



Comparative analysis of sports workers and kinesiologists: a paradox of similar jobs but distinct professional profiles

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ABSTRACT

Purpose. Recently, in Italy, two professions have been defined in the field of sports and physical activities: the sports worker, trained by sports organisations, and the kinesiologist, who holds a degree in exercise and sports sciences. This distinction is essential to ensure quality standards and appropriate regulations, avoiding duplication and confusion among professionals and clients. This study aimed to understand stakeholders' knowledge regarding the different professional roles involved in preventive and adapted physical activities, basic and advanced physical exercise, and functional re-athletisation.

Methods. A sample of 73 operators from gyms and sports centres in the province of Salerno completed a 12-item survey. Descriptive statistics and Fisher's exact tests were used to analyse the data, along with Cramer's V coefficient, to evaluate the association between variables.

Results. The results show that 40% of participants do not clearly distinguish between kinesiologists involved in preventive and adapted physical activities and sports kinesiologists, while 28.8% had a limited perception, and 4.1% had no knowledge. Fisher's test revealed limited knowledge about the distinction between roles ($p = 0.008$, $V = 0.5$), highlighting the importance of adequate information and training. Additionally, the professional sphere influences the perception of capabilities in designing post-rehabilitation recovery programs, indicating the need for additional training resources ($p = 0.003$, $V = 0.5$).

Conclusions. Such studies are fundamental for assessing the effectiveness of legislative and training measures in this sector.

Key words: sport reform, kinesiologists, reathletization, professional figures

Introduction

In Italy, the need to introduce a new comprehensive discipline for sports work and to modernise the regulation of the entire sector led, after several years, to the Sports Reform, enacted through delegation law n. 86 of August 8, 2019 [1]. This provision produced several Legislative Decrees that established precise rules regarding sports work. By means of Legislative Decree n. 36 of 28 February 2021, two distinct professions were established: the sports worker (Art. 25) and the kinesiologist (Art. 41) [2]. The definition of these two professions is fundamental to ensuring quality standards and appropriate regulations to avoid duplication of functions and confusion among clients and professionals themselves. Previously, these professionals were

involved in unpaid voluntary activities as sports workers and engaged in freelance professional activities without supervision or verification by professional organisations, operating as sports professionals [3]. Many European countries recognise and regulate similar professional figures in the field of sports, but there are differences in specificity and regulatory approaches. Some countries have more centralised and state-regulated systems, while others rely on professional bodies for certification and supervision [4]. The figure of the kinesiologist is not uniformly recognised or regulated across all countries, often falling under different professional categories or regulations depending on the national context. The European Commission reported that the sports instructor profession is regulated in 19 member states, while 8, do not regulate it [5]. Regulatory frameworks

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differ, with some countries specifying regulations for certain sports, while qualification requirements range from secondary education to advanced degrees, with various pathways for certification. Moreover, in Italy, there is no structured collaboration between sports federations and academic institutions for the qualification of professionals in the sports sector, unlike other European countries [6].

The Italian reform defines sports workers as professional figures who perform compensated tasks essential for sports activities. They participate in sports activities without gender distinction, whether in professional or amateur sectors. This category encompasses athletes, coaches, instructors, technical directors, sporting directors, athletic trainers, referees, and other individuals recognised by the technical regulations of national sports federations, associated sports disciplines, and sports promotion bodies [2]. To carry out their activity officially, they can choose to register for Value Added Tax (VAT) and obtain a professional qualification through the ATECO codes, updated by the Italian National Institute of Statistics (Istat), the latest of which dates was 2022 [7]. Alternatively, qualification as a sports worker can be obtained through membership in sports organisations, for individuals who have successfully completed training under the National System of Qualifications of Sport Technicians (SNaQ) of the Italian National Olympic Committee (CONI) [8]. On the other hand, for the proper conduct of physical activities, including competitive levels, and the protection of well-being as well as the promotion of healthy lifestyles, professional figures have been established: the basic kinesiologist, the kinesiologist of preventive and adapted physical activities, the sports kinesiologist, and the sports manager [9]. The professional activity of the basic kinesiologist involves conducting, managing, and evaluating individual and group physical activities. These activities are aimed at maintaining and restoring physical well-being through active lifestyles, including compensatory, educational, recreational, and sporting aspects adapted to different age groups. In addition, it involves leading, managing and evaluating activities aimed at improving the quality of life through physical exercise, contributing to the prevention, maintenance, and care of psychophysical well-being [10]. A three-year bachelor's degree in Physical Activity and Sport Sciences (class L-22) is required for the exercise of this professional activity [11].

