moderate-to-vigorous physical activity (MVPA) and sleep were assessed by wrist accelerometer, and recreational screen time by a 7-day parent diary. Recommendations were at least 60 min/day of MVPA, no more than 120 min/day of screen time and 9-11 h/night of sleep. A guideline adherence score ranging from 0 to 3 was calculated based on the number of recommendations met. Outcomes were body fat percentage and 20-m Progressive Aerobic Cardiovascular Endurance Run (PACER) laps. Regression models were adjusted for age, sex, family income, and neurodevelopmental diagnostic group. PACER models additionally adjusted for body fat.

Results:

Among 144 children with complete guideline data, 27.8% met the MVPA, 60.4% the recreational screen-time, and 22.9% the sleep recommendation. Thirty-four (23.6%) met none, 67 (46.5%) met one, 36 (25.0%) met two, and 7 (4.9%) met all three. Each additional recommendation met was associated with 1.86 percentage points lower body fat (95% CI, - 3.62 to -0.10; p = .039) and 1.58 more PACER laps (0.06 to 3.11; p = .042). Descriptively, children meeting all three recommendations showed the most favourable overall profile, with the lowest mean body fat (7.4%) and a relatively high mean PACER score (16.7 laps). The MVPA+sleep group recorded the highest mean PACER score (21.7 laps), but included only three children.

Conclusion:

Meeting more 24-hour movement recommendations was associated with lower body fat and better cardiorespiratory fitness. Longitudinal studies are needed to confirm these patterns.

P1-15 Association between Physical Activity Level Assessed by the Doubly Labeled Water Method and Accelerometer-Derived Physical Activity Intensity in Community-Dwelling Older Adults

YUNDUO Shao (Tohoku University)

Purpose:

Physical activity level (PAL) derived from the doubly labeled water (DLW) method reflects free-living energy expenditure, but its relationship with accelerometer-derived activity intensity in older adults is unclear. This study examined the associations of DLW-derived PAL (PALDLW) with sedentary behavior (SB), light physical activity (LPA), and moderate-to-vigorous physical activity (MVPA) in community-dwelling older adults.

Methods:

This cross-sectional study included 136 Japanese adults aged ≥65 years from Kameoka City. Total energy expenditure was measured using the DLW method, and PALDLW was calculated as total energy expenditure divided by estimated basal metabolic rate. A triaxial accelerometer was used to classify activity time over a 24-h day into SB, LPA, and MVPA. Multiple regression and isotemporal substitution (IS) models were adjusted for age and sex.

Results:

The mean age was 73.2 ± 5.3 years. PALDLW was negatively associated with SB ($\beta = -0.360$, $P < 0.001$) and positively associated with LPA ($\beta = 0.508$, $P < 0.001$) and MVPA ($\beta = 0.400$, $P < 0.001$). Replacing 10 min/day of SB with LPA or MVPA was associated with higher PALDLW ($B = 0.012$ and 0.033, respectively; both $P < 0.001$).

Conclusion:

Replacing SB with LPA or MVPA would increase PALDLW in community-dwelling older adults. Habitual lifestyle modification is essential for increasing physical activity in this population.

P1-16 Effects of a 4-Week Group-Based Exercise Intervention on Executive Function, Sleep, and Quality of Life in Children with ADHD

LIU Zhining (The Education University of Hong Kong)

Background and Objectives:

Children with ADHD commonly experienced difficulties in executive functions and sleep, which may affect everyday functioning and quality of life. Exercise has emerged as a promising non-pharmacological method, but evidence regarding its short-term effects on cognitive, sleep, and quality of life outcomes remains limited. Therefore, this study examined the effects of a 4-week group-based exercise intervention on executive function, sleep, and quality of life in children with ADHD.

Methods:

Thirty-four children with ADHD (30 boys, 4 girls) aged 6-12 years participated in a 4-week group-based exercise intervention. The intervention comprised 16 sessions (4 sessions/week, 60 min/session), including 10 min of warm-up games, 20 min of fitness activities, and two 15 min sport tasks incorporating attention and executive function demands. Polar heart rate monitors were used monitor exercise intensity. Executive function and quality of life were assessed using BRIEF and PedsQL, respectively, while sleep was objectively monitored using a wrist-worn ActiGraph.

Results:

Following the intervention, BRIEF initiate scores significantly decreased from 11.24 ± 1.95 to 10.42 ± 1.92 ($p = .044$, $d = 0.365$), while working memory showed a trend toward improvement ($p = .065$). Sleep onset latency (SOL) decreased significantly from 17.55 ± 4.11 to 14.94 ± 4.05 min ($p = .002$, $d = 0.628$), whereas sleep efficiency, total sleep duration, and wake after sleep onset did not change significantly. No significant changes were observed in PedsQL outcomes, although parent-reported school functioning showed a trend toward improvement ($p = .084$).

Conclusion:

A 4-week group-based exercise intervention was associated with improvements in executive function initiation and shorter sleep onset latency in children with ADHD, while broader executive function and quality of life outcomes showed limited change. These findings suggest that structured exercise may be a promising short-term strategy for addressing selected cognitive and sleep-related difficulties in children with ADHD.

P1-17 Timing of physical activity and associations with obesity among Chinese adolescents

Ting LI (Shanghai university of sport)

Background:

Given the current competitive educational system in China, it is unrealistic for adolescents to increase moderate-to-vigorous physical activity (MVPA) time by reducing time spent on academic learning. Under these circumstances, new methods may be needed to maximize the benefits of MVPA. This study aims to describe the distribution of MVPA on weekdays and weekends, and to explore how the timing of MVPA is differentially associated with obesity risks, thereby identifying target time slots for tailored obesity prevention interventions.

Methods:

A total of 1245 adolescents (54.9% women) participated in the study, with a mean age of 14.9 years. Accelerometers were used to measure hourly MVPA during waking hours (06:00–24:00). Adiposity indicators included body mass index (BMI) z-score, fat mass percentage (FM%), and fat mass index (FMI). Linear regression models were used to analyze the associations between MVPA timing and obesity.

Results:

MVPA peaked during 06:00–07:00, 12:00–13:00, and 18:00–19:00 on weekdays, and 12:00–13:00 and 17:00-18:00 on weekend days. Significant differences in hourly MVPA accumulation were observed across weight-status groups, particularly during weekdays and among boys. Additionally, weekday MVPA during the late afternoon (16:00–17:00) was consistently associated with lower BMI, FM%, and FMI. Similar associations were observed for late-afternoon (15:00-16:00) MVPA on weekends.

Conclusion:

These findings highlight the potential importance of incorporating activity timing into strategies for obesity prevention and the promotion of physical activity among adolescents. Encouraging adolescents to accumulate more MVPA during late-afternoon periods, particularly in school and after-school settings, may improve obesity prevention and management.

P1-18 Finite element analysis of lateral ankle ligament strain in four basketball sprain cases

Hengshuo ZHANG (Loughborough University)

Background and Objectives:

Lateral ankle sprains can disrupt basketball participation and performance, injuring the anterior talofibular ligament (ATFL) and calcaneofibular ligament (CFL). Video reconstruction describes injury kinematics but cannot reveal in-vivo ligament strain. This study combined three-plane motion with finite element (FE) modelling to determine when ATFL and CFL strain reached failure thresholds in four televised basketball sprains and identify the dominant motion components. The technology-enhanced approach examined whether ligament-loading patterns were consistent across cases, generating evidence relevant to athlete preparation and performance support across competitive basketball settings.

Methods:

A validated, CT-based ankle-foot FE model comprised 28 rigid bones and 35 ligaments represented by 63 shell bands. Ligaments were modelled as nonlinear hyperelastic Neo-Hookean materials. With the tibia-fibula fixed, the talus-foot segment was prescribed case-specific sagittal, frontal, and transverse-plane rotations reconstructed from four injury videos. No external force, moment, or ground-reaction load was applied. Mid-substance strain was evaluated at ligament mid-length. Model validation reproduced cadaveric dorsiflexion- plantarflexion strain-gauge tests. Failure thresholds were 0.64 for the ATFL and 0.47 for the CFL. No new human participants were involved.

Results:

Model predictions agreed with cadaveric strain-gauge measurements. The CFL reached threshold in all four cases after 4.99%-24.62% of reconstructed injury motion. The ATFL reached threshold only in Cases 2 and 4, after 43.93% and 94.43%, respectively; peak strains in Cases 1 and 3 were 14% and 50% of threshold. At threshold, ATFL strain was driven mainly by internal rotation in Case 2 (65.8% of rotational contribution) and plantarflexion in Case 4 (47.7%). CFL strain was consistently dominated by inversion (49.3%-81.4%).

Conclusion:
FE modelling revealed consistent, early CFL loading but later, case-specific ATFL loading. By adding ligament-level evidence to video reconstruction, this approach advances technology-supported sport performance analysis. The findings may inform evidence-based athlete preparation, movement-focused coaching, injury-prevention priorities, and return-to-performance planning in basketball.

P1-19 Bridging Sport Coaching in Esports Practice: A Scoping Review

Wing Hang WANG (The Education University of Hong Kong)

Esports refers to a professionalized form of organized video game competition, in which coaching plays a crucial role in helping players understand game dynamics and improving the effectiveness of training programs. As esports clubs face increasing pressure to prepare players and teams for highly intensive competitions, esports coaching has attracted growing attention from key stakeholders. However, despite rising demand, the field still lacks a standardized framework to guide coaches in attaining the competencies, prerequisites, and qualities expected of them. To address this gap, this study develops a theoretical framework for esports coaching by reviewing established sport coaching frameworks alongside extant esports coaching literature, following PRISMA-ScR guidelines. Given the relative maturity of coaching theory in traditional sports, the review of sport coaching frameworks provides a foundational basis for esports coaching from a sports management perspective, while the review of esports coaching literature captures the current state of research and reveals where sport-derived frameworks require adaptation to the unique context of esports. Through an analysis integrating both strands of literature, four key research themes emerge that reveal both continuity with, and departure from, traditional sport coaching: teaching techniques, which extend established video-based performance analysis into game-replay (VOD) review and macro–micro strategic instruction under largely remote coaching conditions; required knowledge, which builds on classical sport-science domains but must additionally accommodate rapidly evolving game mechanics and limited cross-title transferability; in-game analytics and coaching technology, which intensify traditional data-driven coaching practices by leveraging telemetry natively embedded within the game engine; and ethics, which extend familiar concerns of fair play and athlete welfare to esports-specific risks such as online toxicity and industry governance immaturity. Based on these findings, this study offers theoretical and practical implications for supporting the professional training of esports coaches and fostering sustainable development of the esports ecosystem.

P1-20 国际学校武术分层培养的实践与启示 —— 以弘立书院“6+1”梯队为例

黄达博士（中国传媒大学）

背景：

在全球化教育语境下，中华民族传统体育的校园传承是跨文化体育教育研究的重要议题。香港弘立书院将武术课程纳入校内育人体系，搭建“6+1”七级武术梯队，依次设置幼稚班、初学班、新秀班、校队、潜质队、精英队，香港武术代表队。该校分层人才培养模式为国际学校开展中华民族传统体育教育提供典型实践样本。

方法：

本研究以弘立书院武术项目为实践样本，采用参与式观察与案例分析及专家访谈方法，将“6+1”梯队培养模式作为研究对象，旨在梳理国际学校武术人才分层培养的运行逻辑与教学训练安排，探究该模式下的实践成效与现存局限，为国际学校开展民族传统体育教育、分阶段培育学生运动能力提供实践参照。

结果：

研究发现，分层次教学模式能有效推动武术运动在多元文化校园落地，同时起到传承中华传统文化，构建身份认同的普适性教育职能。但在实践过程中仍受学校课时分配、学生课业压力，以及师资配备等现实因素制约。

结论：

分层人才培养体系是国际学校推进中华民族传统体育——武术教育的可行路径。弘立书院的实践可为国际学校完善体育人才分层培养模式提供参考，为搭建校园武术人才培养体系、中华民族传统体育跨文化传播提供经验借鉴。

P1-21 未来排球人才：中日韩青少年运动员培养体系的比较研究

舒睿翔

背景和目的：

中国排球在资金、政策层面投入较大，U系列赛事持续扩展，但青少年运动员向国家队的转化率长期偏低，资源投入与人才产出不相匹配，暴露出培养路径间衔接不畅的结构性问题。中日韩因体育制度、教育体系与文化传统差异，形成各具特色的排球青训模式。本研究聚焦人才培养路径衔接机制这一核心问题。

方法：

采用文献资料法与对比分析法，比较中日韩三国在制度设计、路径衔接与运行层面的差异，厘清人才输送的不同运行模式。

结果：

三国青训体系的根本差异不在培养主体，而在路径衔接机制——日本通过中学—大学—职业联赛的制度化升学通道实现无缝衔接；韩国依托企业队为校园球员提供定向选秀入口；而中国体校、学校、俱乐部三条路径各自运行，缺乏统一注册与跨路径输送机制，人才资源难以转化。

结论：

据此建议：一是借鉴日本学校排球经验，深化体教融合；二是推动赛事从"赛会制"向"赛季制"转型，增加比赛频次；三是推动体育与教育系统赛事互认，消除跨系统参赛壁垒；四是加强基层教练培养，提升科学化训练水平。本研究为亚洲排球青训比较提供新视角，为破解高投入低转化难题、完善后备人才储备提供参考。

P1-22 从赛场影响力到健康公平：运动员参与体育与健康教育的四方演化博弈

陈诗旭博士（ 福建师范大学）

在社交媒体与体育商业化放大运动员公共影响力的背景下，运动员不再只是竞技表现者，也可能成为健康知识传播和社会价值塑造的行动者。然而，运动员健康倡导常呈事件化、短期化和受众分化，其能否转化为可信、持续且公平的公共健康教育，取决于政府、媒体与体育社会组织的协同。基于利益者有限理性，本研究构建政府、媒体、体育社会组织与运动员的四方演化博弈模型，分别设置“协同支持/有限介入”“责任传播/流量导向”“普惠服务/选择性参与”和“主动倡导/消极参与”策略，并通过复制动态、稳定性分析与数值模拟考察政策激励、传播可信度、组织承载能力、运动员声誉收益和公平补偿的作用。初步分析表明：运动员倡导能够扩大健康教育触达，但单一明星效应难以维持长期协作；媒体可信度与体育社会组织的社区转化能力共同决定影响力能否转化为健康收益；面向弱势群体的定向补偿、成本共担与声誉激励较普遍性补贴更有利于系统跨越低协作门槛；当政府协调不足或流量收益持续高于公共价值回报时，系统可能锁定于短期曝光低公平性的均衡。研究将体育影响力由传播现象拓展为公共健康教育资源，并为构建可持续、包容且公平的体育健康教育协同机制提供决策参考。

P1-23 Biopsychosocial Factors Associated with Well-being Among Children and Adolescents with Intellectual Disabilities

Dr. Tracy Chor-wai TANG (The Chinese University of Hong Kong)

Background and Objectives:

Well-being is an important indicator of health and development during childhood. This is especially important for children with intellectual disabilities (ID), who experience unique biological, psychological, and social challenges. Guided by the biopsychosocial model, this study aimed to explore the contributions of biological, psychological, and social factors to well-being among children and adolescents with mild ID.

Methods:

Participants were 214 children and adolescents aged 6-17 years with mild ID, recruited from special schools, mainstream schools, and non-governmental organisations. Objective measures, including BMI (height and weight) and

body fat percentage, were measured by well-trained researchers. Participants also completed questionnaires assessing physical self- perception using the Physical Self-Description Questionnaire-Short Form, social connectedness using the Social Connectedness Scale-Revised, and well-being using the World Health Organization-Five Well-Being Index.

