Dia CIDEFES Julho/2025 – Livro de Resumos

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Conteúdo:

1. Simpósio com Projectos Financiados

1.1. MOVE4FUN

Lúcia Gomes, Hugo Pereira, Marlene N. Silva, Diogo Teixeira, António Palmeira

O projeto MOVE4FUN, financiado pelo programa Erasmus+ Sport, teve como objetivo promover a atividade física regular em crianças e adolescentes entre os 11 e os 15 anos, através da criação de uma App para telemóvel. O consórcio europeu foi coordenado pelo Instituto do Desporto da Polónia, com parceiros da Suécia, Espanha, Portugal e Países Baixos.

A equipa portuguesa, do CIDEFES (Lúcia Gomes, Hugo Pereira, Marlene N. Silva, Diogo Teixeira e António Palmeira), iniciou os trabalhos com uma revisão narrativa da literatura, focada em fatores que influenciam a motivação e o comportamento ativo nesta faixa etária. A revisão serviu de base à definição dos principais temas para investigação qualitativa junto dos adolescentes.

Em cada um dos países do consórcio foi conduzido um grupo focal, com um total de 39 participantes (entre os 11 e os 15 anos), permitindo explorar motivações, barreiras e sugestões para a promoção da atividade física. A análise temática revelou três eixos principais: (1) a valorização da diversão e da gamificação como motivadores centrais; (2) a importância do apoio social (amigos e família); e (3) o desejo de maior autonomia e integração tecnológica.

Com base nestes insights, foi desenvolvido um protótipo funcional de uma aplicação digital (app) cocriada com os parceiros internacionais. A estrutura e funcionalidades da app foram desenhadas com base na Behavior Change Techniques Taxonomy (BCT-Taxonomy) e na Teoria da Autodeterminação (Self-Determination Theory) e , incorporando técnicas como reforço positivo, definição de objetivos, auto-monitorização e desafios sociais. A app visa promover a atividade física de forma lúdica, personalizada e sustentável.

O projeto encontra-se concluído. Os próximos passos incluem a disseminação científica dos resultados, apresentações em conferências e a procura de financiamento adicional para validação e escalabilidade da APP em diferentes contextos europeus.

1.2. Youth-centred participatory action for physical activity promotion: the YoPA project and its evolving impact

Maria F. Souza, Nuno Dias, Ricardo Almeida, Marlene N. Silva, António L. Palmeira, On Behalf of YoPA Consortium

The YoPA project (Youth-centred Participatory Action) is a multi-country initiative funded by Horizon Europe, designed to promote physical activity and well-being among adolescents through participatory approaches. The intervention includes capacity building, mentoring, and a comprehensive co-creation process in four locations: Aalborg (Denmark), Amsterdam (The Netherlands), Osogbo (Nigeria), and Soweto (South Africa). By forming Action Teams composed of youth, facilitators, and community stakeholders, the project empowers young people to co-create local system maps and tailored interventions based on their lived realities, to enhance their communities' well-being. Currently, YoPA is mainly transitioning from its intervention design phase to the early stages of implementation and evaluation in all countries. This symposium will present the project objectives, methods and evaluation frameworks, as well as the local protocol spin-off in Portugal and the studies planned by CIDEFES members around the project.

1.2.1 Youth-centred Participatory Action for physical activity promotion: co-creating and evaluating solutions

Presenters: António Palmeira and Marlene Nunes Silva

Considering the complexity of improving healthy movement behaviours and reducing health inequalities in adolescents, the overall aim of YoPA is to optimally tailor, implement and evaluate social and physical environmental interventions using an evidence-informed co-creation approach, for structural improvement in the lifestyle of adolescents (aged 12–18 years) in urban vulnerable life situations.

Co-creation is a participatory approach of creative and interactive problem-solving among diverse stakeholders with a shared goal and a shared decision-making process, from collaborative problem identification and solution generation to implementation and evaluation.

A key innovation of YoPA lies in its use of the SUPER-AIM framework, a structured yet flexible evaluation model that includes Systems, User-experience, Participatory approach, Experiences, Reach, Adoption, Implementation and Maintenance, combined with a Realist Evaluation. This methodology ensures that interventions are not only evidence-informed but are also deeply grounded in local contexts and youth perspectives, promoting sustainability and relevance.

1.2.2 YoPA Inspired - the Portuguese spin-off protocol of YoPA

Presenter: Nuno Dias

In Portugal, YoPA has inspired a spin-off initiative, which applies the same participatory process at a local scale. This first phase of the spin-off focuses on the co-creation of a local systems map for physical activity promotion and the development of an intervention proposal, shaped directly by youth voices. The Portuguese adaptation is based in Algueirão-Mem Martins, a highly populated and socioeconomic vulnerable region in the municipality of Sintra, with the support of two local stakeholders: CIAPA, a youth center striving for youth skills development and the local administration of the district.

This spin-off highlights how the core ideas of YoPA can be translated into national and municipal strategies to promote active lifestyles. Co-creation sessions agenda, highlights and challenges will be presented.

1.2.3 YoPA Process evaluation studies

Presenter: Maria Fernanda Souza

As an effort to develop relevant research and contribute to the scientific community, but, most of all, to implementing impactful projects that promote health and physical activity, studies focusing on the process, monitoring and lived experiences of participants will be conducted. This presentation will explain the papers being prepared as part of the PhD research of the presenter.