The kinesiologist specialising in preventive and adapted physical activities designs and implements targeted physical activity programs to enhance the psychophysical well-being of individuals across different ages and physical conditions. They also organise activities

and promote lifestyles aimed at disease prevention and enhancing the overall quality of life through physical exercise. Additionally, they focus on preventing postural defects, facilitating post-rehabilitation functional recovery to optimise physical efficiency, and designing and assessing tailored physical activities for individuals with disabilities or stable health conditions [12]. A master's degree in Sciences and Techniques of Preventive and Adapted Physical Activities (class LM-67) is necessary to practice in this profession.

The sports kinesiologist, on the other hand, participates in designing, coordinating, and technically directing athletic training programs up to the highest competitive levels within sports associations, sports promotion bodies, institutions, and specialised centres. They also offer personalised physical and technical training for individual athletes and teams focused on competitive sports [13]. A master's degree in Sports Sciences and Techniques (class LM-68) is necessary to practice this profession. Lastly, the sports manager is responsible for planning and managing sports facilities, overseeing the management and operation of public and private venues for physical and recreational activities, and organising sports events as an expert and consultant [14]. A master's degree in Management of Sport and Physical Activities (class LM-47) [15] is required to practice in this professional field.

For each master's degree course, the Ministry of University and Research (MUR) has provided a specific table of classes to circumscribe the objectives to be pursued with the establishment of individual degree programs by the universities, designated in terms of the learning objectives to accomplish the specific learning objectives of the degree discipline [16]. These objectives are included in the disciplinary areas made up of the scientific-disciplinary fields, to which reference should be made when defining individual curricula. Once obtained, the educational qualification enables access to one of the four distinct lists (similar to a professional register) within the Department of Sport of the Presidency of the Council of Ministers.

Initially, with Legislative Decree n. 163 of 5 October 2022, a hypothetical equivalence between CONI's SNaQ qualifications and academic qualifications was proposed [17]. However, this hypothesis proved impracticable due to differences in application between qualifications of different origins (academic and professional). This condition violates the existing legislative provision of the European qualification framework (EQF) for the free movement of degree holders in the European Union (EU) in the field of physical activity and sports sciences according to the guidelines on physical activity and sedentary lifestyle of the World Health Or-

ganization [18]. The Italian government, acknowledging the numerous criticisms expressed by all stakeholders involved during the hearings of the competent parliamentary commissions regarding the reform, and aware of the need to mitigate them without definitively compromising the reform process, thus nullifying the work done so far, has introduced further integrative and corrective provisions [19]. Legislative Decree n. 120 of 29 August 2023, ensured that technicians from established sports institutions under CONI maintained control over sports activities, excluding kinesiologists from the category of sports workers [20]. The succession of such legislative provisions, currently in the implementation phase, may have caused confusion regarding the functions of voluntary activities, previously carried out without adequate state regulation [21, 22]. Volunteer activities in the Italian sports sector play a fundamental role in promoting the physical and mental well-being of individuals, as well as in supporting sports activities in any form they are practised, particularly considering the recent amendment to Article 33 of the Italian Constitution [23]. These activities are regulated by Article 29 of the Sports Reform, Legislative Decree n. 36/2021 [2]. This regulation establishes that sports organisations can rely on volunteers who are dedicated to promoting sports and fitness with modest financial compensation. In some situations, sports volunteering may include reimbursements or other forms of support, while still maintaining its non-profit nature. Therefore, it highlights the importance of volunteering in the field of sports and fitness. They carry out various tasks, such as implementing preventive and adapted physical activity programs for different age groups and fitness levels, as well as conducting exercise classes and sports initiation at CONI. Additionally, they collaborate with health and wellness professionals in post-rehabilitation functional re-education and promote inclusive values within schools and communities. However, the lack of formal regulation has left ample room for interpretations and non-uniform practices. Although such provisions aim to ensure greater clarity and protection in the voluntary sector, they risk destabilising the methods of carrying out activities themselves, which until now have enjoyed relative freedom of action, free from fiscal, social security, or civil constraints.