Results:

Hierarchical regression was conducted, with age and gender entered as control variables in Step 1, followed by the biopsychosocial factors in Step 2. In the final model, biopsychosocial factors were significantly associated with well-being, $F(6,207) = 16.05$, $p < .001$. Specifically, SCSR ($\beta = .367$, $p < .001$), PSDQ ($\beta = .259$, $p < .001$), body fat percentage ($\beta = .284$, $p = .041$), and BMI ($\beta = -.297$, $p = .042$) were significantly associated with well-being.

Conclusion:

These findings highlighted the importance of biological, psychological, and social factors in understanding and promoting well-being among children and adolescents with mild ID. Future interventions to improve well-being may benefit from addressing these factors collectively.

Acknowledgement:

This study was supported by the Hong Kong Jockey Club Charities Trust. The authors thank the school principals, teachers, parents, and students from all participating schools, as well as the non-governmental organisations. The authors also thank the research team and student helpers for their assistance with data collection.

P1-24 植物乳杆菌补充剂对运动表现和恢复的影响——一项系统评价和叙述性综合分析

纪彦屹博士 (香港教育大学)

背景:

植物乳杆菌（Lactiplantibacillus plantarum）是运动营养领域研究较为广泛的益生菌之一，但其菌株特异性效应尚未得到系统整合。

目的:

本研究系统评价植物乳杆菌对健康人群运动表现与恢复的影响，并比较不同菌株的效应差异。

方法:

检索PubMed、Web of Science、Scopus、SPORTDiscus、Cochrane Library建库至2026年3月11日的随机对照试验。采用Cochrane RoB 2工具评估偏倚风险。因研究在菌株、剂量、结局指标上存在显著异质性，采用叙述性综合分析。

结果:

植物乳杆菌对运动表现与恢复的改善作用呈高度菌株特异性。TWK10 证据一致性较高，可提升有氧耐力，加速乳酸与血氨清除，热灭活制剂仍保留部分效益。PS128 可减轻肌肉损伤，抑制炎症反应，保护神经肌肉功能，但对运动表现峰值的改善作用不一致。PL–02 在提升有氧能力、降低肌肉损伤与炎症因子方面显示初步潜力，证据仍较有限。未明确菌株的植物乳杆菌制剂整体效应不显著，未形成稳定获益。RoB 2 评估显示，纳入研究整体证据质量中等。主要局限为分配隐藏不足、前瞻性注册率偏低。多数研究来自中国台湾地区中小样本，结论外推性受限。

结论:

补充植物乳杆菌可改善健康人群运动表现与恢复，效应具有明确菌株特异性，未来需开展更大样本、多中心、长期随访的随机对照试验提供更高质量证据。

P1-25 学校环境与青少年体育活动之间的关系：系统综述与Meta分析

沙漠 (香港教育大学)

目的：

本研究旨在评估学校环境因素在促进青少年身体活动方面的有效性。

方法：

本研究对五个数据库（PubMed、Embase、Web of Science、EBSCO及Cochrane Library）进行了系统性检索，检索范围涵盖自最早可获取的文献至2023年9月。针对每项学校环境因素，若至少有两项研究报告了该因素与青少年身体活动之间的关联，则对其开展Meta分析。所考察的因素包括7项学校社会环境因素和6项学校物理环境因素。

结果：

本荟萃分析共纳入了18项研究，涉及340,749名参与者。研究发现，学校环境与青少年的体育活动之间存在显著的正相关关系：具体而言，学校社会环境与青少年的体育活动呈正相关。其中，学校提供的每日体育课、学校组织的课外体育活动、对使用体育器材或设施的鼓励以及户外障碍赛项目，均与青少年的体育活动呈现显著的正相关关系。尽管学校的整体体育环境与青少年的体育活动之间未呈现显著相关性，但学校内的体育设施数量与青少年的体育活动水平则呈现出显著的正相关关系。

结论：

本荟萃分析表明，学校环境在促进青少年体育活动方面发挥着重要作用。学校的社会环境因素——包括学校提供的日常体育课、学校组织的课外体育活动、对使用体育资源的鼓励以及户外障碍赛道——在增强青少年体育活动方面尤为有效。在学校的物理环境因素中，体育设施的数量被证实是促进青少年体育活动的关键因素。

P1-26 足球伤病机器学习预测模型的方法学可信度：基于PROBAST+AI的系统评价

江懿锦（北京体育大学）

目的：

机器学习正用于足球伤病风险预测，但重复观测、时间顺序不当和数据泄漏可能夸大模型性能。本研究系统评价足球伤病预测模型的方法学可信度，重点考察时间有效性、球员独立性、数据泄漏及模型评价质量。

方法：

检索PubMed、Web of Science、Scopus、Embase和SPORTDiscus，截止2026年7月16日。纳入应用机器学习及相关算法预测足球伤病的研究，提取评价设计、球员独立性、预测时间一致性及数据泄漏信息，并采用PROBAST+AI 2025进行评价。

结果：

共纳入48篇报告。37篇采用非时间性内部重采样或随机留出验证，8篇采用时间顺序或滚动验证，3篇仅报告表观性能。20篇使用重复记录但未按球员分离开发集与评价集，18篇存在明确的数据泄漏或预测时间错配。47篇模型开发质量为高关注，1篇为不明确；48篇模型性能评价均为高偏倚风险。未发现完全独立的前瞻性外部足球俱乐部验证。

结论：

当前模型的主要限制更多来自研究设计与评价策略，而非算法选择。未来应预先界定预测时间和窗口，按球员及时间划分数据，在训练数据内完成预处理和模型选择，并开展独立外部验证。

POSTER SESSION 2

P2-1 Acute Postural Control and Balance Enhancements Following Flywheel Side Lunge Post-activation Performance Enhancement (PAPE)

Mr. Indy Man Kit HO (Technological and Higher Education Institute of Hong Kong; University of Zagreb)

Background and Objectives:

The current study examined the acute effects of post-activation performance enhancement (PAPE), induced by flywheel resistance exercise warm-up protocol in frontal plane, on dynamic balance, and side hop postural control. Additionally, the study compared the landing biomechanical differences between individuals with chronic ankle instability (CAI) and healthy individuals (non-ankle instability, NAI).

Methods:

Using a randomized, repeated-measures experimental design, 16 participants (aged 18–40 years) were classified into CAI and NAI groups using the Cumberland Ankle Instability Tool. The intervention for inducing the PAPE on the experimental day included 3 sets of side lunge flywheel exercise (loading: 0.035 kg·m2). All participants completed pre- and post-tests on both the control and experimental (flywheel warm-up) days. Dynamic balance and postural control were compared using the Y-Balance Test (YBT) and the side-hop-and-landing task on a force-plate. Key outcome variables included YBT composite scores, time to stability (TTS), and center of pressure (COP) parameters (sway area, path length, and average velocity) with two-way repeated measure ANOVA.

Results:

Y-Balance Test composite scores improved significantly ($p < .05$) whereas the improvement was more pronounced in the tested limb, with a greater percentage increase observed in the CAI group, though no statistically significant differences were found between the CAI and NAI groups. Conversely, the side-hop test metrics (TTS, sway area, path length, and average velocity) did not change significantly after the intervention, although a positive trend was observed in the NAI group ($p > .05$).

Conclusion:

These findings suggest that a flywheel-based PAPE warm-up protocol can potentially enhance neuromuscular performance, leading to acute improvements in dynamic balance. However, its immediate transfer to stabilization during high-impact, dynamic landing tasks appears limited, potentially due to task specificity and insufficient recovery time.

P2-2 Bidirectional Prospective Associations Between Screen Addiction and Negative Emotions Among Junior High School Students: Implications for Whole-School Health Promotion

Miss BAN Mingwei (ShenZhen University)

Background and Objectives:

Whole-school efforts to promote healthy and active lifestyles increasingly need to address digital behavior and emotional well-being together. However, the temporal relationship between screen addiction and negative emotions remains unclear. This study examined their bidirectional prospective associations among junior high school students.

Methods:

Two questionnaire surveys were conducted in December 2025 (T1) and June 2026 (T2) using stratified cluster random sampling across four public junior high schools in Shenzhen. Of 662 baseline participants, 639 completed both surveys (96.5% retention). Screen addiction and negative emotions were assessed using the Multiple Screen Addiction Scale and the Chinese version of the Depression Anxiety Stress Scales-Youth Version, respectively. After metric and partial scalar invariance were established, a traditional latent variable cross-lagged panel model was fitted, adjusting for sex and grade.

Results:

Both constructs showed cross-time stability (β = 0.535 and 0.466, respectively; both $P < 0.001$). After adjustment for baseline levels, sex, and grade, T1 screen addiction predicted T2 negative emotions (B = 0.102, 95% CI [0.030, 0.175], β = 0.135, P = 0.006). T1 negative emotions also predicted T2 screen addiction (B = 0.154, 95% CI [0.012, 0.295], β = 0.100, P = 0.034). The model showed a good fit (χ^2 = 73.93, df = 70, CFI = 0.998, TLI = 0.998, RMSEA = 0.009, SRMR = 0.022).

Conclusion:

Screen addiction and negative emotions showed small bidirectional prospective associations over six months. These findings support jointly addressing digital behavior and emotional well-being within whole-school health promotion, alongside initiatives that foster healthy and active lifestyles. Because the observational two-wave design does not establish causality, these findings support risk awareness but not the effectiveness of specific screening or educational interventions.

P2-3 中国大陆个人与社会责任教学模式（TPSR）实证研究的系统综述与荟萃分析

朱文豪（福建师范大学）

背景：

个人与社会责任教学模式（TPSR）在国内外体育教育领域应用广泛，但中国大陆相关实证研究尚缺乏系统总结。

目标：

旨在通过系统的梳理，进而评估该模式在中国大陆体育教学中的干预效果。

方法：

系统检索知网、Scopus等七个数据库（中文关键词：TPSR、个人与社会责任等；英文关键词："Teaching Personal and Social Responsibility" etc.），筛选中国大陆以TPSR为核心干预、设有对照组的准实验/实验研究，最终纳入68篇。对文章进行描述性统计，对可提取效应量的研究以随机效应模型（Hedges' g）进行荟萃分析。

结果：

统计显示68篇中约84%为硕士论文，并且这些硕士论文集中于近5年，占全部的91%。测量工具以PSRQ问卷为主；大学阶段和足球项目占比最高。对68篇文献进行筛选后最终采取51篇文献进行荟萃分析，得出总效应量g=0.78，95%CI［0.65，0.92］，和采用PSRQ问卷（35篇）进行计算的结果一致（g=0.83），属中到大效应。是国际同类荟萃分析报告水平（g=0.307）的两倍以上。

结论：

通过分析各研究的研究背景，本研究认为近五年TPSR研究的快速增长，与"立德树人"政策导向、国际教育模式引入的实证转化等密切相关。而TPSR实证效应量明显高于国际同类荟萃分析报告水平。这一差距的具体原因还需进一步探索。

P2-4 中学生日常健康行为模式的潜在类别及其学年内动态转变

潘镇辉先生（广州体育学院）

目的：

探讨中学生日常健康行为模式的潜在类别及其学年内动态转变轨迹，分析性别、年级及家庭社会经济地位（SES）对行为类别归属的预测作用。

方法：

2025年6月，采用方便抽样法对广州市两所完全中学732名学生进行为期1年的纵向追踪调查。采用HBSC测量身体活动和课余屏幕久坐行为，采用PSQI测量睡眠质量。应用Mplus 8.10进行潜在剖面分析和潜在转变分析，并采用多项Logistic回归分析相关因素。

结果：

中学生日常健康行为可分为适应良好组（T1：44.0%，T3：48.5%）、不活跃组（34.3%，33.3%）、久坐屏幕组（10.7%，8.1%）和睡眠不佳组（11.0%，10.1%）。各类别维持概率为41.0%～93.0%，其中适应良好组最高（90.0%～93.0%）；睡眠不佳组向适应良好组转变的比例为17.0%～24.0%。女生归属于不良行为类别的可能性低于男生（OR=0.42～0.47，P<0.01），高中生高于初中生（OR=1.94～2.18，P<0.05）；SES对久坐屏幕组具有保护作用（OR=0.73，P=0.008）。

结论：

中学生日常健康行为存在4种潜在模式，且学年内稳定性较高。性别和年级是重要预测因素，初中阶段可能是健康行为干预的重要窗口期，应针对不同类别实施分层精准干预。

P2-5 骑行诱导疲劳下股肌放电编码与持续性内向电流变化

殷然先生（北京师范大学）

目的：

明确逐级递增力竭骑行运动如何改变股外侧肌（VL）与股内侧肌（VM）的运动单元发放特征，以及持续性内向电流（PIC）强度的评估结果。

方法：

招募11名健康青年男性大学生，开展基于最大自主功率（MAP）标准化的逐级骑行方案：40%MAP强度骑行5分钟，50%~90%MAP每一负荷等级骑行3分钟，随后保持90%MAP持续骑行直至力竭。骑行前与骑行结束后即刻，受试者分别完成20%、40%、60%最大自主收缩力（MVC）下的连续递增–递减等长伸膝任务，同步采集股外侧肌、股内侧肌的高密度表面肌电信号。计算绝对与相对募集阈值（RT）、去募集阈值差值（DERT）、运动单元激活期平均发放率、峰值发放率、募集/去募集时刻发放率、加速斜率，以及加速与衰减斜率之间的夹角；采用配对运动单元分析法以ΔF估算PIC强度。构建线性混合效应模型，将干预条件设为固定效应，受试者作为随机截距，显著性水平设定为$p<0.05$。

结果：

经标准化递增骑行至力竭后，股外侧肌与股内侧肌的运动单元特征均出现显著改变。（1）股外侧肌在60%MVC条件下，绝对募集阈值下降63.42 N，相对募集阈值降低8.33个百分点（p分别为0.003、0.008）；绝对去募集阈值差值下降72.42 N，相对去募集阈值差值降低9.99个百分点（二者$p<0.001$）。股内侧肌在40%MVC时绝对募集阈值下降77.65 N（$p<0.001$）。（2）股外侧肌在40%MVC下，激活期平均发放率提升1.39 pps（$p<0.001$），峰值发放率提升2.27 pps（$p<0.001$），募集时刻发放率提升0.83 pps（$p=0.044$）。股内侧肌在60%MVC时激活期平均发放率提升3.11 pps（$p<0.001$）；40%与60%MVC条件下峰值发放率分别提升2.81 pps、4.96 pps（$p=0.042$、0.005）；60%MVC下去募集时刻发放率提升2.15 pps（$p=0.042$）。（3）股外侧肌在60%MVC时ΔF升高3.47 pps（$p=0.003$）；20%MVC下加速斜率降低1.37 pps/%MVC（$p=0.008$）；60%MVC时加速–衰减斜率夹角增大17.17°（$p=0.048$）。

结论：

标准化逐级力竭骑行可提升股肌的速率编码水平与股外侧肌PIC估算强度，提示运动神经元内在放大效应增强，参与疲劳后高力量伸膝控制过程。

P2-6 冯有真：近代中国国际体育赛事报道“第一人”

黄达博士（中国传媒大学）

背景：

近代中国参与国际奥运报道起步较早，但1936年柏林奥运会前，国内体育报道多零散碎片化，缺乏系统专题化实践，冯有真作为公认“中国采访奥运第一人”，其完整报道样本具备重要研究价值。

方法：

本文以冯有真1936年柏林奥运会全部报道文本为核心材料，采用文本分析法，按赛前、赛中、赛后三阶段梳理报道内容，并横向对比同期记者储安平的报道，总结其报道风格与行业贡献。

结果：

报道体裁灵活多元，融合通讯、长短消息、广播稿并嵌入评述，叙事点线面结合，语言兼具纪实性与通俗趣味；相较于同行，冯有真完成国内首个完整规模化奥运连续专题报道，开创全国广播实时转播国际赛事的先例，报道将体育竞技与民族兴衰结合，形成家国叙事视角。同时他赛后总结赛事失利教训，提出国民体育发展四条可行路径。

结论：

战乱中断了早期体育传播发展，但冯有真搭建起近代国际体育赛事报道完整专业框架，其专题化、跨媒介、兼具民族视野的报道范式，为后世体育新闻采写、大型赛事传播提供珍贵历史参考。

P2-7 Time Perception, Expertise and Sustained Engagement in Table Tennis: A Proposal Study

Miss ZhaoJie (Zhejiang University, Hangzhou, China)

Background and Rationale:

Developing expertise in table tennis requires extensive, high-quality practice that is technically demanding and often repetitive. Sustained participation may depend not only on accumulated practice but also on how athletes experience that time, including perceptions of effort, enjoyment, and engagement. Exercise can alter subjective time experience, with time often seeming to pass more slowly than clock time during physical activity. However, whether expertise influences time perception during skilled performance remains unclear. As a fast-paced sport requiring rapid decisions, precise motor control, and sustained attention, table tennis provides an appropriate model for investigating time perception as a potential marker of expertise.

