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The academic study of exercise and sport sciences

Behind the scenes

UNIVERSITÀ

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Review methodology

This book adopts a narrative review methodology to synthesize the academic, professional, and policy dimensions of exercise and sport sciences, with a particular emphasis on their evolution and contemporary challenges. The narrative approach was selected to provide a comprehensive, interpretive overview of the field, integrating historical developments, educational frameworks, and scientific advancements into a cohesive narrative that bridges theory and practice. Unlike systematic reviews, which prioritize exhaustive searches and quantitative synthesis, this narrative methodology was deliberately selected as most appropriate for synthesizing the different historical, legislative, pedagogical, and scientific threads across disparate international and national contexts. This approach allows for the interpretive depth necessary to explore the complexities and nuances of the field's evolution and current challenges, a scope often constrained by the stricter protocols of systematic reviews.

The source selection process began with a purposive sampling of foundational and contemporary works in exercise science, kinesiology, and related subdisciplines (e.g., biomechanics, exercise physiology, motor learning). Key texts were identified through academic databases such as PubMed, Scopus, and Google Scholar, using search terms including “exercise science”, “kinesiology”, “physical activity education”, “Italian sports science curriculum”, and “evidence-based practice in sports”. To ensure relevance to the Italian context, official policy documents (e.g., *Gazzetta Uffi-*

cial decrees) and publications from Italian academic bodies (e.g., UNC, 2025) were retrieved from governmental and institutional repositories. The reference lists of seminal works were also mined to capture additional influential studies.

Inclusion criteria focused on sources that addressed the manuscript's core themes: the historical evolution of the field, educational structures (global and Italian-specific), professional applications, and epistemological challenges. English- and Italian-language publications from peer-reviewed journals, books, and policy reports were prioritized, with a temporal scope spanning foundational works (e.g., Henry, 1964) to recent contributions. While no formal exclusion criteria were applied, preference was given to studies with robust empirical or theoretical grounding over anecdotal or non-peer-reviewed materials.

The synthesis process involved thematic analysis, wherein sources were categorized according to the manuscript's chapter structure (e.g., human movement significance, Italian curriculum, evidence-based practice). Findings were critically evaluated to identify trends, gaps, and tensions in the literature – such as the narrowing of curricula or the fragmented identity of KSS – and integrated with legislative and statistical data to ground the discussion in real-world contexts. While this approach lacks the statistical rigor of meta-analyses, it compensates with a holistic, interpretive lens suited to the book's exploratory objectives.

Limitations of this methodology include potential selection bias due to the purposive nature of source identification and the absence of a systematic protocol for exhaustiveness. To mitigate this, efforts were made to cross-reference claims with multiple sources and incorporate diverse perspectives, including international benchmarks (e.g., ERC model, WHO guidelines). Readers are encouraged to view this work as a scholarly synthesis rather than a definitive empirical study, with its strength lying in its integrative narrative and contextual depth.

Introduction

The study of human movement – its mechanics, its meanings, and its manifold impacts – stands as one of the most dynamic and interdisciplinary pursuits within contemporary academia. This book emerges from a deep-seated conviction that the fields of exercise science, while ostensibly united by their focus on physical activity, are at a critical juncture. They are disciplines shaped by a rich historical legacy, propelled by scientific rigour, and yet perpetually challenged by societal expectations, institutional constraints, and epistemological tensions.

The aim is to peel back the layers of this academic enterprise, revealing not only its intellectual foundations but also the intricate interplay of forces that define its present and will dictate its future.

The genesis of this work lies in recognition of the ubiquity and significance of human movement, a theme that reverberates through the opening chapter. Movement is not merely a physical act; it is a fundamental expression of human existence, threading through the mundane and the extraordinary alike. From the subtle adjustments of posture to the explosive dynamism of athletic performance, movement constitutes a lens through which everybody can understand health, culture, identity, and capability. Yet, despite its pervasiveness, the systematic study of movement – encapsulated in the disciplines of exercise science and kinesiology – remains a relatively young field, one that has undergone dramatic transformations over the past century. This book seeks to

chronicle that evolution, interrogate its current state, and propose pathways toward a more cohesive and impactful future.

Historically, the academic study of physical activity traces its roots to the physical education programmes of the late 19th and early 20th centuries, a period when the cultivation of bodily vigour was seen as a moral and societal imperative. In North America, the term kinesiology emerged to denote a broad, interdisciplinary science of human movement by the late 20th century. In Italy, a parallel trajectory unfolded, with institutions like the Higher Institute of Physical Education (I.S.E.F.) laying the groundwork for what would become a robust academic framework aligned with European standards. These historical developments, detailed in Chapters 1 and 2, illustrate a shift from prescriptive training to a scholarly discipline grounded in empirical inquiry and evidence-based practice. Yet, this transition has not been without its fractures. As the field expanded, it splintered into subdisciplines – biomechanics, exercise physiology, motor learning, sport psychology – each vying for prominence and resources, often at the expense of a unified identity. This fragmentation manifests practically; for instance, whilst the role of a physiotherapist is relatively standardised globally, the ‘exercise professional’ title encompasses vastly different scopes of practice internationally, ranging from community fitness instruction to specialised clinical rehabilitation, often lacking consistent legislative backing or clear integration pathways into healthcare systems (as explored further in Chapter 4).

