

Title: Physiotherapists' experiences of managing persons with suspected cauda equina syndrome: Overcoming the challenges

Short Title: Managing suspected cauda equina syndrome

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Abstract

Introduction: Cauda equina syndrome (CES) is rare but its symptoms are not and musculoskeletal physiotherapists frequently encounter persons with suspected CES. Given that delayed diagnosis of CES can result in devastating consequences for affected persons and costly litigation for healthcare organisations, it is imperative that persons presenting with suspected CES are well managed. However, this may present a challenge to physiotherapists. Therefore, the aim of this study is to explore physiotherapists' experiences of managing persons with suspected CES.

Methods: Semi-structured interviews were conducted with musculoskeletal physiotherapists. Verbatim transcripts were analysed using an interpretive paradigm and thematic analysis.

Ethical approval: Ethical approval was obtained from a university Ethics committee and NHS Research and Development.

Findings: Five interlinking themes emerged. The themes of *worry in relation to risk management* and *communication difficulties* seemed to represent significant challenges. The remaining themes were described as antidotes to these challenges: *Lightening the load with teamwork and shared responsibility*, *the usefulness of a clear pathway*, and *perception of improved confidence and competence with experience and training*.

Discussion: The findings are discussed in the context of other literature and practical recommendations are made relating to pathway implementation, team working, communication aids, training on CES and measures to care for staff wellbeing.

Conclusion: Findings suggest that it is important to be aware of and address the challenges faced by physiotherapists in order to care for clinicians' wellbeing and ensure a safe and smooth journey for persons with suspected CES.

Keywords: Cauda Equina Syndrome, Physiotherapy, Physiotherapist, Pathway, Experience

Introduction

Cauda equina syndrome (CES) is a rare but potentially devastating condition (Greenhalgh et al., 2018). It is poorly defined in the literature but usually refers to dysfunction of the sacral nerve roots in the lumbar spine (Fraser et al., 2009; Kapetanekis et al., 2017). If diagnosis is delayed, CES can result in costly litigation to healthcare organisations and more importantly, can cause significant disability to the affected person, including variable combinations of loss of bladder, bowel and/or sexual function and/or saddle sensation (Carvell et al., 2013; Fraser et al., 2009; Germon et al., 2015). It is currently recommended that a person presenting with “acute... back pain and/or leg pain with a suggestion of a disturbance of their bladder or bowel function and/or saddle sensory disturbance should be suspected of having a CES” (Germon et al., 2015, p3S). For the purpose of this paper, a person presenting with these symptoms will be described as having ‘suspected CES’.

It is common for persons with back pain to present with concurrent bladder and bowel dysfunction for reasons other than CES (Woods et al., 2015). Therefore although CES itself is rare, musculoskeletal physiotherapists often encounter persons with *suspected* CES (Woods et al., 2005; Woodfield et al., 2018; Dionne et al., 2019). To confirm or deny diagnosis, imaging is often indicated on an emergency basis in order to facilitate timely decompression surgery (Germon et al., 2015). It has been suggested that management of persons with suspected CES may present a significant challenge to physiotherapists (Woods et al., 2015; Greenhalgh et al., 2018) but to the authors’ knowledge, this has not previously been explored through empirical research. Therefore, this study aims to explore physiotherapists’ experiences of managing persons with suspected CES.

Methods

Qualitative methodology was employed through semi-structured interviews and thematic analysis with an interpretive paradigm (Braun and Clarke, 2019; Carpenter and Suto, 2008). The interview schedule (Appendix A) was shared with participants in advance to allow them time to familiarise themselves with the questions and to consider cases for discussion. Member checking was not employed as there was little potential for misrepresentation through verbatim transcription, semi-structured interviews allowed the interviewer to clarify in vivo and it has been suggested that member checking has potential to add complexity, contribute to miscommunication and threaten the participant-researcher relationship (Carlson, 2010). In an effort to encourage honesty and openness during the interviews, participants were made aware that they would be given the opportunity to review the completed project report to ensure they were happy with the level of anonymity prior to publication.

