

Patient Perspectives of Inadequately Managed Painful Lumbosacral Radiculopathy: A Qualitative Analysis

Narayan Kissoon,¹ Ashley Guesnier,² Mirline Milien,³ Erin Miller,³ Claire Ervin,³ Ann Menzie²

¹ Mayo Clinic, Rochester, MN, United States; ² Vertex Pharmaceuticals Incorporated, Boston, MA, United States; ³ RTI Health Solutions, Durham, NC, United States

INTRODUCTION

- Painful lumbosacral radiculopathy (LSR), a neurological condition caused by compression or irritation of the lumbosacral nerve roots, has an estimated lifetime incidence of 13% to 40% and is associated with chronic pain, mobility impairment, and workplace absenteeism.¹⁻⁴
- Medications used to manage pain associated with LSR (e.g., gabapentinoids, nonsteroidal anti-inflammatory drugs [NSAIDs], opioids) often provide inadequate pain relief and are associated with side effects that impact daily functioning.⁵
- As a chronic neuropathic condition, painful LSR can be debilitating, including negative impacts on physical functioning and emotional well-being.^{6,7} Inadequately managed pain associated with LSR may also lead to ongoing impairment and dissatisfaction with care.⁸⁻⁷
- Few studies have explored the challenges of painful LSR from the patient perspective. Therefore, this study aimed to characterize how adults with painful LSR describe their symptoms, their experiences with prescription medications, and the impacts of inadequately managed pain.

OBJECTIVES

- Describe patient experiences with inadequately managed painful LSR, including impacts on daily functioning and emotional well-being
- Explore patient perceptions of current treatment strategies and drivers of change to understand unmet needs in the management of painful LSR

METHODS

- This cross-sectional, qualitative study used semistructured interviews to understand patient experiences with painful LSR and medications to address LSR pain.
- Although this study was granted exemption by an institutional review board, all participants provided verbal consent before being interviewed.

Targeted Literature Review

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

Participant Recruitment*

English-speaking adults aged 18-70 years in the United States (target sample size N = 20) were recruited who reported:

- A diagnosis of painful LSR for ≥ 3 months prior to screening
- Unilateral leg pain worse than back pain
- Peak pain intensity ≥ 4 in the past 7 days⁸
- Use of ≥ 1 prescription pain medication for painful LSR in the past year
- Dissatisfaction with pain relief provided by current painful LSR medication(s)

Individual Interviews

- 60-minute concept elicitation interviews were conducted remotely using a semistructured, study-specific interview guide.
- If not spontaneously reported, the following impact areas included in the preliminary conceptual model were probed: mental, physical, occupational, social/familial, financial, leisure, and cognitive.

Qualitative Analysis

- Transcripts were coded and analyzed thematically using ATLAS-ti 9.0 software to identify key themes related to participants' experiences with painful LSR.
- Analysis demonstrated that saturation of concepts was reached, suggesting the sample size was sufficient.

* Individuals were excluded who had unrelated chronic pain conditions, used a spinal cord stimulator, received workers compensation benefits at the time of or within 6 months of screening, and participated in a clinical trial for pain medication at the time of or within 6 months of screening.

⁸ On the numeric rating scale, where 0 = no pain and 10 = worst pain imaginable.

RESULTS

Study Population

- Twenty participants with painful LSR were interviewed (**Table 1**).
- Participants ranged in age from 31 to 70 years (mean age, 51.5 years), and most had private/commercial insurance (n = 13).
- The mean time since painful LSR diagnosis was 8.2 years, with most reporting diagnostic imaging (n = 17; e.g., magnetic resonance imaging) and no history of back/spine surgery (n = 14).

