Received: 8 February 2021 | Revised: 19 February 2021 | Accepted: 20 February 2021

DOI: 10.1002/msc.1550

WILEY

LITERATURE REVIEW

A scoping review protocol: Investigating the extent and legal process of cauda equina syndrome claims for UK physiotherapists

Rachel L. Leech[1] | James Selfe[1] | Suzanne Ball[1] | Susan Greenhalgh[1,2] | Gareth Hogan[1] | Janene Holway[1] | Emma Willis[1] | Gillian Yeowell[1]

[1]Department of Health Professions, Faculty Health, Psychology and Social Care, Manchester Metropolitan University, Manchester, UK

[2]Bolton NHS Foundation Trust, Bolton, UK

Correspondence
Rachel L. Leech, Department of Health Professions, Faculty Health, Psychology and Social Care, Manchester Metropolitan University, Manchester, UK.
Email: r.leech@mmu.ac.uk

Funding information
Chartered Society of Physiotherapy Charitable Trust, Grant/Award Number: PRF/19/A18

Abstract

Introduction: Cauda equina syndrome (CES) is a condition where early identification and treatment is crucial to avoid potentially devastating effects. There is a high number of litigation cases linked with CES given it is a relatively rare condition. This scoping review protocol proposes to explore the extent and process of CES litigation in UK healthcare context cases amongst UK physiotherapists.

Methods and analysis: The methodological framework recommended by Arksey and O'Malley, Levac et al. and the Joanna Briggs Institute will be used throughout this review to aid reporting and transparency. A patient and public involvement (PPI) group meeting was convened at the beginning of the review process in order to provide knowledge exchange to inform the search strategy and propose resources to be used during the scoping review. Two reviewers will independently review the literature in order to apply the inclusion and exclusion criteria. Once the studies to be included have been identified, the data from these studies will be extracted and charted. Results will show quantitative data of the studies included in the review and a narrative synthesis of the literature.

Dissemination: This scoping review will evaluate the existing knowledge relating to CES and litigation and will map the key concepts around this topic. Results will be disseminated to practitioners and policy-makers through peer-reviewed publications, conferences, reports and social media. This method may prove helpful to others who are investigating extent and processes relating to medicolegal cases involving healthcare practitioners.

Registration: The current paper is registered with OSF registries (DOI 10.17605/OSF.IO/MP6Y3).

KEYWORDS
cauda equina syndrome, clinical negligence, litigation, medicolegal, physiotherapy

1 | INTRODUCTION

Cauda equina syndrome (CES) is a rare, yet well-known condition caused by compression of the cauda equina nerve roots (Woodfield et al., 2018). Risk factors for CES include a disc prolapse or any space-occupying lesion that causes cauda equina compression; spinal surgery can also be a risk factor (Finucane et al., 2020). Common symptoms of CES include unilateral or bilateral neurological symptoms, loss of dermatomal sensation and motor weakness; if any of these symptoms arise combined with bladder or bowel dysfunction or saddle sensory change, then CES should be suspected (Finucane et al., 2020). The clinical suspicion of compression of the cauda equina must be confirmed with a magnetic resonance imaging (MRI) scan (British Association of Spine Surgeons, 2019). CES can be challenging to diagnose and treat in an appropriate manner as it can be present in various clinical settings, and clinicians must provide efficient reasoning in order to provide appropriate management (Tricco et al., 2018). Delays in diagnosis and treatment of CES can have life-changing consequences for the patient and can lead to significant medicolegal consequences (Greenhalgh et al., 2018; Woodfield et al., 2018). Delays are often caused by failure to recognise the signs and symptoms of the condition, delays in organising MRI scans and delays in making referrals for surgical opinion (Finucane et al., 2020).

CES is highly litigious with an average payment of £336,000 (Finucane et al., 2017). The NHS paid out circa. £44m in the 10 years previous to 2013, for CES-related claims (Fairbank, 2014), and more recently, it was revealed that in England, 23% of litigation claims for spinal surgical procedures are CES related (NHS Litigation Authority, 2013).