Participants

Eight physiotherapist participants were purposefully recruited from an NHS-commissioned healthcare trust in the UK where the lead researcher worked. Their experience levels are shown in Table 1. The trust had recently run training on CES and an established CES pathway was in place which included implementation of a CES toolkit (Greenhalgh et al., 2016). Participants were eligible if they had at least six months' experience in musculoskeletal physiotherapy and had managed at least three persons with suspected CES. Those who were able to order MRIs were excluded in order to obtain data from a sample representative of the general musculoskeletal physiotherapy population. Ethical approval was obtained from a university Ethics Committee and NHS Research and Development. Informed consent was gained prior to data collection.

Data collection

Interviews were conducted on a one-to-one basis in a private room by the first author. They were audio-recorded and transcribed verbatim. They lasted between 36 and 58 minutes. No repeat interviews were required.

Data analysis

An interpretative approach to data analysis was taken using Braun and Clarke's (2012) six phases of thematic analysis. Data was analysed by the first author who familiarised herself with the data by listening to the audio-recordings and reading the transcripts. Codes were then generated and recorded using QDA Miner software. Themes were sought using colour-coded organisation of codes which might represent emergent themes. Meaning units (parts of the text containing a meaning) with coding relevant to each potential theme were then retrieved using QDA Miner. They were reviewed by the author and assessed for relevance to the theme and the research question. Themes were subsequently revised, defined and named. Each step of the analysis was reviewed by the second author. All participants reviewed the project report and were happy with the level of anonymity, with no amendments being required.

Findings

Five overlapping themes were identified from the data which describe the challenges of managing persons with suspected CES (Figure 1). The challenges of *risk management* and of *communication difficulties* were described as causing panic, anxiety and worry to participants. In contrast, *teamwork and shared responsibility*, *a clear pathway* and *training and experience* were described as providing relief from these negative emotions as well as facilitating appropriate management of persons with suspected CES.

Theme 1: Worry in relation to risk management

The *theme of worry in relation to risk management* was prominent and ran throughout the other themes. All participants discussed risk management but their perceptions of the main risks varied. The majority of participants presented their concerns as a combination of risk of harm to the affected person and risk of litigation with varying emphasis. Those in formal leadership positions also considered missed cases as a financial and reputational risk to the trust and two participants expressed concern about potential risk of losing their careers.

Participants described a change in accepted management over recent years, with more of a 'push' on clinicians to identify symptoms of suspected CES, an increased sense of urgency surrounding management and an increased awareness of CES by healthcare professionals and the general public. Two participants expressed how they felt this could be a positive thing.

"It did seem to be far less of an urgent air to it rather than there is now... But I don't think that's a bad thing, I think that is actually better for patients." (P7)

The perception of needing to manage the risk while making appropriate use of resources was described as causing panic, anxiety and worry to participants.

Subtheme 1a: Fear of missing anything

All participants conveyed a desire to ensure they had not missed anything. Participants described fear of '*missing*' details during history taking, physical assessment, record keeping and verbal handover. The desire not to delay diagnosis was described by one participant as '*fear-driven*' and others described it as causing panic and worry, with anticipation of '*horrendous guilt*' if they were to miss anything. There were accounts of rumination with participants recalling that '*you worry and worry and worry*' and '*there are nights that wake you up from the legal implications*'. One participant reflected on how negative consequences may impact on a physiotherapist despite their hard work to avoid missing anything.

“It's almost heart-breaking in a way... because you think you are doing the best for the patient and you miss something off of your notes and... you could be pulled up on it... you can really go a bit mad.” (P3)

All participants described working hard to ensure nothing was missed, with their accounts revealing a number of challenges which might influence their experiences in this respect. Firstly, participants described how their concerns regarding avoiding missing anything were exacerbated by the need to do so within the confines of resource availability.

Subtheme 1b: Concern regarding resource management

Participants considered the impact of managing persons with suspected CES on other healthcare professionals' time, on the affected person's life and on their own schedules, with reference to the consideration that in many cases, they were expecting CES to be excluded. One participant used the term *'fighting fires'* to describe the challenge of managing a person with suspected CES in the context of time pressures. Five participants talked about the possibility that an individual might fabricate CES symptoms with the intention of getting an MRI, with one participant terming this as *'abuse'* of resources and two participants describing specific cases where they felt this had happened.