Considering these critical issues, the study aims to explore stakeholders' perceptions of the new professional roles in the sports sector. It is important to note that the Italian government did not conduct any sector-specific studies before implementing the reform. Therefore, it is crucial to assess stakeholders' opinions now to understand the impact of the reform and identify the

determinants of success and failure. This analysis can inform future regulatory updates, ensuring they address the practical challenges faced by professionals in the field. Furthermore, by capturing stakeholder insights, the study can identify the factors contributing to the success or failure of the reform, ultimately leading to improved service quality and continuity in the sports sector.

Material and methods

Study participants

The present study involves a representative sample of 73 active operators within gyms and sports centres located in the province of Salerno, identified as internal stakeholders. The participants have a balanced gender distribution, with 63% men and 37% women. The average age is approximately 35 years, with a distribution ranging from 25 to 47 years. Their professional qualifications include degrees in Physical Activity and Sport Sciences, certifications as personal trainers and athletic trainers, and work experience in the sector ranging from 5 to 20 years. These operators play crucial roles in the daily operations of such facilities, including instructors, athletic trainers, managers, and other professionals who contribute to their optimal functioning. The sampling was performed using a simple randomisation method, where participants were randomly selected from the list of active operators in sports centres within the province. This approach ensures that each operator has an equal probability of being included in the sample, thereby enhancing the representativeness and generalisation of the results. Participation in the study was voluntary, and informed consent was obtained from all participants.

Study design

After choosing the target population, data collection was carried out considering both methodological implications and available economic and human resources. On this basis, it was decided to administer a survey, the writing of which was based on the conceptual dimensions and related indicators identified during the definition of the research objective. Some studies in the literature have demonstrated the validity of the survey in detecting the perceptions of stakeholders [24–26]. The survey was prepared using Google Forms and subsequently emailed to recruited participants. Consisting of 12 questions, the majority of which offer four response options, the survey enabled respondents

to choose one answer for each query. However, it is worth noting that certain questions, such as those pertaining to gender and age, feature a varying number of response options, tailored to the nature of the information required. The questions encompass diverse content, encompassing assessments of knowledge depth and comprehension on specific topics, as well as evaluations of each participant's skills and experiences within their respective fields of work or study. Before the main phase of the research, a pilot phase was conducted with a small group of participants to assess and optimise the clarity and relevance of the questions in the survey. The feedback gathered during this phase guided targeted modifications that led to the definitive version of the survey. The survey is delineated in Table 1.

Table 1. Survey administered to the stakeholders

Q1	Age	
	Gender	
Q2	a) Female b) Male	
Q3	What is your educational or professional background? a) Master's degree in Sports Sciences and Techniques (LM-68) b) Master's degree in Preventive and Adapted Physical Activities (LM-67) c) Qualification from national sports federation (FSN) or sports promotion body (EPS) d) None of the above	
Q4	Do you know the differences between a preventive and adapted physical activity kinesiologist and a sports kinesiologist? a) Not at all b) Little c) Moderately d) A lot	
Q5	What are the differences between a preventive and adapted physical activities kinesiologist and a sports kinesiologist? a) The kinesiologist specialising in preventive and adapted physical activities focuses on physical re-education regardless of sports performance, while the sports kinesiologist focuses on athletic training and reconditioning b) Both kinesiologists are involved in physical re-education, as well as athletic training and reconditioning c) The kinesiologist specialising in preventive and adapted physical activities utilises non-conventional therapies, whereas the sports kinesiologist employs traditional training methodologies d) The kinesiologist specialising in preventive and adapted physical activities primarily concentrates on therapy, while the sports kinesiologist focuses on scientific research in the field of sports	
Q6	What are you responsible for in the organisation where you work? a) Athletic training up to the highest competitive levels b) Personal training c) Reathletization, functional recovery post-injury, postural rebalancing, and functional re-education d) Two of the previous options	
Q7	Have you obtained, or do you intend to obtain a degree in Preventive and Adapted Physical Activities (LM-67) or Sports Science and Techniques (LM-68)? a) No, I have not obtained, nor do I intend to obtain such academic degrees b) Yes, I intend to obtain one of the two degrees because I am aware of the job opportunities it offers, and these align with my professional ambitions c) Yes, I intend to obtain one of the two degrees because it also allows me to teach in schools, thereby expanding my job opportunities d) Yes, I am considering the possibility of obtaining one of the two degrees to deepen my knowledge in the field of sports sciences, although I have not yet clearly defined my career prospects now	
Q8	How confident are you in designing and conducting physical activity programs for all age groups? a) Not at all b) Little c) Moderately d) A lot	
Q9	How confident are you in designing and conducting physical activity programs tailored to individuals with various physical conditions? a) Not at all b) Little c) Moderately d) A lot	
Q10	How confident are you in organising and planning activities aimed at preventing postural alterations and facilitating post-rehabilitation functional recovery? a) Not at all b) Little c) Moderately d) A lot	
Q11	How confident are you in designing and conducting physical and technical preparation programs for individual sports, up to the highest competitive levels? a) Not at all b) Little c) Moderately d) A lot	
Q12	How confident are you in designing and conducting physical and technical preparation programs for team sports, up to the highest competitive levels? a) Not at all b) Little c) Moderately d) A lot	

