

RESEARCH ARTICLE (ORIGINAL)

Profile of Sports Nurses in Portugal: A Cross-Sectional Study

Perfil dos Enfermeiros do Desporto em Portugal: Estudo Transversal
Perfil de los Enfermeros Deportivos en Portugal: Estudio Transversal

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Abstract

Background: The pursuit of maximum sports performance, together with the need to prevent injuries and complications, has increased the demand for highly specialized health professionals. However, the profile and perceptions of sports nurses in Portugal remain insufficiently explored.

Objective: To characterize the profile of sports nurses in Portugal.

Methodology: A cross-sectional study was conducted with 129 nurses using an online questionnaire addressing sociodemographic characteristics, education, professional experience, satisfaction, perspectives, and professional practice in sports settings.

Results: Participants were predominantly male (64.3%), with complementary training and varied professional experience (mean of 14 years). Despite contractual challenges, nurses reported moderate levels of professional satisfaction. Multidisciplinary work, diversity of roles, and the need for professional recognition stand out.

Conclusion: The broad scope of practice of sports nurses is crucial in supporting athletes' health, although greater academic and professional recognition is still required. This study contributes to the knowledge in this field and suggests future research to optimize practice.

Keywords: sports nursing; health care team; sports medicine; athletic injuries; emergencies; wounds and injuries

Resumo

Enquadramento: A procura por um rendimento desportivo máximo, aliada à necessidade de prevenir lesões e complicações, tem reforçado a exigência de profissionais de saúde altamente especializados. Contudo, o perfil e as perceções dos enfermeiros que atuam no desporto em Portugal ainda carecem de investigação.

Objetivo: Caracterizar o perfil do enfermeiro no desporto em Portugal.

Metodologia: Estudo transversal com 129 enfermeiros, mediante questionário online, que incluiu características, formação, experiência, satisfação, perspetivas e atuação profissional no contexto desportivo.

Resultados: Perfil predominantemente masculino (64,3%), com formação complementar e experiência variada (média 14 anos). Moderada satisfação profissional apesar dos desafios contratuais. Destaca-se a atuação multidisciplinar, a diversidade de funções e a necessidade de valorização profissional.

Conclusão: A atuação abrangente do enfermeiro no desporto é determinante no apoio à saúde dos atletas, embora haja necessidade de maior reconhecimento académico e profissional. Este estudo contribui para a área e sugere futuras investigações para otimizar a prática.

Palavras-chave: enfermagem no desporto; equipa de cuidados de saúde; medicina desportiva; lesões desportivas; emergências; feridas

Resumen

Marco contextual: La búsqueda del máximo rendimiento deportivo, junto con la necesidad de prevenir lesiones y complicaciones, ha reforzado la demanda de profesionales sanitarios altamente especializados. Sin embargo, el perfil y las percepciones de los enfermeros que trabajan en el ámbito deportivo en Portugal aún requieren investigación.

Objetivo: Caracterizar el perfil del enfermero en el deporte en Portugal.

Metodología: Estudio transversal con 129 enfermeros, mediante cuestionario *online*, que incluyó características, formación, experiencia, satisfacción, perspectivas y actuación profesional en el contexto deportivo.

Resultados: Perfil predominantemente masculino (64,3 %), con formación complementaria y experiencia variada (media de 14 años). Satisfacción profesional moderada a pesar de los retos contractuales. Destaca la actuación multidisciplinar, la diversidad de funciones y la necesidad de valoración profesional.

Conclusión: La amplia actuación del enfermero en el deporte es determinante para el apoyo a la salud de los atletas, aunque es necesario un mayor reconocimiento académico y profesional. Este estudio contribuye al área y sugiere futuras investigaciones para optimizar la práctica.

Palabras clave: enfermería deportiva; equipo de atención sanitaria; medicina deportiva; lesiones deportivas; emergencias; heridas y lesiones



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Introduction

Sport is a major sociocultural phenomenon in Portugal, with a growing presence in people's lives (Instituto Nacional de Estatística [INE], 2024). The pursuit of maximum sports performance, together with the need to prevent complications, has increased the demand for highly specialized health professionals capable of effectively preventing injuries and illnesses and promoting athletes' health. In this context, the presence of nurses in sports is essential, as they play a unique role within multidisciplinary teams. Their practice has progressively adapted to the demands and dynamics of various sports over time (Kamiński, 2022; Silva et al., 2023). Despite their growing importance, the profile and perceptions of sports nurses in Portugal remain underexplored. Therefore, the main objective of this study is to characterize the profile of nurses who work or have worked in sports settings in Portugal. More specifically, this study aims to identify their areas of activity, qualifications, professional experiences, and the main challenges they face in this specialized field.

