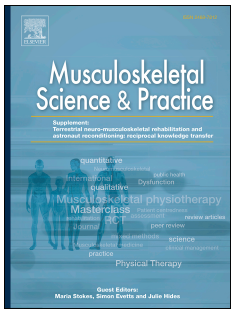

A scoping review: Investigating the extent and legal process of Cauda Equina Syndrome claims for UK physiotherapists

Rachel L. Leech, James Selfe, Suzanne Ball, Susan Greenhalgh, Gareth Hogan, Janene Holway, Emma Willis, Gillian Yeowell

PII: S2468-7812(21)00142-9

DOI: https://doi.org/10.1016/j.msksp.2021.102458

Reference: MSKSP 102458

To appear in: *Musculoskeletal Science and Practice*

Received Date: 6 May 2021

Revised Date: 11 August 2021

Accepted Date: 4 September 2021

Please cite this article as: Leech, R.L., Selfe, J., Ball, S., Greenhalgh, S., Hogan, G., Holway, J., Willis, E., Yeowell, G., A scoping review: Investigating the extent and legal process of Cauda Equina Syndrome claims for UK physiotherapists, *Musculoskeletal Science and Practice*, https://doi.org/10.1016/j.msksp.2021.102458.

A scoping review: Investigating the extent and legal process of Cauda Equina Syndrome claims for UK physiotherapists

Authors: Rachel L. Leech [1] *, Professor James Selfe [1], Suzanne Ball [1], Dr Susan Greenhalgh [1 2], Gareth Hogan [1], Janene Holway [1], Emma Willis [1] and Dr Gillian Yeowell [1]

Abstract

Introduction: Cauda Equina Syndrome (CES) is a condition where early identification and treatment is crucial to avoid potentially life changing devastating effects. This paper reviews the extent and process of CES litigation amongst UK physiotherapists.
Methods: A well-established framework by Arksey and O'Malley was followed when completing the current scoping review. Records were identified via a comprehensive search of three databases as well as website and grey literature searching. Data was extracted and a descriptive analysis and thematic summary were formed.
Results and Discussion: A total of N=1639 records were identified, following removal of duplicates and screening of titles and abstracts N=211 full text records were screened and N=39 were included for full analysis.
Conclusions: This study is the first to investigate the extent and process of CES litigation for physiotherapists in the UK. Our data suggest that between 2009 and 2021 there were 15 CES claims recorded against physiotherapists which is 0.7% of all CES claims recorded in the UK. In terms of the legal process for CES claims, there is currently limited information for physiotherapists and what steps they would need to take once they receive notification they are being sued.
Registration: The current paper is registered with OSF registries (DOI 10.17605/OSF.IO/6FCXN).

Keywords

Cauda Equina Syndrome
Litigation
Medicolegal
Clinical negligence
Physiotherapy

[1] Department of Health Professions, Faculty Health, Psychology and Social Care, Manchester Metropolitan University, Manchester, UK
[2] Bolton NHS Foundation Trust, Orthopaedic Interface Service, Bolton One, Bolton, Manchester, UK
* Corresponding author. Department of Health Professions, Faculty Health, Psychology and Social Care, Manchester Metropolitan University, Manchester, UK. E-mail address: r.leech@mmu.ac.uk

Abstract

Introduction: Cauda Equina Syndrome (CES) is a condition where early identification and treatment is crucial to avoid potentially life changing devastating effects. This paper reviews the extent and process of CES litigation amongst UK physiotherapists.

Methods: A well-established framework by Arksey and O'Malley was followed when completing the current scoping review. Records were identified via a comprehensive search of three databases as well as website and grey literature searching. Data was extracted and a descriptive analysis and thematic summary were formed.

Results and Discussion: A total of N=1639 records were identified, following removal of duplicates and screening of titles and abstracts N=211 full text records were screened and N=39 were included for full analysis.

Conclusions: This study is the first to investigate the extent and process of CES litigation for physiotherapists in the UK. Our data suggest that between 2009 and 2021 there were 15 CES claims recorded against physiotherapists which is 0.7% of all CES claims recorded in the UK. In terms of the legal process for CES claims, there is currently limited information for physiotherapists and what steps they would need to take once they receive notification they are being sued.

Registration: The current paper is registered with OSF registries (DOI 10.17605/OSF.IO/6FCXN).