- Paper 1 explores the process of setting up the first Action Teams across multiple countries, offering a realist-informed evaluation of early participatory practices. Interviews with 19 stakeholders will be analyzed and the realist “ICAMO” configurations will be delineated to explain what works, for whom, in which circumstances and through which mechanisms.

- Paper 2 delves into the monitoring process through an analysis of facilitators logbooks and interviews, generating practical recommendations to enhance participatory fidelity and effectiveness. A specialists panel will be established to create a refined version of the logbook, that can be used by future similar projects trying to monitor co-creation sessions.

- Paper 3 focuses on the youth experience and systemic mapping in the Portuguese spin-off, providing a rich narrative of how young people perceive their environment and how they navigate the co-creation process. The newly launched PROSECO framework will be used to analyze the specific elements of the process, like partnerships, group dynamics, satisfaction, contextual influences, adaptation and others.

Through these studies, YoPA demonstrates how participatory health promotion can be scaled and adapted, offering valuable insights into engaging youth meaningfully in shaping healthier futures.

1.3. Sit-stand desk-based intervention to reduce sitting time in office workers: digging deeper into the results.

Pedro B. Júdice, Hélio Silva, Sabrina C. Costa

The SUFHA project aimed to assess the impact of introducing sit-stand desks (SSD) in the workplace on sedentary behavior and health indicators among adult employees at Lusófona University. The study was structured as a clustered randomized controlled trial involving a 6-month intervention and an extended follow-up period. Two experimental conditions were included: an intervention group with access to SSD and a control group using traditional sitting desks.

Both groups initially attended a psychoeducational session addressing the health risks of prolonged sitting and strategies to promote more dynamic postures throughout the workday. In addition to installing SSD, the intervention group received motivational prompts via email to support regular desk use. Participants were assessed at three main points: baseline, post-intervention (6 months), and extended follow-ups (3 months and up to 24 months). Assessment tools included accelerometry/inclinometry, anthropometry, bioimpedance, and validated questionnaires on well-being, musculoskeletal discomfort, productivity, and dietary intake.

Now completed, the project generated new lines of inquiry following the public presentation of results by Principal Investigator Pedro B. Júdice. Data analysis and academic reflection led to three central research questions:

1. Do compensatory behaviors outside the workplace offset the benefits of SSD use?
2. Does the timing of the psychoeducational session influence SSD adoption and effectiveness?
3. Do longer-term interventions with SSD result in more sustained reductions in sitting time?

The SUFHA project featured strong interdisciplinary collaboration among faculty, researchers, and students from COFAC research centers: CIDEFES, CICANT, HEI-Lab, and COW. This cooperation strengthened the scientific approach and laid the groundwork for future external funding applications. To support dissemination, a series of short testimonial videos were produced in collaboration with students from the Film and Media Arts program, aiming to share the findings and encourage healthier work habits among the wider academic and professional community.

Hélio Silva will present the results and implications derived from the data collected at five-time points: baseline, 3, 6, 9, and 24 months, highlighting the longitudinal impact and sustainability of the SSD intervention.

1.3.1. Presentations for this symposium

Background: Office workers are among the most sedentary occupational groups, spending most of their working hours sitting—often in prolonged, uninterrupted bouts. Sit-stand desks (SSD) have emerged as a promising strategy to reduce workplace sedentary behavior. However, questions remain regarding the sustainability of their effects, the role of behavioral reinforcement such as psychoeducational sessions, and the possibility of compensatory behaviors during non-working hours. This study aimed to examine an SSD intervention's short, medium, and long-term effectiveness under real-world conditions.
Methods: A clustered randomized controlled trial was conducted to evaluate a 6-month SSD intervention among office workers. The intervention combined a psychoeducational session, regular motivational prompts via email, and SSD installation at participants' workstations. Sitting and standing times were objectively assessed using accelerometry, and repeated-measures ANCOVA was used to analyze between-group differences, adjusting for relevant covariates.
Two secondary analyses explored the intervention's temporal effects. The first subsample (n = 20) compared two groups exposed to a 3-month SSD intervention: one received the psychoeducational session immediately before (PE-0), while the other received it six months prior (PE-6). The second subsample (n = 10) included participants who followed the longitudinally to 24 months post-baseline, with 9 and 24 months assessments, using activPAL to evaluate sitting, standing, stepping, and sit-to-stand transitions.
Results: The central 6-month intervention significantly reduced workplace sitting by 32.97 min/day ($p < 0.05$) and increased standing by 27.88 min/day. However, a non-significant increase in leisure-time sitting (+23.07 min/day) suggests possible compensatory behavior. In the PE timing analysis, PE-0 participants showed greater reductions in total sitting time (-44.20 min/day) and prolonged sitting (-27.60 min/day) than PE-6, highlighting the importance of timely behavioral reinforcement. The long-term follow-up indicated sustained reductions in workplace sitting at 18 months (-78.32 min/day) and 24 months (-84.36 min/day), with concurrent increases in standing and stepping.
Conclusion: SSD interventions effectively reduce sitting time across short, medium, and long durations. Incorporating timely psychoeducational components may enhance these effects. Future interventions should address potential compensatory behaviors during leisure time to maximize overall impact.

