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Improve the quality of patient care in the Emergency Department. Physical Therapist and Advanced Practice in Emergency Department: A scoping review

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ABSTRACT

Background: Emergency departments (EDs) worldwide are increasingly adopting multidisciplinary models of care in which physiotherapists play an evolving and expanding role. International evidence suggests that physiotherapy-led pathways may improve the management of low-acuity presentations such as musculoskeletal and vestibular conditions, which contribute substantially to ED overcrowding. In Italy, however, physiotherapists are not yet structurally integrated into ED teams, and the potential applicability of advanced physiotherapy roles remains unclear.

Objective: The objective of this scoping review is to identify, map, and describe current international models of physiotherapy practice within Emergency Departments, including first-contact roles, advanced practice, direct-access models, and multidisciplinary roles, and to explore their impact on the management of non-urgent conditions such as minor injuries, musculoskeletal disorders, and vestibular presentations.

Methods: This review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR). A systematic search of PubMed and Google Scholar was conducted from inception to November 2025, including peer-reviewed studies in English that described, evaluated, or implemented physiotherapy roles in EDs. Eligible populations were ED patients of any age presenting with non-urgent musculoskeletal, traumatic, or vestibular conditions. Data were charted on study design, setting, models of practice, clinical populations, and reported outcomes.

Results: The included studies were primarily conducted in Australia, Canada, and the United Kingdom, and comprised service evaluations, retrospective reviews, quality-of-care studies, pilot projects, validation studies of screening tools, and mixed-methods evaluations of pediatric pathways. Physiotherapy practice in Emergency Departments is mainly organized into First Contact Physiotherapy, Advanced Practice, and Direct Access models, often embedded within specialized pathways for musculoskeletal, vestibular, pediatric, or geriatric care. Overall, physiotherapist-led care is associated with reduced waiting times and ED length of stay, earlier administration of analgesia, improved clinical outcomes (including reduced pain and improved vestibular symptoms), high diagnostic agreement with emergency physicians, lower use of imaging and follow-up services, and high satisfaction among patients, parents, and clinicians. No serious adverse events related to physiotherapy interventions were reported. Most studies were observational, with a limited number of randomized or controlled studies, and no studies were conducted in Italy.

Conclusions: International evidence indicates that physiotherapists can make a meaningful contribution to emergency department care, particularly for low-acuity musculoskeletal and vestibular presentations, through primary contact, advanced practice, and direct-access models. These roles appear safe, effective, and well accepted by patients and clinicians. However, the lack of Italian data, combined with a different regulatory framework and limited autonomy for physiotherapists, currently hinders the translation of these models into the Italian context. Pilot implementations and context-specific evaluations are needed to assess the feasibility and impact of integrating physiotherapists into Italian emergency departments.

Keywords: Emergency Department; Physiotherapy; Advanced Practice, Musculoskeletal Disorders.

1. Introduction:

Emergency departments (EDs) in several international healthcare systems are increasingly organized around multidisciplinary teams in which physiotherapists play a central and expanding role. In Australia, physiotherapists have been formally integrated into ED workforce models to support timely and high-quality care delivery, in line with system-wide performance targets such as the "4-hour rule," which requires that most patients be discharged or admitted within four hours of arrival. The implementation of ED physiotherapy services in Australia has shown positive impacts on patient flow and operational performance, with studies demonstrating reduced waiting times, shorter length of stay, and improved service efficiency when physiotherapists are involved in early assessment and management of musculoskeletal presentations1. Wisconsin is now considered a leading state, with an estimated 30 ED and urgent care centres providing PT consultation services2. Including large multicentre observational data showing reduced waiting and treatment times for musculoskeletal patients managed by primary contact physiotherapists compared with standard medical care3. In the United States, ED-initiated physical therapy has developed more recently as a consultative, secondary-contact model4. In this setting, physical therapists are requested by emergency physicians to provide bedside evaluation and treatment for musculoskeletal, vestibular, and mobility-related problems, typically in 30–45-minute sessions that include assessment, education and facilitated follow-up5. Within EDs, physiotherapists may practice in Primary Contact Physiotherapist (PCP) roles, assessing, diagnosing, and managing patients without prior medical review, or in Secondary Contact roles, providing treatment following a medical referral. Evidence from Australian EDs indicates that PCP models can improve system performance, productivity, and clinician and patient satisfaction. For example, structured evaluations of PCP services have reported reduced length of stay and shorter waiting times for musculoskeletal patients compared with traditional models in which care is provided by medical staff or secondary-contact physiotherapists1,6. In all these initiatives, physiotherapists are incorporated as part of multidisciplinary teams and operate within clearly defined roles that are designed to support, rather than replace, medical and nursing care in the emergency setting. In Canada, ED overcrowding presents a major challenge, with nearly 16 million annual visits and some of the longest waiting times among high-income countries. Musculoskeletal disorders (MSKDs) represent a significant proportion of these visits and are among the most disabling and costly non-fatal conditions. Although ED physicians have traditionally served as the primary contact for MSKDs, many report limited training and confidence in managing these conditions. As a result, Advanced Practice Physiotherapy (APP) models have emerged across Canada, where physiotherapists contribute to triage, assessment, and management of MSKDs, and in some provinces may request imaging or support medication decisions. Studies evaluating direct-access physiotherapy in Canadian EDs demonstrate high diagnostic agreement with emergency physicians and improved quality of care for patients with musculoskeletal complaints. including a randomized controlled trial showing greater reductions in pain and fewer post-ED health-care contacts in the physiotherapy group7. In paediatric EDs, physiotherapists have recently been integrated into interdisciplinary pathways for concussion assessment and early management, showing improvements in parent satisfaction, documentation quality, and timely follow-up referral8. Although physiotherapists are often associated with musculoskeletal care, emerging evidence highlights their important role in the management of acute vertigo and vestibular disorders, which account for a substantial proportion of ED presentations. Studies show that dizziness and vertigo are frequently underdiagnosed in acute care settings, and that physiotherapists with vestibular expertise can improve diagnostic accuracy and support appropriate referral pathways. Data from three Australian EDs revealed that only 26% of patients with vertigo received the gold-standard Dix–Hallpike test, and only 12% of confirmed BPPV cases were treated with canalith-repositioning manoeuvres, despite strong evidence-based recommendations. Furthermore, 36% underwent unnecessary neuroimaging, none of which revealed acute pathology, indicating a substantial care gap in the ED management of vertigo9. Validated vestibular screening tools developed for ED and acute hospital settings further demonstrate the clinical value of physiotherapists in identifying likely vestibular disorders such as benign paroxysmal positional vertigo and vestibular neuritis10. Additionally, pilot programs implementing specialized vestibular physiotherapy in EDs indicate improved assessment, targeted treatment, and potential reductions in return visits9. Across several countries including Australia, the United Kingdom, and Canada direct-access or advanced practice physiotherapy models in EDs have been associated with reduced waiting times, decreased length of stay, improved quality of care, and high levels of clinician and patient satisfaction. Many of these models exploit the physiotherapist's expertise in musculoskeletal and vestibular assessment, diagnostic reasoning, exercise prescription, and patient education. However, despite these promising findings, only a small number of randomized controlled trials have examined the effects of ED physiotherapy services, and evidence on long-term outcomes and health-system impact remains limited1,6,8,11. In Italy, ED overcrowding has intensified over recent decades, with a marked increase in non-urgent presentations a trend further amplified during and after the COVID-19 pandemic. Limited access to timely outpatient care, reduced availability of primary care services, and the appeal of rapid diagnostic testing in EDs have contributed to rising volumes of low-acuity visits. A recent multicentre study involving over 1.28 million attendances in northern Italy showed that more than two-thirds of ED presentations were non-urgent, with a 10% increase in such visits over five years. Despite the relatively short evaluation times for these cases, their cumulative impact has placed considerable strain on ED operations. In response, some Italian hospitals have introduced internal pathways staffed by general practitioners to manage minor conditions; however, the integration of physiotherapists into ED care pathways has not yet been explored, despite growing international evidence supporting their role in managing musculoskeletal and vestibular presentations.

1. Objectives:

1.1 Research question

The objective of this scoping review is to identify, map, and describe the current international models of physiotherapy practice within Emergency Departments (EDs), including primary contact, advanced practice, and multidisciplinary roles, and to explore their impact on the management of non-urgent conditions such as minor trauma, musculoskeletal disorders, and vestibular presentations.

2. Methods:

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) statement was used for the manuscript reporting12.