First contact practitioner (FCP) is a new model beginning to evolve within the United Kingdom (First Contact Practitioner, 2019); this allows the introduction of physiotherapists to become musculoskeletal FCPs in primary care settings. The aim of this is to provide timely access to expert musculoskeletal practitioners (e.g., advanced practice physiotherapists [APPs]) without the patient needing an initial general practitioner (GP) appointment (First Contact Practitioner, 2019; Hutton, 2019). Therefore, physiotherapists are likely to become the first point of contact for an increased number of people with CES. As such, physiotherapists are more likely to be involved in CES litigation cases than ever before. Litigation can have many negative effects for the clinician, including stress and anxiety, which can have effects for many years, contributing to decreased mental and physical well-being (Greenhalgh et al., 2018). These negative effects could also cause physiotherapists to leave the profession.

It is not known how many UK physiotherapists have been or are currently involved in litigation cases associated with CES, or whether they work in the NHS or elsewhere. It is also unclear what guidance and processes are in place to support physiotherapists involved in litigation for CES. Due to the paucity of research around this topic within physiotherapy, the current scoping review will explore litigation relating to CES.

The aim of this study is to gain an understanding of the magnitude of physiotherapy-related CES litigation and how the associated medicolegal processes are currently managed in the United Kingdom. The objectives are as follows:

1. To investigate the extent of CES litigation in physiotherapy.
2. To explore and describe the process of medicolegal litigation and how this is managed in relation to physiotherapy.

2 | METHODS AND ANALYSIS

A scoping review was chosen as the most appropriate method as scoping reviews typically map a wide range of literature from various sources to identify key concepts (Levac et al., 2010). A scoping review is an iterative process which uses all valuable evidence, as opposed to only using the most high-value evidence available which is usually the case for systematic reviews (Murray et al., 2016). Therefore, a scoping review does not adopt a formal method to analyse the quality of literature. However, scoping reviews should still have a comprehensive and rigorous search strategy (Murray et al., 2016; Peters et al., 2015). A scoping review was most appropriate for our topic area as the aim of our review was exploratory rather than hypothesis testing (Tricco et al., 2016).

The framework guiding this scoping review is that developed by Arksey and O'Malley (2005), which was further clarified by Levac et al. (2010) and the Joanna Briggs Institute (JBI) (Peters et al., 2015). This is a well-established framework that is commonly used to provide a structured method for scoping reviews. The PRISMA-ScR reporting guidelines will be used for reporting the results (Tricco et al., 2018).

Arksey and O'Malley's (2005) framework has a six-stage process which we have implemented for this scoping review. The sixth stage (consultation exercise with stakeholders) was originally stated as optional; however, it has since been argued that this is a necessary stage (Levac et al., 2010). Furthermore, this stage is particularly relevant for our topic area which involves people living with CES as well as physiotherapists. This ensures our research, although focussed on clinicians, remains patient centred and relevant. Therefore, rather than conducting a stakeholder consultation as the sixth stage, the research team convened a PPI meeting at the beginning of the scoping review process to co-determine the research questions and co-produce the search strategy. The stakeholders named the group as the CES Critical Friends Group (CFG). The group included four people living with CES (including someone undergoing a litigation case) and a physiotherapy stakeholder with experience of being involved in a CES litigation case.

2.1 | Stage 1: Identifying the research question

In securing funding for this project (Chartered Society of Physiotherapy Charitable Trust; Grant number: PRF /19/A18), the research

TABLE 1 Primary and secondary search terms used for databases

Primary search terms	Cauda equina syndrome	Litigation	UK
Secondary search terms	Or central disc prolapse	Or negligence	Or England
	Or bilateral sciatica	Or malpractice	Or Wales
	Or urinary retention	Or medicolegal	Or Northern Ireland
	Or perineal hypaesthesia		Or Scotland
	Or sexual dysfunction		
	Or spinal		
	Or surgery		

team identified a preliminary research question while considering the concept, target population (UK healthcare professionals) and health outcomes of interest (well-being of physiotherapists in receipt of CES claims). The purpose and rationale of the scoping review and its proposed outcomes were contemplated (Levac et al., 2010). This activity was informed by the CES CFG meeting. The broad research question developed was: With respect to physiotherapy, what is the extent of CES litigation in the United Kingdom, and what is the legal process by which these litigation cases are managed?