Research aims:

This study aims to examine whether highly skilled and less-skilled table tennis players differ in subjective time perception during performance. It will also explore whether expertise-related differences are associated with attentional regulation, information processing, and performance quality.

Study design and methodology:

A comparative experimental design will be used. Participants will complete standardized table tennis tasks under controlled conditions. Measures of perceived passage of time, flow, and enjoyment will be combined with heart rate variability, eye-tracking indices, and objective performance measures to assess temporal experience, attentional regulation, autonomic responses, and task performance.

Planned analyses:

Expertise groups will be compared across subjective, psychophysiological, and performance measures. Associations between time perception, attention, physiological responses, and performance quality will also be examined.

Planned analyses

This research may provide a novel perspective on skilled performance by examining subjective time experience as a potential psychophysiological marker of expertise. Integrating temporal experience with psychophysiological and behavioral measures may enhance understanding of attentional regulation and automaticity during optimal performance states, while also providing insights into how subjective time experience relates to enjoyment, engagement, adherence, and long-term participation in sport.

P2-8 The Impact of AI-Assisted Technological Scaffolding on Table Tennis Performance and Self-Regulated Learning: Preliminary Findings and RCT Protocol

Ms. Zilin HE (The Education University of Hong Kong)

Background and Objectives:

Traditional physical education assessment in racket sports relies on delayed, subjective observations, neglecting complex kinematic chains required for skill mastery. While AI computer vision provides real-time tracking, its pedagogical efficacy remains unverified without cognitive scaffolding. Grounded in Zimmerman's cyclical model, this study evaluates a custom AI-driven table tennis system's impact on students' motor skill proficiency and self- regulated learning (SRL).

Methods:

A 12-week, three-arm randomized controlled trial (RCT) will allocate 90 undergraduates to Traditional Instruction, Unscaffolded AI, and SRL-Scaffolded AI (SAG) groups. We developed a custom AI system utilizing computer vision and mediapipe , establishing its concurrent validity against a gold-standard motion capture system. Prior to the RCT, a teaching workshop pilot study (n=5) assessed ecological validity. A teacher subset (n=5; 2 females, 3 males) completed the Technology-Supported Learning Questionnaire (TSLQ).

Preliminary Results:

Initial technical validation confirmed high kinematic agreement between our custom AI and the gold standard. Additionally, pilot data demonstrated high pedagogical acceptance. Teachers agreed the system enhanced personalized feedback delivery (M=4.43/5.00) and was intuitive to integrate (M=4.21/5.00). Dual-perspective TSLQ validation showed high scores across all SRL sub-processes (M=4.10–4.50). The "Self-Evaluation" dimension received the highest

simulated student rating (M=4.50/5.00), substantiating the hypothesis that objective AI data effectively scaffolds internal performance monitoring.

Conclusions:

Preliminary findings confirm our custom AI system's technical reliability, ecological validity, and applicability to the TSLQ. We hypothesize that the SAG will demonstrate significantly higher motor proficiency and SRL capability during the RCT. Combining continuous digital assessment with explicit cognitive scaffolding provides an essential pathway for modernizing university sports curricula.

P2-9 WHOOP 可穿戴设备在基层教练训练决策中的接受度与使用障碍研究

王子博涵（香港理工大學）

背景与问题：

WHOOP等可穿戴设备在职业体育中应用成熟，但基层渗透有限。现有研究多聚焦设备信效度，对基层教练如何将恢复数据转化为训练决策关注不足。本研究旨在探究基层教练对WHOOP数据的接受度及使用障碍。

概念框架：

以技术接受模型（TAM）为基底，结合基层体育组织资源约束特征，构建三层分析框架：个体认知层（数据素养、感知有用性与易用性）、组织情境层（经费投入、制度支持与培训机制）及实践转化层（时间压力、数据解读负荷与传统执教经验冲突）。

研究路径：

拟采用质性研究设计，选取学校体育教师与青少年俱乐部教练为对象，通过半结构化访谈收集资料，运用主题分析法提炼基层教练对WHOOP恢复数据的理解方式、数据反馈与其执教逻辑的交互机制，以及组织资源约束对技术采纳的影响。

预期价值：

本研究将揭示基层体育科技"落地难"的机制，为体育管理部门制定基层数字化培训方案、为设备厂商优化用户界面提供参考，助力构建"技术可及—教练会用—决策有效"的基层运动表现支持体系。

P2-10 Research of the effect of rope ladder training on the basic footwork technique of adolescent female sabre fencers

Ye ZHANG (The Education University of Hong Kong)

Background and Objectives:

Sabre fencing demands high agility and rapid footwork. This pilot randomized controlled trial investigated whether 8-week rope ladder training improves basic footwork technique in adolescent female sabre fencers.

Methods:

Sixteen fencers were randomly assigned to an experimental group (n=8, rope ladder training) and a control group (n=8, traditional footwork training). Both groups trained 40 minutes per session for 8 weeks. Outcomes were the 30-second one-step lunge target practice (number of valid actions) and the "2–5–9–12 m" fencing step back-and-forth movement (completion time). Paired-samples and independent-samples t-tests were applied ($p<0.05$).

Results:

No baseline differences existed ($p>0.05$). After intervention, the experimental group showed significantly greater improvements in both the 30-second lunge practice ($p<0.01$) and the back-and-forth movement ($p=0.01$) compared with the control group.

Conclusion:

Rope ladder training effectively enhances footwork sensitivity, speed, and continuity in adolescent female sabre fencers, offering a practical supplementary training method.

P2-11 Experiential Anti-Doping Education via Role-Playing Script Games

Mr. HO Yik Kiu Kenneth (The Education University of Hong Kong)

Background and Objectives:

Traditional lectures on anti-doping regulations often fail to engage young athletes, leaving them vulnerable to unintentional anti-doping rule violations (ADRVs) and peer pressure (Filleul et al., 2025). Recent systematic and meta-analytic reviews highlight that effective programmes are multifaceted, values-based, and actively involve athletes, although long-term effects remain uncertain (Filleul et al., 2025; Reynoso-Sánchez et al., 2025). This project aims to design and prototype 《巔峰計劃》 (Peak Plan), an interactive script-killing (Jubensha) anti-doping education tool for elite youth athletes, coaches, and support staff, to strengthen ethical decision-making and adherence to clean-sport principles.

Methods:

Peak Plan is a text-based, multiplayer narrative centred on collaborative sensemaking, where participants each hold partial information and collectively resolve a shared dilemma (Liang et al., 2025). The scenario places participants in a training facility where a sample box of banned substances goes missing, with roles such as a pressured athlete, a coach tempted by victory, a financially strained team doctor, and a staff member with a past violation. Embedded content covers key prohibited substances, the Therapeutic Use Exemption process, the Strict Liability Principle, and consequences of ADRVs. Planned outcomes include doping susceptibility assessed via a validated hypothetical scenario item (e.g., considering use of an undetectable medically supervised banned substance), with higher ratings indicating greater susceptibility. Additional measures will capture moral disengagement in doping using the Moral Disengagement in Doping Scale (MDDS) and anti-doping knowledge (Deng et al., 2022; Manges et al., 2022; Murofushi et al., 2026; Ntoumanis et al., 2021).

Results:

At submission, Peak Plan's narrative, roles, learning objectives, and outcome measures have been fully developed and iteratively refined using current evidence on anti-doping education and serious-game design. No participants have been recruited and no data have been collected or analysed; Ethics Committee approval and informed consent procedures are being prepared.

Conclusion:

Peak Plan offers a novel, evidence-informed prototype that integrates values-based anti-doping content into an immersive role-playing game for elite youth sport. By targeting doping susceptibility, moral disengagement, and clean-performance values, it is positioned to complement existing values-based and coach-focused programmes while testing whether experiential game-based learning can enhance clean-sport motivation beyond traditional didactic education.

P2-12 同伴排斥的数字生态毒性：体育与社会适应的非线性调节

邓万里教授（兴义民族师范学院）

背景和目的：

研究基于生态系统理论与应激缓冲模型，探讨同伴排斥对青少年数字化行为风险的“生态毒性”触发路径，并考察社会适应的中介机制与体育锻炼量的非线性调节效应。

研究方法：

采用问卷调查法对4339名中学生进行调查，运用Python进行多路径回归、Bootstrap自抽样及限制性立方样条分析。

结果：

Harman单因子检验显示共同方法偏差（18.593%）合规。路径结果表明：同伴排斥对数字化风险的总效应显著（β=0.566），且显著负向预测各社会适应维度（β为0.661–0.902，p<0.001）。中介检验表明，社会适应在其中起全中介作用：同伴排斥主要通过侵蚀校园人际适应（间接效应–0.031）、常规适应（0.018）与家庭生活适应（0.067）间接触发数字化风险。此外，体育运动剂量对该路径具有显著的非线性阻断效应。限制性立方条样的拐点定位了“心理免疫”黄金剂量阈值：体育锻炼总量的黄金拐点为31.26分，运动强度（5），运动时间（3.21）与运动频率（1）。

结论：

研究揭示了数字化风险的人际代偿机制，学校应该限制学生每个月至少有1次自主锻炼，时间长度在21–30分钟和31–60分钟均可，而强度则是要求青少年以呼吸急促，出汗很多的大强度的持久的运动(如赛跑、成套健美操、游泳等)为主。研究结果为制定“剂量–效应”精准运动处方干预网络成瘾提供了科学依据。

P2-13 Effects of Rock Climbing on Health-Related Physical Fitness in Children with Autism Spectrum Disorder

Prof. Jing QI

To explore effective approaches for improving the health-related physical fitness (HPF) of children with autism spectrum disorder (ASD), this study aimed to examine the effects of a 6-week rock climbing intervention on the core indicators of their HPF. Methods Forty-one children with ASD were recruited from a special education school of Zhejiang Province, who were randomly assigned to either an exercise group (n=26) or a control group (n=15). The exercise group underwent a 6-week rock climbing intervention (three sessions per week, 40 minutes per session) in the school climbing gym, while the control group maintained their regular school activities. Changes in HPF indicators, including body composition, cardiorespiratory endurance, muscular strength and endurance, and flexibility, were assessed in both groups before and after the intervention using the following tests: body mass index (BMI), the 20-meter shuttle run, handgrip strength, sit-ups, the standing long jump, and the modified sit-and-reach test. Results Following the 6-week intervention, significant improvements (all $P < 0.05$) were observed in the post-test scores compared to baseline for children in the exercise group across the following measures: cardiorespiratory endurance (20-meter shuttle run), muscular endurance (sit-ups), lower-body strength (standing long jump), and flexibility (modified sit-and-reach test). However, no significant improvements were observed in either BMI or upper-body strength (handgrip strength) among children in the exercise group ($P > 0.05$). Conclusion A 6-week rock climbing intervention was found to effectively improve core HPF indicators in children with ASD, including cardiorespiratory endurance, muscular strength and endurance of the trunk and lower limbs, and flexibility. Under safe and controlled conditions, such adapted rock climbing programs may be promoted in school, community, and rehabilitation settings in the future to support HPF enhancement and health promotion for this population.

P2-14 SEND Students in Mainstream Schools are More Active and Physically Fit than Those in Special Schools

Dr. James Ho-pong WAN

Background:

Physical activity is central to promoting equitable health and participation opportunities for children and adolescents with special educational needs and disabilities (SEND), yet comparative evidence across school settings remains limited.

Objective:

To compare physical activity, physical fitness, well-being, and self-consciousness among students aged 6–17 years with SEND attending mainstream and special schools.

Methodology:

This cross-sectional study included 657 SEND students aged 6–17 years recruited across 50 local mainstream and special schools. Physical activity was assessed using the International Physical Activity Questionnaire. Physical fitness measures included body composition, flexibility (sit-and-reach), muscular strength (handgrip test), abdominal endurance (1-minute curl-up), and cardiovascular fitness (15m PACER). Well-Being and self-consciousness were assessed using the WHO–5 Well-Being Index and Self-Consciousness Scale–Revised, respectively. One-way ANCOVA compared outcomes by school types with age, gender and type of disabilities as covariates.

Results:

Compared with students in special schools, those in mainstream schools reported higher physical activity (M=3556.7 vs 2147.7 MET-min/week), performed better in flexibility (M=23.04 vs 19.09 cm), had greater muscular strength (M=18.88 vs 14.09 kg), had stronger abdominal endurance (M=22.05 vs 14.58 repetitions), and better overall cardiovascular fitness (M=16.56 vs 9.10 laps; all $p<.001$). No between-group differences were observed in weight, body mass index, or body-fat percentage (all $p>.05$). By contrast, students in special schools reported higher well-being (M=68.18 vs 56.22, $p<.001$) and slightly higher self-consciousness scores (M=78.63 vs 75.49, $p=.012$).

Conclusion:

SEND students in mainstream schools had higher physical activity and fitness, while those in special schools reported better well-being. These findings highlight the need for school-specific strategies to improve physical activity and psychosocial support.

Acknowledgment:

This study was supported by the Hong Kong Jockey Club Charities Trust. We thank participating schools, organizations, families, students, and the research team for their support.