2.1 Eligibility Criteria

The eligibility criteria included ED patients of any age presenting with non-urgent musculoskeletal, traumatic or vestibular conditions. Models of advanced physiotherapy practice, including direct access, primary contact, advanced practice, or multi-disciplinary integration within EDs. Inclusion criteria: Peer-revied studies describing, evaluating or implementing physiotherapy roles (APP, PCP, or multidisciplinary models) within emergency departments. No restriction on age, gender, or specific pathology. All study designs (qualitative, quantitative, mixed methods). Exclusion criteria: Abstracts, conference proceedings, letters, editorials, expert opinions, and animal research.

2.2 Information Sources

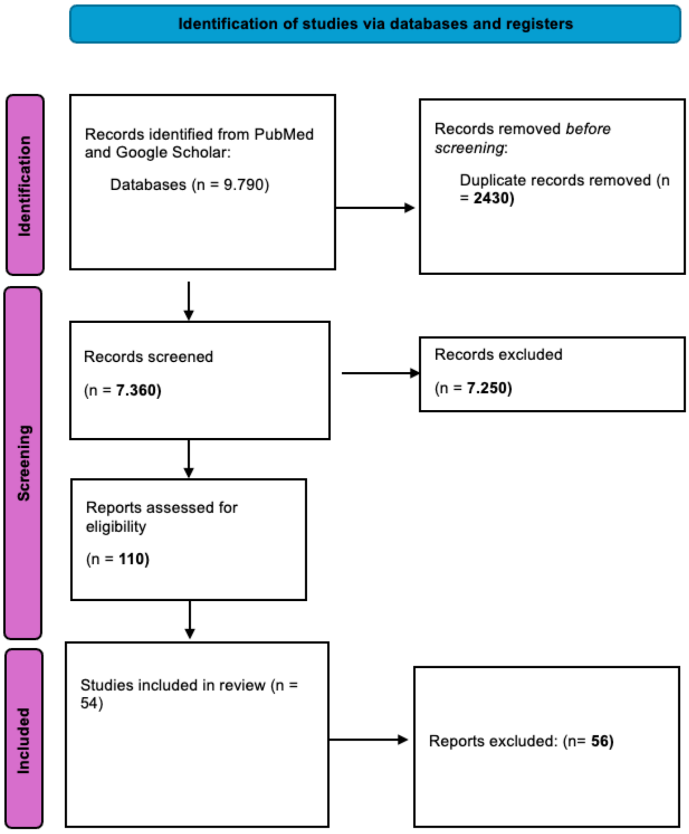
A systematic search was conducted in PubMed and Google Scholar from inception to November 2025.

The final search strategy was: (("physiotherapy" OR "physical therapy" OR "physiotherapist" OR "physical therapist" OR "advanced practice physiotherapy" OR "APP") AND ("emergency department" OR "emergency service" OR "accident and emergency" OR "A&E" OR "emergency room" OR "urgent care" OR "emergency and urgent care" OR "ED department") AND ("direct access" OR "first contact" OR "autonomous practice" OR "advanced practice" OR "triage" OR "physiotherapy triage")) AND ("efficacy" OR "effectiveness" OR "impact" OR "benefit*" OR "outcome*" OR "efficiency" OR "cost-effectiveness" OR "waiting time*" OR "length of stay" OR "patient satisfaction"). The search was performed to find English-language articles.

2.3 Selection of Sources of Evidence

Two independent reviewers screened titles, abstracts, and full texts. Any disagreements were resolved by discussion or by consulting a third reviewer. Reference lists of all included studies were hand-searched to identify additional publications.

1. Results:



3.1 Selection of Sources of Evidence

The initial search identified 9,790 records across PubMed and Google Scholar. After removing 2,430 duplicate records, a total of 7,360 records were screened by title and abstract. Of these, 7,250 were excluded as they did not meet the predefined eligibility criteria. A total of 110 full-text articles were assessed for eligibility, with 56 articles excluded due to reasons such as absence of physiotherapy within the emergency department model, lack of relevant outcome data, non–peer-reviewed sources, or studies not related to advanced practice physiotherapy (APP) or primary contact physiotherapist (PCP) roles. In total, 54 studies were included in the final scoping review. The study selection process is illustrated in the PRISMA flow diagram13.

3.2 Characteristics of Included Studies

The included studies originated primarily from Australia, Canada, and the United Kingdom. They comprised a range of study designs, including prospective service evaluations, retrospective reviews, quality-of-care assessments, pilot projects, screening-tool validation studies, and mixed-methods evaluations of paediatric care pathways. The clinical populations most frequently represented were patients presenting with musculoskeletal conditions, vestibular disorders, and minor post-traumatic injuries—typically low-acuity cases that fall within the scope of physiotherapy practice in emergency settings.

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3.3 Models of Physiotherapy Practice Identified

Across the included studies, physiotherapy practice in emergency departments was organised into several models distinguished primarily by the level of professional autonomy rather than by clinical area. These models varied across countries, reflecting differences in scope of practice, legislation, and workforce organisation. Primary Contact Physiotherapy (PCP) in Australian emergency departments, PCP models allow physiotherapists to independently assess and manage patients immediately after nurse triage, within their professional scope of practice and according to locally agreed protocols, without prior review by a medical practitioner2,14. Advanced Practice Physiotherapy (APP) in Canadian emergency departments have implemented APP roles in which physiotherapists perform advanced triage, autonomous clinical decision-making, and extended-scope activities such as ordering diagnostic imaging or advising on medication use (depending on provincial regulations). APP clinicians manage diverse ED presentations, including musculoskeletal, vestibular, and paediatric cases2. Secondary Contact Physiotherapy (SCP) in the United States, the ED physical therapy has primarily developed as a secondary-contact, consultative model. Physical therapists are integrated into the ED as on-demand consultants, providing independent assessment and treatment at the bedside following physician referral. Reported programmes involve approximately 3–6 ED PT consultations per day, with an estimated 23 U.S. hospital systems offering ED PT services and an average of 1.7 full-time equivalent therapists per week2,5. These models facilitate rapid assessment and early conservative management, improving patient flow and reducing unnecessary medical consultations.

3.4 Clinical Areas Managed by Physiotherapist

Different type of studies analyses the physiotherapist in the emergency department that have a role in different multi-disciplinary approach for a collaboration in the management of simple patient. Across the included studies, physiotherapists in emergency departments were involved in several key clinical areas, most prominently the management of musculoskeletal (MSK) conditions. Most of the literature focused on the assessment and treatment of acute MSK presentations such as sprains, strains, soft-tissue injuries, back pain, and minor trauma. In these contexts, physiotherapists practicing in primary contact or advanced practice roles demonstrated the ability to independently evaluate patients, deliver immediate treatment, and contribute to more efficient patient flow. Studies from Australia, including those 1,6, highlighted how physiotherapists effectively managed MSK injuries by reducing waiting times and improving overall service performance. The U.S. literature further illustrates this breadth of practice, with ED physical therapists most frequently consulted for low back and neck pain, but also for peripheral vertigo and complex mobility or disposition issues in older adults, where detailed gait and transfer assessment supports safe discharge planning5. Recent U.S. evidence further broadens the clinical spectrum of ED physiotherapy. Reported case-mix includes nonsurgical fractures, wound care and burn debridement, migraine, non-cardiac chest pain, frailty and “failure to thrive,” and even support in differentiating potential malingering, demonstrating the versatility of physiotherapists in addressing functional, diagnostic and mobility-related needs2. Australian ED models also highlight the physiotherapist’s role within multidisciplinary allied health teams for older adults, focusing on functional mobility assessment, home safety, discharge planning, and linkage with community services. Qualitative data suggest that older patients particularly value this comprehensive approach, which integrates mobility assessment, exercise prescription, and coordination of follow-up or community support. Was reported very high satisfaction among predominantly older adults managed by a physiotherapist within an allied health team, with patients emphasising clear communication, bedside manner, and the reassurance provided by mobility assessment, safety advice, and organised follow-up or referrals15.