Background

Several definitions have been proposed to clarify the concept of sports nursing. Freire et al. (2020, p. 56) define it as "the discipline that underpins interdisciplinary care practice, centered on the athlete from a holistic perspective, with the aim of promoting, maintaining, improving, and restoring health and well-being to achieve optimal athletic performance." The Portuguese Nursing Regulatory Body, *Ordem dos Enfermeiros* (OE), defines it as the "area of professional practice that contributes to the promotion of well-being, autonomy, and empowerment of individuals, groups, and communities engaged in sports activities" (Regulamento n.º 744/2021 da OE, p. 228). The professional profile of sports nurses in Portugal was established with the publication of the regulation concerning the differentiated added competence in sports nursing (Regulamento n.º 744/2021 da OE, 2021). According to this regulation, a sports nurse is defined as a: holder of effective and proven competence in the professional practice of sports nursing who, in a multidisciplinary context, is responsible for ensuring the nursing care process for individuals, groups, and communities engaging in sports activities, while promoting their well-being and enabling safe sports practices. (p. 228)

Freire et al. (2020) identified six main areas of nursing practice in this context: prevention and health promotion, holistic care for athletes, performance optimization, communication within the multidisciplinary team, urgent and emergency care, and rehabilitation.

A review of the literature reveals a limited number of studies on sports nursing. Recent research has explored topics such as the challenges of sports nursing, the role of nurses in this field, interventions in community and school settings, and the development of specific training

programs for nurses. For example, Liu et al. (2022) found that, although hospital nurses possess theoretical knowledge about physical activity, they lack the practical skills required to prescribe exercise, a task that requires specific training. Other studies, such as those by Silva et al. (2023) and Yusuf et al. (2024), highlight the scarcity of research on multidisciplinary practice and emphasize the need for specialized curricula addressing exercise physiology, sports psychology, and injury management. Santos et al. (2022) identified three main domains of sports nursing – prevention, health promotion, and rehabilitation – with a particular emphasis on emergency care. These domains were also addressed in an innovative model involving nurses working with women's football teams (Mkumbuzi et al., 2023). In addition, Antunes et al. (2021) and Esperto et al. (2022) developed guidelines using standardized nursing languages to identify nursing interventions in sports. Some studies provide practical examples of the work of sports nurses in areas such as concussion management (Miller et al., 2022), skin infections (Bultas et al., 2023), anti-doping (Siegmond, 2022), rehabilitation of ankle joint injuries (Qiao et al., 2022), pediatric emergencies, and the promotion of safe sports environments (Brigham & Olympia, 2022; Swaffield & Olympia, 2022).

Research question

What is the profile of nurses who work or have worked in sports settings in Portugal?

Methodology

This study used an observational, cross-sectional, and exploratory design. It aimed to characterize the socio-demographic, educational, and professional profiles of sports nurses in Portugal, as well as their perceptions of professional practice in this area. The sample was obtained through convenience sampling using a snowball strategy, with the questionnaire disseminated via social and professional networks and institutional contacts. A sample size calculation based on statistical power could not be performed because due to the lack of consolidated data on the total number of sports nurses in Portugal, making it impossible to estimate the reference population. Consequently, the decision was made to include as many eligible participants as possible during the data collection period (March 2024). For this reason, the results should be interpreted with caution, acknowledging the limitations regarding generalizability. The final sample consisted of 129 nurses.