2.2 | Stage 2: Identifying relevant studies

2.2.1 | Search strategy for databases

Following the CES CFG meeting, a broad search strategy will be developed using 'cauda equina syndrome' and 'litigation' as the primary search terms. The search strategy will be further refined by the research team; it will be piloted and re-piloted. Secondary search terms will include a wider set of keywords based on the primary terms, for example, negligence. These will be used with the Boolean operators AND OR in order to find a wide range of literature. This search strategy will be used for an electronic search of the Allied and Complementary Medicine Database (AMED), the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Medline. Table 1 shows all the keywords to be used in the database searches.

2.2.2 | Search strategy for grey literature and websites

The Chartered Society of Physiotherapy (CSP) website will be searched as it is the professional body and trade union for physiotherapists using the following terms: 'cauda equina', 'insurance', 'negligence' and 'litigation'. The Health and Care Professions Council (HCPC) and NHS Resolution (formerly NHS Litigation Authority) will also be searched using the same terms. References from the included records and grey literature will also be searched for relevant records.

The final search strategy will be fully documented and reported following completion of the study.

2.2.3 | Eligibility criteria

At the CES CFG meeting the subsequent inclusion and exclusion criteria were established to guide the scoping review search.

Inclusion criteria

Phenomenon of interest

- Adults—18 years and older.
- Includes information from the UK perspective.
- Focusses on the extent and prevalence of litigation cases for spinal pathologies (must include CES) and associated costs where available.
- Focusses the extent and prevalence of litigation cases for CES spinal surgery (including spinal orthopaedic surgery and spinal neurosurgery) and associated costs where available.
- Research study that investigates which professions are involved in CES litigation (including how many of these are physiotherapists and if relevant which NHS terms and conditions (AfC) pay scales they are from and associated costs where available.
- Data concerning how many litigation cases involve NHS staff and how many involve the private sector and not-for-profit/charitable organisations and associated costs where available.
- Information regarding litigation processes from NHS Resolution.
- Any literature regarding processes/pathways for dealing with litigation in relation to physiotherapy and other healthcare professionals acting as a defendant.

Sources

- Sources of information may consist of research studies, reports, reviews, guidelines, frameworks/pathways, ongoing court cases and grey literature.
- Websites of organisations involved in the management of medicolegal processes (NHS Resolution).
- Websites of professional and governing bodies of health professionals (CSP and HCPC).

Exclusion criteria

- Information solely related to medicolegal costs.
- Information regarding wrong site surgery.
- Literature solely based on consent in surgery.
- Literature relating to spinal anaesthesia.
- Literature not written in the English language.

Other sources such as the university library search facility will also be used as well as professional organisations' websites, grey literature and reference searches of relevant literature.

2.3 | Stage 3: Study Selection

2.3.1 | Study selection for databases

The titles and abstracts of the studies found using the search strategy will be evaluated independently by one reviewer (RL), and a second reviewer (GY) will complete the same process on 10% of the articles retrieved; if there is any uncertainty on the decision to include or exclude a particular article, it will be included for full-text review (Murray et al., 2016).

2.3.2 | Study selection for grey literature and websites

The titles and description information of website results (or abstracts in the case of articles) will be evaluated independently by one reviewer (RL) against the inclusion and exclusion criteria, if there is any uncertainty the full web page or text will be included for full review.