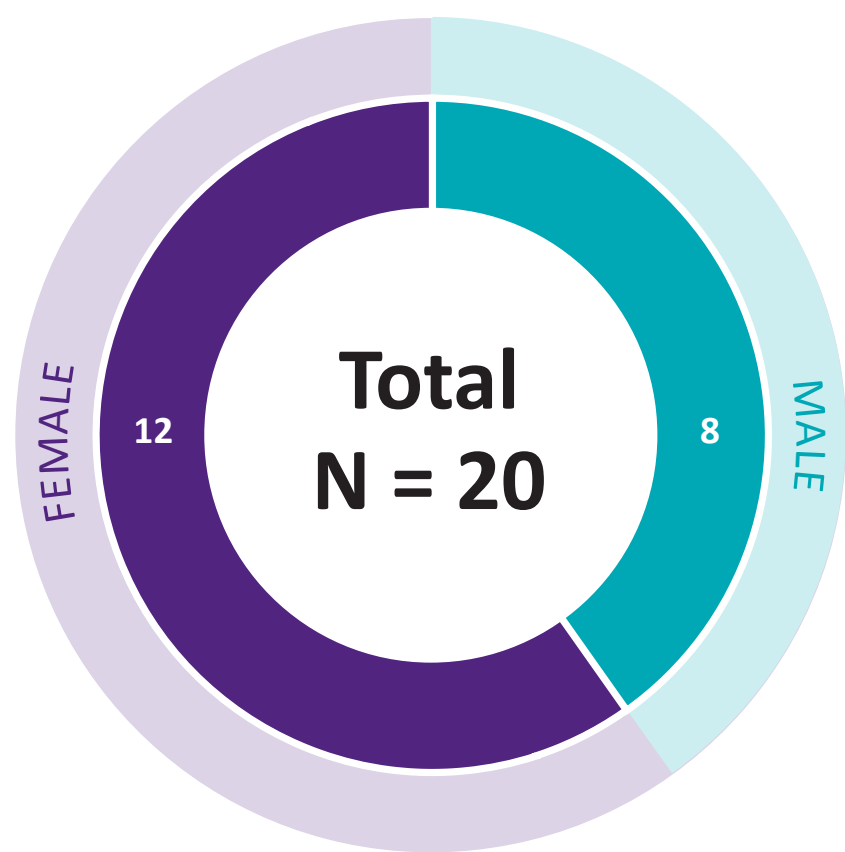


Table 1. Participant Characteristics (N = 20)

Current age group, mean (range), years	51.5 (12.9, 31-70)
31-40 years	6 (30.0)
41-50 years	3 (15.0)
51-60 years	3 (15.0)
61-70 years	8 (40.0)
Race or ethnicity, n (%)	
White	15 (75.0)
African American or Black	4 (20.0)
Hispanic	1 (5.0)
Employment status, n (%)	
Full time	13 (65.0)
Part time	3 (15.0)
Retired	2 (10.0)
Unemployed	2 (10.0)
Health insurance, n (%)	
Private/commercial	13 (65.0)
Medicare	5 (25.0)
Medicaid	1 (5.0)
Other	1 (5.0)
Time since painful LSR diagnosis, mean (range), years	8.2 (1-30)

Figure 1. Key Concepts and Themes



1. Participant-Reported Painful LSR Symptoms

- Participants commonly described the character of pain as burning (n = 9), pinching/pressure (n = 9), stabbing (n = 8), and/or dull/ache (n = 8).
- Participants also described associated symptoms of numbness (n = 14) and tingling/crawling (n = 6).
- Most reported chronic pain associated with LSR that was “constant” (n = 16) or “daily” (n = 15), with acute pain that could be “triggered” (n = 15) and/or “flare up” (n = 11).



2. Painful LSR-Related Impacts

- All participants (n = 20) reported painful LSR-related limitations on physical functioning, including mobility and sleep, with many expressing negative impacts on household/life management (n = 19), self-care (n = 19), driving (n = 18), energy/fatigue (n = 15), and sexual activity/intimacy (n = 14).
- Participants also commonly reported negative impacts to social/familial function, including impaired role function (n = 19), social activities (n = 18), and social interactions/relationships (n = 16).
- Almost all participants (n = 19) reported disruptions in work or volunteer activities, with many reporting cognitive impairment (n = 16), negative self-perception/concept (n = 14), and financial impacts (n = 14).