Data were collected using a structured questionnaire developed specifically for this study. The questionnaire was informed by national and international literature on sports nursing and the researchers' professional experience. Its development included a review by a panel of national experts, who assessed content validity and item clarity. The questionnaire comprised five dimensions: (i) demographic

characteristics, (ii) academic and complementary training, (iii) professional experience, (iv) practice in sports settings, and (v) professional perceptions (satisfaction, challenges, and intention to stay). A preliminary version was piloted with 10 nurses, which allowed for semantic and formatting adjustments. Internal reliability was assessed using Cronbach's α coefficient, which was expectedly low ($\alpha < 0.70$) given to the exploratory nature of the study and the small number of items in each domain. The study variables were organized into five groups: demographic, professional, operational, training and research, and satisfaction. Two potential methodological biases were identified. The first was selection bias, resulting from convenience sampling and the snowball method, which may have led to an overrepresentation of professionals more involved in sports nursing. The second was information bias, inherent to self-report questionnaires, which may introduce biases related to recall or social desirability. Although these biases were minimized by ensuring anonymity and confidentiality, they should be taken into account when interpreting the results with caution. Data were analyzed using IBM SPSS Statistics (version 29.0). Descriptive analyses (frequencies, means, and standard deviations) and inferential analyses (chi-square tests and odds ratios [OR] with 95% confidence intervals [95% CI]) were performed. The significance level was set at $\alpha = 0.05$.

Given the exploratory nature of the study, no correction for multiple comparisons was applied, so the results should be interpreted with caution.

Multivariate analyses were not performed due to the small sample size and the distribution of the variables, which did not allow for robust estimation. As a result, the reported associations correspond to unadjusted bivariate analyses without control for potential confounding factors.

The study was approved by the Health Ethics Committee of the Universidade Católica Portuguesa (UCP) (Opinion No. 284) and adhered to established ethical principles. Participant confidentiality and anonymity were ensured, and data were securely stored with access restricted to the research team.

Results

The study sample consisted of 129 nurses who completed the questionnaire.

Demographic data and general characteristics: Most participants were male (64.3%; $N = 83$). Regarding marital status, 48.1% ($N = 62$) were married or in a civil partnership, 47.3% ($N = 61$) were single, and 4.7% ($N = 6$) were divorced. Most nurses resided in the Lisbon and Tagus Valley region (LVT; 58.9%, $N = 76$), followed by the North (23.3%; $N = 30$; Table 1). In terms of education, 77.5% ($N = 100$) held a bachelor's degree, and 33.6% ($N = 42$) reported having a nursing specialization. More than half were currently working as sports nurses (53.5%; $N = 69$), and an even larger proportion had complementary training related to sports (67.4%; $N = 87$).

Table 1

Demographic data and general characteristics

Variable	Category	N	%
Region of residence	North	30	23.3
	Center	14	10.9
	Lisbon and Tagus Valley	76	58.9
	South	6	4.7
	Islands	3	2.4
Educational level	Bacharelato (3-year degree)	2	1.6
	Bachelor's degree	100	77.5
	Master's degree	25	19.4
	Doctoral degree	2	1.6
Nursing specialty	Medical-Surgical Nursing	5	3.9
	Child Health and Pediatric Nursing	2	1.6
	Community Nursing	4	3.1
	Mental Health and Psychiatric Nursing	3	2.3
	Maternal Health and Obstetric Nursing	2	1.6
	Rehabilitation Nursing	26	20.2
	None	87	67.4

Note. N = Sample; % = Percentage.

Professional experience: The nurses' ages ranged from 23 to 74 years, with a mean of 37.1 ± 9.8 years. Half of the participants were 35 years old or younger, while 25% were 42 years old or older. Nursing experience ranged from 1 to 54 years (mean = 14.4 ± 9.9 years), with half of the

nurses having 13 or fewer years of experience. Specific experience in sports nursing ranged from 0 to 51 years, with a mean of 7.7 ± 8.9 years, and half of the nurses had 5 years or less of experience in this area.

Professional and scientific skills: Most nurses (57.4%;

$N = 74$) did not hold differentiated added competence in sports nursing. A large proportion had never taught in this area (64.3%; $N = 83$), had no published work (86.8%; $N = 112$), and had not presented at scientific events (70.5%; $N = 91$).

Satisfaction and prospects: The mean level of satisfaction with their work as sports nurses was 6.1 (on a 0-10 scale), with a median of 6, indicating a moderate level of satisfaction for half of the participants. Most nurses (69%) intended to continue working as sports nurses over the next five years, motivated mainly by their enjoyment of the field (89.1%; $N = 115$) and geographical proximity (48.8%; $N = 63$). The main reasons reported for potentially leaving sports nursing were difficulties in reconciling schedules (55.8%; $N = 72$) and contractual issues (57.4%; $N = 74$).