This fragmentation is not merely an academic curiosity; it has profound implications for how professors educate students, conduct research, and apply knowledge in professional settings. The surge in undergraduate enrolments in exercise science and kinesiology programmes – a trend noted in the early 21st century and persisting in various forms today – reflects a societal awakening to the centrality of physical activity in health and well-being. Yet, as Chapter 5 argues, the narrowing of curricula in response to this demand has sometimes come at the cost of breadth and integration. The peril of excessive specialisation looms large, threatening

to produce graduates who are technically proficient but lack the holistic perspective necessary to navigate the complexities of human movement in diverse contexts. This tension between depth and breadth, between vocational training and scholarly inquiry, recurs throughout the book – not as an abstract dilemma but as a lived challenge, examined through the lens of an educator and researcher actively engaged with these questions.

The professional landscape adds another layer of complexity, as the identity of the exercise professional remains ambiguous in many global contexts, hindering their integration into healthcare systems. Chapter 4 delves into this issue, offering a comparative analysis of role clarity and legislative frameworks, with a particular focus on Italy's structured model of the kinesiologist versus the broader international ambiguity. By proposing a unified yet adaptable framework, this chapter underscores the need for professional legitimacy to enhance the impact of exercise specialists on public health – a theme that resonates with the educational and practical challenges explored elsewhere in the book.

This narrative aims to balance global and local dimensions, integrating international perspectives while anchoring much of the analysis within the Italian context – an especially illuminating case study. Chapter 2 delves into the evolution of the exercise and sport sciences curriculum in Italy, tracing its journey from the I.S.E.F. to the “3+2” structure of bachelor's and master's degrees introduced in the late 1990s and early 2000s. The Italian Ministerial Reform of 2023, explored in Chapter 2, represents a recent attempt to refine this framework, delineating clear educational pathways such as the L-22 bachelor's degree in Exercise and Sports Sciences and specialised master's programmes like LM-67 (Preventive and Adapted Physical Activity Sciences) and LM-68 (Sports Science and Techniques). These reforms reflect a broader European push toward standardisation and professionalisation, yet they also expose persistent challenges: the fragmented scientific identity of the field, the overlap with allied disciplines like medicine and physiotherapy, and the struggle to secure legal and

societal recognition for movement science professionals. Chapter 3 further explores these dynamics, focusing on the redefinition of kinesiology in Italy through legislative reforms like the 2021 sport reform and the rise of the kinesiologist profession, alongside the epistemological tensions that accompany such shifts.

The Italian experience is emblematic of a larger global narrative, one in which exercise science and kinesiology grapple with their place in the academic and professional hierarchy. As Chapter 7 illustrates, the role of physical activity has evolved from a biomedical curiosity – epitomised by pioneering studies like Morris *et al.*'s (1953) work on coronary heart disease – to a global public health imperative, enshrined in initiatives like the World Health Organization's Global Action Plan on Physical Activity (2018–2030). This shift has elevated the stakes for the disciplines, demanding not only scientific excellence but also the ability to translate research into policy and practice. Yet, as Chapter 8 contends, the promise of evidence-based practice – a cornerstone of modern exercise science – remains only partially realised. The gap between laboratory findings and real-world application persists, exacerbated by institutional silos, funding priorities, and a reluctance among some practitioners to embrace rigorous scientific methods.

This book, then, is both a celebration and a critique. It celebrates the renaissance of physical culture that has seen exercise science and kinesiology emerge as vital academic fields, contributing to advancements in health promotion, athletic performance, and therapeutic innovation. The three pillars of exercise science – experiential learning, scholarly inquiry, and professional practice – form the bedrock of this progress, as articulated in Chapter 1. Through direct engagement with movement, rigorous research, and applied expertise, the discipline has developed to bridge the mind and body, as well as theory and action. Yet, the critique is equally pressing. The field's fragmented identity, its epistemological tensions, and its struggle for autonomy – themes explored in Chapters 3 and 5 – underscore the need for a more unified framework. In Italy, the rise of the kinesiologist profession, catalysed by

the 2021 sport reform and further clarified in Chapter 4's legislative analysis, exemplifies both the promise and the pitfalls of this endeavour, as legal recognition battles against disciplinary overlaps and cultural inertia.

The perspective presented here is shaped by the dual role of educator and researcher, where the classroom and the laboratory function not as separate realms but as interconnected spaces for the generation and dissemination of knowledge. Chapter 6 reflects this ethos, examining the knowledge, skills, and abilities that define university teaching in exercise and sport sciences. Theoretical foundations – anatomy, physiology, biomechanics – must be paired with practical competencies and transversal abilities, such as critical thinking and adaptability, to prepare students for a job market that increasingly demands versatility. This holistic approach, consistently advanced throughout the book, rejects the false dichotomy between mind and body, as well as theory and practice, instead embracing movement as a multifaceted phenomenon that demands an equally multifaceted response.

The international dimension of this work is equally critical. Chapter 5's exploration of the narrowing of exercise science curricula draws on comparative perspectives, contrasting the Italian model with those in North America, Australia, and beyond. The perils of excessive specialisation – a global trend – threaten to undermine the field's ability to address the diverse needs of special populations, occupational settings, and public health initiatives. By contrast, the advantages of a multidisciplinary approach, integrating biomechanics, motor behaviour, and mind-body training, offer a path forward. Similarly, Chapter 7's historical journey through physical activity – from its biomedical beginnings to its current status as a global imperative – underscores the need for systems-based approaches that transcend national boundaries and disciplinary silos.

[...]