(Figures 2 and 3)



3. Challenges With Prescription Medications

- At the time of the interviews, almost all participants (n = 19) reported taking oral prescription medications for painful LSR, with gabapentinoids (n = 11), NSAIDs (n = 10), opioids (n = 8), and muscle relaxants (n = 7) most commonly reported.
- Many participants reported switching/avoiding treatments (n = 16) due to side effects (n = 10) and/or inadequate pain relief (n = 4) (**Figure 4**).
- Participants described cycling through multiple medications, often due to inadequate pain relief, in search of the “right mix” to manage painful LSR, with many ultimately requiring epidural steroid injections (n = 16) for refractory pain.
- Over-the-counter medications were frequently used to manage breakthrough pain or avoid side effects from prescription medications (n = 15).



4. Medication-Related Impacts

- Many participants (n = 14) reported that medications for painful LSR did not provide adequate pain relief and/or had negative impacts on daily functioning.
- Participants reported medication-related challenges, often attributed to side effects, such as decreased energy (n = 14), cognitive side effects (n = 12), financial difficulties (n = 12), problems with driving (n = 12), disruptions in social activities (n = 11), impaired household/life management (n = 10), and sleep disturbances (n = 10).

(Figures 2 and 3)

Figure 2. Patients Reported Pain Associated With LSR and Side Effects From Taking Prescription Medications Negatively Impact Their Lives

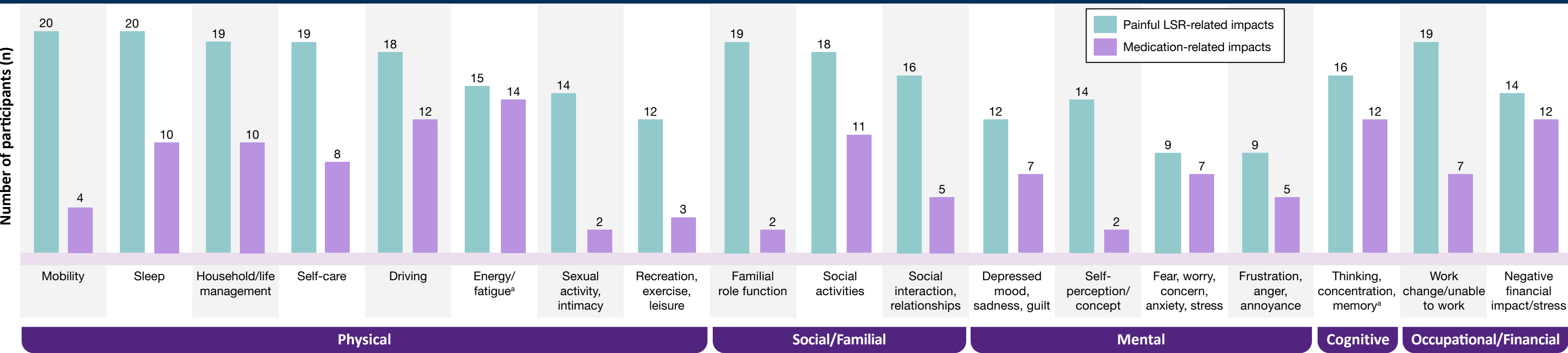


Figure 3. Representative Quotes on the Impacts of Painful LSR and Medication Side Effects

Painful LSR-Related Impacts		Medication-Related Impacts	
Physical	"...I realize that I can't put weight on my left foot, then I have to be super careful about everything that I walk around...We've kind of tried to modify our home to make sure that...all the walkways stay clear."	"But when you first start doing it [gabapentin] I get very drowsy, that's one thing I don't like about doing it. It does affect me negatively like that as far as making me feel drowsy and just out of it...Not motivated to do anything."	
Social/familial	"We used to love big holidays...you just get to the point where you're so tired...you hurt that you just don't do as much anymore."	"My parents have seen me when I'm on the tramadol and they remarked about how goofy I kind of acted. So I try not to hang out with people when I'm on it."	
Mental	"You've got a lot of pressure from people who don't understand the pain...Then just pain is depressing. Especially when you don't feel like there's an end in sight."	"The meloxicam, again, I would just say low-grade anxiety of the, that I've described like, oh, is there a risk of stomach bleeding and all."	
Cognitive*	"You've got to think about every physical activity. It's taxing, it's weighing on your brain 24/7."	["Naproxen side effects] You wouldn't want to complete a crossword puzzle. You wouldn't want to read a newspaper; you wouldn't want to do anything that would require any kind of like mental challenging work."	
Occupational	"...the nerve problem keeping me from working. That's the major impact. Because I'm on disability now. So I'm not making not even half of what I used to."	"Oh, there's no working. There's no working. It's...I would suggest to people, if you're going to take a cyclobenzaprine, take it in bed."	