2. Apresentação dos Relatórios de Tese I

2.1. Effects of exercise as a co-therapy for women with breast cancer.

Pedro G.F. Ramos, Pedro B. Júdice, Eliana V. Carraça, António L. Palmeira

Introduction. Chemotherapy (CT) is commonly used to treat breast cancer (BC), improve disease outcomes, and reduce postoperative complications. However, CT has side effects that may hinder the functionality of patients and lead to dose reductions or delays, thereby affecting treatment efficacy. Recent evidence suggests that exercise is a safe and effective co-therapy that mitigates the side effects of CT and contributes to increased treatment efficacy. Moreover, recent studies show promising effects of exercise on tumor regression when used in a prehabilitation phase along side with conventional pharmacological therapy. Women with BC undergoing CT have a high risk of developing neutropenia, making it unsafe for them to live in certain external environments. Home-based exercise (HBE) interventions may offer a safer and more convenient option for such women. There is a scarcity of studies investigating the effects of structured and supervised HBE interventions on CT completion rate, pathological complete response, and tumor regression in women with BC undergoing neoadjuvant CT. This thesis aims to investigate the effects of a HBE intervention on the aforementioned outcomes.
Project status. The protocol of the main study (Home-Combo) has been submitted for publication and is currently actively recruiting participants from four hospital units and being conducted. Based on the initial protocol proposal, some changes were made to increase the feasibility of the study. Given the high rejection rates from potential participants, eligibility criteria were adjusted to include women at any stage of the treatment, as long as we could ensure three months of intervention before the surgery. The intervention period was extended to the week before surgery, which means that time exposure to the intervention may differ among women. Statistical analysis will need to be adjusted to consider different time exposures and analyze within-group effects. One curious fact that is raising questions, and is calling for close attention, is some unexpected outcomes, observed early in the active control group specifically, an apparent tendency for lower rates of dose delays, absence of excessive fatigue, and lower treatment-related complications (e.g., neutropenia). However, it is still early to conclude that there are still a few participants in this group.

2.2. Doctors' referral for exercise professionals

Mafalda H. Antunes, Hugo V. Pereira

Physical inactivity is a significant global health issue, contributing to the rise of chronic illnesses and increasing healthcare costs, despite the numerous benefits of regular physical activity (PA). Medical practitioners can promote PA but face barriers like limited time, knowledge, and training in effective counselling. Referring patients to exercise professionals can be beneficial; however, the effectiveness of Physical Activity Referral Schemes (PARS) is hindered by low patient engagement. The DOCTORS' REFERRAL FOR

EXERCISE PROFESSIONALS (DR4EP) project addresses these challenges by developing a digital tool for referrals from healthcare providers.
In the first year of the PhD program, foundational work for the DR4EP project was completed. A literature review protocol was published on September 4, 2024, and the review is currently in the data extraction phase, following the screening of over 19,000 titles. Preliminary findings reveal gaps in understanding PARS components, exercise referral practices in non-UK countries, clinician perspectives, and mobile health interventions. A mixed-methods study at Hospital da Luz Lisboa identified "Lack of Referral Pathways" and "Unclear Patient ER Follow-Through" as key barriers, while "Personal Connections" emerged as a notable facilitator. These insights will guide the development of the DR4EP intervention. The design of the Randomised Controlled Trial (RCT) shifted from a multi-centre approach to a focused, single-blind trial with 40 participants at Hospital da Luz Lisboa, ensuring feasibility. Two major grant applications—a Doctoral Research Scholarship from FCT and an enhanced Erasmus+ grant—have been submitted, with outcomes pending. The project's framework was strengthened through completion of the "Behaviour Change Interventions" course.
The upcoming year marks a transition from research to active development and evaluation. Key next steps include finalising the systematic review results by July 2025, completing an audit study to gather stakeholder input, and co-developing and pilot-testing the DR4EP intervention toolkit at Hospital da Luz Lisboa to assess usability and acceptability. Pilot insights will inform preparation for the main RCT to evaluate the intervention's effectiveness and cost-effectiveness. Ultimately, the DR4EP project aims to enhance evidence-based clinical practice, influence national health policies, and improve PA referral practices.

2.3. A influência das características antropométricas no impacto dos golpes de boxe

Manuel Pinto, Luís Monteiro

A presente tese tem como objetivo analisar como as características antropométricas — estatura, envergadura e massa corporal — influenciam a potência dos golpes no boxe, um desporto de alta exigência física e técnica. A investigação começou com uma revisão sistemática publicada na revista Sports, que consolidou o conhecimento existente e identificou lacunas metodológicas. Posteriormente, foi conduzido um estudo observacional transversal, também submetido à mesma revista, que demonstrou correlações positivas entre as características físicas e a potência dos golpes. Além disso, a tese inclui a tradução e publicação do Boxing Performance Analysis Template para o português, publicado na revista Retos, ampliando o acesso à análise técnico-tática da modalidade.
O desenho do estudo principal desta tese seguiu as diretrizes STROBE, sendo classificado como observacional transversal comparativo. Definiram-se como participantes 69 boxeadores masculinos entre 18 e 39 anos do ginásio Gold Glove. Este estudo foi aprovado