Statistical analysis

To validate the surveys, we first assessed its internal consistency through Cronbach's α and associated 95% confidence intervals (CI). A Cronbach's α of 1 indicated perfect reliability, with a cut-off of 0.7 indicating an acceptable internal consistency. Then, descriptive statistics were represented as percentages (%), reflecting the distribution of responses for each of the twelve questions in the survey. To examine the relationships between categorical variables and determine their significance, Fisher's exact test was used, chosen for its effectiveness in analysing non-parametric data and small sample sizes. To assess the strength and degree of these associations, Cramer's V coefficient was used. The analysis was conducted using the Statistical Package for Social Science software (IBM SPSS Statistics for Windows, version 25.0, IBM, SPSS Inc., Armonk, NY, USA).

Results

The survey reveals a diverse demographic with an even distribution across different age groups: 12.3% were aged 25–27 years, 13.7% were 28–30 and 31–33 years old, 17.1% were 34–36 years old, 10.3% were 37–39 years old, 10.3% were 40–42 years old, and 12.3% were 43–45 years old. Most respondents were male (63%) compared to female (37%). Education backgrounds varied, with 38.4% holding a master's degree in Sports Sciences and Techniques, 37% having a master's degree in Preventive and Adapted Physical Activities, and 50.7% holding qualifications from national sports federations. Engagement levels span from mini-

mal to high involvement, with 4.1% not engaged at all and 23.3% highly engaged. Most respondents (60.3%) believe kinesiologists focus on both physical re-education and athletic training. Career focuses include personal training (37%) and athletic training (24.7%). Intentions to pursue further education vary, with 21.9% motivated by job opportunities. Confidence levels and satisfaction with education and career prospects show moderate tendencies overall. Table 2 reflects the distribution of answers for each of the twelve questions in the survey.

Four significant relationships were identified in the data analysis, each associated with a notable p -value. First, there was a significant correlation ($p = 0.013$) between understanding the differences in kinesiologists (Q4) and confidence in designing programs for all age groups (Q8). Secondly, another significant correlation ($p = 0.008$) emerged between understanding kinesiologists' differences (Q4) and confidence in organising postural alteration prevention activities (Q10). Additionally, a significant relationship ($p = 0.003$) was found between organisational responsibilities (Q6) and confidence in organising postural alteration prevention activities (Q10). Lastly, there was a significant correlation ($p = 0.001$) between confidence in designing programs for all age groups (Q8) and confidence in tailoring programs for individuals with various physical conditions (Q9). These findings underscore the interconnectedness of knowledge, responsibilities, and confidence levels in physical activity program design and implementation. A detailed description is shown in Table 3.