2.4 | Stage 4: Charting the data

2.4.1 | Data charting for databases

Following the review of the titles and abstracts, the full text of all articles to be included will be attained. The reviewers will meet throughout the charting process to discuss any challenges or uncertainty and to refine the search strategy if needed (Levac et al., 2010).

A data charting form will be developed by the research team similar to that described by the JBI (Peters et al., 2015). The research team will decide which variables should be extracted to answer the research question. One researcher (RL) will independently obtain data from the studies included during study selection using a data charting form. A second researcher (GY) will check 100% of the data extracted for accuracy and the researchers will then meet to establish if their data extraction approach is consistent before continuing. This will be an iterative process with researchers continuing to extract data and update the form. If useful data are found which do not comply with the charting form, further headings or categories will be added to the form. Any discrepancies will be discussed by the research team, and in the case of disagreement, a third reviewer (JS) will make the final decision. See an example of the data extraction headings as follows:

A. Author(s)
B. Year of publication
C. Title
D. Aims/purpose of the study
E. Type of claim
F. Type of study
G. NHS or non-NHS
H. UK nation
I. Methodology
J. Results
K. Conclusions that relate to wider context
L. Conclusions that relate to review objectives

2.4.2 | Data charting for grey literature and websites

Full web pages or text will be explored according to the inclusion and exclusion criteria by two reviewers (RL and GY). If there is any uncertainty, a third reviewer (JS) will make the final decision. A charting form, using broadly similar headings to those used above, will be used for web pages.

2.5 | Stage 5: Collating, summarising and reporting the results

We anticipate that the methods used in this scoping review protocol will allow us to gather and review current information for this broad topic area. Using the data found from the review, we will map the key concepts of available data, summarise current research findings and identify gaps in the literature around this topic. Our results will show the numerical analysis of the number of studies found from the review as well as a narrative synthesis of the data.

2.5.1 | Disseminating the results

The results of the scoping review will provide insight into the extent and legal process of CES litigation cases in physiotherapy. Circulating these findings will provide useful information for physiotherapists, cauda equina patients, governing bodies and insurers.

The results of this scoping review will complete the first phase of the study 'The experiences of physiotherapists in relation to cauda equina syndrome and litigation'. The knowledge found from the review will inform the subsequent phases of our research. The research team will also provide content to a dedicated project website. We will produce infographics to disseminate research findings in an easy-to-understand format accessible to a wide audience including physiotherapy clinicians, CSP professional body, a range of stakeholders and the public. Ongoing updates of our research activity and interim findings will be posted via a blog on the project website and we will Tweet updates of our research activity and links to dissemination outputs. The research team will approach the editor of *Frontline* magazine to publish a feature page on the project and its findings.

The CSP will also be provided with content regarding the project and its findings for the CSP website and iCSP (interactive CSP website).

3 | CONCLUSION

Scoping reviews are a valuable way to find a wide range of information around a topic. The current scoping review protocol follows a structured framework (Arksey & O'malley, 2005) which provides rigour for our methods. This review will enable us to chart the key concepts of this topic area and review the existing research around CES litigation and physiotherapists.

ACKNOWLEDGEMENT

This work was supported by a Grant from the Chartered Society of Physiotherapy Charitable Trust (Grant number: PRF/19/A18)

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

ETHICAL APPROVAL

The current research and associated papers gained ethical approval from Health, Psychology and Social Care Research Ethics and Governance Committee at Manchester Metropolitan University (EthOS Reference Number: 18122).

AUTHOR CONTRIBUTIONS

Gillian Yeowell, Rachel L. Leech, Susan M. Greenhalgh and James Selfe designed the study. All authors developed the research question and search strategy and contributed to drafting and revising the manuscript. All authors have approved the submission of the final manuscript and have agreed to be personally accountable for the author's own contributions.

ORCID

Rachel L. Leech https://orcid.org/0000-0002-9266-2284
James Selfe https://orcid.org/0000-0001-9931-4998
Susan Greenhalgh https://orcid.org/0000-0002-2259-0123
Gillian Yeowell https://orcid.org/0000-0003-3872-9799

REFERENCES

Arksey, H., & O'malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1), 19–32. https://doi.org/10.1080/1364557032000119616.