pelo Comité de Ética da Universidade Lusófona. As variáveis analisadas incluirão, como input, estatura, envergadura e massa corporal e, como output, a potência de impacto dos golpes (diretos e ganchos, com ambas as mãos), medida em watts pelo instrumento PowerKube. Moderadores como anos de prática, número de competições, títulos conquistados e desempenho em testes de força e potência (CMJ, 1RM no supino e preensão manual) também serão considerados.
Os procedimentos envolverão medições rigorosas das características antropométricas, aplicação de questionários e testes de força e potência. Estas análises terão como objetivo identificar preditores da potência dos golpes e a influência de fatores moderadores, que poderão otimizar o desempenho no boxe com base nas características antropométricas.
Nos próximos meses, está a ser planeado um congresso científico sobre desportos de combate, com participação de investigadores internacionais e treinadores nacionais de renome. Em paralelo, está em desenvolvimento um estudo experimental que analisará a potência de diferentes golpes de boxe em função de métodos de treino específicos, com o objetivo de aprofundar a compreensão da relação entre os perfis físicos dos atletas e as metodologias de treino utilizadas.

2.4. Relationship between training load and neuromuscular fatigue in female football players validating the ACWR model and assessing fatigue in female football

Inês G. Pires, João R. Pereira, Daniela C. da Costa, João V. dos Santos

Regardless of growing popularity of women's football, there's a lack in literature on performance monitoring and training load management in female athletes. Bridging this gap is essential to develop evidence-based and sex-specific strategies to optimize performance and reduce injury risk. This project has two primary goals within women's football. Firstly, it seeks to assess the relationship between external training load and athlete performance, measured through two specific tests: the Countermovement Jump (CMJ) and the 10/5 jump test. Secondly, considering the structural and physiological differences between men's and women's football, as well as between field-based and indoor sports, the study aims to validate the applicability of the Acute:Chronic Workload Ratio (ACWR), proposing female-specific thresholds for its use in women's football. To achieve these aims, the project will be conducted in three studies:

- Study 1 – a synthesis of existing evidence on the measurement, monitoring and interpretation of external training load in women's football;
- Study 2 – a longitudinal study assessing the relationship between training load and neuromuscular fatigue measured by CMJ and 10/5, based on collected data from 6 consecutive microcycles from a Portuguese elite team;
- Study 3 – validation of ACWR model in women's football and determining specific load thresholds, based on longitudinal data collected from two competitive seasons from a Portuguese elite and sub-elite teams.

It is expected that abrupt and excessive variations in training load will negatively impact

performance, highlighting the need for consistent and effective monitoring strategies tailored to the specific demands of women's football. The findings of this study may provide practical and evidence-based recommendations for coaches and staff, contributing to a more effective training load management in the women's game.

2.5. Relationship between internal load, external load, and neuromuscular fatigue in the upper body of professional senior volleyball athletes

Inês L. Arrais, Ana A. Paulo, João R. Pereira

Monitoring training load is essential to balance stress and recovery, optimize performance, and prevent non-functional overreaching and overtraining (Bird, 2011; Corcoran & Bird, 2012; McFarland & Bird, 2014; Meeusen et al., 2013). Neuromuscular fatigue (NF) is a key factor to consider but remains challenging to monitor. While lower body NF has been widely studied (Hoffman & Kaminsky, 2000; Knicker et al., 2011; Robson-Ansley et al., 2009), research focused on upper body fatigue is limited (Rebelo, Pereira, et al., 2025). Moreover, research involving elite and female athletes remains notably limited (Mujika & Taipale, 2019). This lack of data hinders the development of comprehensive monitoring strategies in sports like volleyball (Rebelo, Valente-dos-Santos, et al., 2025), where upper limb actions are frequent and decisive.

To address this gap, two main studies will be conducted on the present thesis: a scoping review and a longitudinal observational study. The scoping review will be conducted to identify physical tests used to infer upper body NF in athletes. The longitudinal observational study will include three phases: (i) study 0, an exploratory phase with a duration of a mesocycle (~6 weeks), examining associations between ITL, upper body ETL and upper body NF; (ii) study 1, a full-season analysis (~9 months) using the same variables as study 0; and (iii) study 2, which will integrate upper and lower body data to investigate cross-segment fatigue patterns, upper and lower body ETL, and upper and lower body NF. The study will be conducted with male and female professional senior volleyball players competing in the Portuguese 1st division. ITL will be assessed by multiplying the session rate of perceived exertion (s-RPE) by session duration. ETL for the lower body will be monitored with an inertial measurement unit (IMU), while ETL for the upper body will be monitored using a wearable measurement unit. NF in the lower body will be evaluated through force plates during a drop landing test, while upper body NF will be assessed using a linear encoder during a bench press throw test. This project aims to inform more targeted and effective monitoring strategies in elite volleyball.

2.6. Determinação da performance em atletas de elite através do teste específico com recurso ao COPTEST(adaptado)

João Crisóstomo, Luís F. Monteiro, José M. Garcia Garcia

A avaliação da performance neuromuscular e metabólica no judo de alto rendimento carece de instrumentos específicos validados que permitam monitorizar, de forma fiável e contextualizada, o rendimento dos atletas em situações próximas da competição. O presente projeto tem como objetivo central a validação do COPTEST(adaptado), um protocolo específico da modalidade que integra tarefas técnicas em contexto de fadiga, associando indicadores fisiológicos, neuromusculares e percetivos. Pretende-se com este estudo disponibilizar uma ferramenta robusta e aplicável ao controlo e otimização do treino em judo de alto rendimento.