Although consideration of resource management was described as influencing many participants' experiences of managing persons with suspected CES, their descriptions did not suggest that this influenced their decision-making regarding whether to escalate concerns, linking with the subtheme of avoiding missing anything.

“I feel almost embarrassed to waste people's time, especially if it probably doesn't sound like it is cauda equina symptoms... I also don't want to make myself liable by not following it through.” (P2)

“I think there is always a possibility that somebody might say what they think you want to hear to get a scan... It doesn't mean that I would treat them differently, it just means that I have taken that on board as well.” (P2)

Participants suggested that their ability to effectively manage resources was dependent on communication, which seemed to present a challenge in itself.

Theme 2: Communication difficulties

The theme of communication difficulties ran throughout all interviews and included accounts of communication with persons with suspected CES and with other healthcare professionals.

Subtheme 2a: The struggle to reach a mutual understanding with persons with suspected CES

Participants conveyed the struggle to achieve clarity in communication with persons with suspected CES. They described a number of perceived barriers which included language, expectations, mental acuity and mutual embarrassment, with the latter being affected by demographic concordance. One described how the affected individual's anxiety had '*rubbed off*' on them and two participants described how panic had a negative effect on their ability to communicate and clinically reason. There were suggestions of mistrust and power struggles, as exemplified in the following account of communicating with a person who the participant felt was fabricating suspected CES symptoms with the intention of getting an MRI.

"I was like, 'I know you are not telling me the truth... so are you being honest... that you have got all these symptoms?' and she said 'yes, you have to refer me to A&E for an MRI'. And I just looked at her and I was like 'well you are not wrong are you, I do have to do that'." (P6)

Participants frequently described accounts of struggling to achieve clarity during history taking.

"I couldn't help but feel a little bit frustrated because I was really trying to get clear answers and sometimes she would reply with something off-topic and I don't know if she understood." (P1)

There were also accounts of striving to achieve clarity when providing information about CES, with participants describing a need to strike the balance between instilling concern and reassurance when giving safety-netting information and when persuading persons with suspected CES that attending the emergency department might take priority over their usual responsibilities.

"The clinical reasoning is a bit stressful, like you don't want to be worrying the patient for no reason but you kind of want them to be a little bit worried because you want them to be vigilant for any symptoms that develop." (P4)

"She was like 'can I go back to work and then go [to the emergency department]?'... So I explained it to her again and said... 'This is a serious condition'." (P5)

Cases where participants did not feel they had achieved clarity in their history taking were described as impacting on their handovers to other healthcare professionals.

Subtheme 2b: Conflict in communication with other healthcare professionals

Many of the cases discussed in the interviews involved a verbal handover to another healthcare professional and experiences of this varied. There were accounts of a struggle to contact senior clinicians and orthopaedic registrars in some cases but other accounts where participants described the helpfulness of having other healthcare professionals available. A number of accounts described friction between healthcare professionals with many participants describing trouble communicating with orthopaedic registrars who were described as having '*less patience for us and our dithering*' and one participant describing '*a bit of an argument*' with a receptionist who was declining to pass their call on to a GP.

"I was absolutely raging... I was like 'you've got no idea what's going on, you don't know what this means, you are not qualified to make that decision that I shouldn't speak to the GP'." (P6)

Suggestions of conflict seemed to be more prevalent when clarity had not been achieved in the preceding conversation with the person with suspected CES. Two participants presented subsequent lack of clarity during handover as a possible contributing factor for unnecessary ED referrals. This suggestion is exemplified in the following excerpt which may also suggest that the participant had a lack of self-confidence their clinical reasoning and communication skills during the scenario.

"I felt like [the orthopaedic registrar] was quite short with me... I can remember him saying 'well that's probably not cauda equina syndrome'... but then 'oh send her in'... Maybe... she didn't actually need to go to hospital in the first place. I... could have been a bit clearer maybe with my questions and... get my head around it before panicking and sending her to A&E... It made me feel I think a bit incompetent... He would probably listen to you better if you sound like you know what you are talking about and you are trusting what you think yourself." (P4)

There were also accounts of interactions with healthcare professionals which seemed to go smoothly, with participants commenting on the usefulness of working as a team.