P2-15 “双减”背景下课外体育活动参与度与初中生体育学业成绩的关联研究

郝志斌（广州体育学院）

背景和目标：

“双减”政策全面减轻了初中生课后作业与校外学科培训压力，有效释放了学生课余锻炼时间，为课外体育常态化开展、推进课内外体育一体化育人提供了良好政策环境。当前初中生普遍存在课外体育锻炼碎片化、主动锻炼意识薄弱、体育学业提升缓慢等问题。为系统探究课外体育活动参与度与初中生体育学业成绩的内在关联，揭示课外体育锻炼对体育学业发展的影响规律，为优化初中课后体育服务、提升学生体育学业质量提供实证依据与实践参考。

方法：

本研究以 3 所公办初中七至九年级 306 名学生为研究样本，主要采用文献资料法、问卷调查法和数理统计法开展研究。通过自编问卷从课外体育锻炼频次、单次运动时长、参与主动性等维度收集调研数据，运用 SPSS 统计软件对数据进行描述性统计、差异性检验及 Pearson 相关性分析，量化探究课外体育参与度与初中生体育学业成绩的相关关系。

结果：

研究表明，“双减” 后初中生课外体育整体参与水平有所改善，但仍存在主动参与率偏低、锻炼时长不足、运动碎片化、男女参与差异显著等问题。相关性分析显示，初中生课外体育活动参与频次、有效锻炼时长、主动参与程度与体育学业成绩均呈显著正相关，规律、持续的课外体育锻炼能够有效提升学生体能素质与运动技能掌握水平，对体育学业成绩具有明显促进作用。

结论：

研究表明，“双减” 后初中生课外体育整体参与水平有所改善，但仍存在主动参与率偏低、锻炼时长不足、运动碎片化、男女参与差异显著等问题。相关性分析显示，初中生课外体育活动参与频次、有效锻炼时长、主动参与程度与体育学业成绩均呈显著正相关，规律、持续的课外体育锻炼能够有效提升学生体能素质与运动技能掌握水平，对体育学业成绩具有明显促进作用。

P2-16 中国体育舞蹈运动员的动机及其对职业生涯的影响

倪旸（广州南方学院）

体育舞蹈作为竞技体育项目，其高强度竞争对运动员的运动表现与职业持续性构成挑战。动机是影响运动员训练与职业发展的心理驱动力，然而相关系统研究较为匮乏。本研究旨在探索中国体育舞蹈运动员的动机类型、动机质量的影响因素，及其对职业生涯与运动表现的影响。

基于自我决定理论与成就目标理论的整合框架，采用定性设计，对12名中国体育舞蹈运动员（5名现役、7名退役；平均年龄25.17岁，训练年限11.6年，均参加过国家级及以上赛事）进行半结构化深度访谈，运用主题分析法分析数据。

动机分为任务导向与自我导向。任务导向者关注自我超越，面对挫败时心理韧性更强，利于维持长期高水平表现；自我导向者依赖外部排名，短期可激发高动机，但长期因成绩波动或认可下降易倦怠而退役。动机质量方面，自主性、胜任感与关系感的满足显著提升内在动机：自主选择、教练认可与成绩反馈可增强胜任感；恶性竞争、裁判不公、师生紧张及舞伴破裂则损害关系感，致动机下降。此外，中国社会文化下的性别角色压力（女性婚育、男性经济负担）显著影响职业选择。

高质量、任务导向的动机是延长竞技寿命、维持高水平表现的关键，而低质量、自我导向的动机易导致提前退役。研究结果为教练优化心理训练、改善训练环境及制定职业方案提供实证依据，对竞技体育舞蹈人才培养与表现提升有实践指导价值。

P2-17 Group-Based Versus Individual-Based Fitness Training for People with Physical Disabilities in Hong Kong: A Randomized Controlled Trial Protocol

Ms. SO Ting Yuet (Hong Kong Metropolitan University)

People with physical disabilities (PWPD) often encounter barriers to sustained physical activity and accessible fitness opportunities. This study will compare the effects of group-based and individual-based fitness training on physical fitness, psychological outcomes, and health-related quality of life among PWPD in Hong Kong. It will also explore barriers and facilitators influencing programme participation and implementation.

A three-arm randomized controlled trial will recruit 60 PWPD through nongovernmental organizations. Eligible participants will be randomly assigned in a 1:1:1 ratio to group-based training, individual-based training, or a control group receiving health education. Both intervention groups will complete a 12-week programme involving two 60-minute sessions per week. Sessions will include warm-up, progressive resistance training, aerobic training, and cool-down. The group-based condition will emphasize peer interaction and social support, whereas the individual-based condition will provide individualized supervision. The control group will continue usual activities and attend health-education sessions.

Data will be collected at baseline, after the intervention, and 12 weeks after programme completion. Primary outcomes will be assessed using the Brockport Physical Fitness Test, including grip strength, dumbbell-press muscular endurance, shoulder flexibility, and skinfold-based body composition. Aerobic endurance will be assessed using a submaximal arm-ergometry test. Secondary outcomes will include physical-activity enjoyment, perceived social support, and quality of life measured using the SF-12 Health Survey. Attendance and activity records will be used to assess participation and adherence.

The Social Ecological Model (SEM) will guide the qualitative investigation of barriers and facilitators at individual, interpersonal, organizational, community, and policy levels. SEM will not be used as a measurement scale; instead, its domains will inform semi-structured interviews with selected participants and organizational stakeholders. Quantitative data will be analyzed using repeated-measures comparisons, and interview data will undergo thematic analysis.

The study will provide evidence to inform accessible, progressive, and socially supportive fitness programs for PWPD in Hong Kong.

P2-18 Metabolic Adaptation in Intermittent Energy Restriction: Evidence from a Systematic Review and Meta-Analysis

Ms. Jaclyn Hei TSANG

Background and Objectives:

Intermittent energy restriction (IER) has emerged as a potential alternative to traditional continuous energy restriction (CER) for weight management. This systematic review and meta-analysis aimed to determine whether IER is superior to CER in reducing metabolic adaptation, with a particular focus on changes in resting metabolic rate (RMR).

Methods:

A systematic search of four electronic databases was conducted for all available records up to June 2026. Random-effects meta-analyses were used to examine both between- group and within-group differences in RMR. Subgroup analyses were performed based on IER subtypes, including intermittent fasting (IF) and intermittent energy restriction with breaks (INTB), as well as intervention duration.

Results:

Fourteen randomized controlled trials comprising 575 participants met the inclusion criteria. Meta-analytic findings revealed that IER resulted in a significantly smaller decrease in RMR compared with CER (mean difference [MD] = −40.77 kcal/d; 95% CI = −69.04 to −12.47; P = 0.005), suggesting lesser metabolic adaptation. Some variations in response were noted between IER subtypes (IF and INTB), potentially due to differences in compensatory physiological mechanisms. The overall certainty of evidence, however, remained limited.

Conclusion:

Future well-designed studies are needed to further elucidate the metabolic impact of IER and its subtypes and to assess their long-term viability as sustainable weight management approaches.

P2-19 Temporal associations of the intensity of daily physical activity with sleep in primary school students

ZHANG Chang

Objectives:

This study aimed to investigate the distribution characteristics of physical activity (PA) at different intensities across four time periods of the day (6:00–23:59) and their associations with sleep health in primary school students.

Methods:

A total of 668 primary school students were recruited from Changsha and Guangzhou. Accelerometers were used to objectively measure physical activity and sleep parameters. Multiple linear regression was performed to examine the associations between light-intensity physical activity (LPA) and moderate-to-vigorous physical activity (MVPA) during the morning (6:00–11:59), afternoon (12:00–17:59), evening (18:00–20:59), and late-night (21:00–23:59) periods and sleep period time (SPT), total sleep time (TST), and sleep efficiency (SE).

Results:

(1) Both LPA and MVPA in primary school students exhibited a temporal distribution pattern, characterized by a gradual increase from morning to afternoon, peaking in the afternoon, followed by a progressive decline, and reaching the lowest level during the late-night period.

(2) Morning, afternoon, and evening LPA were significantly positively associated with SPT, TST, and SE ($P < 0.05$).

(3) Afternoon and evening MVPA were significantly positively associated with SPT, TST, and SE ($P < 0.05$).

(4) Late-night MVPA was significantly negatively associated with SPT and TST ($P < 0.05$).

Conclusion:

The associations between PA of different intensities and sleep health varied significantly by time of day in primary school students. LPA consistently showed a beneficial sleep-promoting effect during the 6:00–20:59 period, while MVPA was associated with improved sleep in the afternoon and evening. However, late-night MVPA may shorten sleep duration. Therefore, PA should be scheduled preferentially within the 6:00–20:59 period, late-night MVPA (21:00–23:59) should be avoided as much as possible, and the positive role of LPA in promoting sleep health should be emphasized.

P2-20 Effects of Self-Determination Theory–Based Digital Physical Education Homework on Homework Motivation and Physical Fitness in Junior High School Students

XU Honghan (Beijing Normal University)

Against the backdrop of the continued implementation of China's "Double Reduction" policy and the rapid digital transformation of education, digital physical education (PE) homework has increasingly become an important means of promoting students' participation in extracurricular physical activity. However, conventional PE homework is often characterized by monotonous task formats, insufficient process-oriented feedback, and limited motivation for sustained student participation.

Grounded in Self-Determination Theory (SDT), this experimental study examined the effects of SDT-based digital PE homework on homework motivation and physical fitness among junior high school students. A total of 85 eighth-grade students from the Experimental Middle School Affiliated with Beijing Normal University at Zhuhai participated in thestudy. Students in the experimental group completed digital PE homework designed according to SDT principles, whereas those in the control group completed conventional PE homework. The intervention lasted 10 weeks. Students' motivation and physical fitness were assessed using a physical education learning motivation scale and standardized physical fitness tests. Independent-samples t tests, repeated-measures analysis of variance (ANOVA), and mediation analysis were conducted to evaluate changes in homework motivation and physical fitness.

The results showed that, after the 10-week intervention, the experimental group demonstrated significantly greater improvement in the 50-m sprint and showed improved overall physical fitness compared with the control group. Although intrinsic motivation increased in the experimental group, the change did not reach statistical significance. Mediation analysis further indicated that intrinsic motivation did not significantly mediate the relationship between the digital PE homework intervention and improvement in 50-m sprint performance. These findings suggest that SDT-based digital PE homework can effectively facilitate improvements in students' physical fitness, particularly speed-related performance. Process tracking, immediate feedback, and evaluation mechanisms provided by digital platforms may help regulate and reinforce students' exercise behaviors. Nevertheless, the capacity of such interventions to enhance students' intrinsic motivation requires further optimization. The findings provide practical implications for the design of digital PE homework and the reform of school-based physical education.

P2-21 Physical Activity for Healthy Ageing: Personality Traits, Affective Function, and Brain Connectivity in Older Adults

Dr. Peggy Pui-lai OR (The Education University of Hong Kong)

Background:

Promoting physically active lifestyles is central to healthy ageing, physical education, and population health. Regular walking is an accessible, low-cost form of physical activity that may help older adults maintain psychological wellbeing, support adaptive health-related decisions, and reduce age-related functional decline. However, individual characteristics, including personality, may influence how older adults engage with and benefit from exercise interventions. This study investigated whether Big Five personality traits moderated the effects of a walking programme on health-related decision-making and salivary biomarkers in healthy older adults.

Methods:

A randomized controlled trial was conducted with 100 community-dwelling healthy older adults aged 60–74 years. Participants were randomly allocated to a walking intervention group or a control group. Pre- and post-intervention assessments included health-related decision-making, personality traits measured using the Big Five Inventory 10, and salivary biomarkers, including cortisol and tryptophan. Mixed-design 2×22 \times 22×2 MANOVAs were used to examine changes over time and group-by-personality interactions.

Results:

A significant time-by-group interaction was observed for extraversion, ($F(1,98) = 4.223$, $p = .043 < .05$, $\eta^2 p = .041$). Profile analysis indicated that highly extraverted older adults in the walking group demonstrated a meaningful increase in health-related decision-making scores, from 1.34 to 1.50. In contrast, participants with lower extraversion showed a decline relative to controls. No significant interaction effects were found for conscientiousness, neuroticism, agreeableness, or openness ($p > .05$). Physiological analyses showed no statistically significant group-by-time interactions for salivary cortisol or tryptophan.

Conclusion:

Walking may be a practical health-promotion approach for fostering active lifestyles and supporting health-related decision-making in later life, particularly among older adults with higher extraversion. The findings highlight the potential value of tailoring physical activit and health education programmes to individual

psychological characteristics. Larger trials with longer intervention periods are needed to clarify these effects and to inform personality-sensitive physical activity strategies for healthy ageing.

P2-22 Retrospective Descriptive Analysis and Comparisons of Risk Factors Between Injured and Non-injured Hong Kong Rugby Union Players Using the Machine Learning Approach

Miss Nicole Ka Ching LEE (Technological and Higher Education Institute of Hong Kong; The Chinese University of Hong Kong)

Background:

Rugby Union (RU) is a high-contact sport with significant injury burden. However, injury epidemiology and associated risk factors in the Hong Kong (HK) RU population are underexplored, and machine learning approaches to injury risk prediction have not been widely applied in this context.

Objectives:

To describe injury patterns, compare risk factors between injured and non-injured players, examine association between injury and risk factors and develop predictive models for injury risk among HK RU players.

Methods:

A retrospective descriptive analysis of injury reports from eight HK RU teams (2024-2025 season) was conducted. A cross-sectional survey (n = 111) collected demographic, training habit, protective equipment, and mental toughness data. Binary logistic regression and four machine learning models (Support Vector Machine (SVM), Random Forest, Extreme Gradient Boosting, and Logistic Regression) were developed and SHAP analysis was used for model interpretation.

Results:

The overall match- only injury incidence rate was 13.76 per 1000 player-hours (95% CI: 10.75–17.36). Contact injuries predominated (66.2%), with lower limb injuries most common (57.7%). Logistic regression identified mental toughness (OR = 1.142, p = 0.025) and education level (OR = 5.426, p = 0.024) as significant predictors. Machine learning model, SVM (accuracy: 69.9%), highlighted lower training experience and weekly training hours as important non-linear predictors.

Conclusion:

This study suggests that injury risk in Hong Kong RU is multifactorial, with contact and lower-limb injuries as the main injury burden. Traditional regression identified mental toughness and education level as statistically significant factors. Machine learning model highlighted age, education level, rigid taping use, lower rugby training experience and lower weekly training hours as important predictors of higher injury risk. These findings indicate that beyond demographic and psychological characteristics, inadequate preparatory conditioning may be a key risk factor. Injury prevention strategies should prioritize progressive conditioning, sufficient training exposure, and a more structured training monitoring for undertrained players.

P2-23 EcoFit Youth Project: Empowering Underprivileged Children through Health and Physical Education and Sustainable Cooking

MS KWOK Bo Ping Eva (The Education University of Hong Kong)

Background and Objectives:

The EcoFit Youth Project (EcoFit) is a community-driven initiative proposed in late 2024 and started in March 2025 and completed in March 2026 in To Kwa Wan Community Living Room (土瓜灣社區客廳) and Hung Hom Community Living Room (紅磡社區客廳). EcoFit aims to empower underprivileged children (about 200 -250 participants) through an integrated programme co-led by university student volunteers (20–30 students). The project specifically seeks to strengthen children's nutrition and health literacy, improve sustainable cooking-related skills, and promote regular physical activity to support physical fitness and mental wellbeing, while advancing community-level health and equity.

Methods:

EcoFit delivers three integrated components: (1) health and nutrition education (nutrition literacy, hygiene, and healthy living); (2) sustainable cooking skills using locally sourced ingredients through hands-on meal-preparation sessions; and (3) structured physical activity sessions designed to reduce sedentary behaviour and enhance physical and mental health. The programme is implemented through monthly interactive workshops (two to four sessions per month at each centre during both initial and ongoing phases). University students provide mentorship and instruction, supported by continuous feedback and refinement with community living room supervisors.

Results:

EcoFit is expected to produce measurable improvements in children's health-related knowledge and practical competencies (nutrition literacy and cooking skills), increased participation in regular physical activity, and enhanced personal and social skills such as confidence and teamwork. For university student volunteers, the initiative provides authentic teaching/mentoring experience, leadership development, and strengthened community engagement. For communities, EcoFit strengthens stakeholder collaboration and promotes sustainable health practices.

Conclusion:

EcoFit aligns with WHO-relevant SDGs, particularly SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), SDG 11 (Sustainable Cities and Communities), and SDG 17 (Partnerships for the Goals). By combining health education, sustainability-focused cooking, and structured exercise within community learning spaces, EcoFit offers a replicable community model for scaling to other settings and informing frontline practice toward more active, healthier, and more inclusive societies.

P2-24 Why Time Flies – And Why Time Drags: Reframing Subjective Time in Physical Education

Finley GEERLINGS (The Education University of Hong Kong)

Background and Objectives:

Educational research has devoted considerable attention to motivation, engagement, and enjoyment, yet has largely overlooked one of the most universal features of learning: how the passage of time is experienced. Lessons that appear to pass quickly are frequently described as engaging and worthwhile, whereas those in which time appears to drag are often remembered less favourably. This paper introduces a conceptual framework proposing subjective time as an important, but neglected, psychological construct within education.

Using physical education (PE) as an initial application, the presentation explores whether subjective time may represent a mechanism linking pedagogical experience with enjoyment, perceived value, and future participation.

Methods:

The presentation synthesises evidence from cognitive psychology, motivational science, psychophysiology, and exercise research to develop a conceptual model of subjective time in educational settings. It also outlines an emerging programme of school-based research in which repeated PE lessons will be used to investigate associations between perceived passage of time, enjoyment, perceived task value, behavioural intention, and physiological indices of attentional regulation.