A metodologia do estudo principal (Estudo V) inclui a aplicação do COPTEST(adaptado) a uma amostra de judocas de elite e sub-elite, com recolha de variáveis como lactatemia, frequência cardíaca, perceção subjetiva de esforço, força explosiva, alterações do desempenho neuromuscular e da fadiga do sistema nervoso central (SNC). Os dados obtidos serão utilizados para analisar a fiabilidade teste-reteste, validade concorrente e preditiva, com recurso a métodos estatísticos robustos (ICC, Bland-Altman, regressão linear).

Como suporte à validação, o projeto integra estudos adicionais: uma revisão sistemática sobre as exigências neuromusculares e metabólicas no judo (Estudo I), um inquérito a treinadores ibéricos sobre práticas de Strength and Conditioning (Estudo II) e duas revisões narrativas sobre treino físico e testes específicos na modalidade (Estudos III e IV), atualmente em curso. Está ainda previsto um estudo longitudinal (Estudo VI), que utilizará o COPTEST(adaptado) como instrumento de monitorização regular durante o ciclo de apuramento olímpico até 2028, contribuindo para a compreensão da evolução da performance ao longo do tempo, nos parâmetros neuromusculares, metabólicos e da fadiga do SNC.

A amostra incluirá atletas da seleção nacional portuguesa e de centros de alto rendimento ibéricos. Os procedimentos incluem avaliações de campo e laboratoriais, integrando tecnologia validada e protocolos reconhecidos internacionalmente.

Os próximos passos incluem a recolha de dados para a validação do teste e a aplicação dos inquéritos aos treinadores. A validação do COPTEST(adaptado) representa um avanço metodológico relevante, oferecendo aos treinadores uma ferramenta prática e sensível à variação da performance em cenários reais de treino.

3. Relatórios de Projectos

3.1. Projecto ACTIVUS – estratégias para a capacitação de treinadores e apoio à carreira dual de jovens atletas

Catarina N. Matias, Lucia Gomes, José P. Morgado

O projeto ACTIVUS – Activating the Dual Career of Athletes and Holistic Development of Young, Talented Athletes across Europe, cofinanciado pelo programa Erasmus+ Sport da Agência Executiva Europeia para a Educação e Cultura (EACEA), visa promover o desenvolvimento holístico dos jovens atletas talentosos, com enfoque na conciliação entre carreira desportiva e académica/profissional (Dual Career of Athletes – DCA). O consórcio europeu é coordenado pela organização Sportief Besteed Projecten Bv (Países Baixos) e integra parceiros de Portugal (CIDEFES), Roménia, Itália, Espanha e Macedónia do Norte.
Nesta apresentação, são divulgados os principais resultados intermédios do projeto, centrados na co-criação de um programa formativo baseado em evidências para treinadores que trabalham com atletas-estudantes de idades compreendidas entre os 15 e 18 em regime de carreira dual. Embora a DCA seja uma prioridade nas políticas europeias, o apoio efetivo aos treinadores permanece limitado. O projeto procurou colmatar essa lacuna através de uma abordagem mista de investigação, envolvendo inquéritos online a 300 atletas e 120 treinadores nos países do consorcio, complementados por grupos focais com treinadores e atletas-estudantes. A análise dos dados, através de estatísticas descritivas e análise temática, revelou três dimensões essenciais: Identidades Múltiplas, destacando os desafios na articulação de papéis além do desportivo; Comunicação, sublinhando as dinâmicas relacionais com partes interessadas; e Gestão do Tempo, refletindo o equilíbrio entre exigências académicas, desportivas e pessoais.
Com base nestes resultados, desenvolveu-se um programa de formação modular para treinadores, pilotado em Suceava (Roménia) com treinadores e atletas-estudantes, a ser validado transnacionalmente. Os próximos passos incluem a implementação prática das ferramentas por cada treinador junto da sua equipa, com foco nas três temáticas identificadas. Posteriormente, será conduzida uma avaliação qualitativa através de grupos focais com atletas-estudantes, de modo a aferir o impacto das mudanças. Este processo de co-criação colaborativo e ecológico dará origem a um kit de ferramentas prático para treinadores, visando replicabilidade e sustentabilidade, reforçando o papel dos treinadores como agentes de mudança na promoção de carreiras duais sustentáveis em toda a Europa.

3.2. Physical activity-related policy assessment in five European country–municipality pairs: a mixed-methods study within the INDEEP project

Lucas C. da Silva, António J. L. S. Palmeira, Marlene N. Silva

The INDEEP (INtervention on the DEterminants of, and Expertise in, Physical activity behaviours) project brings together a multidisciplinary consortium to advance the understanding of physical activity behaviours and their associated determinants in European adolescents aged 12 to 14. Funded by the Horizon Europe – MSCA Doctoral Networks, INDEEP focuses on the development of harmonised methods to assess behaviours and influencing factors across multiple levels of the socioecological model—

biological, intrapersonal, interpersonal, environmental, and policy. Ultimately, the project seeks to provide an intervention development toolbox that integrates these determinants with behaviour change theory and co-creation methodologies.
Within this broader context, the present study concentrates on the policy level, exploring how national and local policy environments shape opportunities for physical activity among youth. The study intends to identify and analyse physical activity-related policies in five European country–municipality pairs: Lisbon, Portugal; Athlone, Ireland; Bremen, Germany; Ghent, Belgium; and Kristiansand, Norway. Moreover, the study seeks to assess the degree of policy implementation and contextual relevance, generating cross-site comparative data and policy insights that may guide future strategies to promote youth physical activity.
To achieve these objectives, the study employs a mixed-methods approach. A policy document review at both national and local levels will be complemented by semi-structured interviews with key policy informants. This will be followed by a modified Delphi process involving a panel of local stakeholders to assess the implementation of good practice statements adapted from the PEN PA-EPI tool.
The next steps include finalising the data collection instruments, securing ethics approvals in all participating countries, and training national research teams. Pilot testing is planned for late 2025, with full data collection scheduled to begin in early 2026. The findings are expected to provide a nuanced understanding of multilevel policy implementation and its potential influence on adolescents' physical activity behaviours across diverse European contexts.