Theme 3: Lightening the load with teamwork and shared responsibility

Teamwork and shared responsibility seemed to provide reassurance and alleviate time pressures, with other team members helping with caseload management as required. Responsibility was referred to as a burden by an experienced participant in the context of

advising others (P8), reflecting a different perspective to the majority of participants who talked about how escalating concerns to more senior clinicians helped them to feel '*protected*', '*more relaxed*' and '*reassured*' both in terms of cementing their decision-making and in sharing responsibility. Handovers were described as learning experiences and one participant commented that '*it's not off-loading the responsibility, but it is definitely sharing it out*' (P5).

One experienced participant discussed her own decision-making in detail (P8) but the majority of participants put emphasis on external factors like the trust's pathway and the advice of others as influencing factors in guiding management of suspected CES.

"I suppose if you have got less experience... you're not in a position to make any decisions yes or no. It's definitely kind of a shared responsibility in that we need to learn so we need to... have these experiences... we just need a bit of help from other people higher up." (P5)

Theme 4: Usefulness of a clear pathway

All participants raised the topic of a CES pathway, including their trust's questioning pro forma and a CES information leaflet which included safety netting information based on wording in the CES credit card developed by Greenhalgh et al. (2016). These three elements were described as useful tools in facilitating communication and consistent management. They were described as an antidote to participants' panic, anxiety and worry.

"It's positive to have a protocol to follow because it takes the angst factor out for you. You know what you have to do each step of the way." (P7)

One participant presented an account of how they found the pathway frustrating initially but later came to appreciate the opportunity to '*chat [cases] though with someone*' (P6). The remaining participants presented the pathway as a useful tool in facilitating the appropriate management of persons with suspected CES. It was described as helpful in simplifying the process, clarifying responsibilities and aiding communication with persons receiving care and with other healthcare professionals. One participant summarised by stating that the pathway "*makes something that is quite intimidating a lot easier to manage*" (P2).

Theme 5: Perceptions of improved confidence and competence with experience and training

All participants described increased confidence with experience and additional training. Participants recalled feeling that their initial lack of understanding of CES made them more

embarrassed and less specific during history taking which was a much more stressful experience at the time. Experience and training helped them to understand the condition and its management with perceived benefit to their confidence and competence in managing persons with suspected CES.

“I was very terrified the first couple of times because I didn't really know why I was asking things... only with experience and time have I felt more confident.” (P2)

Discussion

This study explored physiotherapists' experiences of managing persons with suspected CES and highlighted two areas which seemed to represent challenges and three which seemed to represent antidotes to these challenges. To the authors' knowledge, this is the first study to explore the management of suspected CES from physiotherapists' experiential perspectives.

Participants' accounts of worry about 'missing anything' predominantly related to concern regarding risk of litigation. This did not seem to suggest lack of concern for the person with suspected CES, but worry that despite their efforts to be vigilant, they may still encounter associated litigation. This reflects the rise in litigation rates over recent years which has been suggested as a contributing factor to the change in the accepted management of suspected CES (Germon et al., 2015; Todd and Dickson, 2016; Hussain et al., 2018). Although concern regarding litigation has been well documented in medical literature as an influential factor in clinical decision-making, there has previously been a lack of in-depth qualitative enquiry on the topic to highlight its effect on clinicians' wellbeing (O'Dowd, 2012; Minkoff, 2012; Cheng et al., 2014; Sekhar and Vyas, 2013).

Worry in relation to risk management was described by participants as relating to the need to manage risk within the confines of resource availability. Given that healthcare resources are usually finite, the low threshold for emergency investigation which is recommended to protect persons with suspected CES may have potential to risk an adverse effect on other populations. Scenarios like this may represent a problem without an optimal solution. The concept of decision-making in these scenarios has been termed as 'satisficing', a portmanteau of the verbs 'to suffice' and 'to satisfy' (Simon, 1956). Previous research explores satisficing with the aim of providing quality healthcare while maintaining sustainability of financial, environmental and social resources (Baid et al., 2019). For participants in the present study however, the main resource of concern seemed to be time, including that of other healthcare professionals. Perhaps this is linked with participants' descriptions that decision-making regarding use of

other resources (such as imaging) might be outside of their scope of practice. The team approach to risk management seemed to be highly dependent on communication which presented another challenge.

