

Healthcare Professionals’ Perspectives of Inadequately Managed Painful Lumbosacral Radiculopathy: A Qualitative Analysis

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INTRODUCTION

- Painful lumbosacral radiculopathy (LSR) results from compression or irritation of nerve roots in the lumbosacral spine, which can be accompanied by numbness, weakness, and reflex changes.¹⁻³
- No medications are specifically indicated for painful LSR, and existing clinical practice guidelines provide varying recommendations.³
- Commonly used medications, including nonsteroidal anti-inflammatory drugs (NSAIDs), gabapentinoids, antidepressants, and opioids, deliver inconsistent pain relief and are often associated with tolerability challenges.^{3,5}
- Managing painful LSR requires patient-specific treatment decisions that consider comorbidities, potential drug interactions, and the need to balance efficacy with tolerability to achieve adequate pain control.⁶
- This study aimed to describe physician experiences with managing chronic pain associated with LSR, including treatment patterns and barriers to effective care.

OBJECTIVES

- Describe key challenges and barriers healthcare providers (HCPs) face in the management of LSR-related pain in adult patients
- Characterize prescribing patterns and drivers of treatment selection among HCPs to inform unmet needs in the management of painful LSR

METHODS

- This cross-sectional, qualitative study used semistructured interviews to collect and analyze HCP experiences of managing painful LSR.
- Although this study was granted exemption by an institutional review board, all participants provided verbal consent before the interview.

Targeted Literature Review

- A literature review of qualitative studies, surveys, and reviews published between September 2014 and September 2024 on the diagnosis and treatment of painful LSR was conducted.
- Results informed development of the interview guide.

Participant Recruitment*

United States–based physicians (target sample size, N = 20) were recruited who:

- Specialized in neurology, pain medicine, or family/internal medicine (i.e., general practitioners)
- Had ≥ 3 years of experience providing care following completion of a medical residency/fellowship program
- Spent ≥ 50% of their time in the clinical setting (i.e., not primarily research or administratively focused)
- Managed ≥ 2 patients per week with chronic pain, defined as pain lasting > 3 months, associated with LSR

One-on-One Interviews

- 60-minute concept elicitation interviews were conducted remotely using a study-specific interview guide.
- The interviews were semistructured, which allowed for probing and exploration to clarify responses or explore new themes, if needed.

Qualitative Analysis

- Transcripts were coded in MAXQDA 2025 qualitative software; using thematic analysis, key themes were identified related to physicians’ experiences with managing painful LSR.
- Thematic saturation was reached, suggesting that the sample size was sufficient.

RESULTS

- Twenty physicians participated in the study, with an equal distribution between generalists (n = 10) and specialists (n = 10).
- Most participants (n = 16) said that more than half of their patients with LSR experienced chronic pain (i.e., lasting longer than 3 months) due to the condition.