Results:

The proposed framework positions subjective time as more than a consequence of engaging lessons, suggesting instead that it may contribute to how educational experiences are evaluated, remembered, and translated into future behavioural choices. The presentation identifies testable hypotheses and illustrates how PE provides a valuable context for investigating these relationships under ecologically valid conditions.

Conclusion:

Subjective time may represent a missing psychological construct within educational research. By positioning PE as a model environment for examining how temporal experience influences engagement and future participation, this framework offers a new direction for educational theory and research. The presentation introduces an emerging programme of work designed to evaluate whether the experience of time provides a novel pathway through which learning environments can foster sustained engagement and lifelong participation.

P2-25 The Benefits of AI-Adaptive Dance-based Exercise Intervention: A Narrative Review

Ms. MA Kaiting (The Education University of Hong Kong)

Background:

Exercise is important for the healthy ageing, standardized exercise prescriptions inadequately address the substantial heterogeneity of older adults in physical function, psychological status, cognitive capacity, behavioral patterns, and preferences. Artificial intelligence (AI) offers an emerging opportunity to transform conventional exercise prescription toward individualized and dynamically adaptive interventions. However, the current evidence and potential application of AI-adaptive exercise in older adults remain insufficiently synthesized.

Objectives:

This narrative review aims to critically examine the studies of AI-adaptive exercise interventions for older adults and explore how adaptive dance-based exercise may support different aspects of healthy aging.

Methods:

A narrative literature review was conducted using PubMed, Web of Science, and Scopus were searched for publications from January 2016 to August 2026. Search terms covered older adults, artificial intelligence, personalized and adaptive exercise, and dance-based exercise. Relevant literature was narratively synthesized with a focus on approaches to exercise adaptation, AI-enabled personalization, and physical, cognitive, psychological, social, and physiological outcomes.

Results:

A total of 120 studies were identified and screened with 22 studies included in the narrative synthesis. The literature suggests that AI-enabled systems can facilitate individualized exercise guidance, movement monitoring, and responsive feedback. Dance-based interventions provide a distinctive combination of physical activity, emotional experience, and social interaction. However, relatively few studies have integrated these domains within AI-adaptive exercise interventions for older adults.

Conclusion:

AI-adaptive dance-based exercise is a promising but still emerging approach to healthy aging. Future research should explore how AI can integrate information about physical performance, psychological well-being, behavior, and personal preferences to provide more individualized exercise programs.

P2-26 Community Environments and Active Transport in Relation to Physical Activity and Movement Skills among Children in Bangladesh

Mr. Hamza Saghir ASLAM (Hong Kong Baptist University)

Background:

Neighbourhood environments are important determinants of children's physical activity (PA) and fundamental movement skills (FMS), but evidence from low- and middle-income countries remains limited. The behavioural pathways linking environmental characteristics to child outcomes—particularly outdoor play and active transport—are not well established, especially in Bangladesh contexts. This study evaluates these relationships.

Methods:

A cross-sectional study was conducted among 507 primary school–aged children (6–12 years) from urban (n = 200) and rural (n = 307) Bangladesh. Parents reported perceived community access and safety and active transport environments, while children reported PA and completed the Test of Gross Motor Development-3 (TGMD-3) assessment of Fundamental Movement Skills (FMS). Multilevel models examined associations between environmental exposures and outcomes. Mediation was assessed using structural equation modelling for outdoor play balance, play location diversity, and active transport behaviour.

Results:

Higher community access and safety were associated with increased active play frequency (IRR = 1.18, 95% CI: 1.03–1.36), but not consistently with FMS or organised sport after adjustment. It was positively associated with outdoor play balance ($\beta = 0.40$, $p < 0.001$), but not with play location diversity or active transport. In pathway-adjusted models, outdoor play balance and play location diversity were independently associated with active play and selected outcomes, while active transport was not. Rural children demonstrated more favourable environmental exposures and movement outcomes overall, although associations between access and safety and active play and object control skills were stronger in urban children.

Conclusion:

Community environments influence children's movement behaviours in Bangladesh primarily through outdoor play rather than active transport. Urban children appear more sensitive to environmental variation, suggesting greater marginal benefits from improvements in access and safety in constrained settings. Interventions should prioritise safe, accessible, and diverse opportunities for outdoor play to support children's PA and motor development.

P2-27 Effects of an 8-Week Combined Cognitive Training and Physical Activity on Inhibitory Control in Children with ADHD: A Randomized Controlled Trial

Miss Kunyi HUANG (The Education University of Hong Kong)

Background:

Children with Attention-Deficit/Hyperactivity Disorder (ADHD) commonly exhibit executive function deficits, particularly in inhibitory control. Cognitive training (CT) and physical activity (PA) may improve executive function, but evidence on their combined effects remains limited. This randomized controlled trial examined the effects of CT, PA, and combined CT+PA on inhibitory control in children with ADHD.

Methods:

Eighty-nine children with ADHD aged 8–13 years were randomly assigned to a CT group, PA group, CT+PA group, or control group. The interventions lasted 8 weeks, with three 40-minute sessions per week. The CT group received computerized cognitive training, the PA group performed moderate-intensity rope skipping and slow running, and the CT+PA group completed 20 minutes of PA followed by 20 minutes of CT per session. The control group maintained usual daily activities. Inhibitory control was assessed using the Stroop Color–Word Test under neutral, congruent, and incongruent conditions. Data were analyzed using two-way repeated-measures ANOVA.

Results:

No significant changes were found in accuracy or reaction time under neutral or congruent conditions. Under the incongruent condition, accuracy showed a significant main effect of time, indicating overall improvement from pre- to post-test. Significant accuracy improvements were observed in the CT (mean difference = −0.053, SE = 0.025), CT+PA (mean difference = −0.117, SE = 0.027), and PA group (mean difference = −0.089, SE = 0.027) (all $p < 0.05$), but not in

the control group. Reaction time showed a significant group × time interaction. All intervention groups demonstrated significant reductions in reaction time, with the largest improvement in the CT+PA group (mean difference = 190.68, SE = 24.08), followed by the PA and CT groups, when compared with the control group.

Conclusion:

CT, PA, and combined CT+PA interventions improved inhibitory control in children with ADHD, with the combined intervention showing the strongest effect on reaction time.

P2-28 **Effects of a Preschooler-focused Physical Activity Intervention on Promoting Parent-Child Activity Levels and Relationship: Preliminary Results of an Exploratory Cluster Randomized Controlled Trial**

Dr. Whitney Wing Yin, AU (The University of Hong Kong)

Background and Objectives:

Physical inactivity is a public health crisis affecting both children and adults. Acknowledging the dependent relationship between children and parental physical activity (PA), mitigating intergenerational inactivity through family-based interventions may be promising. However, besides scarce rigorous evidence informing efficacy, most studies targeted older children and fathers only. Nonetheless, most positioned parents as the change pivot, underinvestigating children's ability to influence family behaviours. Therefore, this study explored the effects of a preschooler-focused PA intervention with family components on promoting preschoolers' and their parents' PA. As effectiveness of family-based interventions on PA may be mediated by parent-child relationship, a significant determinant of preschoolers' all-rounded health, effects on it will also be examined.

Methods:

This is an ongoing cluster randomized controlled trial involving random parent-child dyads participating in the KID-FIT study. Families were allocated into intervention and control groups according to children's preschool randomization. Intervention preschoolers attended in-school 75-minute game-based PA classes twice weekly on top of usual curriculum, while families received weekend PA assignments and leaflets that encouraged active lifestyle.

Parent and child PA, as well as parent-child relationship were assessed at the start and end of intervention (a 10-month preschool year). Linear mixed models assessed treatment effects.

Results:

Preliminary analysis of 49 parents [control 18, intervention 31; mean age=38.44 (SD 4.27); 28 fathers, 21 mothers] found no significant effects on children and parent PA, or parent-child relationships (all $p>0.05$). Results were consistent after adjusting for family demographics.

Conclusion:

Initial findings showed limited effects of a preschooler-focused PA intervention on promoting parent-child PA and relationships, suggesting that primarily intervening young-aged children might be insufficient in fostering family PA behavioural changes. However, results remain exploratory given a small and imbalanced sample size. Findings should be substantiated at trial completion and in future fully-powered studies, hoping to alleviate cross-generational physical inactivity and improve family health.

POSTER SESSION 3

P3-1 Motor Performance and Reaction Speed in an Esports Multiplayer Online Battle Arena (MOBA) Training

Maorun ZHANG (Lingnan University)

Background and Objectives:

In recent years, multiplayer online battle arena (MOBA) games represented by "King of Glory" have been widely popular among teenage students. A long-standing debate in sports education and youth development research is whether structured MOBA esports exercises can effectively improve human responsiveness. This study explores whether short-term structured MOBA esports training can produce reaction speed improvement.

Methods:

Forty Chinese male participants (n=40) aged 16-19 with no experience in MOBA training were recruited and randomly divided into two groups of 20 each: a control group and a MOBA esports (King of Glory) training group. The training group completed 1.5 hours of moderate-intensity training every day for a month. The training was implemented in the King of Glory standard games with reaction and response enhancement, under the supervision of an esports instructor. The control group was not involved in any training. The outcome measurement tools include a human baseline online reaction time test, a 10-item self-report questionnaire used to measure improvement in subjective response performance. All participants completed online reaction speed measurements before and after the training for cross-group comparison.

Results:

The results of the reaction time test showed that MOBA esports training produced a trend of improved reaction speed. The MOBA esports training group scored high on the questionnaire for multi-information processing and rapid information judgment tasks.

Conclusion:

Motor Performance and Reaction Speed were observed to show improvement in MOBA training. The esports could enhance the reaction and response, however the possibility of skill transfer will need further study.

P3-2 Physical Activity Interventions and Theory Use Among Adults With Physical Disabilities: Systematic Review

Ms. Yuxin ZOU (Shanghai University of Sport)

Background and Objectives:

Adults with physical disabilities often report low physical activity (PA) participation, shaped by individual, social, and environmental factors. Although interventions have sought to increase PA in this population, existing studies vary in target groups, intervention content, outcome measures, and theoretical frameworks used. This review synthesized PA intervention studies in this population and described the theoretical frameworks used to inform future PA intervention design and evidence synthesis.

Methods:

Literature published from 2006 to 2026 was searched. Eligible studies included adults with physical disabilities, evaluated interventions intended to increase PA, and reported at least one PA outcome; studies reporting only health, function, symptom, or association outcomes were excluded. We extracted study design, disability characteristics, intervention content, PA measurement and theoretical frameworks used, and theory-related construct outcomes. Randomized reports were assessed using RoB 2.

Results:

Fourteen PA intervention studies met the eligibility criteria; 12 provided sufficient intervention and PA outcome information for synthesis. Evidence was concentrated in spinal cord injury, with limited coverage of other groups. Interventions included exercise training, behavioural support, remote programmes, and community-based approaches. However, most studies were small, and PA outcome measurement, follow-up assessment, and statistical reporting were inconsistent. Long-term PA maintenance was not consistently assessed. Twelve reports were judged overall high risk of bias, mainly due to incomplete PA outcome data and self-reported PA measurement bias. Regarding theoretical frameworks used, seven of these studies reported using an explicit behavioural theory or model to inform the intervention or study design.

Conclusion:

included interventions may promote PA, but the evidence is limited by uneven disability coverage, small samples, inconsistent PA outcome reporting, insufficient long-term follow-up, and unclear intervention mechanisms. Future studies should broaden disability coverage, improve PA reporting, and examine how theory-related constructs link intervention components with PA change.

P3-3 “育人”视域中的体育教育：基础教育体育课程知识的价值论反思

颜旭（广州体育学院）

背景：

基础教育体育课程长期围绕运动技能、体质健康等功能目标组织知识，缺乏对“何种体育知识最具育人价值”的价值论审视。本研究基于立德树人根本任务与《义务教育体育与健康课程标准（2022年版）》核心素养导向，旨在揭示体育课程知识育人价值旁落问题，探讨课程知识观重建方向。

方法：

采用理论分析与概念辨析方法。以具身认知理论“身体是认知、情感与意义生成的主体”和身体素养理论的多维整合视角为分析框架，结合课程政策文本，从价值论层面辨析训练性与教育性知识、工具价值与内在价值、技能掌握与身体理解三对关系，揭示工具理性对体育教育的侵蚀。

结果：

体育课程知识不应还原为竞技技术、体能指标或健康手段，其本质是“以身体为中介的教育性知识”。课程知识工具化表现为：以运动成绩替代身体发展，以分解技术替代运动文化，以量化指标替代教育性判断。其根源在于将学校体育等同于竞技训练或健康管理，遮蔽育人价值。

结论：

应确立育人本位的体育课程知识观，将运动表现、身体素养、运动文化转化为教育性任务，需在课程标准、教学设计、教师教育三个层面协同推进，使体育课程知识真正服务于学生完整人格发展。

P3-4 SmartCourt: Integrating Digital Technology, Computer Visioning, and Performance Analytics in Sport Education and Research

Mr. Yuxin ZUO (The Education University of Hong Kong)

The rapid advancement of digital technologies has transformed the ways in which sport performance, coaching, and education are delivered. To address the growing demand for technology-enhanced learning and evidence-based performance analysis, the Department of Health and Physical Education at The Education University of Hong Kong (EdUHK) established the first SmartCourt facility in Hong Kong. The SmartCourt project aims to create an integrated digital sport environment that combines multi-angle video capture, live streaming, cloud-based storage, computer vision, and analytics tools to support teaching, coaching, research, and athlete development.

At the core of SmartCourt is a video-based analysis system that supports both real-time and post-event performance review. Through synchronized multi-angle recording, live streaming, and on-site replay functions, students, coaches, and athletes can immediately review training sessions and competitions from different perspectives. The platform enables users to analyze technical skills, tactical decisions, and game situations during and after performance, facilitating reflective learning, coaching feedback, and evidence-informed decision-making. These capabilities transform sporting activities into rich digital learning materials that can be revisited for teaching, learning, and performance enhancement purposes.

Building upon these video-based functionalities, SmartCourt has expanded into computer vision-driven sports analytics. A recent development is an automated volleyball trajectory analysis system capable of detecting and visualizing ball trajectories during setting and spiking actions. The system generates trajectory maps, heat maps, key-coordinate visualizations, landing-point distributions, and dynamic playback previews to provide objective performance feedback. Additional functions, including video highlighting, coach annotations, and automated report generation, further enhance the efficiency of performance review and athlete development. At the same time, technologies for player recognition, posture analysis and 3D-to-2D conversion are also being developed in basketball. By converting raw video footage into meaningful performance insights, computer visioning extends the educational and analytical value of digital learning resources.

The SmartCourt project demonstrates how the integration of video-based learning resources and computer vision technologies can enhance sport education, coaching practice, and research. The project provides a practical model for future smart sport facilities that seek to combine technology, pedagogy, and performance analytics to support innovation in teaching, learning, and athlete development.

P3-5 **Aligning School and Family Interventions: ACT and Positive Discipline for Adaptive Perfectionism in Chinese Secondary Students**

Ms. HUANG Xiaofen (The Education University of Hong Kong)

How the alignment of School-based ACT and Positive Discipline Parenting (PDP) Program Contributes to the Development of Adaptive Perfectionism and Stress Alevation among Chinese Secondary School Students: A Mixed-method Study

Background and Objectives:

Perfectionism is highly salient among Chinese secondary students, yet adaptive perfectionism remains under-researched in non-Western contexts. Grounded in attachment theory, self-compassion research, and Acceptance and Commitment Therapy (ACT), this sequential mixed-methods study aims to (1) explore cultural manifestations of adaptive and maladaptive perfectionism, (2) examine self-compassion as a mediator and core ACT processes as moderators in the attachment-perfectionism relationships, and (3) evaluate the efficacy of a culturally adaptive school-based ACT program and its synergy with a Positive Discipline parenting program (PDP) in promoting adaptive perfectionism and reducing perceived stress among Grade 7-9 students in in Wenzhou, China.