Participants' desires to achieve clarity in communication with persons receiving care resonate with previous recommendations relating to suspected CES and the struggle to do so is echoed in other literature relating to CES and broader healthcare contexts (Kenny, 2004; Greenhalgh et al., 2015). Some of the perceived barriers to communication described by participants are reflected in previous studies which suggest that clinicians perceive communication to be more effective when there was higher demographic concordance with the person receiving care and when they perceive the person receiving care to have good communication skills (Werner and Malterud, 2003; Kenny, 2004; Street et al., 2007). Participants in the present study framed these factors in the context of the sensitive line of questioning for suspected CES (regarding bladder and bowel habits and sexual function). In relation to striking a balance in communicating safety netting information, participants' accounts reflect theories of risk communication where a clinician might assess how concerned a person is and how concerned they want them to be, then attempt to use communication to adjust the level of concern accordingly (Sandman, 2003). Communication in the context of suspected CES is key to safe and effective care and it is therefore important to employ strategies to facilitate it.

Previous literature has suggested that communication can be improved by implementing person-centred communication, shared decision-making and a strong therapeutic alliance (Bieber et al., 2008; Pinto et al., 2012; Søndena et al., 2020). However, ability to implement these approaches may be hindered by a number of factors described by the participants, including time management, power struggles, mistrust and physiotherapists' lack of confidence in their own clinical knowledge (Foronda et al., 2016). The cauda equina pro forma and the written safety netting information in the CES information leaflet were described as helping to transcend embarrassment and language barriers to facilitate communication, gain clarity and 'protect' the clinician. These two elements of the CES toolkit have not yet been validated in practice but the findings of the present study do suggest support from physiotherapists for its use. Use of a pro forma was also described as helpful in facilitating inter-professional handover which seemed to represent another communication challenge.

Suggestions of conflict were described during interactions with other healthcare professionals, particularly orthopaedic registrars. Previous studies have attributed frustrations in inter-professional communication to differences in training, communication style, egos, structural hierarchies, lack of organisation and lack of confidence (Foronda et al., 2016). The latter was

echoed by a number of participants in the present study and structural hierarchy was mentioned by one participant. It has been suggested that a superior hierarchical position may be culturally ascribed to medics over nursing staff, with subsequent impact on communication and team working (Coombs and Ersser, 2003; McGrath et al., 2006). This suggestion of interdisciplinary hegemony may have contributed to participants' accounts of interdisciplinary conflict affecting communication. Under-effective inter-professional communication has been associated with poorer outcomes and delayed diagnosis so it is important to address issues in this area of practice (Foronda et al., 2016).

Inter-professional handover aids have been suggested, with the SBAR acronym (Situation, Background, Assessment and Recommendation) having shown an ability to improve confidence and efficacy of inter-professional communication in many healthcare settings (Foronda et al., 2016; Compton et al., 2012; Kostoff et al., 2016). Other publications have suggested that clinicians should be trained in identifying problematic relationships between themselves and persons receiving care in order to better manage the 'antipathies and power struggles' which affect management (Kenny, 2004, p305). Perhaps this recommendation could be extended to apply to relationships between healthcare professionals. Further research might be required to evaluate whether this is an effective strategy to facilitate management of persons with suspected CES. Findings of the present study also highlight a need to consider physiotherapists' wellbeing in the context of these challenges.

The themes of communication difficulties and risk management were associated with reports of 'fear', 'anxiety', 'worry' and 'panic' which are resonant with previous studies looking at emotion in healthcare practice (Kozlowski et al., 2017). Some level of stress has been suggested to improve decision-making in certain scenarios, but conflict and anger have been suggested to impact negatively on cognitive processing and a level of emotional response consistent with panic has been described as 'highly contagious and highly destructive' (Kozlowski et al., 2017; Sandman, 2003, p2; Langridge et al., 2016). Although participants may not have been using terms like panic to describe emotions as intense as their definitions in psychology literature, use of this language does suggest potential for emotion to affect clinical reasoning and decision-making as well as to impact negatively on clinicians' wellbeing (Sandman, 2003; Langridge et al., 2016; Kozlowski et al., 2017). It is important to understand how these emotional responses can be moderated in the context of managing persons with suspected CES. This was touched upon by participants through themes relating to the helpfulness of teamwork, pathways, experience and training.

