



The Influence of Pain Catastrophizing and Prior Painful Experiences on Procedural Pain and Post-Block Resolution Pain



Patrick Collins, B.S., Kristin L. Schreiber, MD, PhD, Jenna Wilson, PhD, Martin Kiik, MD, Taylor Vega, MD, Y. Kathy Chen, MD

Department of Anesthesiology, Perioperative and Pain Medicine, Brigham and Women’s Hospital



Introduction

- Regional Anesthesia plays a vital role in multimodal perioperative pain management
- However, some patients can experience procedural pain, as well as dramatic increases in pain at time of nerve block resolution.
- Pain catastrophizing, which is the degree to which a patient may feel helpless, magnify, and ruminate about pain when they experience it, has been associated with worse procedural, acute, and chronic pain. Baseline trait pain catastrophizing can be measured using the Pain Catastrophizing Scale score (PCS; range 0-52), which asks people to reflect on times they have had pain and rate how much these thoughts occur.
- Previous painful experiences may also impact how individuals experience pain.

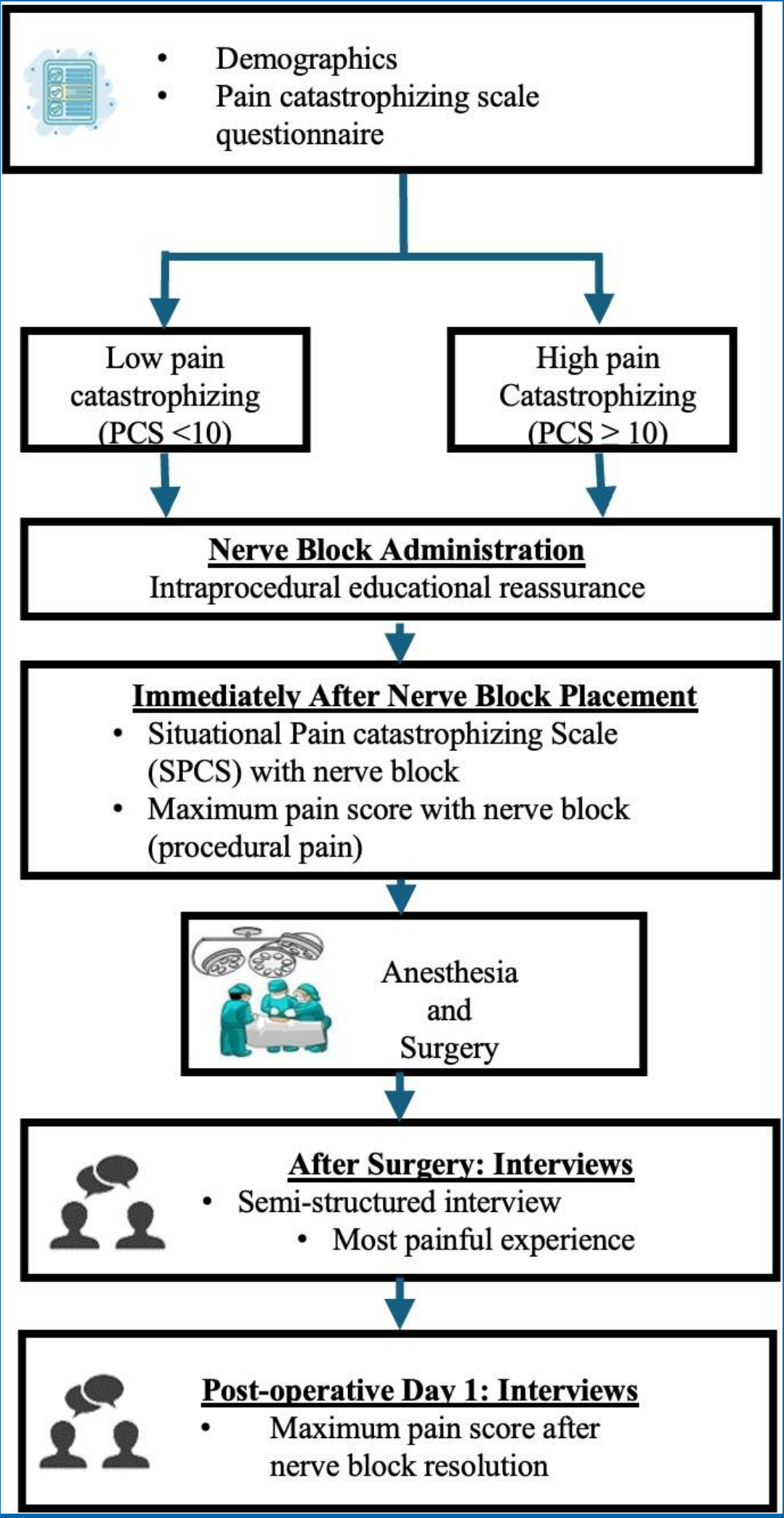


Aims

Among a cohort of patients who received enhanced education and reassurance (no sedation) during nerve block placement:

- To understand factors that are related to procedural pain
 - pain catastrophizing
 - procedural catastrophizing
 - previous most painful experience
 - pain after nerve block resolution
- To understand factors that are related to pain after nerve block resolution
 - pain catastrophizing
 - previous most painful experience
 - procedural pain
 - procedural catastrophizing
- To explore themes in patients’ description of their most painful experience

Methods/Study Flow



Study Sample Characteristics

Table 1. Demographics		
	Low Catastrophizing (PCS < 10)	High Catastrophizing (PCS ≥ 10)
Number of subjects (n)	20	16
Age (mean ± SD)	66.35 ± 9.59	58.81 ± 14.07
Gender		
Male	15	7
Female	5	9
ASA		
II	6	5
III	14	10
IV	0	1
BMI (mean ± SD)	30.57 ± 6.92	30.31 ± 7.74
PCS (mean ± SD)	3.3 ± 2.83	18.81 ± 6.69
Race/Ethnicity		
African American	1	1
Caucasian	19	13
Hispanic/Latina	0	1
Native American	0	1

Procedural Pain

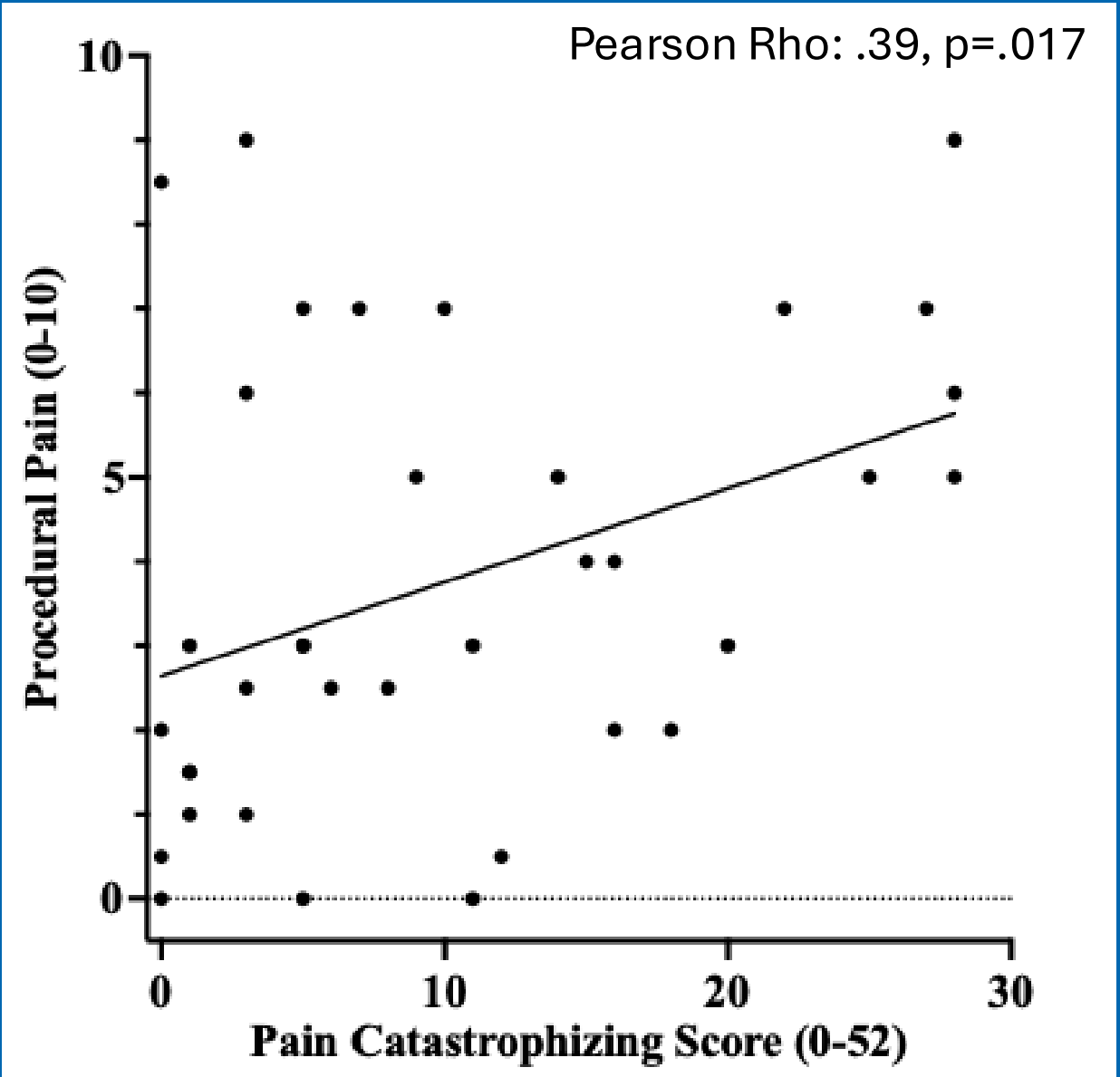


Figure 1A : Greater PCS was associated with higher procedural pain during the nerve block

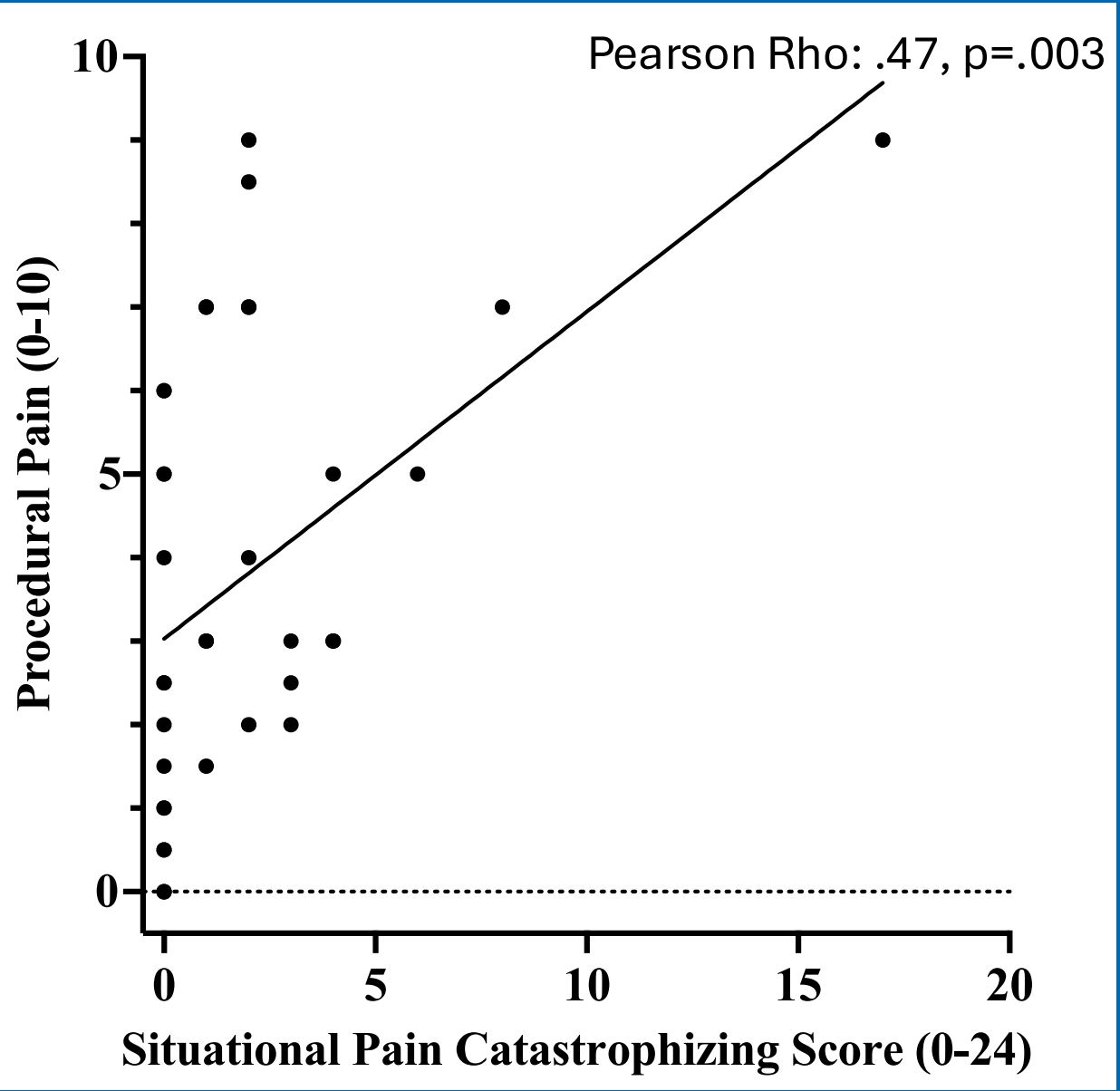


Figure 1B : Greater catastrophizing thoughts during the nerve block procedure (SPCS) were associated with higher procedural pain during the nerve block