Methods:

Study 1 will employ reflective thematic analysis of semi-structured interviews with students, parents, and teachers using purposive maximum variation sampling. Study 2 will use cluster random sampling (target >= 1200) to test a moderated mediation structural equation model, with self-compassion as mediator and cognitive defusion, present-moment awareness, and values clarification as moderators. Study 3 will implement a 2x2 factorial cluster randomized controlled trial (target n = 160) comparing ACT-only, combined ACT+PDP, and waitlist control conditions, with assessments as baseline, post-intervention, and 3 month follow-up.

Results:

Data collection is forthcoming. It's anticipated that secure attachment will predict adaptive perfectionism through self-compassion, with ACT processes strengthening the pathway. It's further expected the combined ACT+PDP intervention to yield superior and more sustained improvements in adaptive perfectionism and stress reduction compared with single-system approaches.

Conclusion:

This study will advance cross-cultural perfectionism research and provide evidence-based, culturally relevant tools for Chinese schools and families.

P3-6 **Gender Differences in the Effects of High-Intensity Interval Training and Moderate-Intensity Continuous Training on Serum Uric Acid Levels in Sedentary College Students**

TANG Xiao (Shenzhen University)

Background and Objectives:

Hyperuricemia has emerged as the second most prevalent metabolic disorder in China, with rapidly rising prevalence among young adults. Sedentary college students represent a high-risk group due to prolonged sitting and irregular lifestyle habits. This study aimed to compare the regulatory effects of high-intensity interval training (HIIT) and moderate-intensity continuous training (MICT) on serum uric acid (SUA) levels in sedentary college students and examine potential gender differences, providing empirical evidence for gender-specific campus exercise intervention programs.

Methods:

A randomized crossover experimental design was adopted. Nineteen sedentary college students (9 males, 10 females) meeting inclusion criteria were enrolled and stratified by gender. Each participant completed two 2-week exercise intervention phases with a 1-week washout period between phases. Males commenced with MICT (treadmill running, 30 min/session, RPE 4–6) and females with HIIT (cycle ergometer, 15 min/session, 1-min sprint / 30-s recovery × 6 sets, RPE 7–8), then crossed over to the alternate exercise mode in the second phase. Both interventions were administered 3 times weekly. SUA was measured at four time points: before and after each phase. Statistical analyses included repeated measures ANOVA, paired-sample t-tests, and independent-samples t-tests.

Results:

MICT produced a slight reduction in SUA (−7.74 μmol/L) whereas HIIT caused a minor elevation (+6.68 μmol/L); the difference between modes was not statistically significant ($P = 0.60$). No significant gender differences were found in SUA responses to either exercise mode. No significant time × intervention type interaction was observed. A significant main effect of gender was confirmed, with males exhibiting markedly higher baseline SUA

levels than females (479.89 ± 66.23 vs. 376.30 ± 46.20 μmol/L, P < 0.01). Overall, short-term exercise training yielded no significant regulatory effect on SUA in sedentary college students.

Conclusion:

Short-term HIIT and MICT do not significantly modify SUA levels in sedentary college students, and gender does not influence the urate-regulating efficacy of either mode. Given the high prevalence of dysregulated SUA metabolism in this population, longer-duration and personalized exercise strategies are warranted. These findings inform university health policy and the design of preventive metabolic health interventions for young sedentary populations across Asia.

P3-7 学龄儿童书包负担与腰背痛关系的系统综述

周漫璐女士 (香港教育大学)

背景:

腰背痛及其他形式的背部疼痛在儿童和青少年中日益受到关注，可能影响其长期肌肉骨骼健康。学校背包的使用作为一种可调节因素，被广泛研究为可能的腰背痛诱因。然而，现有研究在方法学质量、病例定义及暴露测量方面差异显著，证据不一致。本系统综述旨在综合评估背包使用与学生背痛之间的流行病学证据，分析方法学质量，并指出问卷设计的改进方向。

方法:

通过检索 PubMed、Web of Science 和 EBSCO 数据库（2000年1月至2025年4月），辅以参考文献的人工筛查，纳入符合条件的观察性研究。纳入标准为研究背包相关因素与腰背痛患病率关系的学龄儿童（6—19岁）调查。最终共纳入 17 篇研究（16 项横断面研究，1 项纵向研究），总样本量 29,822人。提取信息包括研究特征、不同回忆周期的患病率、背包相关和其他潜在风险因素、以及方法学质量评分。

结果:

在纳入的 9 个背包相关因素中，背包时间、背包重量、主观因果认知、携带方式及重量感知与腰背痛风险之间存在不一致的显著关联，部分研究呈现剂量—反应关系。背包类型及往返学校的交通工具均未显示与腰背痛的显著关系。有关“谁背书包”与“携带书包数量”的调查仅见于单项研究，前者与腰背痛风险无显著关联，后者则显示显著关联。

31 个非背包的潜在腰背痛风险因素，其中 18 个因素在多于 1 项研究中被考察，座椅靠背适配性与腰背痛患病率之间存在稳定关联；父母的教育和使用储物柜中被认为无关联性。剩下的15个因素结果不一致。还有13 个因素仅在单一研究中被评估，其中5个显著关联的因素，8个无显著关联的因素。

尽管现有研究总体方法学质量中等偏上，但普遍存在问卷信效度不足、因素定义及测量方法不统一、混杂因素控制不充分等问题。多数文献为横断面调查，无法建立因果推断，且回忆周期与腰背痛界定的多样性限制了研究间结果的可比性与整合性。

结论：

背包使用并非学生腰背痛的唯一风险因素，但可能是重要的风险因素。双肩对称背负在腰背痛预防风险方面具有一定保护作用。现有背包相关变量的测量工具需进一步完善和标准化。未来应开展前瞻性队列研究，量化累积风险因素并验证长期负重与腰背痛的因果关系，以支持循证的学校健康政策与早期预防策略。

P3-8 Effects of Graded Vestibular Rotational Stimulation on Motor and Cognitive Behaviors in Mice

WEI Tianhe (Beijing Normal University)

Background:

Changes in gravity and body motion can alter vestibular input and may affect movement and cognitive performance. However, it remains unclear whether increasing levels of rotational vestibular stimulation produce distinct behavioral effects. We developed a graded rotational stimulation model to examine how stimulation intensity influences different behavioral domains in mice.

Methods:

Sixteen 8-week-old male C57BL/6J mice were randomly assigned to control (CON), 1/6G, 3/8G, and 2G stimulation conditions (n=4/group). Mice were positioned head-outward at the edge of a rotating platform with a radius of 15cm. Each cycle consisted of 180s clockwise rotation, 30s stop, 180s counterclockwise rotation, and 30s stop, repeated for 60min. Open-field, rotarod, balance-beam, Y-maze, and novel object recognition tests were performed before and immediately after stimulation.

Results:

Behavioral effects varied with stimulation intensity. Spatial working memory was affected at lower intensities, with Y-maze spontaneous alternation decreasing by approximately 16%, 24%, and 40% in the 1/6G, 3/8G, and 2G groups, respectively (all $p < 0.01$). Motor impairment became more evident at higher intensities, with rotarod latency decreasing by approximately 14%, 31%, and 62%, respectively, reaching significance at 3/8G and 2G ($p < 0.05$ and $P < 0.0001$, respectively). The 2G group also showed a more than five-fold increase in balance-beam traversal time ($p < 0.0001$) and reduced open-field activity ($p < 0.05$).

Conclusion:

Graded rotational stimulation produced intensity-related behavioral changes, with cognitive changes detectable at lower stimulation levels and pronounced motor and postural deficits emerging at higher levels. These findings suggest that different behavioral domains may have distinct sensitivities to acute rotational vestibular stimulation.

Funding:

Supported by Beijing Natural Science Foundation (Grant No. BJNSF7262166)

P3-9 AI驅動個人化回饋與大學生體育學習投入：基於自我決定理論的動機機制框架

馬傑駒（廣州體育學院）

針對大學公共體育課堂學生運動基礎差異較大、教師難以持續提供個別化回饋的問題，本文以自我決定理論建構AI驅動個人化回饋影響體育學習投入的概念架構。框架採用理論驅動的演繹路徑形成：首先將AI回饋的即時性、針對性與適應性映射至自我決定理論中的勝任感與自主感支持；繼而結合個人化回饋、AI輔助回饋及體育教育領域關於「心理需要支持—學習動機—學習投入」的既有實證證據，提出「技術回饋—激發學習投入」的作用。具體而言，AI可藉助動作辨識與學習分析，根據學生運動表現與學習過程提供差異化回饋，幫助學生辨識問題、明確改善方向並增強勝任感與自主感，進而提升體育學習動機，並促進其行為、認知與情感投入。現有研究總體證明，個人化與AI輔助回饋對學習動機、學習參與及學習結果具有積極或情境依賴的促進作用；體育教育研究亦支持自主支持和勝任支持透過動機機制關聯學生投入與活動行為。基於此，本文將AI定位為教師判斷與個別化指導的補充，而非替代，並提出可供後續實證檢驗的理論命題。

P3-10 From Certification to Professional Practice: Lessons from Football Referee Development in Japan

Mr. Fu Ming (Capital University of Physical Education and Sports, Waseda University)

Background:

Becoming a qualified football referee is only the beginning of professional development. Progression to higher levels requires continuing education, match experience, regular assessment and feedback, and the ability to adapt to changes in the game. Japan provides a useful example of how these elements can be connected within a structured referee development pathway. This paper examines the Japanese experience and considers its relevance to professional practice in sport across Asia.

Professional Practice:

The paper discusses key features of referee development in Japanese football, including qualification and progression, referee education, match-based learning, assessment and feedback, and pathways from grassroots and university football to professional and international levels. Publicly available regulations, educational materials, and development guidelines are considered alongside a practitioner-researcher perspective based on direct experience within the Japanese refereeing environment. Attention is also given to changing professional demands associated with technologies such as the Video Assistant Referee (VAR).

Insights:

The Japanese experience shows that referee development extends beyond obtaining a licence. Professional competence is developed through a continuing process of education, practice, assessment, feedback, and progression. Modern refereeing also requires competencies beyond knowledge of the Laws of the Game and physical preparation, including decision-making, communication, teamwork, psychological readiness, technological literacy, and adaptability.

Implications:

The Japanese case highlights the value of viewing professional development as a continuing pathway rather than a one-time certification process. It offers a practical reference for wider discussions in Asia on professional standards, continuing professional development, quality assurance, and stronger links between education and professional practice in sport.

P3-11 Coach-Athlete Attachment Dimensions across China-based and UK-based Training Contexts: The Mediating Role of Psychological Safety in University Badminton

Rachel Yuanyuan GUO (Loughborough University)

Background:

The coach-athlete relationship is central in athletes' engagement and development in sports. Coaching cultures and relational norms vary across training contexts, and athletes' attachment dimensions also differ. However, the mechanisms involved remain unclear. This study investigated whether psychological safety mediates the association between training context and attachment dimensions among university badminton players in China-based and the UK-based contexts.

Methods:

The sample consisted of 246 players (China-based: n = 151; UK-based: n = 95; Mean age = 21.72 ± 2.71 years). Attachment dimensions were measured using the ECR and CAAS; psychological safety was assessed using Edmondson's scale. Group differences were explored using MANOVA and independent samples t-tests; mediation was explored using R with 5000 bootstrap resamples.

Results:

China-based athletes scored significantly higher than UK-based athletes on anxious and avoidant attachment (Pillai's Trace = .206, $p < .001$). There was no significant group difference in secure attachment. China-based athletes also reported lower psychological safety ($t(243) = 3.538$, $p < .001$). Psychological safety mediated avoidant attachment (ACME = 0.098, $p = .046$). In the case of secure attachment, indirect and direct effects ran in opposite directions (ACME = −0.275, $p < .001$; ADE = 0.398, $p = .002$), resulting in a non-significant total effect. The mediation effect was non-significant for anxious attachment (ACME = 0.064, $p = .177$), but the direct effect was strong (ADE = 1.067, $p < .001$).

Conclusion:

China-based athletes have higher anxious and avoidant attachment and lower psychological safety than UK-based athletes, with differential mediation across attachment dimensions. In large power distance training contexts, secure attachment is not solely associated with psychological safety; high coach involvement represents an independent pathway. In training contexts where Eastern and Western coaching cultures meet, such as Hong Kong, coaching practice may pay attention to both psychological safety and coach involvement.

P3-12 Behavioral alterations and serum C-terminal agrin fragment elevation following hindlimb unloading in mice: implications for exercise and health under simulated microgravity

Zixi DENG (Beijing Normal University)

Background:

Prolonged microgravity exposure induces neuromuscular deconditioning that compromises motor function and physical health, yet the relationship between behavioral performance changes and blood-based biomarkers of neuromuscular junction injury remains poorly characterized.

Methods:

Twenty male C57BL/6J mice (7–8 weeks) were randomly assigned to control (Con, n=10) or 28-day hindlimb unloading (HU, n=10) groups with a head-down tilt of approximately 30°. Motor coordination and balance were assessed using rotarod and balance beam tests; spontaneous activity and exploration were evaluated in the open field test. Serum C-terminal agrin fragment (CAF) and neurofilament light chain (NfL) were measured by ELISA.

Results:

HU mice exhibited significant body weight suppression from day 14 and reduced gastrocnemius mass ($p<0.0001$). Rotarod performance declined significantly ($p<0.01$) and balance beam traversal time was prolonged, indicating impaired motor coordination and balance. Open field testing revealed reduced total distance, mean velocity, and center crossings ($p<0.05$), with no change in center time, suggesting decreased activity and exploration without elevated anxiety-like behavior. These deficits showed partial recovery 24–48 hours after reloading. Serum CAF increased progressively, reaching significance at day 28 ($p<0.05$), and partially reversed after 7 days of recovery. NfL showed a trending increase without significance.

Conclusion:

Twenty-eight-day simulated microgravity induces coordinated declines in motor coordination, balance, and exploratory activity, accompanied by elevated serum CAF. The parallel changes in behavioral performance and CAF suggest that CAF may serve as an early blood-based indicator of neuromuscular deconditioning, with implications for monitoring exercise countermeasures and preserving motor health in spaceflight and prolonged bed rest populations.

P3-13 社区体育干预对久坐成年人身心健康的影响

王伟（广州体育学院）

目的：

探讨12周社区体育活动干预对久坐成年人身体机能与心理健康的影响，为社区健康促进提供实证依据。

方法：

采用准实验设计，从两个条件相近的城市社区招募48名40—55岁久坐成年人，分为干预组（n=24）和对照组（n=24）。干预组接受为期12周、每周3次、每次60分钟的中等强度有氧运动结合抗阻训练，对照组维持原有生活方式。干预前后测量握力、坐位体前屈、6分钟步行测试及PHQ–9抑郁量表、SF–36健康问卷，采用独立样本t检验和协方差分析处理数据。

结果：

干预后，干预组6分钟步行距离（+42.3 m）、握力（+2.1 kg）和PHQ–9得分（−3.4）较基线显著改善（P<0.05），控制基线值后组间差异仍显著（P<0.05）；体质指数无显著变化。

结论：

12周社区体育干预可有效改善久坐成年人的心肺耐力、肌肉力量及抑郁症状，是促进社区居民身心健康的可行、经济有效途径。

P3-14 Acute Vestibular Perturbation Reduces Spatial Navigation Efficiency in Healthy Young Adults

LIU Ruofan (Beijing Normal University)

Background and Objectives:

Many sports and dynamic operational scenarios involve rapid body reorientation and continuous spatial updating. Effective performance in these settings depends on the integration of vestibular information to support spatial orientation and navigation during movement. This study therefore examined how acute vestibular perturbation influences spatial navigation efficiency in healthy young adults.