A scoping review: Investigating the extent and legal process of Cauda Equina Syndrome claims for UK physiotherapists

Authors:

Abstract

Introduction: Cauda Equina Syndrome (CES) is a condition where early identification and treatment is crucial to avoid potentially life changing devastating effects. This paper reviews the extent and process of CES litigation amongst UK physiotherapists.
Methods: A well-established framework by Arksey and O'Malley was followed when completing the current scoping review. Records were identified via a comprehensive search of three databases as well as website and grey literature searching. Data was extracted and a descriptive analysis and thematic summary were formed.
Results and Discussion: A total of N=1639 records were identified, following removal of duplicates and screening of titles and abstracts N=211 full text records were screened and N=39 were included for full analysis.
Conclusions: This study is the first to investigate the extent and process of CES litigation for physiotherapists in the UK. Our data suggest that between 2009 and 2021 there were 15 CES claims recorded against physiotherapists which is 0.7% of all CES claims recorded in the UK. In terms of the legal process for CES claims, there is currently limited information for physiotherapists and what steps they would need to take once they receive notification they are being sued.
Registration: The current paper is registered with OSF registries (DOI 10.17605/OSF.IO/6FCXN).

Keywords

Cauda Equina Syndrome
Litigation
Medicolegal
Clinical negligence
Physiotherapy

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). Delays in diagnosis and treatment of CES can have life changing ramifications for the patient and can lead to significant medicolegal consequences (Greenhalgh *et al.*, 2018; Woodfield *et al.*, 2018). It is estimated that 10% of CES cases involve litigation (Lavy *et al.*, 2009), which has a large impact on the NHS in terms of cost. The NHS paid out circa. £44m in the 10 years previous to 2013, for CES related claims (Fairbank, 2014).

Historically there have only been a small number of successful claims related to failure or delay in diagnosis of CES against UK physiotherapists, however this number has increased over recent years (Beswetherick, 2017, 2019). This increase, may be in part, be related to changes in the physiotherapist's role. First contact practitioner (FCP) is a new approach to the management of musculoskeletal conditions within the UK (Hutton, 2019; Greenhalgh, Selfe and Yeowell, 2020). The aim of the FCP role is to provide timely access to expert musculoskeletal practitioners without the patient needing an initial general practitioner (GP) appointment (Hutton, 2019). This allows the introduction of physiotherapists with advanced practice skills to undertake many of the musculoskeletal responsibilities currently carried out by general practitioners (Greenhalgh, Selfe and Yeowell, 2020). Therefore, physiotherapists are at an increased risk of being involved in litigation.

However, the true extent of physiotherapists' involvement in CES litigation is unclear as there is currently no centralised recording of these data from a whole UK perspective. In addition, it is unclear what guidance and processes are in place to support physiotherapists who become involved in litigation for CES.

The aims of this scoping review are:

1. To review the extent of CES litigation in physiotherapy in the UK
2. To review the process of medico-legal litigation and how this is managed in relation to physiotherapy in the UK

Method

A scoping review was undertaken to address the aims. Scoping reviews typically map a wide range of literature from various sources to identify key concepts (Levac, Colquhoun and O'Brien, 2010). The framework by Arksey and O'Malley (2005) was adopted as per our protocol (Leech *et al.*, 2021). The following provides a summary of each stage.

Stage 1: Identifying the research question

The Arksey and O'Malley framework (Arksey and O'Malley, 2005) was adapted by including a Patient and Public Involvement meeting (PPI) in stage 1. The stakeholders named the group as the Critical Friend 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. This meeting was held to ensure the research question and search strategy would be relevant and comprehensive.

Stage 2: Identifying relevant studies

Search strategy for databases

The search strategy was informed by the CFG and further refined by the research team. The Allied and Complementary Medicine Database (AMED), The Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Medline databases were searched using the search strategy detailed in the protocol (Leech *et al.*, 2021). The search was undertaken on 14th January 2021 and databases were searched from inception.

Search strategy for grey literature and websites
Records included from the databases were also searched for additional relevant references using the same eligibility criteria. The research team also searched the Chartered Society of Physiotherapy (CSP) website as it is the professional body and trade union for physiotherapists using the search terms 'cauda equina', 'insurance', 'negligence' and 'litigation'. The Health and Care Professions Council (HCPC) and NHS Resolution (formerly NHS Litigation Authority) were also searched using the same terms. The same inclusion and exclusion criteria were used as for the databases.

Stage 3: Study Selection

Study selection for databases
The titles and abstracts were evaluated independently by one reviewer (RL). A second reviewer (GY) repeated the process on 10% of the records retrieved. If there was any uncertainty on the decision to include or exclude a particular record it was included for full text review (Murray *et al.*, 2016). There was concordance of 100% between the two reviewers. Full text records that met the inclusion criteria were included (Leech *et al.*, 2021).

Study selection for grey literature and websites
Records obtained from the CSP website were filtered to exclude 'posts'. These records were items which any member could publish on the website, for example, to comment on a page and therefore did not meet our eligibility criteria. The titles and description information of website results (or abstracts in the case of articles) were evaluated independently by one reviewer (RL) against the inclusion and exclusion criteria. If there was any uncertainty on the decision to include or exclude a particular record it was included for full text review (Murray *et al.*, 2016).