Figure 4. Side Effects and Lack of Efficacy Were Common Reasons for Changing or Avoiding Medication

Reported Reasons	Number of Participants (n)	Representative Quote
Avoid side effects	10	“Oh, the restless legs feeling was uncontrollable. They slowly tapered me up on the medicine and they tried to get me to take it, but it was unbearable. The creepy crawling feeling under my skin. So I tapered back off of it.”
Inadequate pain relief	4	“Mostly, it was because they weren't working. They weren't giving me any relief. Some of the ones like the codeine and stuff like that, anything that was strong or possibly habit forming, I came off of those as quickly as possible if I didn't feel any relief from them, but it was mostly lack of efficacy.”

Notes: Participants could cite multiple reasons for switching or stopping medications. The following reasons were each reported by 1 participant; no longer needed, avoid daily medications, avoid medication interactions, and avoid potential addiction. Bolding emphasizes key messages.

DISCUSSION

- This qualitative study highlights the challenging real-world experiences of adults, who often reported persistent LSR-related pain that remained inadequately controlled despite available treatments.
- Although prescription medications for painful LSR were widely used, participants reported inadequate pain relief and tolerability issues that contributed to persistent pain, disrupted daily functioning, and led to frequent switching/avoidance of therapies.
- Participants reported medication-related impacts due to side effects from commonly used medications for painful LSR, including gastrointestinal issues with long-term NSAID use, cognitive effects from gabapentinoids, as well as reduced energy levels, impaired mental acuity, and limited work productivity from opioids.
- Impacts from LSR-related pain and medication side effects extended beyond physical pain and limited mobility, negatively affecting daily responsibilities, social/familial relationships, sleep quality, and emotional well-being.
- Despite receiving treatment, participants experienced burdensome painful LSR-related and medication-related impacts, underscoring the unmet need for treatment options that minimize side effects and provide adequate pain relief.

LIMITATIONS

- The sample size (N = 20) represents a narrow cross-section of adults with painful LSR; however, the study was adequately powered to achieve saturation.
- As these findings are derived from patient-reported experiences, the qualitative analysis inherently includes a degree of subjectivity in interpretation.

CONCLUSIONS

This study describes the perspectives of patients living with painful LSR and the limitations of pain management with prescription medications in real-world settings.



Although prescription medications were commonly used to manage painful LSR, participants reported inadequate pain relief and tolerability issues, which resulted in persistent pain and disruptions to daily activities, sleep, and work.



Patients with painful LSR reported a range of painful symptoms that significantly impaired their daily functioning, including physical, mental, cognitive, and emotional impacts; occupational impacts were also reported.

The combined patient-level impacts of living with chronic pain related to LSR and medication-related challenges, including side effects and inadequate pain management, underscore the need for improved treatments that more effectively address patient-reported unmet needs in the management of painful LSR.

References

- Stafford MA, et al. Br J Anaesth. 2007 Oct;99(4):461-73.
- Berry JA, et al. Cureus. 2019 Oct 17;11(10):e5934.
- Alexander CE, et al. 2024. <https://www.ncbi.nlm.nih.gov/books/NBK430837/>.
- Oosterhuis T, et al. Occup Environ Med. 2019 Oct;76(10):772-9.
- Price MR, et al. PM R. 2024 Oct;16(10):1128-42.
- Girach A, et al. Pain Res Manag. 2019 May 23;2019:2091960.
- Haswell K, et al. Man Ther. 2015 Apr;20(2):353-7.

Acknowledgments

Medical writing support under the guidance of the authors was provided by Matthew Fitzpatrick, PhD, and Lacey Lopez, PhD; editing was provided by the Medical Editing team; and design was provided by the Creative Services team, all of RTI Health Solutions.