Low back pain represents one of the most common musculoskeletal presentations in emergency departments. Although many cases resolve spontaneously, between 3–25% progress to chronic symptoms, generating substantial costs and disability16. A prospective cohort study from Singapore found that the STarT Back Screening Tool (SBT), administered immediately after ED consultation, was a significant predictor of 6-month pain outcomes17. Emerging evidence indicates that physiotherapists may play a critical role in early risk stratification and prognosis of acute LBP in the ED. A prospective cohort study from Singapore found that the STarT Back Screening Tool (SBT), administered immediately after ED consultation, was a significant predictor of 6-month pain outcomes. The SBT total score independently predicted long-term pain ($\beta = 0.125$, $p = .046$), while pain intensity at 6 weeks was the strongest predictor ($\beta = 0.500$, $p < .001$), together explaining 40.1% of the variance in 6-month pain outcomes. These findings suggest that ED-based physiotherapists could integrate stratified care approaches to identify patients at higher risk of chronicity and facilitate early education, reassurance, and follow-up planning18. A growing body of evidence also supports physiotherapists' involvement in the management of vestibular and dizziness-related presentations. These conditions, often underdiagnosed or misclassified in emergency settings, benefit significantly from the specialized assessment skills of vestibular physiotherapists. Demonstrated that physiotherapists can reliably identify vestibular disorders such as benign paroxysmal positional vertigo and vestibular neuritis using validated screening tools10. Similarly, reported that implementing a dedicated vestibular physiotherapy service within the ED improved diagnostic clarity and facilitated more appropriate treatment and referral pathways9. A growing body of evidence also supports physiotherapists' involvement in the management of vestibular and dizziness-related presentations. These conditions, often underdiagnosed or misclassified in emergency settings, benefit significantly from the specialized assessment skills of vestibular physiotherapists. Recent observational evidence from three Australian emergency departments demonstrated that most dizziness presentations were managed sub optimally, with 67% of patients discharged with undifferentiated diagnoses and 96% of individuals with a confirmed BPPV diagnosis treated with vestibular suppressants, contrary to guideline recommendations. Moreover, physiotherapists reviewed only 15% of BPPV cases, underscoring a significant underutilisation of vestibular expertise in EDs9. In addition to MSK and vestibular care, physiotherapists also played an important role in paediatric emergency presentations. Evidence from Canada, particularly the work19 showed that integrating physiotherapists into paediatric concussion pathways enhanced early assessment, improved documentation of key clinical indicators, and supported more efficient follow-up planning. These findings suggest that physiotherapists contribute meaningfully to the management of paediatric injuries that require structured clinical evaluation and timely intervention20. Collectively, the included studies demonstrate that physiotherapists in emergency departments manage a diverse range of clinical presentations. Their expertise extends beyond traditional MSK care to include the complex assessment of vestibular disorders and the structured management of paediatric concussion, highlighting their potential to address the needs of multiple patient

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populations within the ED environment. Always in paediatric ED demonstrated that direct access physiotherapy for concussion improves clinical documentation and early assessment and caregiver satisfaction using structured tools such as SCAT5/ChildSCAT5 and standardized neurological screening21,22. Qualitative work from North American EDs similarly highlights the perceived value of ED-based physical therapy consultation for older adults with falls, particularly for disposition planning and fall prevention strategies23.

3.5 Outcomes reported

Across the included studies, outcomes clustered around service efficacy, clinical effects, safety, health-care utilisation, and stakeholder satisfaction, as summarised in Table 1:

Efficacy	Clinical	Safety	Health Care	Satisfaction
Waiting Time	MSK	Diagnostic Agreement PT-MD	Imaging	Patient Satisfaction
Length of Stay	Vestibular	Validated Tools	Return ED visits	Physician acceptance
Improved Workflow - Triage Flow	Traumatic	No adverse event reported	Follow – up efficiency	Nurse Acceptance

Table 1. Description of Outcomes Reported and Evaluated

Efficacy outcomes were described by multiple studies reported improvements in operational efficiency when physiotherapists were integrated into the emergency department. Different studies documented reductions in waiting time and ED length of stay among musculoskeletal patients managed by a primary contact physiotherapist1,14,24,25. A prospective observational study from a US academic ED similarly reported significantly shorter ED length of stay for patients who received ED-initiated physiotherapy (4.0 h vs 6.2 h, $p < 0.001$)26. In the U.S. early-access models include reduced unnecessary hospital admissions, fewer observation-status stays, decreased fall-related ED revisits, lower burden on primary care services, and fewer specialist referrals, complementing the established evidence on reduced imaging use, lower medication administration and shorter ED length of stay2. Also was observed faster access to care and enhanced workflow metrics in EDs that included physiotherapy services6. Reported that a physiotherapist led diversion pathway reduced average ED length of stay by approximately 110 minutes and increased four-hour rule compliance. A high-quality randomized controlled trial further demonstrated the impact of interdisciplinary models including physiotherapists on key ED and patient outcomes. In a sample of 353 older adults (mean age 79.6), early assessment and intervention by a dedicated health and social care professional (HSCP) team—including a senior physiotherapist—reduced ED length of stay by nearly 50% compared with usual care (6.43 h vs 12.10 h, $Z = 4.82$, $p < 0.001$) and substantially lowered hospital admission rates (19.3% vs 55.9%). Better functional status at 30 days and 6 months; and improved mobility and self-care at 30 days. At six months, participants continued to demonstrate better self-care and fewer unscheduled hospital admissions. Patient satisfaction was significantly higher in the intervention group, with no increase in ED revisits or adverse outcomes24. These findings are consistent with large Australian cohort data on PCP models, which reported shorter waiting and treatment times and faster discharge for musculoskeletal patients3. In Canada, found that direct-access physiotherapy resulted in fewer post-ED health-care contacts without increasing ED process time8. Noted shorter time to first analgesic dose for patients assessed by advanced practice physiotherapists. Studies addressing clinical outcomes reported improvements in symptom measures and assessment quality. Founding greater reductions in pain intensity and pain interference in patients treated by physiotherapists, with differences maintained up to three months8. In the domain of low back pain, recent evidence from a prospective cohort study demonstrated that prognostic screening tools may also provide value in the emergency department setting. Among 177 patients presenting with acute low back pain, the STarT Back Screening Tool (SBT) administered immediately after ED consultation showed significant predictive validity for long-term outcomes. The SBT total score independently predicted 6-month pain intensity (β = 0.125, p = .046), while the strongest prognostic factor was pain at 6 weeks (β = 0.500, p < .001), collectively explaining 40.1% of the variance in 6-month pain scores. Across all SBT risk categories, 82.5% of patients achieved at least a 2-point reduction in pain, and 59.9% were pain-free at 6 months. These findings suggest that early stratified management of acute low back pain potentially delivered by physiotherapists in ED settings may support timely identification of patients at higher risk of chronicity and guide more appropriate follow-up pathways18. Additional evidence describing current emergency department management patterns for atraumatic low back pain highlights several gaps that physiotherapy-led models could address. In a prospective cohort of 103 ED patients, 35.9% received an opioid in the ED, 18.5% received an opioid at discharge, and nearly 46% underwent CT or MRI despite guideline recommendations discouraging routine imaging in the absence of red flags. Follow-up care was highly inconsistent: only 11.8% of patients attended outpatient physiotherapy within 6 weeks, while 32.4% reported missed work due to persistent pain27. Functional improvement was statistically significant PROMIS-PFSF-12 a but scores remained below population norms at 6 weeks, indicating incomplete recovery and poor continuity of care. These findings underscore the need for structured, physiotherapy-integrated pathways to optimise evaluation, reduce possible unnecessary imaging and opioid use, and support early recovery2,27. Also validated a vestibular screening tool with good diagnostic accuracy for identifying peripheral vestibular disorders10. In an ED vestibular pilot, a study reported more frequent use of appropriate clinical manoeuvres and earlier symptom improvement9. In paediatric care, documented improved documentation quality and follow-up planning in concussion pathways involving physiotherapists19. A qualitative study described physiotherapists' involvement in mobility assessment and discharge planning for older adults after falls. Across all included studies, no serious adverse events associated with physiotherapy assessment or treatment were reported. Found high diagnostic agreement between physiotherapists and emergency physicians for musculoskeletal presentations8. Observational studies reporting high diagnostic concordance between physiotherapists and emergency physicians and no serious adverse events28,29. Most recent analysis in 2024 of a pilot randomized clinical trial of 36 patients with minor MSK disorders reported an overall raw diagnostic agreement of 86.1% between physiotherapist and physician29. Reported no adverse reactions to vestibular assessment and treatment, aside from transient nausea9. High sensitivity and specificity for the validated vestibular tool10. No studies identified increased risk of missed diagnoses or inappropriate discharges in physiotherapy-led models. Several studies described effects on resource use. Reduced neuroimaging utilisation in patients managed through a vestibular physiotherapy pathway9. Reported fewer follow-up health-care visits in the physiotherapy group over a three-month period8.