4. Antecâmara de Estudos (Pitch)

4.1. Free time for life: influência neoliberal no tempo livre e nos comportamentos de movimento dos trabalhadores em Portugal

Sabrina C. Teno, Maria Fernanda S. Souza, Pedro B. Júdice, Sónia V. Correia

INTRODUÇÃO: O neoliberalismo é um conjunto de práticas políticas e econômicas multifacetadas caracterizadas por um compromisso com os princípios do livre mercado, desregulamentação do trabalho, pela liberdade e capacidades empreendedoras dos indivíduos e um papel reduzido do Estado nos assuntos econômicos. Suas transformações no mundo do trabalho levaram, entre outras coisas, à desigualdade social, ao trabalho precário, à falta de barreiras entre o trabalho e o tempo livre e à redução do tempo de lazer. Além disso, correntes filosóficas entendem que como resultado, os sintomas de estresse, ansiedade e depressão aumentaram na população, e levanta-se a hipótese de que este efeito na saúde mental possa afetar a capacidade de fazer escolhas mais ativas fisicamente no lazer. Contudo, poucos estudos dedicaram-se a analisar as relações entre

a situação perante o trabalho e os comportamentos de movimento (atividade física e comportamento sedentário) sob a ótica do neoliberalismo. Além disso, as crenças neoliberais quando incorporadas à vida, moldam a forma como percecionamos o tempo livre. Sendo assim, é importante compreender se existe relação entre esta forma subjetiva de compreensão do tempo e a precarização do trabalho, as atitudes frente ao lazer dos trabalhadores e se existem fatores moderadores destas relações.
Perguntas de pesquisa:
1. Existe relação entre a situação perante ao trabalho (precariedade) e os comportamentos de movimento?
2. Existe relação entre a precariedade do trabalho e as atitudes frente ao lazer?
3. O género, a renda e a saúde mental podem ser moderadores destas relações?
4. As crenças neoliberais, ou seja, o grau que as pessoas incorporaram a ideologia em suas vidas (em seus comportamentos, relacionamentos, perceções e autoconceito), estão relacionadas com os comportamentos de movimento, a saúde mental e o tempo livre?
MÉTODO: Pretendemos reunir dados de trabalhadores de diversos setores e aplicar questionários validados para mensurar as variáveis de interesse. Além disso, pretendemos utilizar métodos mistos (quantitativos e qualitativos) para descrever os resultados. Pretende-se divulgá-los em congressos e revistas científicas, e angariar financiamento junto a agências de fomento à pesquisa.

5. Apresentações de Trabalhos (Tese II e Outros Investigadores do CIDEFES)

5.1. The relationship between centre of pressure data and archery performance

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INTRODUCTION
Postural stability is crucial for archery performance, particularly during the aiming phase (period between anchoring and releasing the arrow). Postural stability has been assessed through the centre of pressure (CoP) data. Although limited in number, previous studies suggest that CoP data (CoP sway and velocity) may serve as predictors of shooting performance.
AIM
To analyse the relationship between CoP data and archery shooting performance during the aiming phase.
METHODS
Thirty-one archers aged 18 and over were selected (19 men; 32.7 ± 17.1 years; age categories: 3 juniors, 20 seniors, 8 veterans). Each archer shot 10 sets of 3 arrows at a target (18 m; official competition indoor distance) with recurve bows. Shooting

performance was evaluated based on target score and the distance from the arrow to the target center. CoP data was collected using a RSscan pressure plate (50 Hz). A camera (CANON EOS 550D; 25 Hz) was used to identify the aiming phase. The following COP parameters were computed: amplitudes of anteroposterior and mediolateral displacements; maximum anteroposterior and mediolateral velocities; ellipse area (95%). Spearman test was used to analyse the correlation between CoP and shooting performance variables. Mann-Whitney test was used to compare subjects with ≥ 5 years (8 archers) to those with < 5 years of archery experience (23 archers).
RESULTS
No significant correlations were found between CoP data and shooting performance. However, an individualized analysis revealed that 10 archers (8 with < 5 years of experience) showed significant correlations ($p < 0.05$). Archers with ≥ 5 years of experience had significantly better performance ($p < 0.05$); however, no significant differences were observed in CoP parameters between groups.
CONCLUSION
The findings were not aligned with previous studies that associated COP data and shooting performance. Therefore, other variables, such as centre of gravity or bow sway, may be more closely related to archery performance and could serve as more accurate predictors. However, COP data may still hold value as a performance-enhancing parameter in individualized analyses, particularly for individuals with less archery experience.