Table 2. Survey results on sports science and kinesiology education and perceptions

	Answer options	%
Q1. Age	a) 25–27 years	12.3
	b) 28–30 years	13.7
	c) 31–33 years	13.7
	d) 34–36 years	17.1
	e) 37–39 years	10.3
	f) 40–42 years	10.3
	g) 43–45 years	10.3
	h) 46–47 years	12.3
Q2. Gender	a) Female	37
	b) Male	63
Q3. What is your educational or professional background?	a) Master's degree in Sports Sciences and Techniques (LM-68)	38.4
	b) Master's degree in Preventive and Adapted Physical Activities (LM-67)	37
	c) Qualification from national sports federation (FSN) or sports promotion body (EPS)	50.7
	d) None of the above	12.3

HUMAN MOVEMENT

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Q4. Do you know the differences between a preventive and adapted physical activity kinesiologist and a sports kinesiologist?	a) Not at all b) Little c) Moderately d) A lot	4.1 28.8 43.8 23.3
Q5. What are the differences between a preventive and adapted physical activities kinesiologist and a sports kinesiologist?	a) The kinesiologist specialising in preventive and adapted physical activities focuses on physical re-education regardless of sports performance, while the sports kinesiologist focuses on athletic training and reconditioning b) Both kinesiologists are involved in physical re-education, as well as athletic training and reconditioning c) The kinesiologist specialising in preventive and adapted physical activities utilises non-conventional therapies, whereas the sports kinesiologist employs traditional training methodologies d) The kinesiologist specialising in preventive and adapted physical activities primarily concentrates on therapy, while the sports kinesiologist focuses on scientific research in the field of sports	60.3 13.7 12.3 13.7
Q6. What are you responsible for in the organisation where you work?	a) Athletic training up to the highest competitive levels b) Personal training c) Reathletization, functional recovery post-injury, postural rebalancing, and functional re-education d) Two of the previous options	24.7 37 17.8 20.5
Q7. Have you obtained, or do you intend to obtain a degree in Preventive and Adapted Physical Activities (LM-67) or Sports Science and Techniques (LM-68)?	a) No, I have not obtained, nor do I intend to obtain such academic degrees b) Yes, I intend to obtain one of the two degrees because I am aware of the job opportunities it offers, and these align with my professional ambitions c) Yes, I intend to obtain one of the two degrees because it also allows me to teach in schools, thereby expanding my job opportunities d) Yes, I am considering the possibility of obtaining one of the two degrees to deepen my knowledge in the field of sports sciences, although I have not yet clearly defined my career prospects now	38.4 21.9 16.4 23.3
Q8. How confident are you in designing and conducting physical activity programs for all age groups?	a) Not at all b) Little c) Moderately d) A lot	1.3 13.7 60.3 24.7
Q9. How confident are you in designing and conducting physical activity programs tailored to individuals with various physical conditions?	a) Not at all b) Little c) Moderately d) A lot	6.8 26 49.3 17.9
Q10. How confident are you in organising and planning activities aimed at preventing postural alterations and facilitating post-rehabilitation functional recovery?	a) Not at all b) Little c) Moderately d) A lot	6.9 43.8 34.2 15.1
Q11. How confident are you in designing and conducting physical and technical preparation programs for individual sports, up to the highest competitive levels?	a) Not at all b) Little c) Moderately d) A lot	2.8 21.9 49.3 26
Q12. How confident are you in designing and conducting physical and technical preparation programs for team sports, up to the highest competitive levels?	a) Not at all b) Little c) Moderately d) A lot	6.9 35.6 39.7 17.8