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Reporting no increase in return ED visits among patients reassigned to a physiotherapist-led clinic30. In a prospective observational study from a US academic ED, 72.7% of MSK patients received ED-initiated physiotherapy. Compared with the non-PT group, patients assessed by a physiotherapist demonstrated significantly lower imaging rates (38.3% vs 51%, p = 0.009), reduced opioid administration during the ED stay (17.5% vs 32.9%, p < 0.001), and a substantially shorter ED length of stay (4.0 h vs 6.2 h, p < 0.001). In a matched low-back-pain subgroup, imaging was reduced from 57% to 25% (p = 0.029). These findings highlight the potential value of ED-PT in delivering guideline-adherent care, reducing unnecessary imaging, and limiting opioid exposure during acute MSK presentations26,31.In the geriatric population, a feasibility study showed that early physiotherapy interventions delivered in the ED for older adults at risk of immobilization syndrome were acceptable, feasible, and potentially protective against in-hospital functional decline32. A telephone triage study noted reductions in face-to-face appointments and missed attendances for musculoskeletal follow-up33. Patient and clinician satisfaction were frequently reported. Recorded patient satisfaction levels approaching 97% within the physiotherapist-led pathway30. Found higher satisfaction with clarity of information and overall care among patients in the physiotherapy group9. Observed higher scores on patient-experience indicators in EDs with physiotherapy services6. Reported high parental satisfaction in paediatric concussion pathways19, and described strong acceptance of physiotherapy roles among ED staff. Families reported significantly higher satisfaction scores when physiotherapists were involved (Family 94.7 vs 89.0; Overall 95.4 vs 89.2). Physiotherapy involvement also improved documentation quality (e.g., GCS, prognostic factors, 5P rule) and increased appropriate early referrals to specialist concussion clinics (37% vs 17%)21. Qualitative evidence further indicates that patients perceive APP-led emergency care as highly satisfactory, with participants describing feeling 'safe', 'understood', and 'in good hands'. In a 2024 qualitative study, patients viewed APPs as more competent and more appropriate than emergency physicians for minor MSKDs, and highlighted timely access as a key benefit, with 72% of participants being assessed within two hours of arrival34.

Author	**Study Design**	**Aim of the Study**	**Sample Size**	**Outcome Study**	**Follow Up**	**Health System and Professional**
Bird et al.35	Prospective cohort observational study	Evaluate whether Primary Contact Physiotherapist	14,452 MSK patients treated by PCPs (13.964 included in analysis) concurrent control	10 Australian EDs across 5 states; MSK patients in triage 3-5	Waiting time; Treatment time; Time to discharge (4-hour NEAT compliance); Multivariate regression for adjusted effects	PCPs reduced waiting time by 31 minutes vs other clinicians. • PCPs reduced treatment time by 40 minutes on average. • 92.7% of patients treated by PCPs discharged <4h vs 74.5% (others). • PCP model independently predicted shorter waiting and treatment times. • No misdiagnoses or adverse events reported. • Strong staff and patient satisfaction in prior qualitative findings.

Rice et al.36	Qualitative study, interpretative design, reflexive thematic analysis	Explore experiences, beliefs, and practices of MSK physiotherapists regarding Cauda Equina Syndrome (CES) safety netting, including challenges and system impacts.	8 physiotherapists	5 themes: Anxiety/ responsibility; Communication & referral barriers; Variation in safety-netting; Ambiguous CES presentations; Systemic barriers (MRI access, pathway inefficiencies)	n.a.	Highlights barriers in communication with A&E and T&O; safety-netting inconsistencies; perceived risk & responsibility; limitations in urgent diagnostics; systemic pressures affecting decision-making
Krebs et al.37	Cross-sectional survey	Explore attempts by low-acuity patients to seek alternative care before attending the ED, and identify demographic factors associated with these behaviours	1,402 adult ED patients	60.1% attempted alternative care. 47.3% called a physician; 67.5% of them were advised to go to ED. 54.1% visited a physician; 21.2% anot her health professional. Logistic regression shows predictors of NOT seeking alternative care: male sex, injury-only presentation, high-school education or less. • 89.3% believed ED was "best option".	n.a.	Highlights barriers in primary-care access; ED serves as safety net. Identifies populations less likely to seek alternatives (men, low-education, injury). Shows inappropriate/ incomplete care pathways and limited system effectiveness of alternative-care strategies (e.g. low use of health line and wait-time website).
Matifat et al.38	Prospective cross-sectional diagnostic concordance study	Assess diagnostic, treatment-plan, and discharge-plan concordance between Advanced Practice Physiotherapists (APPs) and ED physicians in patients with minor MSK disorders	113 ED patients with MSK disorders	Diagnostic concordance: Very good agreement. Imaging requests: Ordered similarly; moderate agreement. Treatment plan: APPs referred more to PT; low agreement Medication: Physician s prescribed more; slight agreement. Discharge plan: Moderate agreement; raw. Patient satisfaction: High and similar between providers. Consultati on time: APPs longer (13.5 min vs 5.8 min).	n.a.	Strong evidence supporting APP integration: diagnostic and discharge-plan concordance comparable to ED physicians; APPs emphasize conservative care; potential to reduce inappropriate prescriptions; demonstrates safety, expertise, and patient acceptance; supports advanced-practice roles in ED.

Matifat et al.39	Pragmatic stepped-wedge cluster RCT (protocol) + cost analysis	Compare ED APP-led care vs usual physician ED care for minor MSKD	Planned n=744 across 6 EDs	Primary: BPI Pain Interference (4 weeks). Secondary: pain intensity, disability (NDI/ODI/QuickDASH/LEFS), satisfaction, imaging, medications, opioids, referrals, re-visits, LOS, adverse events. No results(protocol).	Scheduled at 4, 12, 26 weeks	Potential impact on ED overcrowding, reduced imaging/medication (including opioids), increased conservative care, cost-efficiency, supports APP integration and advanced roles
Gangon et al.40	RCT	Compare direct-access physiotherapy vs usual emergency physician care for minor MSK disorders on clinical outcomes and healthcare resource use	78 ED patients (40 PT group; 38 control)	Clinical outcomes: PT group had significantly greater improvements in pain intensity and pain interference at 1 month and 3 months. Both groups achieved MCID, but PT group improved more. Resource outcomes: At discharge: fewer prescription meds, fewer opioids, fewer imaging tests requested. At 1 month: fewer ED return visits, fewer opioids, fewer prescription meds overall. At 3 months: PT group used less OTC medication. No adverse events reported.	1 and 3 months	Improved clinical outcomes vs physician usual care. Major reduction in unnecessary imaging, opioid prescriptions, and return visits. Supports safety and effectiveness of direct-access PT in ED. Suggests better adherence to clinical guidelines and more conservative management by PTs.
Jovic et al.41	Retrospective case-controlled comparative observational study	Assess whether patients with MSK conditions receive timelier analgesia when managed by Advanced Practice Physiotherapists (APPs) compared with medical officers or nurse practitioners	532 total patients (APP n=224; MO n=160; NP n=148)	Primary outcome: Time from triage to analgesia—APPs 40.5 min vs MO/NP 59 min (18.5 min faster, p<0.001). Secondary outcomes: Time triage allocation: APP 16 min vs MO/NP 41 min (−25 min; p<0.0001). Allocation analgesia: no significant difference (27 vs 30 min; p=0.465). Receiving analgesia within 60 min: APP 69.2% vs 50.6% (p=0.006). Within 30 min: no difference (36.1% vs 30.5%). ED length of stay reduced by 56 min for APP group. Analgesic type similar across groups except lower ketorolac use in APP group.	n.a.	APPs improve timeliness of care: faster allocation, faster analgesia, shorter ED stay. Highlights value of APPs in MSK patient flow. Identifies limits of scope (APPs cannot prescribe analgesia in Tasmania), reinforcing need for expanded prescribing rights to optimize impact. Supports integration of APPs in ED workforce.
Dowell et al.42	Retrospective before–after service evaluation	Evaluate effectiveness of a physiotherapy-led Telephone Triage and Advice (TTAD) service for patients referred from the ED to MSK physiotherapy	598 referrals total (2017: n=250 / 2018: n=348).	40.2% of ED referrals discharged via TTAD (140/348). Reduction in face-to-face initial appointments from 250 (2017) → 208 (2018). Failed attendance initial appointments decreased from 14.4% → 9.5%. Follow-up face-to-face appointments reduced (174 → 140). Most frequent diagnoses discharged via TTAD: ankle sprain 69.5%, knee STI 73.8%, shoulder STI 57.6%, LBP 60%.	n.a.	TTAD decreased need for face-to-face visits (−16.8% initial appointments) despite +11.2% referrals. Reduced non-attendance rates. Increased service efficiency and reduced outpatient physiotherapy burden. Demonstrates successful physiotherapist-led digital triage for ED MSK referrals.