Methods:

Thirty healthy participants (15 men, 15 women; 18–25 years) completed a within-subject pre–post experiment. Vestibular perturbation was induced by passive chair rotation at 180°/s combined with alternating lateral head movements. Before and immediately after perturbation, participants completed a virtual Morris water maze consisting of visible-platform trials, 16 hidden-platform trials organized into four learning blocks, and a probe trial. Navigation time, path length, success rate, and target-directed search measures were assessed using repeated-measures analyses and paired comparisons.

Results:

(1) Performance in the visible-platform trials remained unchanged after vestibular perturbation ($p > 0.05$).

(2) In the hidden-platform task, navigation time and path length increased significantly ($p = 0.032$ and $p = 0.023$, respectively), while success rate remained unchanged.

(3) In the probe trial, time spent in the target quadrant decreased significantly ($p = 0.012$), whereas other probe-trial measures showed no significant changes.

Conclusion:

Acute vestibular perturbation reduces spatial navigation efficiency and weakens target-directed spatial search while preserving basic visually guided navigation. These findings support an important role of vestibular processing in spatial orientation and may have implications for sport and other dynamic settings requiring rapid body reorientation and continuous spatial updating.

P3-15 An Investigation into the Consumption Behavior of Urban Marathon Participants from the Perspective of AISAS

Miss Hao ZHAO (Shandong University of Finance and Economics)

Objectives:

To explore the characteristics and patterns of consumption behavior among urban marathon participants within the AISAS framework.

Methods:

Literature review, mathematical statistics, and questionnaire surveys.

Results:

(1) Marathon participants' consumption behavior aligns with consumer behavior patterns in the digital era, They have evolved into rational consumer decision-makers who exhibit a strong proactive approach to information gathering and strive to maximize their consumption utility.

(2) Demographic variables exhibit stratified effects on consumption expenditures, with significant differences in sensitivity across consumption categories.Gender, place of permanent residence, and participant category are core influencing variables; annual income and whether it is the participant's first time competing are important influencing variables; age, education level, occupation, competition format, and number of peers are marginal influencing variables. Round-trip transportation costs and accommodation expenses are highly sensitive to the heterogeneity of participants; in contrast, intra-city transportation costs and the cost of newly purchased equipment are less influenced by demographic variables.

(3) The number of expected stay days is the only variable showing direct and significant impact on consumption expenditures, demonstrating a positive correlation.

(4) Certain traditional demographic variables (such as gender, place of residence, annual income, and whether it was the first time participating) exhibit significant explanatory power regarding consumption expenditure, whereas variables like age, education level, and occupation demonstrate limited explanatory power, attributed to: homogeneity among marathon participants, the sport's nature fostering shared values beyond demographic factors, and the functional and context-dependent nature of marathon-related expenditures.

Conclusion:

This study contributes to enriching and expanding the theoretical framework of marathon event consumption behavior. The findings provide a baseline reference for subsequent longitudinal research and an analytical framework for comparing consumption characteristics across different cities, thereby advancing the field from fragmented descriptions to systematic theoretical development in marathon event consumption research.

P3-16 身体技术与文化整合：中医“治未病”理念融入大学生运动队损伤预防的可行性、逻辑与体系构建

涂智兴先生（福建医科大学）

背景：

非体育专业大学生运动队运动损伤高发且缺乏系统性预防管理，现有干预方案多面向专业运动员，未能充分回应普通大学生的身体实践特征与文化情境。中医“治未病”理念蕴含“未病先防、既病防变、瘥后防复”的层次化预防逻辑，与运动损伤预防高度契合，但其融入高校体育教育体系的可行性基础、理论逻辑与制度路径尚缺乏系统建构。

目标：

从社会学与人类学交叉视角出发，探讨中医“治未病”理念融入非体育专业大学生运动队损伤预防的可行性条件，梳理其内在逻辑链条，并构建以体育教育为载体的整合性专业实践体系。

理论视角与方法：

理论视角与方法：以布迪厄实践理论（场域、惯习、身体资本）与医学人类学（地方性知识、身体技术、文化漂移）为核心理论工具，采用理论建构与文献推演的方法，结合政策文本分析与既有实证证据，进行多层次逻辑论证与体系设计。

核心發現：

(1) 文化可行性、制度可行性、操作可行性与社会可行性共同构成中医“治未病”融入大学生运动队的可行性基础，其关键在于文化适应性与教育可及性；

(2) “治未病”理念可转化为预防逻辑、管理逻辑、康复逻辑与教育逻辑四重递进链条，形成从体质辨识到行为养成的完整理论闭环；

(3) 基于上述逻辑，构建了涵盖主体层、内容层、制度层与文化层的“四位一体”整合性专业实践体系，实现了体育教育、中医传统疗法与大学生身体实践的有机耦合。

结论与意义：

本研究首次从社会学与人类学视角系统建构了中医“治未病”理念融入大学生运动队损伤预防的理论框架，为亚洲高校体育教育领域建立本土化、文化适配的专业实践体系提供了理论依据与操作指南，亦为“传统文化+体育教育”的跨学科研究提供了知识整合的新范式。

P3-17 Para-karate for Visually-impaired Adults in Hong Kong: A Participatory Action Research

CHAN Ka Man (The Education University of Hong Kong)

This study investigated the effects of para-karate on the well-being of adults with visual impairment (VI) in Hong Kong and examined the broader contributions of inclusive karate programmes to sport participation, social engagement, and community development. A mixed-methods research design was adopted, combining quantitative and qualitative approaches to provide a comprehensive understanding of the impact of karate training on participants' lives.

Participants completed a six-month para-karate training programme and were assessed using surveys measuring quality of life, body balance, vision-related quality of life, and activity-based confidence. In addition, five participants took part in in-depth interviews, while thirteen participants engaged in focus group discussions. Observations were also conducted to capture participants' experiences and behavioural changes throughout the programme. Quantitative data were analysed using SPSS, while thematic analysis was applied to qualitative data from interviews and focus groups.

The findings indicate that para-karate positively influences the physical, psychological, and social well-being of adults with VI. Although improvements in the quality-of-life domains were not statistically significant ($p > 0.05$), participants demonstrated enhanced body balance, confidence, social interaction, and psychological resilience. Qualitative findings further revealed that inclusive para-karate programmes provide meaningful health and social benefits, promoting a sense of belonging, personal achievement, and community connection. The results suggest that para-karate serves not

only as a recreational activity but also as a potential intervention for reducing social isolation, supporting mental well-being, and encouraging healthier lifestyles among individuals with visual impairment.

This study highlights the value of sustained karate participation in promoting long-term well-being and contributes to the development of para-karate as an inclusive sport. The findings provide practical insights for policymakers, practitioners, and community stakeholders seeking to enhance opportunities for individuals with visual impairment. Future research should explore train-the-trainer initiatives, specialised coaching strategies, and longitudinal investigations of psychological outcomes, motivation, and competitive development within para-karate programmes.

P3-18 Perceived Impact of Major Sport Events from Hong Kong Citizens

Ms. Zoe Sau Ni WONG (Technological and Higher Education Institute)

Background:

With the opening of the Kai Tak Sports Park in 2025, the Hong Kong government has been increasing emphasis on promoting major sports events and community sports participation. The aim of the study was to examine Hong Kong residents' perceptions of the impacts of major sport events, and investigated the factors influencing their attitudes towards such events.

Methods:

A questionnaire adopted from Perić's 'Survey on the Socio-economic Impacts of Hosting Sport Events' was used through Google form. The study targeted Hong Kong Citizens aged 18-64 who had experience of watching major sport event in person or through digital media. Data were analyzed using non-parametric statistical technique to examine relationships and differences among key variables.

Results:

Results showed that individuals with sports involvements perceived the impacts of major sport events more positively than those without sports participation ($U(128) = 714$, $p < 0.05$). In contrast, respondents with volunteering experience at sporting events reported less favorable perceptions of event impacts than those without such experiences ($U(128) = 493.5$, $p < .05$). Environmental impacts received both positive and negative

evaluation from the respondents, with a mean positive impact score of 6.35 (SD=0.96) and a mean negative score of 3.94 (SD=0.93). Furthermore, positive social impact showed positive and significant correlation with potential spending (Rs (127) =0.434, p<0.05), but the relationship was not strong.

Conclusion:

This study contributes to a better understanding of residents' perceptions of major sporting events in Hong Kong. The study recommends sustainable event management, improved volunteer management practices, and stronger promotion of social benefits to increase public support for major sporting events.

P3-19 Equity in school physical education across Southeast Asia: a scoping review

Zhe ZHANG

School physical education (PE) is intended to provide all students with opportunities to develop movement competence, physical activity, confidence, and wellbeing, yet equal curricular entitlement does not necessarily produce equitable experiences or outcomes. This scoping review mapped how equity has been examined in school PE across Southeast Asia and identified where inequalities arise along a review-derived analytical continuum from opportunity to participation, experience, and outcome. Web of Science, Scopus, SPORTDiscus, and Education Research Complete were searched to 11 August 2026. The searches identified 324 records. After removal of 117 duplicate records, 207 unique records were screened and 37 sources met the eligibility criteria. Evidence was charted by country, population, study design, equity dimension, PE context, and key findings, followed by iterative thematic synthesis and source-level verification. Three interrelated themes were identified. First, opportunities to access quality PE were unevenly shaped by teacher expertise, facilities, curriculum time, adapted resources, policy implementation, and geography. Second, participation and lived experience varied according to disability, gender, body size, culture, school context, peer and family support, and responsive pedagogy. Third, evidence on unequal learning, movement, physical activity, and health-related outcomes was comparatively limited and largely cross-sectional or short term. The synthesis indicates that PE inequity can be organised through a review-derived analytical continuum in which social position and learner needs interact with the distribution and delivery of educational opportunities. Future research should test whether structural reforms narrow subgroup gaps and whether unequal PE experiences translate into longer-term educational and health disparities.

P3-20 大学生群体中的身体素养与主观幸福感：一项范围综述

林梓洋 (香港教育大学)

背景：

全球范围内大学生面临的心理健康挑战日益加剧。身体素养（PL）为理解体育活动参与如何促进心理健康提供了一个理论框架，然而关于PL与主观幸福感（SWB）之间关系的实证研究仍较为零散。本项范围综述旨在梳理现有关于大学生群体中PL与 SWB 的实证研究，综合分析PL各维度及中介路径的作用，评估测量工具，并识别研究空白。

方法：

遵循 PRISMA –ScR指南，我们在PubMed、Web of Science、 Scopus、SPORTDiscus 及 CNKI 数据库中检索了2010年至2026年8月期间发表的、探讨大学生群体中PL与 SWB 关联的定量研究。本研究未进行元分析；研究结果以叙述性方式呈现。

结果：

共纳入17项核心研究。研究发现PL与 SWB 之间存在中等程度的正相关关系。情感/动机维度（动机与自信心）显示出最显著的效应；而关于身体能力及认知维度的证据尚不明确。研究识别出四种中介路径：行为路径、心理资源路径、社会路径及认知–情感路径。心理资源路径所呈现的效应大于行为路径。大多数研究采用《感知身体素养量表》（PPLI）或其简版中文版本（PPLI –SC）；然而，针对大学生群体专门开发或进行跨文化验证的测量工具较为有限。

结论：

大学生群体中，PL与 SWB 之间存在中等程度的正相关关系。研究进展受到测量工具异质性及对横断面研究设计过度依赖的制约。未来研究应优先采用纵向与实验性研究设计、工具标准化以及对竞争性中介模型进行直接检验。

P3-21 中学体育学业水平考试数智化评价的教师接受应用研究

吴震霖（广州体育学院）

背景：

数智技术加速嵌入中学体育学业水平考试，为提升评价精准性、公平性与实施效率提供了新路径。体育教师作为连接课程教学与考试评价的直接实施者，其技术接受与实际应用直接影响数智化评价效能。本研究旨在揭示体育教师接受并应用学业水平考试数智化评价的作用机制。

方法：

基于整合型技术接受与使用模型（Unified Theory of Acceptance and Use of Technology，UTAUT）引入信任变量，以参与体育学业水平考试教学与考评工作的中学体育教师为对象，通过线上问卷收集数据，经筛选后获得500份有效样本；采用偏最小二乘结构方程模型（Partial Least Squares Structural Equation Modeling，PLS–SEM）与模糊集定性比较分析（fuzzy–set Qualitative Comparative Analysis，fsQCA）分析净效应与组态效应。

结果：

绩效期望对使用意愿的正向影响最强，努力期望、社会影响、便利条件与信任均显著促进使用意愿；使用意愿显著促进实际应用，并发挥部分中介作用。fsQCA识别出4种高使用意愿驱动路径，实际应用由努力期望、社会影响、便利条件与使用意愿协同驱动。

结论：

教师接受与应用数智化评价具有多因素协同特征，应提升教师数智能力，完善技术与资源保障，强化评价信任，促进数智技术与体育教学评价深度融合。

P3-22 The Association between Sugar-Sweetened Beverage Intake, Sedentary Time, and Depressive Symptoms among U.S. Adults

TONG Xiangyue (The Education University of Hong Kong)

Background and Objectives:

High sugar-sweetened beverage (SSB) intake and prolonged sedentary time are two prevalent lifestyle behaviours, each associated with depression, yet they are usually studied in isolation and rarely examined together in nationally representative samples. This study estimated the independent and joint associations of SSB intake and sedentary time with depressive symptoms among U.S. adults, and tested whether the two behaviours interact.

Methods:

We analysed 10,749 adults from the National Health and Nutrition Examination Survey (NHANES; 2015–2020). SSB intake was derived from 24-hour dietary recall and sedentary time from self-reported daily sitting. Depressive symptoms were defined as a Patient Health Questionnaire-9 score of 10 or higher. Survey-weighted logistic regression estimated associations adjusted for demographic and lifestyle covariates. Interaction was assessed on both the multiplicative scale and the additive scale (relative excess risk due to interaction, RERI), using g-computation with Taylor-linearised confidence intervals.

Results:

The weighted prevalence of depressive symptoms was 8.1%. Each additional 100 kcal/day of SSB (OR 1.11, 95% CI 1.04–1.17) and each additional hour of sitting (OR 1.09, 1.05–1.13) was independently associated with higher odds of depressive symptoms, with significant dose–response trends. Heavy SSB consumers had nearly 2.9-fold higher odds (OR 2.89, 1.71–4.87). The two behaviours interacted sub-multiplicatively (interaction OR 0.38, 95% CI 0.16–0.88, P = 0.026); the additive estimate was directionally consistent but imprecise (RERI −1.41, 95% CI −2.83 to 0.02).

Conclusion:

In this nationally representative adult sample, SSB intake and sedentary time were each independently associated with depressive symptoms. Their co-occurrence showed no synergy on either scale, and only the multiplicative departure reached significance. Heavy SSB intake alone already carried the highest prevalence, and the combination of the two behaviours was not associated with a disproportionately higher symptom burden.

P3-23 Differential effects of exercise on executive functions in neurodevelopmental disorders: an umbrella review and meta-meta-analysis

Changhui PENG (Shanghai University of Sport)

Background:

The beneficial effects of exercise on executive function have been widely documented. However, evidence remains inconsistent in individuals with neurodevelopmental disorders (NDDs). This umbrella review aimed to systematically evaluate the effectiveness of exercise in improving executive function in individuals with NDDs.

Methods:

PubMed, Embase, Cochrane Library, and Web of Science were systematically searched from inception to May 2026 for published meta-analyses. Methodological quality was assessed using AMSTAR-2. Effect sizes were pooled using a random-effects model and expressed as SMDs. Subgroup analyses were conducted by population and intervention characteristics, and evidence certainty was assessed with GRADE.