Table 3. Fisher test results

		Q8. How confident are you in designing and conducting physical activity programs for all age groups?				<i>p</i>	<i>V</i>
		Not at all	Little	Moderately	A lot		
Q4. Do you know the differences between a preventive and adapted physical activity kinesiologist and a sports kinesiologist?	Not at all	0	1	2	0	0.013	0.3
	Little	0	6	15	0		
	Moderately	1	3	19	9		
	A lot	0	0	8	9		
		Q10. How confident are you in organising and planning activities aimed at preventing postural alterations and facilitating post-rehabilitation functional recovery?				<i>p</i>	<i>V</i>
		Not at all	Little	Moderately	A lot		
Q4. Do you know the differences between a preventive and adapted physical activity kinesiologist and a sports kinesiologist?	Not at all	0	2	1	0	0.008	0.5
	Little	3	14	4	0		
	Moderately	2	13	13	4		
	A lot	0	3	7	7		
		Q10. How confident are you in organising and planning activities aimed at preventing postural alterations and facilitating post-rehabilitation functional recovery?				<i>p</i>	<i>V</i>
		Not at all	Little	Moderately	A lot		
Q6. What are you responsible for in the organisation where you work?	Athletic training up to the highest competitive levels	3	12	10	2	0.003	0.5
	Personal training	2	13	3	0		
	Reathletization, functional recovery	0	1	4	8		
	Two of the previous options	0	1	8	6		
		Q9. How confident are you in designing and conducting physical activity programs tailored to individuals with various physical conditions?				<i>p</i>	<i>V</i>
		Not at all	Little	Moderately	A lot		
Q8. How confident are you in designing and conducting physical activity programs for all age groups?	Not at all	1	0	0	0	0.001	0.4
	Little	3	4	3	0		
	Moderately	1	14	26	3		
	A lot	0	1	7	10		

Discussion

The study aimed to understand the stakeholder’s knowledge regarding the different professional roles involved in preventive and adapted physical activities, basic and advanced physical exercises, and functional re-athletisation. From the analysis of the data in Table 2, a detailed account of the responses provided by the participants to the survey emerges, offering interest-

ing insights into various thematic areas. Analysis of each participant’s educational background reveals that a significant portion obtained diplomas from either a National Sports Federation or a Sports Promotion Organization, constituting 50.7% of the sample. Meanwhile, 38.4% hold master’s degrees in Sports Sciences and Techniques (LM-68), and 37% have attained master’s degrees in Preventive and Adapted Physical Activities (LM-67). A minority, corresponding to 12.3%,

do not possess any educational or professional qualifications. It is clear from the responses that several gyms and sports centres currently have more former athletes or federally licensed trainers in their technical staff than kinesiologists. In this sense, Article 27 of the Legislative Decree 229/2022, intervening on Article 41 of Legislative Decree n. 36 of 2021, clarifies the respective professional competencies: kinesiologists must deal with the movement of the body of those who perform physical activities; trainers of specific sports disciplines must deal with the performance of competitive sports activities [27].

A significant aspect concerns the stakeholders' understanding of the distinctions between the role of the kinesiologist in preventive and adapted physical activities and that of the sports kinesiologist, as highlighted in question 4. The results show that only a minority, 4.1%, reported having no knowledge of the matter, while a considerable percentage, 28.8%, indicated having limited knowledge. Most participants, 43.8%, stated having moderate knowledge, while 23.3% claimed to have a high understanding of the difference between the two profiles. The connection with question 5 is evident as it directly impacts the nature of the provided response. The majority of participants demonstrated a solid understanding of the distinctions, with 60.3% correctly identifying the focus of the kinesiologist of preventive and adapted physical activities for education and physical re-athletisation, as opposed to the more common athletic training associated with the sports kinesiologist. However, about 40% of the sample did not clearly grasp the peculiarities of these profiles. This lack of clarity can lead to confusion in the delivery of services, resulting in suboptimal exercise programs that do not effectively meet individuals' specific needs. Moreover, it may hinder collaboration among professionals, negatively impacting the overall effectiveness of physical activity initiatives. These critical issues have also been highlighted by the Conference of Autonomous Regions and Provinces (CARP), which recently called for a thorough evaluation of the implementation of the new regulations [28]. Regarding professional skills and specialisations, a substantial portion of the participants engage in personal training (37%) or athletic preparation up to the highest competitive levels (24.7%). A smaller group (17.8%) is involved in post-injury physical reathletization. In terms of academic aspirations, a significant percentage of participants (38.4%) reported not being interested in pursuing an academic degree. However, a notable portion (21.9%) expressed an intention to obtain one of two degrees (LM-67 or LM-68), viewing these courses as a pathway

to fulfilling their professional ambitions. Additionally, some participants (16.4%) believe that having academic qualifications can open new job prospects, such as teaching in schools. A notable percentage (23.3%) is considering furthering their education in the field of physical activity and sports sciences to deepen their expertise, even though they have not yet clearly defined their career objectives. Finally, regarding specific skills in program design and management, most participants consider themselves moderately proficient in creating and overseeing programs tailored to various age groups, individuals with different physical conditions, and both individual and team sports contexts.