Truter et al.43	Prospective intervention study	Evaluate impact of an advanced-scope physiotherapist–led diversion pathway redirecting eligible MSK patients from ED to an outpatient clinic	1794 total screened; 1099 diverted (DIV); 491 eligible but not diverted (END); 182 not eligible (NOT)	ED Length of Stay: DIV 82 min vs END 191 min (−110 min; 95% CI 99–120). NEAT (discharge <4h): DIV 97.9% vs END 78.6% (+19.3%). DNW ("did not wait"): 0.5% DIV vs 9.4% END. Return to ED: No significant difference at 96h (3–5%) or 28 days. Patient satisfaction: 96.7% "satisfied/very satisfied." Triage accuracy: 182 ineligibles correctly identified.	96h and 28 days return visit check only	Demonstrates major ED flow improvement: shorter LOS, fewer DNW, better NEAT compliance. ASP-led diversion increases ED capacity and efficiency. High patient satisfaction. Supports ASP advanced competencies in triage, imaging, and MSK management. Highlights appropriate exclusion of higher-acuity or complex cases.
Chary et al.44	Qualitative study	Explore ED staff perspectives on physical therapy consultation for older adults with falls, including perceived value, challenges, and strategies to improve practice	28 participants	Reasons for PT consult (disposition decision, functional concerns). Value of PT: expertise, standardized gait assessment, more time with patient, improved discharge planning, improved outpatient follow-up. Challenges: limited PT staffing, ED space constraints, lack of protocols, variability in consultation triggers. Strategies: leadership buy-in, use of ED observation units, formal pathways (e.g., ISAR, TUG-based screening).	n.a.	Highlights PT role in improving ED throughput, reducing unnecessary admissions, facilitating safe discharge, improving continuity of care. Shows system barriers (staffing, space), need for structured pathways, and high perceived value by ED clinicians. Supports integration of PT for falls risk assessment and disposition planning in ED.
Lioyd et al.45	Retrospective observational audit across three EDs	Determine adherence to BPPV best-practice guidelines in ED management and assess physiotherapy involvement in care	96 ED patients with dizziness/vertigo (after excluding 62 non-vestibular cases)	Adherence to guidelines was very low: only 26% received a Dix–Hallpike test by medical staff and 14% by physiotherapists; only 1% received a Supine Roll Test. Among 26 patients diagnosed with BPPV, only 12% received canalith repositioning manoeuvres, while 96% were prescribed vestibular suppressant medications. Physiotherapists reviewed just 23% of eligible patients, focusing mainly on mobility/falls risk rather than vestibular assessment. Imaging was frequent (36%) despite guidelines advising against routine radiology. Re-presentations within 6 months occurred in 17% of undifferentiated dizziness cases.	n.a.	Highlights major evidence–practice gaps: limited use of recommended diagnostic manoeuvres, heavy reliance on imaging and medications, minimal physiotherapy involvement in vestibular assessment, and missed opportunities for guideline-adherent care. Suggests potential benefits of expanding PT roles in ED for vestibular disorders.
Langevin et al.22	Pilot RCT	Evaluate the feasibility of conducting an RCT comparing direct-access physiotherapy versus usual ED physician care for children/adolescents with low-acuity MSK complaints, and assess preliminary effects on pain interference, function, satisfaction, and health service use	66 children (33 PT group; 33 usual care)	High feasibility: eligibility 84%, retention 92%, data completion 92–98%. Pain interference improved similarly in both groups overall, but in children without fractures the PT group showed greater improvement at 4 weeks (mean −4.69). Health care satisfaction higher in the PT group at T1. Wait time to see provider shorter in PT group (11 vs 16.7 h). ED lOS slightly shorter for PT group	Baseline (T0), post-ED visit (T1), 2 weeks (T2), 4 weeks (T3)	Direct-access PT acceptable and feasible; indicates potential for improved satisfaction, reduced wait times, more efficient patient flow, and possible better outcomes in specific subgroups (non-fracture MSK). Supports expanding PT role in pediatric ED settings.

Tan et al.46	Prospective observational cohort study	Investigate whether the STarT Back Screening Tool (SBT) can predict long-term outcomes in ED patients presenting with acute low back pain	177 patients completing follow-up	SBT total score and 6-week pain score predicted 6-month pain score; regression model explained 40.1% of pain variance; rapid pain reduction in first 6 weeks for all SBT risk groups; no significant differences between risk groups at 6 months; 82.5% achieved ≥2-point pain reduction; 59.9% pain-free; 93.8% reported improved status	6 weeks and 6 months	Supports use of SBT in ED to identify patients at risk of persistent pain and guide early management; provides prognostic information useful to ED clinicians for planning LBP care
Gagnon et al.47	Secondary analysis of a pilot pragmatic randomized controlled trial	Determine diagnostic concordance between physiotherapists and emergency physicians for patients with minor MSK disorders in the ED	36 patients assessed by both PT and EP	Raw diagnostic agreement 86.1%; Gwet's AC1 = 0.84 (almost perfect agreement); disagreements mostly when PT suspected fracture/contusion and EP diagnosed ligament/meniscus disorder; no adverse events	n.a.	High concordance supports safety and reliability of PT diagnostic decision-making in ED; highlights potential for PT integration into ED MSK care models and supports advanced practice roles
Blondin et al.48	Qualitative exploratory study	Explore patient acceptability, experience, satisfaction, and perception of ED advanced practice physiotherapy model	11 patients	Patients reported high satisfaction, timely access to care, and appreciation for thorough assessment, clear explanations, helpful advice/exercises, and interpersonal skills. APPs were perceived as competent first-contact professionals able to manage MSK disorders and assume delegated medical tasks. Some participants suggested adding follow-up care; minor concerns raised about medication prescription or imaging delays.	Interviews conducted within 8 weeks of ED visit	Supports acceptability and positive patient experience of APP-led ED model; indicates APPs can reduce perceived wait time and enhance care quality; APPs viewed as appropriate alternative to ED physicians for minor MSKD management
Cassarino et al.49	Single-centre RCT	Evaluate impact of early ED assessment/intervention by a physiotherapist–occupational therapist–social worker team on quality, safety, and effectiveness of care for older adults	353 older adults (≥65 years)	Intervention reduced ED length of stay (6.4 h vs 12.1 h), decreased hospital admissions (19.3% vs 55.9%), improved satisfaction at index visit, and improved function, mobility, and self-care at 30 days and 6 months. No differences in ED revisits at 30 days; at 6 months lower unscheduled admissions in intervention group.	30 days and 6 months	Demonstrates effectiveness of interdisciplinary team including physiotherapy in improving ED flow, reducing admissions, and enhancing patient experience; supports integration of allied health professionals in ED for older adults