Stage 4: Charting the data

Data charting for databases
A data charting form was developed by the research team similar to that described by The Joanna Briggs Institute (JBI) (Peters *et al.*, 2015). One researcher (RL) independently obtained data from the records included during study selection using this data charting form. A second researcher (GY) checked 100% of the data extracted for accuracy, the researchers (RL & GY) met throughout the data charting process to establish if their data extraction approach was consistent, to discuss any uncertainty and to refine the search strategy where needed (Levac, Colquhoun and O'brien, 2010). This was an iterative process, with researchers continuing to extract data and update the form. If useful data was found which did not fit with the charting form, when appropriate, further headings or categories were added to the from. Following the full text reviews, concordance between the two researchers (RL & GY) was >95% regarding inclusion/exclusion. Where there was a

disagreement a third reviewer (JS) made the final decision, this occurred in two cases, one of which was included and one excluded.

Data charting for websites

Full web pages or text were evaluated according to the inclusion and exclusion criteria by two reviewers (RL and GY). Following the full text reviews, concordance between the two researchers (RL & GY) was 100% regarding inclusion/exclusion.

Stage 5: Collating, summarising and reporting the results

Using the methods stated in the protocol (Leech *et al.*, 2021) key concepts were mapped, current research findings summarised and gaps in the literature identified.

Results

Descriptive analysis

The flow diagram (Figure 1) shows the results of the search and the number of records found.

The initial search of the databases identified n=1639 records, n=482 of these were identified from databases, n=1146 from websites and a further n=11 were identified via the grey literature. After duplicates were removed, n=1603 records remained. Website results that were 'posts' were excluded (n=459).

A total of n=1144 records underwent title and abstract review and n=933 were excluded. N=211 records underwent a full text review and were independently screened against the eligibility criteria by the same reviewers. A further n=172 were excluded, leaving a total of n=39 records for analysis.

Database descriptive results

The search terms used for the databases were entered as one complete search. The results of this search revealed n=411 records from Medline, n=69 records from CINAHL and n=2 records from AMED.

Website descriptive results

See table 1. for the number of records found from each of the websites.

Table 1. Website search results – number of records retrieved

Website	Search term	Records found
CSP	Cauda equina	n=65 records found n=22 records following removal of 'posts'
CSP	Insurance	n=497 records n=185 records following removal of 'posts'
CSP	Negligence	n=82 records found n=33 records following removal of 'posts'
CSP	Litigation	n=74 records found n=19 records following removal of 'posts'
HCPC	Cauda equina	n=0 records found
HCPC	Insurance	n=90 records found
HCPC	Negligence	n=6 records found
HCPC	Litigation	n=4 records found
NHS Resolution	Cauda equina	n=14 records found
NHS Resolution	Insurance	n=18 records found
NHS Resolution	Negligence	n=200 records found
NHS Resolution	Litigation	n=96 records found