Comparison between nurses who currently work as sports nurses and those who do not: No significant differences were found between the two groups in terms of age or years of nursing practice (Mann-Whitney test). However, a significant difference was found in the number of years of professional experience in sports nursing ($p < 0.001$). Nurses who were not currently working in sports had a mean of 4.4 ± 4.9 years of experience (range 0-23), whereas those currently working in sports had a mean of 10.5 ± 10.5 years of experience (range 1-54). A significant difference was also found in satisfaction with their work as sports nurses, with mean scores of 4.8 ± 2.3 among nurses not currently working in sports and 7.3 ± 1.9 among those who were.

Association between professional practice and other indicators: Chi-square independence tests revealed no significant association between working in sports nursing and holding a nursing specialization ($p = .840$). In contrast, a significant association was found between having complementary training in sports and working in the field ($p = .015$), with nurses who had complementary training being 2.5 times more likely to work in sports nursing (CI = 1.2-5.4). Working in sports nursing was also significantly associated with providing training in this field ($p = .018$; OR = 2.4, 95% CI = 1.2-5.2) and presenting at scientific events ($p = .010$; OR = 2.9, 95% CI = 1.3-6.5). A strong association was observed between the intention to continue working in the field over the next five years and current employment ($p < .001$), with nurses who intended to remain in sports nursing being 10.8 times more likely to be currently employed (CI = 4.3-27.5).

Characteristics of nurses currently working in sports: Among the 69 nurses currently working in sports, the number of athletes under their care ranged from 0 to 4,000, with half being responsible for 24 athletes or fewer. Most participants (69.6%; $N = 48$) reported having other nursing colleagues working at the same sports institution, while only 31.9% ($N = 22$) reported having a nursing coordinator (Table 2). Physiotherapists (84.1%; $N = 58$) and physicians (73.9%; $N = 51$) were usually present in the teams, along with physiologists (50.7%; $N = 35$) and nutritionists (43.5%; $N = 30$).

Table 2

Characterization of the health team of sports nurses

$N = 69$	Yes	N	%	No	N	%
More nurses in the institution		48	69.6		21	30.4
Head nurses		22	31.9		47	68.1
Physician		51	73.9		18	26.1
Physiotherapist		58	84.1		11	15.9
Physiologist		35	50.7		34	49.3
Nutritionist		30	43.5		39	56.5
Psychologist		24	34.8		45	65.2
Podiatrist		6	8.7		63	91.3
Massage therapist		19	27.5		50	72.5
Other professionals		6	8.7		63	91.3

Note. N = Sample; % = Percentage.

Characteristics of the activity of nurses currently working in sports: Most nurses working in sports (84.1%; $N = 58$) reported providing care in grassroots football, and 72.5% ($N = 50$) provided care in both grassroots and senior teams. Most participants were involved in the care of male athletes (88.4%; $N = 58$), who were predominantly attended by male nurses (75.4%; $N = 46$). Care for female athletes was provided in similar proportions by male nurses

(51.2%; $N = 21$) and female nurses (48.8%; $N = 48$). A small percentage of participants worked with athletes with disabilities (10.1%; $N = 7$). Most nurses were employed at the national competitive level (76.8%; $N = 53$), engaged in grassroots and competitive sports (98.9%; $N = 68$), and working with professional athletes (62.3%; $N = 43$). Their activities included providing overall support (60.9%; $N = 42$) and support at sports events (43.5%; $N = 30$; Table 3).

Table 3*Characterization of the activity of sports nurses*

SPORT	Yes	N	%	No	N	%
Football		58	84.1		11	15.9
Team sports		17	24.6		52	75.4
Individual sports		14	20.3		55	79.7
Other sports		19	27.5		50	72.5
AGE GROUP						
Grassroots		58	84.1		11	15.9
Seniors		42	60.9		27	39.1
Veterans		13	18.8		56	81.2
TYPE OF SPORT						
Grassroots/Competitive		68	98.6		1	1.4
Educational		5	7.2		64	92.8
Participation		7	10.1		62	89.9
COMPETITIVE LEVEL						
Regional		35	50.7		34	49.3
National		53	76.8		16	23.2
International		36	52.2		33	47.8
Recreational		5	7.2		64	92.8
TYPE OF ATHLETE CONTRACT						
Professional		43	62.3		26	37.7
Semi-professional		38	55.1		31	44.9
Amateur		38	55.1		31	44.9
TYPE OF SUPPORT						
Training		15	21.7		54	78.3
Competition		25	36.2		44	63.8
Overall support		42	60.9		27	39.1
Consultation		9	13.0		60	87.0
Events		30	43.5		39	56.5
Management		1	1.4		68	98.6

Note. N = Sample; % = Percentage.