Results:

Fifty meta-analyses (974 RCTs and 38,354 participants) were included, yielding 124 effect sizes. AMSTAR-2 ratings ranged from critically low to high, indicating methodological limitations of varying severity across the included reviews. The meta-meta-analysis showed that exercise significantly improved overall executive function in individuals with NDDs (SMD = 0.58), as well as inhibitory control (SMD = 0.68), working memory (SMD = 0.46), and cognitive flexibility (SMD = 0.48). In contrast, the effect on higher-order executive functions was limited (SMD = 0.39). Subgroup analyses suggested that the benefits of exercise were consistent across NDD populations ($p > 0.05$). Further moderator analyses indicated that, compared with acute exercise, chronic exercise with a session duration of ≥60 minutes produced the greatest improvement in overall executive function, whereas an intervention duration of ≥12 weeks showed greater benefits for inhibitory control.

Conclusion:

These findings support exercise as an effective strategy for improving executive function in individuals with NDDs and provide evidence-based guidance on chronic exercise dose. High-quality studies are needed to confirm these findings, clarify the effects of exercise on higher-level executive functions, and identify the optimal intervention dose.

P3-24 运动学指标对篮球投篮命中率影响的系统评价与Meta分析

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背景:

投篮是篮球得分的关键技术，其表现受多种运动学因素影响。然而，各项运动学指标对投篮结果的综合效应尚未得到系统量化。

方法:

系统检索 PubMed、Scopus 和 Web of Science 数据库，检索时间截至2026年7月。纳入考察运动学指标与篮球投篮表现关联的实证研究。采用JBI 评估工具评价纳入研究的偏倚风险。使用随机效应模型计算标准化均数差（SMD）及其 95% 置信区间（CI），以合并效应量。

结果:

共纳入20项研究，包含426名参与者。涉及的投篮类型包括罚球、跳投、定点两分球投篮和定点三分球投篮。与投篮命中率显著相关的关键运动学指标包括出手速度、高度、角度、关节角度和质心位移等。分析发现，出手高度的优化与投篮命中率提高存在显著关联，与低命中组相比，高命中组的出手高度显著更高，合并标准化均数差（SMD）为0.85(95% CI: 0.42 to 1.28), P< 0.001。研究间存在中度异质性（I^2 = 45%, P = 0.12）。

结论:

本次综述的证据表明，特定的运动学参数（如出手高度、出手角度）对投篮命中率有显著影响。纳入研究多为观察性设计，因果推断能力有限。各研究间测量设备、指标定义及投篮任务类型存在差异。

P3-25 Building Resilience through Movement: A Capacity-Building Programme for SEN and Emotional Health Sports Coaching

Mr. SIU Ka Man Tom (The Education University of Hong Kong)

Background:

The demand for inclusive sports provision in Hong Kong is rising, particularly for children and adolescents with Special Educational Needs (SEN) and emotional health challenges. Despite this growing need, there remains a significant gap in the professional development of community sports coaches who are equipped with the pedagogical and psychological skills to support this demographic. Untrained coaches risk excluding vulnerable populations, while properly trained coaches can serve as powerful agents of psychosocial development.

Purpose:

This project aims to design, implement, and evaluate a large-scale, evidence-based capacity-building programme—the SEN and Emotional Health Sports Coaching Course. The primary purpose is to equip 864 community sports coaches with the theoretical knowledge and adaptive practical skills necessary to foster resilience, inclusion, and meaningful engagement among SEN participants. Furthermore, the initiative seeks to establish a sustainable coaching model that bridges the gap between academic research and frontline community practice in Hong Kong.

Programme Design:

Delivered over three years (2026–2028), the 12-hour, face-to-face course is structured into two core components:

- Theoretical Foundations (10 hours): This module covers SEN typologies, inclusive coaching philosophies, and resilience-building strategies grounded in the PERMA model (Positive Emotion, Engagement, Relationships, Meaning, Accomplishment).
- Practical Application (2 hours): Participants engage in supervised, hands-on coaching sessions with SEN students, followed by structured reflection and feedback.

The program adopts a quasi-experimental evaluation design to rigorously measure pre- and post-intervention changes in coach self-efficacy and knowledge, comparing the experimental and control groups. The evaluation framework integrates the Kirkpatrick Model and the Integrated Model of

Training Evaluation and Effectiveness (IMTEE) to assess satisfaction, learning outcomes, and behavioral change.

Expected Outcome:

It is anticipated that participants will demonstrate a significant increase in adaptive coaching competencies and self-efficacy in managing diverse SEN profiles. For the broader community, the programme is expected to improve the quality of inclusive sports delivery, enhance the emotional resilience of SEN participants, and reduce barriers to physical activity. The evaluation data will not only inform the sustainable development of future coaching curricula but will also be published and presented at academic conferences to contribute to the global evidence base regarding the intersection of sport, special education, and emotional health.

P3-26 Compositional movement and functional changes after pickleball in pre-frail older adults: implications for healthy aging

Dr. Ziwei ZENG

Introduction:

Promoting physical activity in aging populations is a global public health priority, as rapid urbanization has increased sedentary lifestyles and frailty-related health burdens worldwide. While sport-based community interventions show promise, evidence on how they redistribute 24-hour movement behaviors and translate into functional and psychosocial gains remains limited. This secondary analysis of a RCT evaluated the effects of an 8-week pickleball program on compositional movement patterns, physical function, and mental wellbeing in pre-frail older adults, and examined implications for scalable health promotion.

Methods:

This secondary analysis included 61 pre-frail older adults (≥65y) from a two-arm RCT who completed the intervention per-protocol (pickleball: n=29; control: n=32). Wrist-worn ActiGraph accelerometers measured 24-hour movement at baseline and post-intervention. Isometric log-ratio (ilr) coordinates captured compositionally meaningful changes in sedentary time, light physical activity, moderate-to-vigorous physical activity, and sleep. Functional fitness was assessed via the Senior Fitness Test, and mental health via 12-Item Short Form Health Survey Mental Component Summary scale (SF-12 MCS). Generalized estimating equation models, adjusted for covariates, tested between-group differences.

Results:

The intervention group showed significant improvements in functional fitness, including lower-body strength (30-second chair stand: β=4.72, p<0.001), upper-body strength (30-second arm curl: β=3.41, p<0.001), and upper-body flexibility (back scratch: β=3.24, p=0.006). Compositional analyses revealed a favorable shift toward active behaviors relative to sedentary/sleep (ilr1: β=0.16, p=0.014). Importantly, mental wellbeing improved significantly (SF-12 MCS: β=5.11, p=0.002), highlighting psychosocial benefits beyond physical function.

Conclusion:

A community-delivered pickleball program produced meaningful improvements in functional fitness, 24-hour movement composition, and mental health among pre-frail older adults. The reallocation of sedentary time to activity aligns with WHO 24-hour movement guidelines and offers a scalable, socially engaging strategy for healthy aging. These findings support integrating sport-based programs into community health policies to reduce sedentary-related health inequalities and promote active living across diverse populations.

P3-27 Associations between Physical Activity and Mental Well-Being in Children and Adolescents with Special Educational Needs: The Mediating Effects of Physical Self-Concept and Social Connectedness

Dr. Ruiyuan TAO

Background:

Children and adolescents with special educational needs and disabilities (SEND) are often insufficiently active and experience poor psychosocial well-being. Although physical activity has been positively associated with mental well-being, the psychosocial pathways underlying this association remain underexplored in this population. This study aimed to examine the parallel psychosocial pathways linking physical self-concept and social connectedness through which physical activity may be associated with mental well-being among SEND children and adolescents.

Methods:

We recruited 166 SEND children and adolescents aged 6-17 years from Hong Kong mainstream primary and secondary schools. Physical activity was assessed using a wrist-worn ActiGraph GT3X accelerometer for seven consecutive days. Participants completed self-reported questionnaires assessing physical self-concept, social connectedness, and mental well-

being. Raw accelerometer data were processed using the R package GGIR to generate daily moderate-to-vigorous physical activity (MVPA) and average acceleration. Parallel mediation models were conducted using the R package lavaan, adjusting for age, gender, disability type, and family socioeconomic status, with school-level clustering accounted for using cluster bootstrap resampling.

Results:

Higher MVPA was positively associated with mental well-being (total effect: $\beta = 0.22$, $p < .01$), with significant indirect associations through physical self-concept ($\beta = 0.13$, $p < .01$) and social connectedness ($\beta = 0.07$, $p < .05$). Similar findings were observed for average acceleration, with significant indirect associations through physical self-concept and social connectedness.

Conclusion:

Physical activity, particularly MVPA, could serve as a promising approach to foster physical self-concept and social connectedness, which may in turn support mental well-being in SEND children and adolescents.

Acknowledgment:

This study was supported by the Hong Kong Jockey Club Charities Trust. We thank all participating schools, organizations, families, students, and the research team for their support.

P3-28 Social Media and Sense of Belonging in Hong Kong Amateur Taekwondo Athlete Peer Networks: A Qualitative Study

Brigitta C.Y. WAN (Hong Kong Metropolitan University)

Background:

Sense of belonging (SOB) is a fundamental human need associated with motivation, engagement, well-being and performance. Elite taekwondo athletes have access to centralised training programmes, dedicated coaching and structured team environments. In contrast, amateur athletes usually train at local dojangs or in community-based settings and have fewer opportunities for continuous contact with a broader network of athletes. Social media offers an alternative means for these athletes to interact outside their dojangs, share their experiences, and obtain support from their peers. The aim of this study is to examine how Hong Kong amateur taekwondo athletes perceive the role of social media in relation to their sense of belonging within

local peer taekwondo networks and how they connect these experiences to their motivation, confidence, psychological well-being and perception of their sport performance.

Methodology:

This qualitative study will use semi-structured interviews with approximately 10-15 amateur taekwondo athletes recruited through Hong Kong dojangs. Interviews will explore peer communication beyond immediate training environments, engagement with taekwondo-related content, experience-sharing and seeking or providing support. Data will be analysed using thematic analysis to identify recurring patterns relating to peer relationships, athletic identity, psychological support and sense of belonging. The study is informed by Maslow's hierarchy of needs and Baumeister and Leary's belongingness perspective.

Research in Progress:

As data collection and analysis have not begun, there are no empirical results to report at this stage. The study does not assume that social media necessarily enhances a sense of belonging, instead, it aims to understand the athletes' experiences, including how they describe the relationships among social media, peer relationships, motivation, confidence, and perceived sports performance.

Conclusion:

By focusing on amateur taekwondo athletes in Hong Kong, this study addresses a relatively underexplored area. Findings may provide a basis for further research and offer useful insights for coaches and community-based sports organisations.

P3-29 Effects of Exercise Interventions on Mental Health Outcomes in Children with Neurodevelopmental Disorders: A Systematic Umbrella Review and Meta-meta-analysis

Changhui PENG (Shanghai University of Sport)

Introduction:

Exercise interventions have shown positive effects on mental health. With increasing attention to the health of children with neurodevelopmental disorders (NDDs), numerous meta-analyses have examined these outcomes in this population; however, conclusions remain inconsistent.

This study aimed to summarize and evaluate the strength and reliability of existing evidence regarding the effects of exercise interventions on mental health outcomes in children with NDDs.

Methods:

PubMed, Web of Science, the Cochrane Library, Embase, and PsycINFO were systematically searched from inception to December 2025. Eligibility criteria were defined according to the PICOS framework, and meta-analyses of randomized controlled trials were included. The methodological quality of reviews was assessed using the AMSTAR-2 tool, and the certainty of evidence was evaluated using the GRADE approach. All outcomes were synthesized using random-effects models, and effect sizes were reported as standardized mean differences with corresponding 95% confidence intervals. Subgroup analyses were conducted according to disorder type.

Results:

Forty-nine meta-analyses comprising 826 randomized controlled trials (40,018 participants) were included, yielding 147 associations between exercise interventions and mental health outcomes. AMSTAR-2 assessments indicated that the methodological quality of the included reviews ranged from moderate to high. GRADE ratings showed that most associations were supported by evidence of moderate certainty. Pooled analyses demonstrated that exercise interventions significantly improved cognitive function in children with NDDs (SMD = 0.45), including executive function (SMD = 0.61), memory (SMD = 0.46), and attention (SMD = 0.33). In addition, exercise interventions significantly improved social functioning (SMD = 0.43) and emotional regulation (SMD = 0.67), primarily reflected in reduced anxiety, depressive symptoms, and social interaction difficulties. Subgroup analyses indicated that children with attention-deficit/hyperactivity disorder showed

greater improvements in cognitive function than other NDD subtypes, whereas children with autism spectrum disorder showed greater benefits in social functioning following intervention.

Conclusion:

Exercise interventions significantly improve mental health outcomes in children with NDDs and play a pivotal role in enhancing cognitive function, promoting social participation, and supporting emotional regulation. In addition, this study provides strong evidence for differential intervention effects among NDD subgroups. Future studies should optimize intervention design and strengthen long-term follow-up to facilitate the precise implementation and dissemination of exercise interventions for children with NDDs.

P3-30 青少年数字成瘾的体育运动剂量效应与非线性拐点研究

侯文志博士 (兴义民族师范学院)

青少年问题性网络使用风险日益严峻，探索非药物干预手段阻断网络成瘾已经成为世界卫生与体育科学的重点。目的：研究探讨初中生体育锻炼量与网络成瘾（聚焦耐受性与时间管理失败维度）之间的非线性剂量–效应关系。

方法：

基于贵州省2104名初中生的横断面调查数据，利用体育活动等级、网络成瘾、抑郁–焦虑–压力邓量表评估运动干预对行为风险和情绪危机的影响。研究过程中严格控制受试者性别、城乡户口以及抚养情况等人口学异质性并构建4节点限制性立方样条模型进行非线性回归估计。

结果：

共线性诊断表明模型未受共线性干扰（调整后VIF均<1.15）。方差证实，体育锻炼量与时间管理失败维度之间存在显著的非线性倒U型剂量–效应关系（F=12.28，P=0.0005）。样条模型精准推算出效益拐点：当体育锻炼量得分恰好为24分（约对应每周3次、每次30分钟的中等强度体育锻炼）时，青少年网络成瘾的相对预测风险降至最低。在0—24分区间内，增加运动量对成瘾行为具有断崖式的阻断效益；超过24分后，运动的边际保护效益出现饱和并伴随递减趋势。

结论：

体育锻炼对青少年网络成瘾的缓解作用是存在显著的“剂量阈值”。建议围绕“24分黄金运动剂量”制定精准运动处方，以最大化提升行为风险的量化干预效率。

P3-31 认知参与型乒乓球干预对ADHD儿童执行功能与协调能力影响

时星宇（上海体育大学）

目标：

讨认知参与型乒乓球训练对注意缺陷多动障碍（Attention–Deficit/Hyperactivity Disorder, ADHD）儿童执行功能和协调能力的影响。

方法：

研究招募24名就读于普通学校的ADHD儿童，年龄为12～14岁，平均年龄为12.7±0.8岁。所有儿童被随机分为实验组（n=12）和对照组（n=12）。实验组接受为期12周的认知参与型乒乓球训练，每周训练2次，每次50分钟；对照组维持原有活动安排，不接受额外训练。采用Go/No–go任务和Stroop任务评价儿童执行功能，并采用BOT–2评价协调能力。

结果：

(1) 重复测量方差分析显示，执行功能和运动能力均存在显著的组别×时间交互作用，表明实验组干预后的改善幅度显著高于对照组（$F=5.23$，$p=0.02$）。

(2) 在执行功能方面，实验组Go/No–go任务和Stroop任务评分的改著优于对照组（Go/No–go任务：$F=10.59$，$p<0.01$；Stroop任务：$F=8.73$，$p<0.01$）。

(3) BOT–2结果显示，干预后实验组整体运动能力评分高于对照组。此外，手部运动协调能力（手部灵巧性和上肢协调能力）以及身体协调能力（平衡能力和双侧协调能力）均改善显著（手部运动协调能力：$F=11.50$，$p<0.01$；身体运动协调能力：$F=10.45$，$p<0.01$）。

结论：

为期12周的认知参与型乒乓球训练可有效改善ADHD儿童的执行功能、手部运动协调能力和身体运动协调能力。未来仍需开展更高质量的随机对照试验，以进一步验证该方案的有效性，并明确其长期效果。