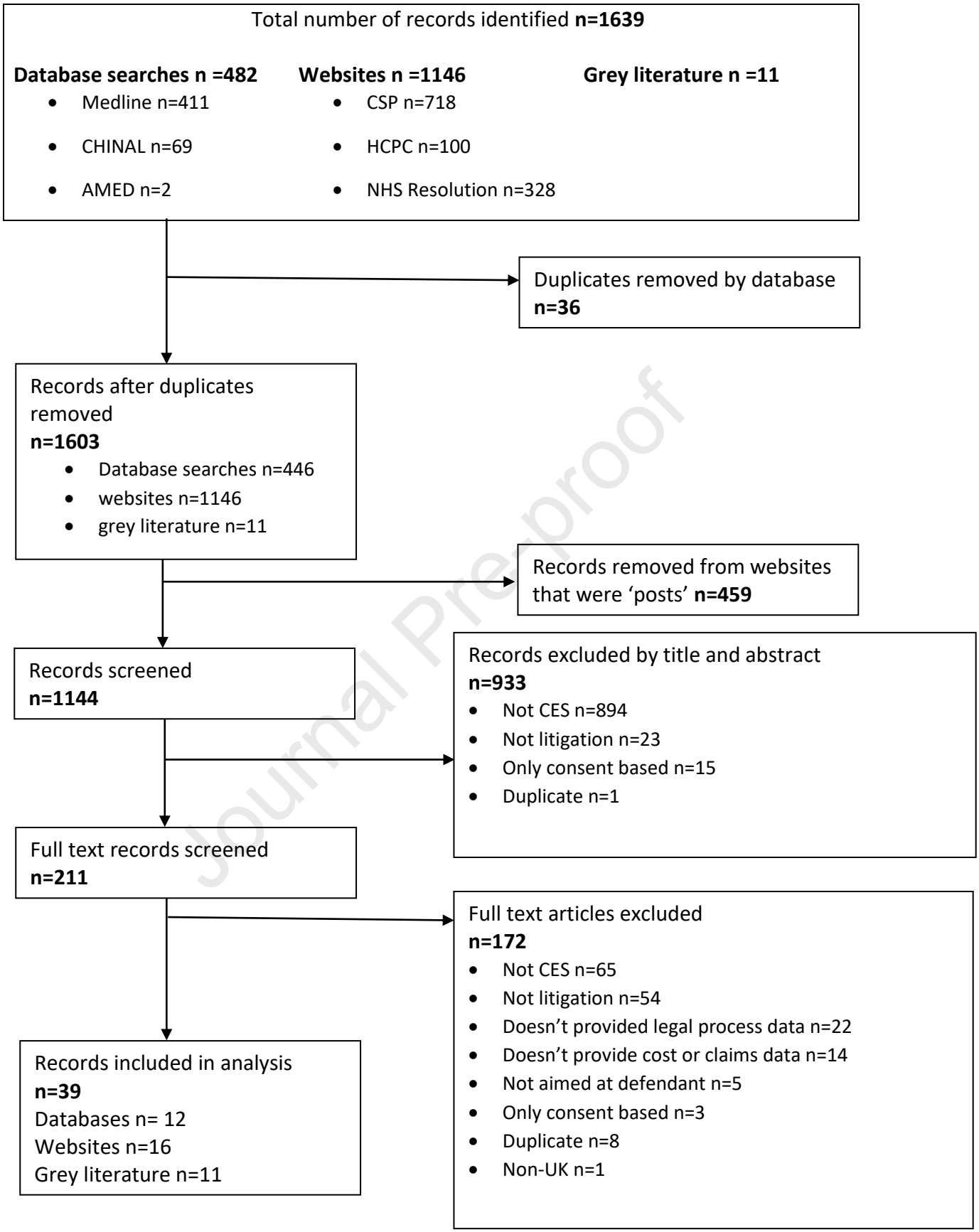

Figure 1. Scoping review flow chart

Included records by year of publication
The earliest published record included in the current scoping review was from 2009. Records dated up until 2021 (year of search) were retrieved.

Claims and costs (extent of CES litigation)
Most of the source data presented in the 39 records, regarding the number of CES claims and associated costs, was gained through the NHSLA (now known as the NHS Resolution); via freedom of information requests, searching of their databases or via personal communication (Lavy *et al.*, 2009). Other data were gained from the Medical Defence Union (MDU) (Markham, 2004; Hutton, 2019), insurance brokers (Beswetherick, 2017), individual hospitals (Mukherjee, Pringle and Crocker, 2014) or surgeons (Todd, 2011). In total, 28 of the 39 records analysed gave claims and cost data in relation to CES litigation cases.

Process of litigation
In relation to the legal process, 6 records were found from the NHS Resolution website and 5 records were found on the CSP website. In total, 11 records of the 39 records analysed related to the legal process.

See supplementary file 1 for the data extraction table for databases and supplementary file 2 for the data extraction table for websites. Records that were grey literature were split between the data extraction table for databases and the table for websites, depending on the type of record.

Discussion

This scoping review investigated the extent of CES litigation in physiotherapy in the UK and explored the process of litigation and how this is managed in relation to physiotherapy in the UK. Between 2009 – 2021 a total of 2050 CES claims were recorded. Of these 2050, 15 (0.7%) were physiotherapy related. We found little information describing the legal process for physiotherapists undergoing litigation in the public domain.
Papers which collected data regarding reasons for litigation highlighted that failure or delay in diagnosis was often the top factor which led to the most expensive CES claims (Mukherjee, Pringle and Crocker, 2014; Medical Protection Society, 2017; Wilson-MacDonald, Fairbank and Lavy, 2018; Beswetherick, 2019). Many papers described data for spinal disease, spinal surgery, orthopaedic surgery or neurosurgery as a whole, with CES often cited as one of the most common pathologies for claims (Quraishi *et al.*, 2012; Thavarajah, Podger and Hobbs, 2013; Machin *et al.*, 2018). Many litigation cases relating to CES mention a lack of out of hours imaging facilities (Thavarajah, Podger and Hobbs, 2013; Mukherjee, Pringle and Crocker, 2014; NHSLA, 2016; Hutton, 2019) or out of hours GP appointments as reasons for lack of timely treatment (Taylor, 2017). A number of papers recommend raising awareness of the red flag symptoms related to CES and when it is appropriate to take action (Beswetherick, 2017; Medical Protection Society, 2017).

However, some suggest that the problem is not a lack of knowledge relating to CES symptoms but a lack of application of the existing knowledge (Todd, 2011).

Extent of CES litigation

Period Recorded

Data relating to medical negligence and litigation processes has only become available in more recent years, with the earliest record retrieved in our search being published in 2009. The lack of publications prior to this date may relate to when it became mandatory in 2002, for the National Health Service Litigation Authority (NHSLA) to be informed of all claims against NHS trusts in England (it was not possible to identify a specific date for other UK nations). Before this there was no complete record of litigation as NHS trusts did not regularly inform the NHSLA of smaller claims (Machin *et al.*, 2014). There may also be an increase in litigation cases and associated costs over recent years (Machin *et al.*, 2014).