Pain medicine Family medicine
Neurology Internal medicine

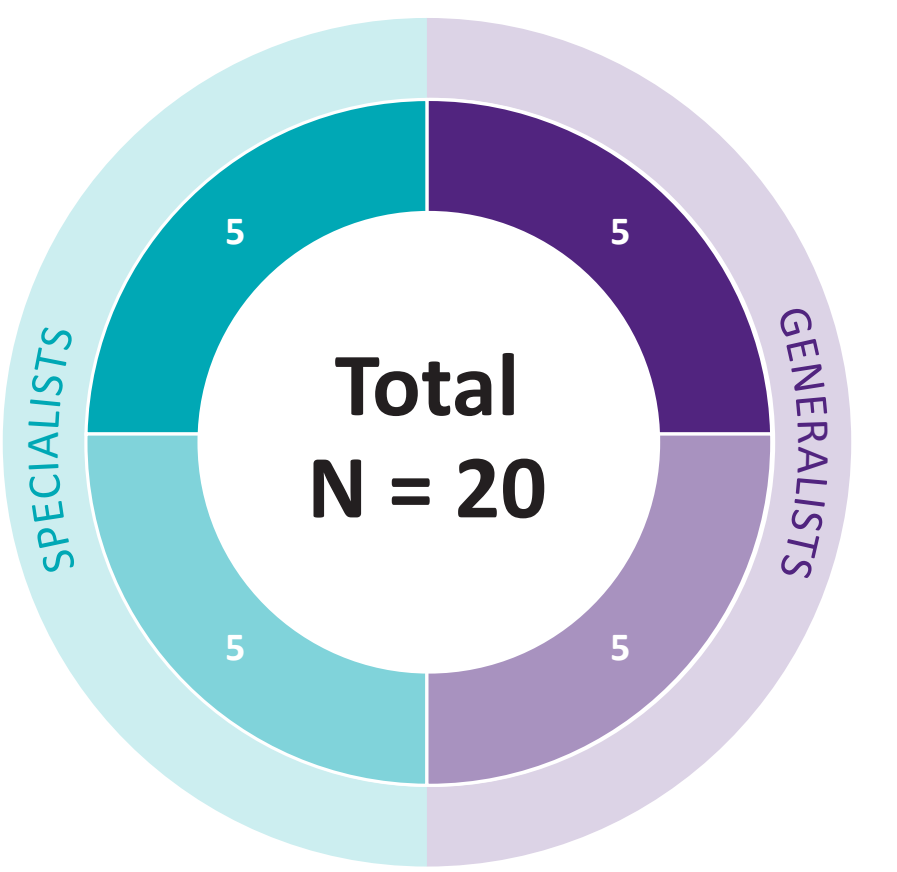


Table 1. Participant Characteristics (N = 20)

Sex, n (%)	
Male	15 (75.0)
Female	5 (25.0)
Race or ethnicity, n (%) ^a	
White	12 (60.0)
Asian	7 (35.0)
Egyptian	1 (5.0)
HCP practice setting, n (%) ^b	
Private practice	14 (70.0)
Group practice, affiliated with larger health system	5 (25.0)
Hospital	3 (15.0)
Geographic region, n (%)	
Northeast	7 (35.0)
Midwest	6 (30.0)
West	4 (20.0)
Southeast	2 (10.0)
South	1 (5.0)
Years treating patients with painful LSR, mean (median)	
	26.4 (25)

^a One participant preferred not to answer.

^b Several participants reported multiple practice settings.

Figure 1. Key Concepts and Themes



1. Managing Painful LSR

- Over half of the participants (n = 12) relied on clinical experience to inform patient-care plans for painful LSR versus following formal guidelines.
- Treatment goals focused on improving or maintaining daily physical function (n = 18) and reducing or eliminating pain (n = 16) (Figure 2).
- Half of participants (n = 10) noted the importance of aligning treatment with patients’ personal goals, aiming to provide adequate pain relief to enable a return to meaningful activities like working, driving, or caring for family.



2. Factors Influencing Treatment Decisions

- Treatment decisions were guided by patient-specific factors, including individual characteristics (e.g., age and weight; n = 19), potential contraindications due to comorbidities (n = 11), and treatment history (n = 7) (Figure 3).
- Participants reported medications for painful LSR were associated with side effects that limited use in certain patients due to risk of ulcers or gastrointestinal bleeding (n = 15), renal complications (n = 10), and hypertension (n = 4).
- Most participants (n = 17) described using physical therapy adjunctively with medications for painful LSR, noting it is often a prerequisite for insurance coverage of diagnostic imaging and later-line therapies.



3. Choice of Therapy for Painful LSR

- All participants (n = 20) reported using oral NSAIDs to manage painful LSR. Other commonly used oral medications included opioids (n = 20), gabapentinoids (n = 16), antidepressants (n = 17), muscle relaxants (n = 16), and steroids (n = 12) (Figure 4).
- Nearly all participants (n = 19) confirmed using combination therapy to manage painful LSR, often pairing NSAIDs with other oral and topical analgesics to improve pain relief.
- Generalists commonly initiated treatment with over-the-counter NSAIDs, followed by prescription NSAIDs and muscle relaxants as needed, whereas specialists more often initiated gabapentinoids as patients were typically referred after unsuccessful prior treatment.
- Both generalists and specialists generally reserved interventional therapies (e.g., epidural steroid injections) after patients failed more conservative options, with most agreeing that surgery should be a last resort (n = 14).



4. Medication-Related Unmet Needs

- Participants described challenges in achieving adequate pain relief for patients with painful LSR, with frequent treatment changes commonly reported (n = 16).
- Primary reasons for changing therapies included intolerability/side effects (n = 12) and lack of effectiveness (n = 10).

Figure 2. Treatment Goals When Managing Painful LSR

Treatment Goal	Number of Physicians (n)	Representative Quote
Improve daily functioning	18	<i>“The treatment goal is to have them be able to function in a capacity that they want. They have, sort of, their own goals of what it is that they want to do that they haven’t been able to do. So, you’re trying to meet those goals in terms of function.”</i> Family Medicine
Reduce pain	16	<i>“[The number] one [goal] is: we need to keep this patient pain-free, and we need to keep this patient independent and productive. So I want to keep them pain free.”</i> Family Medicine
Meet individual patient goals	10	<i>“You know, are they able to go to work? Are they able to drive a car? Are they able to do things that they need to do on a daily basis? I guess that’s the real metric. And are they happy with their improvement?”</i> Neurologist
Limitations with treatment options interfere with achieving treatment goals.		