Morris et al.31	Prospective 53-week observational evaluation	Assess performance, flow, satisfaction, and adherence to national ED targets of an Advanced Scope of Practice Physiotherapist (ASoP-PT) in a large Australian ED	836 patients consulted by the ASoP-PT	ASoP-PT managed mainly ATS 4–5 MSK cases; significantly shorter length of wait and length of stay when ASoP-PT was present compared to shifts without PT; high compliance with ATS time-to-assessment targets; NEAT compliance 98–100% when PT present; no adverse events; imaging ordering consistent and appropriate; high patient and staff satisfaction with PT expertise, assessment quality, and timeliness	n.a.	Demonstrated that ASoP-PT performs as well or better than medical/nursing staff on ED access indicators; improves patient flow and quality; reduces burden on doctors; valued member of ED team; highlights legislative barriers (e.g., inability to prescribe) limiting full extended-scope efficiency
Fleming-McDonnell et al.4	Administrative case report (service development + preliminary outcomes)	Describe the design, implementation, and early outcomes of introducing a physical therapist service in a large urban ED	316 patients in first 18 months; 518 in year 2; 565 in year 3	Increased referrals over time, high acceptance by ED clinicians, improved pain management, improved functional mobility, contributions to differential diagnosis; 50% of patients had ED length of stay <5h vs ED average of 6.3h; high patient satisfaction; safe screening and management	n.a.	Demonstrated feasibility and benefit of PT presence in ED; improved patient flow and satisfaction; PTs supported diagnostic clarity and discharge planning; barriers included limited coverage hours and need for cultural change in ED processes
Gagnon et al.50	Retrospective cohort analysis of a pilot implementation study	Evaluate feasibility and effects of introducing direct-access paediatric PT in PED concussion care regarding satisfaction, documentation, and service metrics	347 eligible children; 81 seen by paediatric PT	Higher parental satisfaction when seen by PT (Family domain 94.7 vs 89.0; Overall 95.4 vs 89.2); significantly improved documentation of prognostic indicators; PT involvement increased appropriate early referrals to concussion clinic (37.2% vs 17.5%); shorter wait time to first provider; similar LOS; no increase in return visits	Phone follow-up within 48 hours for satisfaction/recall	PT presence improves quality of documentation, enhances early management, increases timely referrals, and improves family satisfaction; supports interdisciplinary PED models; suggests increased efficiency without prolonging LOS
Tran et al.51	Case series (2 cases, military setting)	Describe PTs ordering diagnostic imaging and making direct referrals within a military direct-access model	2	Appropriate PT-ordered imaging (MRI), timely direct referrals to podiatry/orthopaedics, accelerated surgical intervention, full functional recovery in both cases	Until resolution after surgery and rehab	Shows PT autonomy in imaging/referrals; improves timeliness, reduces delays, and supports safe PT-led primary contact in military healthcare

Richardson et al.52	RCT + cost-consequence evaluation	Compare PT-led initial assessment vs routine ED care for soft tissue injuries	766	Longer return-to-activity time in PT group (41 vs 28.5 days), higher satisfaction, more advice/appliances; similar long-term outcomes; costs slightly higher in PT arm	3 and 6 months	PT safe and acceptable but not superior for primary outcomes; may increase system costs; routine care preferred unless staffing required
Henderson et al.20	Paediatric direct-access case report	Show importance of red-flag recognition in paediatric neck pain and need for ED referral	1 child	PT identified red flags, stopped evaluation, immobilized with collar, referred to ED; diagnosed with LCH; underwent chemo + C1–C3 fusion; recovered fully by 6 months	3 and 6 months	Highlights PT role in early identification of severe pathology; supports PT safety and diagnostic vigilance in direct-access pediatric practice
Howland et al.25	Retrospective observational study	Evaluate effectiveness of ED Advanced Practice Physiotherapist as primary contact	129	Shorter LOS (208 vs 377 min) and triage-to-assessment	7-day reattendance	APP-PT improves ED flow, reduces wait times, provides safe MSK care; supports expansion of APP roles and granting imaging-request authority
Sheppard et al.53	Qualitative interpretive study	Explore patient satisfaction and perceptions of ED physiotherapy in an Australian Allied Health Team model	22 initial interviews; 15 follow-ups	Identified core themes: expectations, bedside manner, physiotherapy management, and overall satisfaction. Patients valued thorough assessment (home environment, mobility, social supports), clear explanations, exercises, safety advice, and help with referrals. Reported high satisfaction and positive influence on ED experience.	2–3 weeks post-ED visit	Highlights physiotherapist role in aged care ED pathways, discharge planning, safety assessment, and workflow support; demonstrates strong patient satisfaction and perceived added value of PT in ED teamwork

Kim et al.54	Narrative review	Describe scope, clinical applications, outcomes, and implementation steps for ED-initiated PT programs in the U.S.	n.a.	Early data show improved patient satisfaction, reduced wait times, reduced admissions, improved pain management, potential reduction in opioid use and low-value imaging. PT effective for MSK, vestibular, and mobility issues; supports efficient discharge planning.	n.a.	Emphasizes growing ED PT model, strong physician support, positive workflow impact, better MSK/ vestibular management, and need for structured implementation steps and expanded PT integration
Magel et al.55	Prospective observational cohort	Describe evaluation, treatment, imaging patterns, medications, follow-up, and functional outcomes for atraumatic LBP ED patients	103	PROMIS physical function improved +10.8 at 6 weeks; pain improved −3.2; high imaging rates (x-ray 35.9%, CT/MRI 45.6%); 35.9% received opioids in ED; 18.5% discharged with opioids; only 11.8% attended PT follow-up; wide variation in care patterns; 32.4% missed work	6-week follow-up	Shows lack of standardized ED LBP pathway, high imaging and opioid use, low PT referral; highlights need for ED-specific guidelines and potential role for PT to improve MSK management
Lefmann et al.56	Editorial commentary	Describe the diverse clinical value of ED physiotherapy and define advanced vs secondary contact roles	n.a.	Not applicable (conceptual). Defines competencies, scope activities (radiology request, plastering, wound/fracture care, vestibular assessment, mobility, discharge planning), and evidence gaps needing research	n.a.	Highlights evolution and benefits of ED PT roles; identifies need for training pathways, standardized competencies, and recognition of PT contribution to efficiency, imaging reduction, and discharge safety
Stewart et al.57	Multisite retrospective cohort (pre/post clinical pathway)	Assess effect of an ED vertigo clinical pathway including vestibular physiotherapy on quality and efficiency of care	543 patients (214 pre-pathway; 329 post-pathway)	Post-pathway: vestibular PT assessments +27%; HINTS use +27%; reduced wait time to assessment (25h → 4.6h); reduced ED LOS (3.9h → 3.2h). PT-assessed patients had higher diagnostic specificity (65% vs 34%) but higher admissions and total hospital LOS due to case complexity. No change in adverse events.	30 days (re-presentations, readmissions)	Pathway improved quality and efficiency of care; vestibular PT increased diagnostic accuracy; demonstrated need for formal vestibular services in ED; supports PT integration in dizziness/vertigo pathways

Vickery et al.58	Mixed-methods cross-sectional survey	Explore perceived barriers, facilitators, and strategies to optimise ED physiotherapists' roles in Australia	94 physiotherapists	Five barrier/ facilitator themes identified (organisational culture, training/ credentialling, governance & policies, funding, advocacy/research). Six themes for future optimisation (training pathways, culture, governance, funding, advocacy, medicolegal concerns). High respect/ understanding from ED stakeholders.	n.a.	Highlights workforce, cultural and policy needs to optimise ED physiotherapy; identifies gaps in training, governance, funding and need for national role standardisation
Tousignant-Laflamme et al.59	Feasibility study	Assess feasibility and potential clinical value of early PT in ED to prevent immobilisation syndrome in older adults	20 patients assessed in ED (≥65 y)	Feasible implementation; 9 patients received ED PT and 0 developed immobilisation syndrome, whereas 2/11 without ED PT developed IS. Identified facilitators (interprofessional collaboration, easy access) and barriers (space, equipment, inconsistent screening).	In-hospital follow-up until discharge	Highlights benefit of early mobility; need for better screening and resources; demonstrates ED PT could reduce functional decline in older adults
Matifat et al.60	Pragmatic stepped-wedge cluster RCT + cost analysis (protocol)	Compare APPT-led ED care vs usual physician-led care for minor MSKD; evaluate clinical outcomes, resource use, costs	Planned 744participa nts across 6 EDs	Primary: BPI pain interference. Secondary: pain, disability (NDI/ODI/ QuickDASH/LEFS), satisfaction, imaging, meds, ED return visits, costs (TDABC).	4-12-16 weeks	Advanced Practice PT as primary contact in ED; PTs able to assess, diagnose, recommend imaging/ meds; collaboration with ED physicians; aims to improve access, LOS, quality of MSK care
Ip et al.61	Retrospective mixed-methods implementation process evaluation	Evaluate implementation, feasibility, acceptability and barriers/facilitators of Specialized Vestibular Physiotherapy (SVP) in ED	13 clinicians(9 survey; 7 interview)	High acceptability, feasibility, appropriateness; improved ED flow; key facilitators: leadership, champions, communication; main barrier: workforce capacity and inconsistent terminology	n.a.	ED physiotherapy service managing BPPV; requires organisational embedding, referral pathways, training, stakeholder engagement; PTs delivering Dix-Hallpike, CRT