NHS / Non-NHS

Of the records analysed N=11 included NHS based data, with a total of 1631 CES claims recorded (not including duplicated data). N=2 records related to non-NHS data, with a total of 128 CES claims. N=3 records included NHS and non-NHS data, with a total of 291 CES claims (not including duplicated data).

Most data regarding CES claims relates to the NHS and there is less information relating to non-NHS physiotherapists.

Claims Data

Claims data varied; some records had larger claims data due to having a wider category that included CES rather than recording claims data solely relating to CES. For example, one article included 617 claims relating to 'nerve damage' which included CES (Thavarajah, Podger and Hobbs, 2013). Therefore, it is unclear how many of these claims were specifically CES related.

It is perceived that the number of CES claims is likely to be higher than data recorded as the NHS Resolution database is not a research tool and there is no guarantee that coding on their database is consistent (Atrey, Gupte and Corbett, 2010). Therefore, CES claims could be saved under other keywords and may not be included in data when searching for 'Cauda Equina Syndrome' on the NHS Resolution database. It appears that claims are categorised into four categories by the NHS Resolution and health boards of the devolved administrations, based on the progress of the claim (see Table 2 for definitions). However, not all health boards may report data in this way; data from the records retrieved seldom state if claims are open, closed, potential or confirmed. This means it is unclear if all claims are being accounted for. Consequently, the extent of claims may be higher if, for example, all claims reported in a study are only referring to claims that are closed as those that remain open would not be accounted for.

Table 2. Definitions of Types of Claim

Type of Claim	Definition
Open claim	Claims opened by litigation management department of local trust
Closed claim	Conclusion made and claim closed
Potential claim	A claim that is under review but is not confirmed and may not progress to a clinical negligence claim
Confirmed claim	Claims that have all required information and have been confirmed as an active clinical negligence claim

Cost Data

Average settlements for litigation cases varied widely from between £2,250 (Taylor, 2017) to £1,525,000 (Mukherjee, Pringle and Crocker, 2014). However, most claims were settled with damages awards between £200,000 to £400,000.

Damages and claimant solicitors' costs related to CES claims were high but also varied depending on each case, this is because settlements depend on factors related to each individual patient. For example, younger patients tend to be awarded higher settlements as negligence is likely to have a larger impact on their future (Hutton, 2019). Average damages for CES claims tended to range between £200,000 - £400,000, however some claims were much higher, at over 1.5 million (Mukherjee, Pringle and Crocker, 2014). Unfortunately, there is insufficient data to to attribute the average cost of damages to physiotherapy or other professions, such as general practitioners or surgeons.

Process of CES litigation

Process Data

There is little information describing the legal process for physiotherapists undergoing litigation in the public domain. There is information available to physiotherapists who are members of the CSP regarding the litigation process and who they should contact regarding negligence claims. However, physiotherapists would need to know where to search for this and would need to be a member of the CSP to access some of this information.

Five records were found that related to the legal process as applied to physiotherapy, these were all from the CSP website (The Chartered Society of Physiotherapy, 2017a, 2017b, 2019a, 2019b, 2019c). These web pages include information such as who to contact and the legal process should a physiotherapist be involved in clinical negligence case (The Chartered Society of Physiotherapy, 2017a). Another of the web pages discusses insurance, why it is needed and what it covers (The Chartered Society of Physiotherapy, 2017b). Other pages give information on who to contact with regard to medicolegal issues (The Chartered Society of Physiotherapy, 2019a), explains why patients may make a complaint and how concerns may be investigated (The Chartered Society of Physiotherapy, 2019b). They also provide support regarding what a physiotherapist should include in a statement, if asked to write one (The Chartered Society of Physiotherapy, 2019c). The CSP state that they may be able to provide support to physiotherapists undergoing litigation depending on their circumstances. However, this information is not readily available in one place on the CSP

website, using the specific terms ‘cauda equina’, ‘insurance’, ‘negligence’ and litigation retrieved a total of 716 results including titles such as ‘Hidden impact of cauda equina’ and ‘Clinical update: cauda equina syndrome’. Currently physiotherapists would have to search through multiple records in order to find the appropriate guidance on the process of CES litigation. Furthermore, legal terminology in these documents is often used interchangeably, for example, the terms ‘complaint’, ‘claim’ and ‘litigation’. This could be confusing for a clinician seeking guidance on the legal process who may have little knowledge of legal terms.