Figure 3. Patient-Specific Factors Complicating Treatment Selection for Painful LSR

Patient-Specific Factor	Number of Physicians (n)	Representative Quote
Patient characteristics	19	<i>“In a 65-, 70-year-old that’s on multiple medications that you have to worry about drug interactions and the frailty of their stomach versus a younger, healthier patient where gastritis or GI upset is not an issue.”</i> Pain Medicine
Comorbidities and potential contraindications	11	<i>“You think about: do they have chronic kidney disease? That means they can’t take NSAIDs. Can I give them a steroid? Oh, wait a minute, they’re a diabetic.”</i> Neurologist
Treatment history	7	<i>“What medications they have tried? You know, there are so many over-the-counter treatments available now. So, people have tried them in the past, uh, before coming to see me.”</i> Family Medicine
Etiology and/or LSR pain characteristics	4	<i>“So, how long have they had their pain?... How did it occur? Is it increased with coughing and sneezing to suggest it’s idiopathic? Or is it more nerve foraminal where it’s just [a] chronic achy thing that goes on throughout the day?”</i> Neurologist

Figure 4. Physician-Reported Oral Medications Commonly Used for Painful LSR

- Participants reported use of multiple oral medication classes when managing patients with painful LSR, many used in combination, with treatment lines reflecting physician views that varied depending on individual, provider type (generalists vs specialists) and the point at which patients entered care.

Oral Medication Class	Number of Physicians (n)	Therapy Types	First Line	Second Line	Third Line
NSAIDs ^a	20	Ibuprofen, naproxen, meloxicam, celecoxib	✓	✓	
Opioids ^b	20	Most Common: tramadol (n = 11) Less Common: oxycodone (n = 8), hydrocodone (n = 5)		✓	✓
Antidepressants	17	TCAs (n = 10): amitriptyline Less Common (n = 7): duloxetine		✓	✓
Muscle relaxants	16	Carisoprodol, cyclobenzaprine, tizanidine	✓	✓	
Gabapentinoids	16	Gabapentin (Neurontin), pregabalin (Lyrica)		✓	✓
Steroids	12	Prednisone, methylprednisolone		✓	✓

Note: Classification of oral medication classes by treatment line reflects reported prescribing patterns among study participants, with variability related to specialty, setting of patient care (e.g., emergency department/inpatient, outpatient), and other factors.
^a Includes both over-the-counter (OTC) and prescription non-steroidal anti-inflammatory drugs (NSAIDs).
^b Due to risk of side effects, most participants (n = 16) reported prescribing opioids sparingly and only for short courses to address acute/breakthrough LSR-related pain. SNRIs = selective norepinephrine reuptake inhibitors; TCAs = tricyclic antidepressants.

DISCUSSION

- This qualitative study highlights the complexities that prevent the successful management of painful LSR in real-world clinical settings.
- Treatment selection for painful LSR was largely driven by patient comorbidities, prior treatment history, and the need to balance pain relief with side effect management; participants frequently used combination therapy to address multiple aspects of LSR-related pain.
- Participants described ongoing challenges in achieving adequate pain relief for patients with painful LSR, citing frequent treatment changes due to tolerability issues and lack of effectiveness, underscoring the limitations of currently available therapies for LSR-related pain.

LIMITATIONS

- The sample size (N = 20) represents a narrow cross-section of physicians (general practitioners, neurologists, and pain medicine specialists); however, the study was adequately powered to achieve saturation.

CONCLUSIONS

This qualitative study investigated physicians’ perspectives of managing patients with painful LSR in real-world settings.

- Physician perspectives reflect challenges in managing pain associated with LSR, emphasizing difficulties in effectively managing the condition due to inadequate therapy options.
- Physicians emphasized the limitations in currently available medications for painful LSR, primarily related to intolerability/side effects and lack of effectiveness, often prompting them to initiate combination therapy or change treatment altogether.

The results of this study underscore the unmet needs associated with current neuropathic pain medications used to manage painful LSR and may help inform future efforts to support patient-centered care.

References

- Alexander CE, et al. 2025. <https://www.ncbi.nlm.nih.gov/books/NBK430837/>.
- Queremel Milani DA, Davis DD. 2025. <https://www.ncbi.nlm.nih.gov/books/NBK560692/>.
- Price MR, et al. PM R. 2024 Oct;16(10):1128-42.
- Khorami AK, et al. J Clin Med. 2021 Jun 3;10(11):2482.
- Migliorini F, et al. Expert Opin Pharmacother. 2021 Jan;22(1):109-19.
- Slade SC, et al. Clin J Pain. 2016 Sep;32(9):800-16.

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