The concept of teamwork was described as helpful in facilitating appropriate management and alleviating stress. Participants' accounts of the helpfulness of a sense of shared responsibility and a clear role within the team echo the findings of a previous qualitative enquiry where nurse participants suggested that they experience 'stress' and 'fear' when working outside of their scope of practice (French et al., 2011). A clearly defined scope of practice and 'mutual support amongst colleagues' were advocated as potential remedial factors, with the latter being described as a coping mechanism which might reduce risk of burnout and contribute to job satisfaction (French et al., 2011, p6). Participants' scope of practice seemed to be clarified by the presence of a clear pathway.

Participants described how a clinical pathway simplified the otherwise 'intimidating' task of managing persons with suspected CES. Pathways are advocated across healthcare literature for their role in facilitating provision of the safe, cost-effective and standardised care which may benefit persons receiving care and organisations (O'Leary et al., 2014; Buchert and Butler, 2016; Abrahams et al., 2017). There is also some evidence for staff satisfaction relating to clinical pathways (Schuld et al., 2011). However, findings of the present study are novel in reporting first-hand accounts of physiotherapists suggesting that a clear CES pathway might also be beneficial to their wellbeing. The findings support previous suggestions that a robust and widely circulated pathway will help healthcare professionals to manage persons with suspected CES (Greenhalgh et al., 2018).

Training and experience were also described as helpful in overcoming the challenges of communication and risk management. Again, this echoes findings in qualitative nursing literature, where participants felt that training improved their confidence and decreased stress (French et al., 2011). Recent research exploring experiences of persons with CES found that participants felt their experiences were negatively impacted when their healthcare professionals had a lack of understanding of the condition (Hall and Jones, 2018). These findings in combination with those of the present study support previous emphasis on awareness of CES signs and symptoms by clinicians which, in combination with effective communication of these to persons at risk of developing CES, may help facilitate effective management (Greenhalgh et al., 2015). The findings of the present study also suggest that training and experience may benefit staff wellbeing. The "fear-driven" approach to training described by one participant may not be productive and perhaps the focus should shift to fostering a supportive team culture and equipping physiotherapists with the knowledge, tools, pathways and social support to confidently and effectively manage persons with suspected CES. As one participant says of her junior colleagues, "*we... need to build their resilience and*

their confidence and... how they cope with that. Because otherwise... [people] are going to burn out” (P8).

Methodological considerations

Credibility of this study was enhanced by the qualitative approach and rigorous data analysis. The interviewer was an experienced musculoskeletal physiotherapist with training and experience in communication skills and postgraduate training in research methods. As an insider researcher, her potential to take statements for granted or make assumptions was acknowledged and she used a reflective journal to maintain an awareness of this and question whether her interpretations were data-driven (McEvoy, 2001). The transcripts suggest that participants felt able to be honest about sensitive topics and there is a possibility that participants’ pre-existing relationship with the researcher facilitated openness during the interviews (McEvoy, 2001; Robson and McCartan, 2016).

Data analysis was peer-reviewed by the second author, a musculoskeletal physiotherapist, academic and experienced qualitative researcher. She had no relationship with participants and was not familiar with the trust in which recruitment took place. The combination of the researchers’ knowledge, experience and background provided different perspectives which seemed to result in a balanced approach to data analysis and enhance trustworthiness.

Qualitative findings are not generalisable and transferability is limited by the single-trust recruitment strategy and small sample size which is common in qualitative research (Creswell, and Poth, 2015). The reader is encouraged to consider the context of this study in order to assess the level of transferability of findings to their own setting (Carpenter and Suto, 2008). Data saturation is not considered compatible with thematic analysis and was therefore not sought for this study (Braun and Clarke, 2019b).

Implications for practice

The findings of this study suggest that clear pathways, effective teamwork, communication aids and training might be practical steps to take to address the challenges faced by physiotherapists in managing persons with suspected CES.