NHS Resolution may not be the first place a physiotherapist may look for information on the litigation process, however some guidance on the litigation process is available and is easier to find. The information on their website is available publicly and non-NHS physiotherapists may also find some of this information useful, however they may not think to look here. There were six records relating to the legal process found from the NHS Resolution website. These web pages include information for healthcare professionals regarding the litigation process and providing support including legal advice contact. Including information regarding the clinical negligence scheme for general practice and existing liabilities scheme for general practice (NHS Resolution, 2019, 2021b). They also answer common questions regarding the clinical negligence scheme for general practice (NHS Resolution, 2021a) and how these claims are handled (NHS Resolution, 2020a), what healthcare professionals should so if they receive a complaint or claim (NHS Resolution, 2020c) and brief dispute resolution guidance (NHS Resolution, 2020b). These documents are not aimed at physiotherapists specifically; however, they are still applicable to them. One of these records is easily accessible from the NHS Resolution homepage using the primary care appeals link (NHS Resolution, 2020b). However, the others may need to be search for using specific terms.

In contrast with physiotherapy, there seems to be clearly described legal and support processes for other professions such as doctors and surgeons. For example, organisations such as the General Medical Council (GMC) have information on their website regarding their 6 month process for concerns about doctors and their investigation process which is publicly available on their website (General Medical Council, 2021). The HCPC also give information on their investigations process, however interestingly this guidance is oriented to the person making the complaint or claim, rather than HCPC registrants i.e. defendants (HCPC, 2019). The MDU offer support, guidance and advice to healthcare professionals, however their membership information is largely aimed at doctors, nurses, consultants and general practitioners. There is no specific mention of physiotherapy on the MDU website, although they do provide membership for physiotherapists, this information is only available through enquiry. There is publicly available information on the MDU website for support and includes pages such as: I’ve had a complaint, I've had a letter from the GMC, I'm being sued, I have to attend court, I have to write a report or statement, I'm being investigated by the police and I've had an inquiry from the media (The MDU, 2021).

Implications and future research

There is a paucity of research regarding litigation involving physiotherapists, with most current research providing data related to doctors and surgeons only. Future research should also investigate non-NHS litigation, as there is currently very little information on the extent of litigation for those working outside of the NHS. Considering the NHS paid out circa.

£44m in the 10 years previous to 2013, for CES related claims (Fairbank, 2014) it is recommended that the NHS review coding of CES cases in order to improve accuracy of NHS data in future. Finally, as more FCP and advanced physiotherapy roles are created, there is an urgent need to provide physiotherapists with clearer and more accessible information on the legal process.

Limitations

It is apparent that there is little data available relating to the extent and process of CES litigation for physiotherapists in the UK.
Most of the source data presented in this scoping review originates from NHS Resolution, however the NHS Resolution database is not primarily a research tool, it is a claims management tool and there is no guarantee that coding on their database is consistent or that detail is adequate for research purposes (Atrey, Gupte and Corbett, 2010). Therefore, data obtained through their database and subsequent FOI requests could be inaccurate and the numbers presented in this paper are likely to be an underestimate. Some figures only including secondary and tertiary care do not include costs made against GP's or FCP's in primary care settings and therefore actual CES claims costs are also expected to be much higher than stated (Coleman, 2019).
When undertaking a scoping review there is no formal assessment of methodological quality of the papers included (Arksey and O'malley, 2005) and therefore studies of low quality may be included. However, scoping reviews are broad in nature and outline all literature regardless of quality, which allows a wide ranging and more contextual overview (Murray *et al.*, 2017).

Conclusion

This study is the first to investigate the extent and process of CES litigation for physiotherapists in the UK. Our data suggest that between 2009 and 2021 there have been 15 CES claims recorded against physiotherapists which is 0.7% of all CES claims recorded in the UK. This is likely to increase with the introduction of more advanced physiotherapy roles such as FCP's that have high levels of clinical autonomy and see patients at early stages in their disease processes.
In terms of the legal process for CES claims, this scoping review has demonstrated that there is a limited amount of information regarding the process of litigation for physiotherapists and what steps they would need to take once they receive notification they are being sued. Any information that is available is often difficult to find and is housed in multiple places. The guidance that is provided use legal terminology interchangeably, for example, the terms 'complaint', 'claim' and 'litigation', which could be confusing for a clinician seeking guidance. There is no clearly articulated overarching / national information describing the legal process aimed at physiotherapists involved in clinical negligence claims. We recommend the development of a single repository for information regarding the legal process for physiotherapists that is well signposted using clear and consistent language.

Declaration of competing interest

None declared.

Abbreviations:

CSP - Chartered Society of Physiotherapy
GMC - General Medical Council
HCPC - Health and Care Professions Council
NHSLA – National Health Service Litigation Authority
MDU – Medical Defence Union
MPS- Medical Protection Society

References

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

Atrey, A., Gupte, C. M. and Corbett, S. A. (2010) 'Review of successful litigation against english health trusts in the treatment of adults with orthopaedic pathology: Clinical governance lessons learned', *Journal of Bone and Joint Surgery - Series A*. Journal of Bone and Joint Surgery Inc., p. e36(1). doi: 10.2106/JBJS.J.00277.