The most common areas of activity were skin and wound care (92.8%; $N = 64$), acute injury and illness care (92.8%; $N = 64$), and urgent and emergency care (89.9%; $N =$

62). The areas with the lowest levels of activity were scientific research (17.4%; $N = 12$) and specimen collection (17.4%; $N = 12$; Table 4).

Table 4*Area of activity of sports nurses*

AREA OF ACTIVITY	Yes	N	%	No	N	%
Athlete health data management		29	42.0		40	58.0
Comprehensive athlete health assessment		38	55.1		31	44.9
Injury/illness assessment		61	88.4		8	11.6
Skin and wound care		64	92.8		5	7.2
Urgent and emergency care		62	89.9		7	10.1
Disease prevention and health promotion		47	68.1		22	31.9
Injury prevention		47	68.1		22	31.9
Acute injury/illness care		64	92.8		5	7.2
Chronic disease management and monitoring		28	40.6		41	59.4
Injury rehabilitation		37	53.6		32	46.4
Preparation of athletes for training/competition		60	87.0		9	13.0
Well-being and performance monitoring/management		26	37.7		43	62.3
Recovery after exercise		41	59.4		28	40.6
Management (human resources)		19	27.5		50	72.5
Management (physical resources)		27	39.1		42	60.9
Liaison within the health team		44	63.8		25	36.2
Liaison within the sports team/institution		39	56.5		30	43.5
Medication administration		49	71.0		19	27.5
Anti-doping testing/monitoring		20	29.0		48	69.6
Specimen collection		12	17.4		56	81.2
Support for medical procedures		24	34.8		45	65.2
Support for nutrition and sports supplementation		28	40.6		41	59.4
Support for sports psychology/mental health		25	36.2		44	63.8
Sports performance enhancement		19	27.5		50	72.5
Safety and risk management		39	56.5		30	43.5
Training of sports agents		20	29.0		49	71.0
Scientific research		12	17.4		58	82.6

Note. N = Sample; % = Percentage.

Most nurses worked under service provision contracts (72.5%; $N = 50$), reported reduced weekly working hours (71%; $N = 49$), and held concurrent positions in other

institutions (85.5%; $N = 59$), mainly in public hospitals (Table 5).

Table 5*Contractual status of sports nurses*

EMPLOYMENT CONTRACT	Yes	N	%	No	N	%
Public service employment contract		1	1.4		68	98.6
Individual open-ended employment contract		6	8.7		63	91.3
Individual fixed-term employment contract		1	1.4		68	98.6
Service provision contract (freelance)		50	72.5		19	27.5
Secondment		10	14.5		59	85.5
Liberal profession		12	17.4		57	82.6
Business agreement		1	1.4		68	98.6
WEEKLY WORKLOAD		N	%			
< 20 hours/week (includes sporadic work)		49	71.0			
20–35 hours/week		9	13.0			
36–40 hours/week		6	8.7			
> 40 hours/week		5	7.2			
CONCURRENT POSITIONS		N	%			
Public hospital		30	43.5			
Private/social hospital		17	24.6			
Public community institution		5	7.2			
Private/social community institution		5	7.2			
Private practice		1	1.4			
University		1	1.4			
None		10	14.5			

Note. N = Sample; % = Percentage.

Discussion

This pioneering study provides valuable insights into Portuguese sports health, addressing a gap in research on the profile of sports nurses.

The predominance of male sports nurses (57.5%) contrasts with the broader nursing workforce and may reflect sociocultural factors, while also mirroring the gender distribution observed in the sports sector (INE, 2024). The concentration of professionals in the LVT region may be related to the greater availability of sports opportunities in this region, which is consistent with the higher number of federated athletes registered in the region (Instituto Português do Desporto e da Juventude [IPDJ], 2024). The wide age range and variability in professional experience indicate that sports nursing attracts professionals at different stages of their careers. Nevertheless, the relatively young mean age (37 years) and substantial experience (14 years in nursing and 7 years in sports nursing) suggest a body of professionals with established professional maturity in sports settings. A relevant finding is the apparent dissociation between working in sports and holding a formal nursing specialization, which may indicate the need for greater recognition and valorization of specialized training in this area. Although many nurses have complementary training, which reflects an interest in advancing the field, their limited involvement in scientific activities suggests potential for growth in the production of specific knowledge in sports nursing. The discrepancy between high self-perceived competence (42.6%) and the low number of experts recognized by the OE may indicate limited awareness of the criteria for formal recognition

or a need to value this process.