- **CES pathways** have been recommended to be robust, widely circulated, accessible and agreed with all members of the multidisciplinary team (Greenhalgh et al., 2018). Development, evaluation and maintenance of pathways should be carefully considered

to facilitate consistent, safe and effective care (Buchert and Butler, 2016) and current CES pathways for primary care should be in line with recent guidelines from the National Low Back Pain Clinical Network (2020).

- **A team working culture** should be fostered at all levels with clearly defined scopes of practice and mutual support between colleagues.
- **Communication aids** could include CES questioning prompts. The questioning pro forma advocated by participants was based on the CES cue card for clinicians developed by Greenhalgh et al. (2016). The CES information leaflet included wording from the CES credit card which is currently available in over 30 languages from <https://www.macpweb.org/Cauda-Equina-Information-cards>. Use of handover tools like SBAR could also be considered (Müller et al., 2018).
- **Training on CES** could be planned and delivered with the aims of improving communication with persons receiving care and other healthcare professionals as well as improving understanding of CES, its associated symptoms and its management.
- **Staff wellbeing** should be monitored and additional support measures could be considered such as clinical supervision, Schwartz rounds and empathy huddles (Point of Care Foundation, 2020; Turner et al., 2019; Snowdon et al., 2017).

Conclusion

The aim of this study was to explore physiotherapists' experiences of managing persons with suspected CES. The findings suggest that physiotherapists commonly encounter barriers which might be particularly challenging for inexperienced physiotherapists. They support previous recommendations for physiotherapy services to have a robust CES pathway in place, for clinicians to have a good awareness of CES signs and symptoms and for use of communication tools. The present study is novel in providing empirical research to support the role of effective teamwork and in identifying potential threats to physiotherapists' wellbeing relating to managing persons with suspected CES. It may not be possible to completely eliminate the challenges, but it is important to be aware of them and to strive to minimise risk and optimise wellbeing for the sake of clinicians, organisations and persons receiving care.

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Tables

Table 1. Participants' experience levels

Participant	Years' musculoskeletal physiotherapy experience	Postgraduate education
P1	2.5	Nil
P2	2	Nil
P3	7	Nil
P4	5	Nil
P5	1.5	Nil
P6	3	Nil
P7	27	Nil
P8	6	MSc in progress

Appendix A: Interview Schedule

The interview schedule was drafted by the first author who consulted a physiotherapist with expert knowledge of the physiotherapy management of CES. The schedule was then revised in collaboration with the second author to include only open questions so that participants could guide the narrative. Probes and silences were used to encourage participants to share their experiences while keeping content close to the research question and minimising the risk of missing important experiences and meanings (Carpenter and Suto, 2008; Braun and Clarke, 2019). No changes were made to the schedule following a pilot interview which was carried out with a musculoskeletal physiotherapist from another trust prior to data collection.

At the commencement of each interview, the pre-existing relationship between the researcher and the participant was acknowledged. The interviewer explained that there were no right and wrong answers and that the interview simply aimed to facilitate understanding of participants' experiences. Participants were then asked to think back to occasions where they had managed a person with suspected CES and to explain each experience in as much detail as possible.

Interview Questions

1. Could you think back to a specific person who presented with potential cauda equina symptoms? Take your time, can you take yourself back to that moment, when that person first came to see you. Can you tell me in as much detail as possible about your experience of managing that patient?
2. Can you tell me about another person, maybe about a very different experience related to a person with suspected CES?
3. And do you have a third example of managing a patient with suspected CES? Or perhaps of advising a colleague about management?

Examples of probes

Elaboration probes

"You mentioned _____, can you tell me more about that?"

“Can you tell me what lead you to make that decision?”

“What were your actions at the time?”

“How did you feel during the experience?”.

“You covered a lot of interesting points there. Can we go back to a couple of them to go in to more detail?”

Continuation probes:

“Can you tell me what happened after that?”

“Have you had any similar experiences since?”

“Could you take yourself back to the scenario and think about the details... Is there anything else you would like to add?”

Clarification probes:

“You said _____, can you explain a bit more about what you mean by that?”

“What I understand from what you’ve said is that _____. Is that correct?”

Attention probes:

“That’s really interesting.”

“That’s really helpful to know, thank you.”

Contrast probes:

To be used with caution in order to avoid making the participant feel challenged.

“What do you think might have caused that to happen?”