Beswetherick, N. (2017) 'Are self-employed musculoskeletal physiotherapists mis-diagnosing Cauda Equina syndrome? A retrospective study of clinical negligence claims in the UK', *Physiotherapy*. Elsevier BV, 103, pp. e78–e79. doi: 10.1016/j.physio.2017.11.043.

Beswetherick, N. (2019) 'Are NHS-employed musculoskeletal physiotherapists in England mis-diagnosing Cauda Equina syndrome?', *Physiotherapy*. Elsevier BV, 105, pp. e15–e16. doi: 10.1016/j.physio.2018.11.255.

Coleman, C. (2019) *The little-known spinal injury 'costing the NHS millions' - BBC News*. Available at: https://www.bbc.co.uk/news/health-49235474 (Accessed: 23 June 2020).
Fairbank, J. (2014) 'Cauda Equina Syndrome - risk management.', *Journal of Trauma and Orthopaedics*, 2(3), pp. 49–50.

General Medical Council (2021) *How we investigate concerns*. Available at: https://www.gmc-uk.org/concerns/information-for-doctors-under-investigation/how-we-investigate-concerns (Accessed: 20 January 2020).

Greenhalgh, S. *et al.* (2018) 'Assessment and management of cauda equina syndrome', *Musculoskeletal Science and Practice*. Elsevier Ltd, 37, pp. 69–74. doi: 10.1016/j.msksp.2018.06.002.

Greenhalgh, S., Selfe, J. and Yeowell, G. (2020) 'A qualitative study to explore the experiences of first contact physiotherapy practitioners in the NHS and their experiences of

their first contact role', *Musculoskeletal Science and Practice*. Elsevier Ltd, 50. doi: 10.1016/j.msksp.2020.102267.

HCPC (2019) *Information for members of the public How to raise a concern*. Available at: https://www.hcpc-uk.org/globalassets/resources/guidance/how-to-raise-a-concern.pdf?v=637106322670000000 (Accessed: 4 January 2021).

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*.

Lavy, C. *et al.* (2009) 'Cauda equina syndrome', *BMJ*. British Medical Journal Publishing Group, 338(mar31 1), pp. b936–b936. doi: 10.1136/bmj.b936.

Leech, R. L. *et al.* (2021) 'A scoping review protocol: Investigating the extent and legal process of cauda equina syndrome claims for UK physiotherapists', *Musculoskeletal Care*. John Wiley & Sons, Ltd, p. msc.1550. doi: 10.1002/msc.1550.

Levac, D., Colquhoun, H. and O'brien, K. K. (2010) 'Scoping studies: advancing the methodology', *Implementation Science*, 5(69).

Machin, J. *et al.* (2014) 'Litigation in trauma and orthopaedic surgery', *Journal of Orthopaedics and Trauma*, 2(3), pp. 32–38.

Machin, J. T. *et al.* (2018) 'Can spinal surgery in England be saved from litigation: a review of 978 clinical negligence claims against the NHS', *European Spine Journal*, 27, pp. 2693–2699. doi: 10.1007/s00586-018-5739-1.

Markham, D. E. (2004) 'Cauda Equina Syndrome: Diagnosis, Delay and Litigation Risk', *Journal of Orthopaedic Medicine*. Informa UK Limited, 26(3), pp. 102–105. doi: 10.1080/1355297x.2004.11736237.

Medical Protection Society (2017) *THE RISING COST OF CLINICAL NEGLIGENCE WHO PAYS THE PRICE? CLINICAL NEGLIGENCE COSTS STRIKING A BALANCE THE RISING COST OF CLINICAL NEGLIGENCE WHO PAYS THE PRICE?* Available at: https://www.medicalprotection.org/docs/default-source/pdfs/policy-papers/striking-a-balance-policy-paper-65gs4rc7.pdf (Accessed: 16 February 2021).

Mukherjee, S., Pringle, C. and Crocker, M. (2014) 'A nine-year review of medicolegal claims in neurosurgery', *Annals of The Royal College of Surgeons of England*, 96(4), pp. 266–270. doi: 10.1308/003588414X13814021679834.

Murray, A. *et al.* (2016) 'The relationship and effects of golf on physical and mental health: a scoping review protocol'. doi: 10.1136/bjsports-2015-095914.

Murray, A. D. *et al.* (2017) 'The relationships between golf and health: a scoping review',

British Journal of Sports Medicine, 51, pp. 12–19. doi: 10.1136/bjsports-2016-096625.
NHS Resolution (2019) *An introduction to the Clinical Negligence Scheme for General Practice (CNSGP)* . Available at: https://resolution.nhs.uk/resources/an-introduction-to-the-clinical-negligence-scheme-for-general-practice/ (Accessed: 19 February 2021).

NHS Resolution (2020a) *Handling claims under the Clinical Negligence Scheme for General Practice*. Available at: https://resolution.nhs.uk/resources/handling-claims-under-the-clinical-negligence-scheme-for-general-practice/ (Accessed: 19 February 2021).