5.2. Effects of bed height on rescuer's fatigue and centre of pressure kinematics during chest compressions during cardiopulmonary resuscitation: preliminary results

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Introduction: Current cardiopulmonary resuscitation guidelines do not offer specific recommendations on patient positioning height (ground level or elevated surfaces), despite evidence suggesting that height may affect the rescuer postural stability and fatigue, potentially influencing chest compression (CC) quality.
Objective: To compare CC performed at different patient positioning heights regarding the rescuer postural stability and fatigue.
Methods: Seven participants (2 men; 46.6±9.0 years; ≥5 years of experience in cardiopulmonary resuscitation) were selected for this randomized crossover trial (1-week between different scenarios). Each participant performed five 2-minute CC cycles (with 2-minute rests between them) under four different patient positions/scenarios: ground and bed at 80cm, 42cm, and self-selected height (mean: 60cm). CC were performed on the manikin's left side, with the rescuer's right hand on its sternum. Centre of pressure (CoP) data was collected to assess postural stability during standing CC, using a pressure platform (Zebris medical FDM-1.5; 100Hz). Muscular fatigue of the trapezius superior (TS) and lumbar erector spinae (LES) was assessed through electromyography data

(Biosignalplux; 1000Hz), using the median frequency value (MDF) – value tends to decrease when fatigue appear. Global fatigue was assessed using heart rate (Polar Electro H10) and blood lactate values (Lactate Pro 2 LT-1730). Wilcoxon test was used to compare the different patient positions/scenarios.
Results: CC performed standing at 80cm yielded higher CoP peak velocity ($p<0.05$); CoP ellipse area differed between scenarios (narrower for CC performed standing at 80cm). CC performed on the ground yielded higher MDF of LES compared to self-selected and 42cm heights ($p<0.05$); CC performed standing at 80cm yielded higher MDF of LES compared to the other two CC standing scenarios ($p<0.05$); CC performed on the ground yielded higher MDF of TS compared to the standing scenarios ($p<0.05$). CC performed standing at 80cm yielded a trend toward higher blood lactate and heart rate values ($p=0.068$).
Conclusion: Performing CC while standing at an 80cm bed height (standard hospital bed height) reduced rescuer postural stability and increased global fatigue, while performing CC on the ground appeared to result in lower TS fatigue. Performing CC while standing at lower bed heights appeared to induce higher ES fatigue.

5.3. A scoping review on optimum power load with barbell exercises: a key to enhance performance in athletes

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In physical quality training, efforts continue to determine optimal prescribed loads for barbell exercises, particularly when working with athletes requiring supplementary training. With velocity-based training, new methods for determining barbell exercise loads have emerged. Beyond the traditional one repetition maximum (RM), testing methods now focus on barbell velocity with specified loads. These approaches create profiles showing load, velocity, and power relationships. Unlike conventional RM percentage-based loading, these profiles enable power value determination from load and bar-velocity measurements.
This study aimed to review research methodologies employed to determine the Optimum Power Load (OPL) in barbell exercises, offering a comprehensive overview.
The scoping review criteria included English-language studies of athletes from individual and team sports that used velocity-measuring devices to quantify OPL and correlate it with performance metrics (sprinting, jumping, change of direction). The search was conducted on four databases (PubMed, Scopus, Web of Science, and SPORTDiscus) in June 2024, and yielded 2717 records. After screening, 13 studies were included in the final review.
Results from the reviewed literature indicate that training programs utilizing OPL are more effective than traditional strength-power periodization for improving 10m and 20m sprint speed and mean propulsive power (MPP). When comparing different OPL strategies, jump squat training demonstrated superior improvements in jump height, multi-distance sprint velocity, and change of direction speed compared to Olympic Push Press training. In combined-method training, adding plyometrics to OPL resulted in greater jump

improvements, whereas adding resisted sprinting yielded better resisted sprint times. For potentiation protocols, cluster sets at OPL proved superior to traditional sets for enhancing subsequent countermovement jump height. Similarly, self-selected repetition schemes enhanced post-activation jump performance more than fixed-volume schemes. A pivotal cross-sectional finding among 109 elite athletes was the consistency of the mean propulsive velocity (MPV) at which MPP occurs, with individual values narrowly scattered around a mean of approximately 1.0 $m \cdot s^{-1}$. This bar power was largely to near-perfectly correlated with sprint performance.
Training at OPL is superior to traditional models in enhancing athletic speed. The consistent finding of maximal power occurring at an MPV of approximately 1.0 $m \cdot s^{-1}$ offers an empirically grounded framework for effective load prescription.

5.4. Mobilidade ciclável na cidade de Lisboa: promoção da bicicleta como alternativa ao transporte particular

Tiago G. Encarnação

Introdução
O aumento do uso do carro nas últimas décadas, levou à redução da atividade física no dia a dia das pessoas, contribuindo para o sedentarismo, hoje visto como um problema global de saúde, tendo ainda agravado problemas ambientais, como a poluição, dificuldades de circulação nas cidades, e excesso de ocupação do espaço público.
Neste cenário, a bicicleta surge como uma alternativa sustentável e acessível, que ajuda a incluir exercício físico na rotina, promovendo hábitos saudáveis, reduzindo a poluição e melhoria da qualidade de vida nas cidades
Objetivo Geral
A bicicleta, sendo um meio de transporte ativo, acessível e não poluente, permite reduzir o tráfego automóvel, combater o sedentarismo e promover estilos de vida mais saudáveis. Avaliar os seus impactos permite identificar benefícios para a cidade e para os cidadãos, apoiar decisões baseadas em evidência e contribuir para a construção de uma Lisboa mais saudável, eficiente e amiga do ambiente.
Objetivos Específicos
1. Realizar uma revisão sistemática sobre mobilidade ciclável.
2. Caracterizar os utilizadores das ciclovias de Lisboa (perfil, rotas, distâncias, tempos).
3. Verificar se a utilização da bicicleta permite atingir as recomendações semanais de atividade física da OMS.
4. Comparar os tempos de deslocação entre bicicleta e transporte particular.