From the analysis using Fisher's exact tests, four significant relationships between categorical variables were identified. The first significant relationship was between the perception of the distinction between kinesiologists specialising in preventive and adapted physical activities and sports kinesiologists, and their competence in designing and conducting programs for different age groups. Although most participants reported having limited or moderate knowledge of the distinction between these two professional roles, they still believed they were adequately competent in designing programs suitable for various age groups. The level of significance found ($p = 0.008$) indicates that the association between these two questions is statistically relevant, while the V Cramer Index ($V = 0.5$) indicates a moderately strong correlation. This data underscores the importance of adequate training and clearer professional roles in the field of physical exercise. Such improvements would promote a better understanding and application in designing programs suitable for different age groups. Additionally, a significant relationship emerged between Question 4 and Question 10. While most participants perceive themselves as "moderately" competent in designing and conducting programs for individuals with postural alterations and dysfunctions, as well as in post-rehabilitation recovery, a significant percentage feel less confident in this area. The significance value ($p = 0.003$) indicates a statistically significant association, while Cramer's V index ($V = 0.5$) suggests a moderately strong correlation. These results underscore the necessity for enhancing skills and access to training resources within the post-rehabilitation recovery domain. Notably, the significant relationship identified between Question 6 and Question 10 highlights the influence of the professional sphere on an individual's perceptions regarding their abilities in designing and planning activities aimed at preventing postural alterations and promoting functional recovery post-rehabilitation. The level of significance

($p = 0.003$) emphasises the statistical importance of this association, while the Cramer's V index ($V = 0.5$) indicates a moderately strong correlation.

In the domain of personal training, responses exhibited a more evenly distributed range, with a noticeable prevalence of individuals feeling "moderately" to "a lot" prepared. This trend reflects the broad and adaptable nature of personal training, which necessitates proficiency in addressing various physical and health-related needs. Those involved in athletic training, particularly at the highest competitive levels, perceive themselves as less equipped to manage specific postural dysfunctions compared to other domains. This shortfall could be attributed to the intense focus on optimising athletic performance rather than addressing biomechanical issues [29]. In the context of re-athletisation, post-injury functional recovery, postural realignment, and functional re-education, different evaluations are encountered, inclined to indicate a limited preparation in designing and conducting programs for individuals with postural alterations and dysfunctions. Those who operate in more than one professional field demonstrate a more balanced distribution among the various evaluations. This may reflect a more integrated and comprehensive view of the recovery process, which requires cross-cutting skills and a multidisciplinary approach. Finally, a statistically significant relationship was established between the participant's perception of their skills in designing and executing physical activity programs adapted to different age groups (Question 8) and their assessment of their skills in designing and executing programs aimed at individuals with different physical conditions (Question 9). The level of significance indicates that the association between these two questions is statistically significant ($p = 0.001$), while the Cramer's V Index ($V = 0.4$) suggests a moderately strong correlation. The data clearly highlights that most participants feel more confident in designing and conducting programs tailored to different age groups compared to those intended for individuals with various physical conditions. This finding suggests the need to invest in additional resources or dedicated training programs to prepare operators to effectively manage challenges related to diverse physical conditions, thus ensuring a level of competence comparable to that demonstrated in designing and conducting programs for diverse age groups.

As can be appreciated from the results of this study, it is still unclear what concrete effects this reform will have on the professional future of kinesiologists but, more importantly, on the effective health protection of citizens who participate in sports. Encouraging proper

physical and sports practice in citizens of all ages is important, given its benefits [30–32]. Studies of this kind play a fundamental role in analysing the effectiveness of legislative measures adopted. They not only provide an overview of current perceptions and skills among industry professionals but also allow for the assessment of the impact of policies and training initiatives in the field. This approach represents a gap that has been overlooked in the assessment of the sports reform and should be addressed to ensure a comprehensive evaluation of the effectiveness of the policies implemented.