NHS Resolution (2020b) *Primary Care Appeals - dispute resolution guidance - NHS Resolution*. Available at: https://resolution.nhs.uk/resources/primary-care-appeals-dispute-resolution-guidance/ (Accessed: 1 February 2021).

NHS Resolution (2020c) *Supporting general practice - What to do if you receive a complaint or a claim - NHS Resolution*. Available at: https://resolution.nhs.uk/resources/supporting-general-practice-complaint-or-claim/ (Accessed: 3 February 2021).

NHS Resolution (2021a) *Clinical Negligence Scheme for General Practice frequently asked questions*. Available at: https://resolution.nhs.uk/faq-section/clinical-negligence-scheme-for-general-practice/ (Accessed: 19 February 2021).

NHS Resolution (2021b) *Existing Liabilities Scheme for General Practice*. Available at: https://resolution.nhs.uk/services/claims-management/clinical-schemes/general-practice-indemnity/existing-liabilities-scheme-for-general-practice/ (Accessed: 19 February 2021).

NHSLA (2016) *Did you know? Cauda Equina Syndrome*. Available at: https://webarchive.nationalarchives.gov.uk/20180903114432/http:/www.nhsla.com/Safety/Documents/DYK_Cauda_Equina_Syndrome_Web.pdf (Accessed: 4 February 2021).

Peters, M. D. J. *et al.* (2015) 'Guidance for conducting systematic scoping reviews', *International Journal of Evidence-Based Healthcare*, 13(3), pp. 141–146. doi: 10.1097/XEB.0000000000000050.

Quraishi, N. A. *et al.* (2012) 'Malpractice litigation and the spine: The NHS perspective on 235 successful claims in England', *European Spine Journal*. doi: 10.1007/s00586-012-2203-5.
Taylor, C. (2017) *Analysis of cauda equina syndrome claims*, *MDU Journal*. Available at: https://mdujournal.themdu.com/issue-archive/spring-2017/analysis-of-cauda-equina-syndrome-claims (Accessed: 4 January 2021).

Thavarajah, D., Podger, H. and Hobbs, N. (2013) 'Orthopaedic litigation what is the financial burden trend?', *British Journal of Health Care Management*, 19(2), pp. 69–74.

The Chartered Society of Physiotherapy (2017a) *Complaints briefing: What to do if a complaint is made against you | The Chartered Society of Physiotherapy*. Available at: https://www.csp.org.uk/publications/complaints-briefing-what-do-if-complaint-made-against-you (Accessed: 15 January 2021).

The Chartered Society of Physiotherapy (2017b) *Insurance cover: have you got it covered? | The Chartered Society of Physiotherapy*. Available at: https://www.csp.org.uk/frontline/article/insurance-cover-have-you-got-it-covered (Accessed: 15 January 2021).

The Chartered Society of Physiotherapy (2019a) *Getting support with medicolegal issues*. Available at: https://www.csp.org.uk/professional-clinical/professional-guidance/medicolegal-work/getting-support (Accessed: 15 January 2021).

The Chartered Society of Physiotherapy (2019b) *Understanding medicolegal work*. Available at: https://www.csp.org.uk/professional-clinical/professional-guidance/medicolegal-work/understanding-medicolegal-work (Accessed: 15 January 2021).

The Chartered Society of Physiotherapy (2019c) *Writing a medicolegal statement*. Available at: https://www.csp.org.uk/professional-clinical/professional-guidance/medicolegal-work/writing-statement (Accessed: 15 January 2021).

The MDU (2021) *Get MDU support*. Available at: https://www.themdu.com/get-mdu-support (Accessed: 2 March 2021).

Todd, N. V. (2011) 'Causes and outcomes of cauda equina syndrome in medico-legal practice: A single neurosurgical experience of 40 consecutive cases', *British Journal of Neurosurgery*, 25(4), pp. 503–508. doi: 10.3109/02688697.2010.550344.

Wilson-MacDonald, J., Fairbank, J. and Lavy, C. (2018) 'CAUDA EQUINA SYNDROME AND LITIGATION', *Orthopaedic Proceedings*, 94-B(SUPP_X).

Woodfield, J. *et al.* (2018) 'Understanding cauda equina syndrome: Protocol for a UK multicentre prospective observational cohort study', *BMJ Open*. BMJ Publishing Group, 8(12), p. e025230. doi: 10.1136/bmjopen-2018-025230.

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).

Funding

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

Acknowledgements

We would like to thank Natalie Beswetherick OBE, Director Practice & Development, Chartered Society of Physiotherapy for her help and assistance with accessing data records (Beswetherick, 2017, 2019).

Highlights

- Cauda Equina Syndrome litigation in physiotherapy
- Extent of Cauda Equina Syndrome litigation amongst UK physiotherapists
- Legal process for litigation amongst UK physiotherapists
- Review of legal process for UK physiotherapists
- Review of extent of Cauda Equina Syndrome litigation for UK physiotherapists