British Association of Spine Surgeons. (2019). *Cauda equina syndrome*. https://www.spinesurgeons.ac.uk/Cauda-Equina-Syndrome

Fairbank, J. (2014). Cauda equina syndrome - risk management. *Journal of Trauma and Orthopaedics*, *2*(3), 49–50.

Finucane, L. M., Downie, A., Mercer, C., Greenhalgh, S. M., Boissonnault, W. G., Pool-Goudzwaard, A. L., Beneciuk, J. M., Leech, R. L., & Selfe, J. (2020). International framework for red flags for potential serious spinal pathologies. *Journal of Orthopaedic & Sports Physical Therapy*, *50*(7), 350–372. https://doi.org/10.2519/jospt.2020.9971.

Finucane, L., Mercer, C., & Greenhalgh, S. (2017). Clinical update: cauda equina syndrome. *Frontline*, (8). https://www.csp.org.uk/frontline/article/clinical-update-cauda-equina-syndrome

First Contact Practitioner. (2019). *First contact practitioner (FCP) – placing physiotherapists directly into GP practices*. https://firstcontactpractitioner.org.uk/

Greenhalgh, S., Finucane, L., Mercer, C., & Selfe, J. (2018). Assessment and management of cauda equina syndrome. *Musculoskeletal Science and Practice*, *37*, 69–74. https://doi.org/10.1016/j.msksp.2018.06.002.

Hutton, M. (2019). *Spinal services GIRFT programme national specialty report GIRFT is delivered in partnership with the Royal National Orthopaedic Hospital NHS Trust and NHS improvement foreword from professor Tim Briggs GIRFT programme chair GIRFT programme chair and natio*.

Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). *Scoping studies: Advancing the methodology*. http://www.cihr-irsc.ca

Murray, A., Daines, L., Archibald, D., Hawkes, R., Grant, L., & Mutrie, N. (2016). *The relationship and effects of golf on physical and mental health: A scoping review protocol*, *50*(11), 647–650. https://doi.org/10.1136/bjsports-2015-095914.

NHS Litigation Authority. (2013). *Freedom of information request CES UK charity*.

Peters, M. D. J., Godfrey, C. M., Khalil, H., McInerney, P., Parker, D., & Soares, C. B. (2015). Guidance for conducting systematic scoping reviews. *International Journal of Evidence-Based Healthcare*, *13*(3), 141–146. https://doi.org/10.1097/XEB.0000000000000050.

Tricco, A. C., Lillie, E., Zarin, W., O'brien, K., Colquhoun, H., Kastner, M., Levac, D., Ng, C., Sharpe, J. P., Wilson, K., Kenny, M., Warren, R., Wilson, C., Stelfox, H. T., & Straus, S. E. (2016). A scoping review on the conduct and reporting of scoping reviews. *BMC Medical Research Methodology*, *16*(1), 1–10. https://doi.org/10.1186/s12874-016-0116-4.

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., …, Straus, S. E. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine* (*169*(7) (pp. 467–473). American College of Physicians. https://doi.org/10.7326/M18-0850.

Woodfield, J., Hoeritzauer, I., Jamjoom, A. A. B., Pronin, S., Srikandarajah, N., Poon, M., Roy, H., Demetriades, A. K., Sell, P., Eames, N., & Statham, P. F. X. (2018). Understanding cauda equina syndrome: Protocol for a UK multicentre prospective observational cohort study. *BMJ Open*, *8*(12). e025230 https://doi.org/10.1136/bmjopen-2018-025230.

How to cite this article: Leech RL, Selfe J, Ball S, et al. A scoping review protocol: Investigating the extent and legal process of cauda equina syndrome claims for UK physiotherapists. *Musculoskeletal Care*. 2021;1–5. https://doi.org/10.1002/msc.1550