To contextualise the results of this study within the broader framework of education and professional practice in sports sciences, it is useful to consider recent research conducted from various international perspectives. A study by Schlesinger et al. [33] in Switzerland assessed the alignment between academic courses in Physical Activity and Sport Sciences and professional requirements. It highlighted that while these courses effectively transmit specific sports-related skills and practical competencies, there is a clear gap in addressing interdisciplinary skills, which are increasingly crucial in different work environments. Similarly, perceptions of sports science professionals vary significantly among various stakeholders in Australia, as demonstrated by the study of Stevens et al. [34]. Coaches, professionals, and employers often differ in their assessments of the role and value of sports science graduates within sports teams. This disparity underscores the importance of effective communication and recognition of the contributions of sports science practitioners, as well as the promotion of favourable working conditions to ensure professional satisfaction and organisational effectiveness. Finally, a comparative study conducted in six European countries highlighted discrepancies between the competencies that graduates believe they possess and those considered essential by employers in the sports sector [35]. This disparity underscores the need for educational institutions to integrate practical experiences such as internships and volunteering into curricula to better prepare graduates for the demands of the job market. It is crucial to align educational curricula with the evolving needs of the sports industry to facilitate an effective transition of graduates into professional roles [36]. Continuous dialogue between educational institutions, professionals, and employers is essential to optimise training programmes, providing graduates with the technical, interdisciplinary skills, and practical experience needed to excel in dynamic and challenging sports environments [37]. Further research on these issues in different cultural

contexts and the long-term impact of educational reforms can guide policies to improve sports science education globally.

The main limitations of this study relate to the small size of the sample involved, which could limit the representativeness of the results. Furthermore, the subjectivity of each participant's perceptions poses another challenge, as personal opinions and individual experiences could influence the collected data. These factors could compromise the ability to generalise the results to a broader population outside the specific context of the study. Another limitation is the potential bias arising from the aggregated interpretation of the questionnaire results, which may hide significant differences between professional groups. It is important to note that the level of awareness and understanding of the questions can vary based on the education of the respondents, creating potential differences among the identified professional categories. Specifically, it is reasonable to expect that individuals with an academic background may provide more favourable responses. Therefore, a disaggregated analysis that considers the level of education as an independent variable could provide additional valuable insights, contributing to a better understanding of the differences in responses and helping to more effectively identify the priority target group for raising awareness about the roles and figures of sports operators.

There are opportunities for future research to expand the investigation to assess whether the findings obtained can be applied in broader and more different contexts. To achieve maximum benefits, the technical-practical skills and expertise of the kinesiologist are crucial. To bridge the gap between perceived and actual skills, it is essential to implement continuing education and training programs tailored to the needs identified by stakeholders. Such initiatives could enhance the competencies of professionals in the field, ensuring they are well-equipped to meet the evolving demands of the sports sector. Greater clarity is required from the institutions concerning the profile of the sports practitioner in the hope that proper attention will be paid to the opinion expressed by the territory (CARP) and that the suggested changes will help to give due value to the more than 100,000 sports science graduates who have been trained since the establishment of degree courses in Physical Activity and Sport Sciences in Italy.

Conclusions

The study highlights the complexity and lack of clarity regarding the roles and competencies of differ-

ent professional figures involved in preventive and adapted physical activities, basic and advanced physical exercise, sports, general functional rehabilitation, and post-injury rehabilitation, considering recent legislative provisions. The regulatory landscape in the Italian sports sector remains fragmented due to the evolution of legislative frameworks, contributing to confusion among stakeholders. A significant gap emerges in the competencies related to managing postural dysfunctions and other specific physical conditions, especially in the field of re-athletisation. This underscores the importance of additional training resources or dedicated programs to adequately prepare practitioners to effectively address the emerging challenges in the field.

Ethical approval

The study was conducted according to the guidelines of the Declaration of Helsinki. Ethical review and approval were waived for this study because it was a descriptive research study that did not involve clinical treatment. No sensitive data were collected.

Informed consent

Informed consent has been obtained from all individuals included in this study. All individuals involved in the study were guaranteed anonymity and were provided with complete and honest information about the content, purpose, and process of the research in an understandable way. No individual was forced to participate.

Conflict of interest

The authors state no conflict of interest.

Disclosure statement

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