Hipóteses
- Os utilizadores são ativos, saudáveis e percorrem distâncias moderadas.
- O uso da bicicleta permite cumprir as recomendações de atividade física.
- Em meio urbano, a bicicleta é mais rápida que o carro em trajetos curtos.

Metodologia

- Instrumentos: questionários Qmov24 e Com-b (validados e traduzidos).
- Recolha de dados: online (via GIRA, FPUB, FPC, FTP, U-Bike) e presencial (em 2 pontos de 6 eixos principais de ciclovias de Lisboa).
- Amostra: 384 participantes da área metropolitana de Lisboa, com critérios de inclusão e exclusão.

Contexto de Lisboa

- A cidade apresenta baixos níveis de uso da bicicleta (1%), muito abaixo de cidades como Copenhaga (35%) e Amesterdão (32%).
- Nos últimos anos, foram feitos investimentos em ciclovias e no sistema de bicicletas partilhadas GIRA.

Impacto Esperado

Avaliar a eficácia dos investimentos em mobilidade ciclável e o seu impacto na saúde e nos hábitos da população

5.5. Relação entre deslocamento e centro de pressão e pontuação em figuras de pares de equilíbrio na ginástica acrobática

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INTRODUÇÃO: O controlo sobre a postura assume um papel fulcral na Ginástica Acrobática, tanto nos elementos de dificuldade, estando associado a um bom desempenho desportivo. Durante as figuras de equilíbrio, o centro de pressão é um dos indicadores envolvidos na manutenção desse estado.
OBJETIVOS: Investigar se a variação da posição do centro de pressão está relacionada com a pontuação atribuída por juízes durante a realização de uma figura de equilíbrio em duas situações: a) na totalidade da figura e, b) em cada fase da figura.
MÉTODOS: Medimos a variação da posição do centro de pressão durante a realização da figura de pares de equilíbrio em que o base se encontra na posição bípede e o volante realiza ângulo de pernas afastadas e transição para apoio facial invertido nas mãos do base. Cada par realizou cinco repetições com o base numa plataforma de pressão, as repetições foram gravadas e cedidas a juízes internacionais que avaliaram a execução através dos critérios do Código de Pontuação em vigor. Este estudo, além de pioneiro numa área de elevada relevância, faz a ponte entre a investigação científica e o contexto prático, através da utilização de equipamento e software acessíveis, que podem ser utilizados diretamente no treino e permitem ao treinador corrigir e melhorar a performance dos ginastas em tempo real.
RESULTADOS: Relativamente à análise estatística foi observado que as penalizações atribuídas pelos juízes relativamente à instabilidade estão positiva e significativamente correlacionados com a área da elipse, quanto maiores estes indicadores de performance, maior a penalização e também foi verificado um maior deslocamento do CP no eixo médio-lateral.

CONCLUSÃO: A principal conclusão que podemos retirar deste estudo é que a pontuação dos juízes está relacionada com a deslocação do centro de pressão dos ginastas. Sugerindo que o desenvolvimento da estabilidade durante a execução de uma pirâmide na disciplina de ginástica acrobática vai ter efeitos positivos sobre a pontuação atribuída pelos juízes. O controlo postural assume assim um papel preponderante na obtenção de bons resultados. Este estudo apenas foi realizado com pare. Como estudámos dois elementos técnicos e a transição entre eles conseguimos perceber que a área da elipse é significativamente mais baixa na fase 1 em comparação com o observado nas fases seguintes.

5.6. Effectiveness of hybrid physical activity interventions with text messages in older adults – a rapid systematic review

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Background: According to the World Health Organization (WHO), one-sixth of the world's population will be over 65 by 2030, and by 2050, this number is expected to reach two billion. Physical activity (PA) can improve the aging process. Despite known benefits, compliance among older adults with WHO-recommended PA levels remains low. Evidence indicates that hybrid interventions with SMS can increase exercise frequency in older adults.
Objective: Thus, this Rapid Systematic Review aims to assess the effectiveness of hybrid interventions that utilize text messages to promote PA in older adults, in three domains: 1) PA levels; 2) PA programs adherence; and 3) Health benefits.
Method: A broad search was made on PubMed (last search on June 2025) based on PICO to include experimental and non-experimental studies, utilizing hybrid interventions with SMS text on older adults.
Results: Four studies (n = 260) published between 2016-2024 were meticulously analyzed. All studies resulted in between 70%-100% program adherence. Regarding PA levels, two studies showed a maintenance of daily steps after the end of the intervention, while other studies provide self-reported information showing improvement in weekly PA.
Conclusion: This indicates that hybrid interventions with SMS text appear to be effective both in PA program adherence and PA levels. As for health improvements, more studies are needed with a focus on this domain.