Gagnon et al.8	RCT	Evaluate the impact of direct-access physiotherapy vs usual emergency physician care for minor MSKD	78 patients (40 PT; 38 control)	PT group showed significantly lower pain and pain interference at 1 and 3 months; fewer ED return visits (0% vs 21% at 1 month); fewer prescription meds and opioids; markedly fewer imaging tests recommended at ED discharge; no adverse events	1 and 3 months	Demonstrates superior clinical outcomes and more efficient resource use with PT as primary contact; supports PT diagnostic reasoning, guideline adherence, and reduced healthcare utilization
Goodman et al.62	Descriptive observational project report	Describe implementation and sustainability of expanded-scope physiotherapy in a regional ED	517 primary contacts	97.4% discharged within 4h (vs 73.8% ED average); wait time reduced 39→19 min; stable treatment time; high staff satisfaction (80–82% strongly agree); high patient satisfaction (76–94% positive); no adverse events	None	Safe and efficient expanded-scope PT role; improved ED flow; independent X-ray ordering and interpretation; autonomous management; highlights challenges in training, supervision, rur
de Campos et al.63	Multicentre pragmatic parallel RCT	Evaluate whether a primary-contact physiotherapy pathway reduces ED LOS compared with usual medical/nurse practitioner care for MSK conditions	Planned 1370	Primary outcome: ED LOS. Secondary outcomes: time to care, clinical duration, admissions, imaging, opioids/gabapentinoids use, specialist consults, re-presentations (72h/30d); pain, QoL (EQ-5D-5L), satisfaction, adverse events; cost-effectiveness analysis	Days 1, 7, 42	Primary-contact PTs perform autonomous or collaborative care; can order imaging and specialist consults; expected impact: improved flow, decreased LOS, reduced unnecessary imaging/opioids, high acceptability
Kim et al.64	Cluster-RCT	Test whether embedding a PT directly in the ED physician team improves pain interference, disability, imaging use, and opioid consumption in acute LBP	224 planned	Primary: PROMIS Pain Interference at 3 months. Secondary: ODI, opioid use, prescription analgesics, imaging utilization, NPRS, GROC, PCS-4, PSEQ-4, health care utilisation	1 week, 1 month, 2 months, 3 months (exploratory 6 and 12 months)	Embedded PT performs standardized LBP algorithm (manual therapy, exercise, education). Aims to reduce opioid dependence, unnecessary imaging, and enhance guideline-driven ED MSK care

Gill et al.65	Retrospective service evaluation (3-year data audit)	Describe implementation and performance of a Primary Practitioner Physiotherapy (PP) service in ED and evaluate impact on waiting time/LOS	5641 PP patients	92% seen within ACEM targets; 91% discharged <4h; PP waiting times 6–16 min shorter vs MD; LOS 11–24 min shorter vs MD; increased caseload year by year; broad MSK spectrum including fractures; no adverse events reported	None	Demonstrated PP-PT improves flow, reduces waiting and LOS; PTs assessed/managed fractures, ordered X-rays, coordinated follow-up; requires senior MSK training; supported by ED staff; shows scalability
Lloyd et al.9	Prospective pre–post feasibility study	Assess safety and feasibility of specialised vestibular physiotherapy for dizziness/vertigo in ED	52 (20 usual care; 32 vestibular PT)	93.8% PT group completed full vestibular assessment; 100% Hallpike-Dix performed vs 5% usual care; CRT 40.6% vs 0%; undifferentiated dizziness reduced (34.4% vs 85%); brain imaging reduced (34.4% vs 55%); improved satisfaction and return-to-function at 5 days; no adverse events	5-day phone follow-up	Safe, feasible; improves adherence to vestibular guidelines, diagnostic specificity, and patient satisfaction; requires advanced vestibular training and integration with ED pathways
Strudwick et al.6	Multisite retrospective cohort (before–after comparison across 4 EDs)	Evaluate impact of ED physiotherapy service on length of stay, return visits, imaging, and patient flow	62,620 total ED presentations; physiotherapy consulted in 3.1%	Patients seen by PT had shorter ED LOS (median 2.9 h vs 3.6 h), lower imaging rates, reduced hospital admissions (2.3% vs 12.2%), and fewer 72-hour re-presentations (3.6% vs 6.1%). PT involvement improved flow notably in MSK and mobility-related cases	72-hour return visits	Demonstrated system-level value of ED PT: lower admissions, fewer imaging tests, improved ED throughput; emphasises PT role in mobility assessment, discharge planning, MSK triage
Gagnon et al.47	Secondary analysis of RCT	Examine diagnostic concordance between ED physiotherapists and emergency physicians for MSK diagnoses	36 assessed by both clinicians	Overall raw agreement 86.1%; Gwet's AC1 0.84 (almost perfect). Disagreements mainly fracture vs sprain/soft tissue. No adverse events. PT identified all fractures clinically despite no imaging authority	n.a.	Provides strong evidence of PT diagnostic safety and accuracy; supports autonomous PT triage models in ED; highlights potential improvements if PTs gained imaging referral rights

Pugh et al.66	Prospective observational study	Assess impact of ED-based PT on imaging use, opioid administration, and ED length of stay	524 MSK patients (381 PT; 143 no PT)	PT group had lower imaging (38.3% vs 51%), lower opioid admin (17.5% vs 32.9%), shorter LOS (4 h vs 6.2 h). Subgroup LBP: less imaging (25% vs 57%)	n.a.	ED-PT reduces imaging and opioid use, improves flow; PT works as secondary contact practitioner after initial MD triage
Matifat et al.67	Systematic review (15 studies)	Summarize evidence on MSK PT care in EDs and evaluate outcomes, safety, efficiency	15 included studies	PT care as effective as medical care for pain/function; consistently reduces waiting time and LOS; PT orders fewer or equal imaging; high patient satisfaction; no increase in adverse events	n.a.	Supports PT/ESP roles in ED (triage, diagnosis, ordering imaging, prescribing in some jurisdictions); highlights system benefits (reduced wait times, safe management)
Gagnon et al.19	Single-center retrospective cohort	Determine feasibility and impact of direct-access pediatric PT for concussion management in the PED	347 total children; 81 seen by PT	PT group showed significantly higher parental satisfaction (Family: 94.7 vs 89.0; Overall: 95.4 vs 89.2). Better recall of concussion instructions (57% vs 39%). Much higher documentation of prognostic indicators (5P rule items >98% vs <1%). More appropriate referrals to concussion clinic (37.2% vs 17.5%). Similar ED LOS, no increase in return visits	48-hour phone survey for a subsample; 7-day revisit check	PT presence improved early concussion management, documentation quality, referral accuracy, and satisfaction; feasible model, recommended for broader implementation; limited by restricted PT coverage hours

Table 2. Data Extraction Table

n.a. not avaible, ED: emergency department, PT: physiotherapist, MSK: musculoskeletal, A&E: accident and emergency, APP: advanced clinical physiotherapist, APPT: advanced practice physiotherapy therapist / advanced practice physiotherapist, ASoP-PT: advanced scope of practice physiotherapist, ATS: Australasian Triage Scale, BPI: brief pain inventory, BPPV: benign paroxysmal positional vertigo, CRT: canalith repositioning technique, CT: computed tomography, ESP / ESP-PT: extended scope physiotherapist / extended scope physiotherapy, FCP: first contact practitioner, HINTS: head impulse–nystagmus–test of skew, ISAR: identification of seniors at risk, LBP: low back pain, LOS: length of stay, , MRI: magnetic resonance imaging, NEAT: national emergency access target (4-hour rule), NDI: neck disability index, NP: nurse practitioner, NPRS: numeric pain rating scale, ODI: oswestry disability index, PCS-4: pain catastrophizing scale – 4 item, PED: pediatric emergency department, PROMIS: patient-reported outcomes measurement information system, PSEQ-4: pain self-efficacy questionnaire – 4 item, QoL: quality of life, SVP: specialized vestibular physiotherapy, TUG: timed up and go (test).