Although the moderate levels of professional satisfaction reported are encouraging, difficulties in reconciling schedules and contractual problems were identified as potential reasons for leaving the field. These findings highlight the need for sports organizations and regulatory bodies to improve these professionals' working conditions in order to keep them in the profession and ensure the quality of care. The tendency for nurses to be employed in sports institutions with existing nursing staff suggests recognition of the value of nursing interventions, which may be associated with the perceived positive impact of the care provided. However, the limited presence of nursing leadership or management structures suggests that the formal recognition of the nursing profession within sports organizations remains in the early stages of development. The widespread integration of physiotherapists, physicians, and exercise physiologists into multidisciplinary health teams that include nurses and other professionals with varying degrees of involvement reflects a collaborative approach to comprehensive athlete care, consistent with international studies (Silva et al., 2023). Football emerged as the sport with the highest presence of nurses, likely due to its popularity, the large number of federated athletes, and the primary care provided to youth and senior athletes, who are predominantly male (IPDJ, 2024). Despite the potential of sports nursing to support athletes with disabilities, the low percentage of nurses working in this context (10.1%) suggests an area with opportunities for growth, especially considering the number of registered athletes (IPDJ, 2024). The concentration of nurses in grassroots and high-performance sports

may be associated with the availability of job opportunities, which tend to be more limited in educational and participatory sports. The predominant involvement in national competitive contexts and with professional athletes may reflect a greater appreciation for the presence of nurses in highly competitive settings and possibly better working conditions. Most nurses reported providing overall support to athletes, which demonstrates a holistic and integrated approach across all stages of care. The variety of activities, including skin and wound care, urgent and emergency care, and injury and illness assessment and prevention, illustrates the breadth of nursing competencies in sports and the ability to respond to athletes' diverse health needs. Most nurses reported other activities such as comprehensive athlete health assessment, disease prevention and health promotion, injury prevention, injury rehabilitation, preparation for training and competition, recovery after exercise, liaison roles within the health team and/or institution, medication administration, and safety and risk management. This wide range of responsibilities highlights the breadth of nursing competencies in sport, which is corroborated by international literature (Brigham & Olympia, 2022; Bultas et al., 2023; Miller et al., 2022; Qiao et al., 2022; Santos et al., 2022; Siegmund, 2022; Swaffield & Olympia, 2022). The variability in the less prevalent activities reflects the adaptation of practice to the specific needs of each context and highlights the potential value of integrating nurses into sports organizations, given the wide range of possible interventions. Precarious contracts and reduced working hours suggest the need for greater contractual flexibility or may indicate job insecurity and instability, which explains holding concurrent positions in other institutions. The significant variation in the number of athletes cared for suggests the existence of different models of care provision, with the possibility of higher staffing being associated with the coverage of sports events. Establishing guidelines for nursing practice in sports is crucial to ensure safety and quality of care in the future. This study has several limitations, namely its descriptive design, the use of self-reported data, and the sample size, which may affect the generalizability of the results. Future research should use mixed-methods approaches that integrate qualitative studies to explore the perceptions of nurses and other stakeholders in the sports system, as well as longitudinal studies to analyze career development and the impact of nursing care over time. The inclusion of larger samples will be essential to confirm and expand the results of this research.

Conclusion

This study characterized the profile of sports nurses in Portugal. The findings indicate a predominantly male workforce, a geographical concentration in the LVT region, and professionals with substantial experience, despite limited formal specialization and scientific experience. Their broad scope of practice is fundamental for supporting athletes' health, although they face significant work-related challenges. Promoting academic and pro-

fessional recognition, investing in the development of specific skills, and establishing certification mechanisms that value specialization emerge as key implications of this study. Encouraging research is essential for consolidating the field. Future studies should include larger samples to deepen understanding and optimize healthcare in the Portuguese sports system.

Author contributions

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