3.6 Evidence Gaps

Different studies across the years deter several gaps in the evidence of Physiotherapist in the ED, first is the growing adoption, most of the available research consist in observational designs, pilot evaluations, qualitative analysis or service reviews. Only small number of RCT composed the strong part of the literature examine the direct impact of physiotherapist8. A cluster randomized trial protocol has been published to evaluate advanced practice physiotherapy in EDs, including cost-effectiveness outcomes, but results are not yet available68. One RCT found higher patient satisfaction but no improvement in clinical recovery, and even a longer time to return to usual activities compared with standard ED care, highlighting uncertainty regarding long-term effectiveness52. The absence of multiple high-quality trials limits the degree to which causal relationships between physiotherapy interventions and patient or system outcomes can be established. Heterogeneity was evidenced as a great deficit because for each country is described a different approach and reasonability for the physiotherapist. This heterogeneity in study design, populations, and scope of practice complicates the comparison of models and prevents identification of the most effective components across settings. Also limited evidence on the long-term outcomes While some studies report short-term follow-up for instance, clinical improvements up to three months in the trial the sustainability of physiotherapist-led interventions over longer periods remains unclear9. Evidence describing recurrence rates, long-term functional recovery, chronicity prevention, or long-term healthcare utilisation is largely absent. A further gap concerns cost-effectiveness. Despite indications that physiotherapist-led pathways may reduce imaging9, unnecessary follow-up8, and missed appointments33, dedicated economic analyses are lacking. None of the included studies performed formal cost-effectiveness or cost–utility evaluations, which limits conclusions about the financial implications of implementing physiotherapy-led models at scale. In addition, evidence for specific populations is uneven. Most studies address low-acuity musculoskeletal injuries, with fewer focusing on vestibular presentations or paediatric emergency care19,22, and only qualitative insights regarding older adults69. Little evidence exists for trauma, chronic pain, multimorbidity, or complex emergency presentations. Finally, a major evidence gaps concerns geographic representation. No studies were identified from Italy or Southern Europe. All included research originates from Australia, Canada, the UK, or Ireland. Given the substantial differences in professional regulation, scope of physiotherapy practice, and ED organisational structures across health systems, the transferability of these models to the Italian context remains uncertain. This absence is particularly striking given that Italian EDs face high volumes of non-urgent presentations and significant overcrowding, suggesting a missed opportunity for evaluation of physiotherapy-led models within the national system.

4. Discussions

This scoping review examined the current evidence on physiotherapy roles within emergency departments in countries that have actively developed multidisciplinary models of care, particularly Australia, Canada, and the United Kingdom. Overall, the findings indicate that physiotherapists, especially when practising in Primary Contact or Advanced Practice roles, can contribute substantially to the assessment, management, and flow of patients presenting with musculoskeletal, vestibular, paediatric, or mobility-related conditions. Similarly, early physiotherapy input for older adults has been shown feasible and potentially beneficial in preventing immobilization-related complications during ED stays32. Across multiple models of care, physiotherapist-led interventions were consistently associated with improved service efficiency, enhanced clinical assessment, and favourable patient and clinician experiences6,8,9,19,30,33,69,70. A key observation is that physiotherapist-led care is frequently linked to gains in operational performance. Studies from Australia and Canada reported reductions in waiting times and ED length of stay, faster access to analgesia, and more efficient care pathways when physiotherapists were integrated into ED services1,6,8,9,14,19,30,33,70,71. These improvements likely reflect the capacity of physiotherapists to perform rapid assessment, initiate conservative management, and streamline referral or discharge processes for low-acuity presentations. Clinically, physiotherapists demonstrated effective management of musculoskeletal disorders, sustained reductions in pain intensity, accurate identification of peripheral vestibular disorders using validated tools, and meaningful contributions to paediatric concussion pathways and geriatric mobility assessment8–10,19,22,69. Evidence from US EDs confirms that integrating physiotherapists early during musculoskeletal presentations can reduce imaging, opioid administration and ED length of stay, even within secondary-contact models51. These findings strengthen the rationale for physiotherapy integration as part of ED opioid-reduction and imaging-stewardship strategies, especially for atraumatic LBP5,26. ED physiotherapists in US improve care-team efficiency by supporting diagnostic clarity, early mobilisation, discharge planning, and patient reassurance, thereby reducing physician workload and improving satisfaction among both patients and providers72.It is important to emphasise that the models described in this review do not replace the role of the emergency physician, nor do they suggest that medical care slows down the system. Rather, physiotherapists are integrated within multidisciplinary teams to manage low-acuity, non–time-critical conditions that fall within their recognised expertise, such as simple musculoskeletal injuries, minor trauma and selected vestibular presentations. By taking responsibility for these cases under agreed protocols and within a clearly defined scope of practice, physiotherapists can reduce unnecessary medical workload and allow physicians to focus on high-acuity, diagnostically complex or time-sensitive presentations. In this sense, physiotherapy input is intended to complement – not duplicate or compete with medical care in the emergency department. Safety and acceptability outcomes across the included studies were uniformly reassuring73. High diagnostic agreement between physiotherapists and emergency physicians has been reported for musculoskeletal presentations, and no serious adverse events related to physiotherapy interventions were described, aside from occasional transient symptoms during vestibular manoeuvres8–10,70,73. Patient, parent, and clinician satisfaction were consistently high15. Patients consistently perceived APPs as skilled MSK experts, appreciated they're through assessments, clarity of explanations and in some cases expressed a preference for physiotherapist management with better experience scores and strong staff acceptance in EDs with physiotherapy services2,6,9,19,30,34 . Despite these promising findings, the evidence base remains limited by the predominance of observational designs, heterogeneity in models and outcomes, and scarce long-term or economic evaluations11,74. No studies were conducted in Italy or Southern Europe, which restricts the direct transferability of existing models to the Italian context. The emergence of large multicenter RCTs such as the ongoing Canadian stepped-wedge trial highlights the growing international effort to generate more rigorous and generalisable evidence on physiotherapy-led emergency care models. A recent Australian study highlighted that the effective implementation of emergency department physiotherapy models depends on specific enabling conditions, including a supportive organisational culture, clear governance structures, appropriate credentialling and training pathways, dedicated funding, and structured advocacy efforts75. Further research, including context-specific pilot projects and robust evaluations, is needed to determine the feasibility, generalisability, and system-level impact of integrating physiotherapists into Italian emergency departments.

5. Limit of the study

This scoping review presents several methodological limitations. First, the search was limited to articles published in English and indexed in PubMed and Google Scholar, which may have led to the omission of relevant studies available in other languages or databases. Second, no formal assessment of methodological quality or risk of bias was performed, in line with scoping review methodology, but this limits the ability to evaluate the robustness of the included evidence. Third, the heterogeneity of study designs, populations, and outcome measures restricted the possibility of comparing results across studies or conducting any quantitative synthesis. Finally, the review did not identify any studies conducted in Italy, limiting the contextual applicability of the findings to the Italian healthcare system.

6. Conclusions

This scoping review highlights a growing body of international evidence supporting the involvement of physiotherapists in emergency department pathways, particularly through First Contact and Advanced Practice models implemented across different healthcare systems. In several countries, physiotherapist-led interventions are associated with greater service efficiency, more accurate assessment processes, and high levels of satisfaction among both patients and clinicians. No studies were identified within the Italian context, where the current regulatory framework clearly defines professional roles and does not include extended physiotherapy functions such as those described in the international literature. These regulatory conditions limit the direct transferability of foreign models and require careful consideration prior to any potential adaptation. Any future exploration of the physiotherapist's contribution within Italian emergency departments should therefore be conceived strictly within the current scope of professional practice, focusing on functional assessment and conservative management of low-complexity conditions, integrated within pathways involving multispecialty teams and guided by protocols that support without overlapping the physician's decision-making. Further research could include small-scale pilot projects designed to evaluate the feasibility, acceptability, and potential impact of emergency department pathways supported by physiotherapy, developed in close interprofessional collaboration and in full compliance with Italian regulations. Such initiatives could help optimize patient flow, improve the management of minor musculoskeletal and vestibular conditions, and enhance the overall quality of care without altering existing professional responsibilities. In this direction, the applicability of this emerging model within the Italian system could be immediate. High-quality international trials, such as the ongoing Canadian cluster trial, will provide valuable insights into the scalability, safety, and cost-effectiveness of these models and may guide more context-specific future considerations. These reflections will necessarily include a careful evaluation of quality of care in the Emergency Department, which must be assessed beyond numerical indicators such as length of stay, incorporating not only patient satisfaction but also the management of clinical complexity, communication, and the quality of human interaction. In a scenario of profound transformation of the Italian healthcare system moving toward a more community-oriented model of proximity care it is also essential not to overlook the early identification of risk factors, carried out in synergy with other professionals, to detect early signs of chronicity both in healthy individuals and in those with existing conditions. This approach facilitates access to community services and strengthens the connection between hospital and territorial care. Through functional assessment, the emergency department physiotherapist can guide patients toward the most appropriate rehabilitation service (e.g., outpatient care, home-based care), ensuring timely and continuous management after discharge.74.

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