Pain after Block Resolution

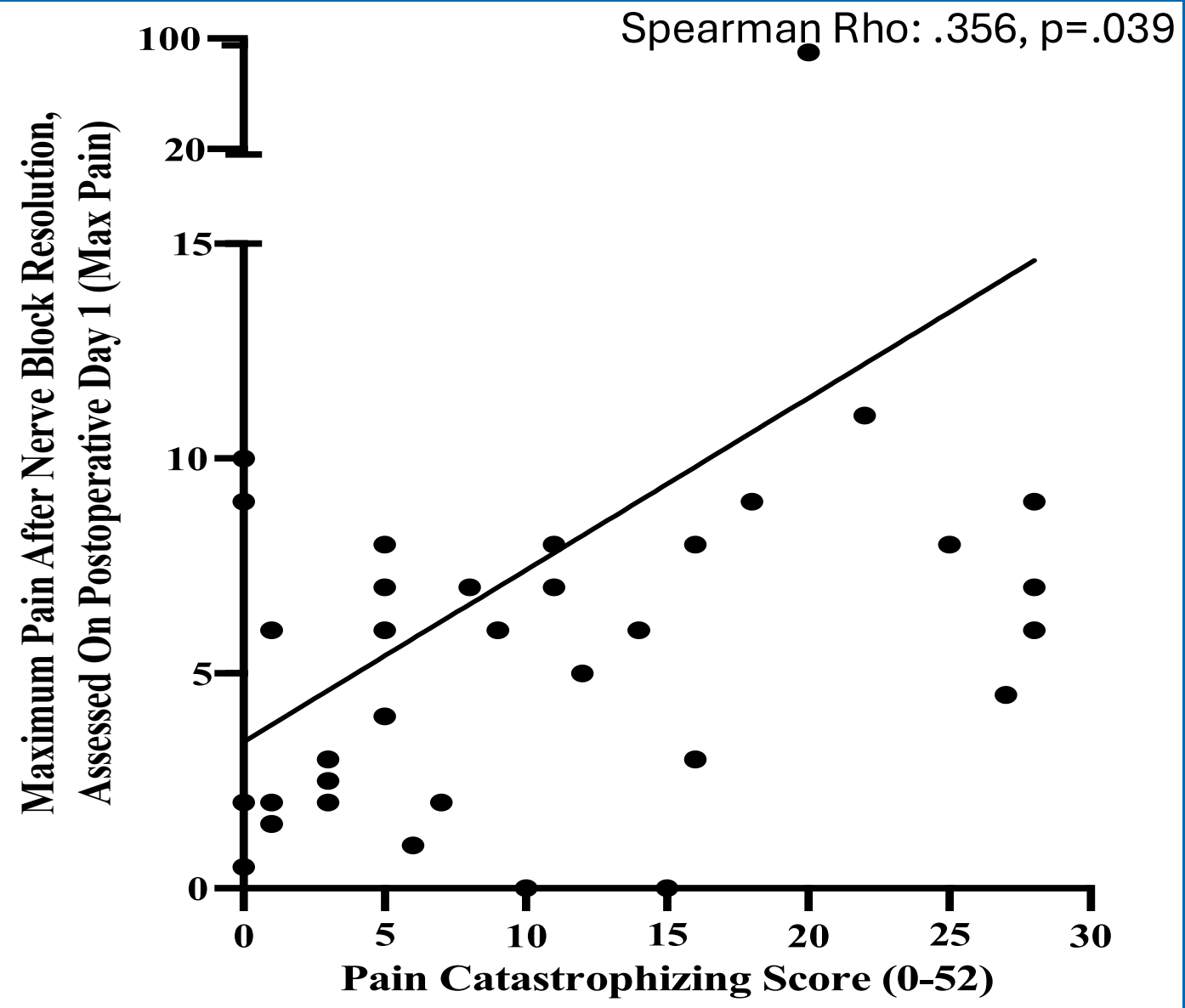


Figure 2A : Greater PCS was associated with higher maximum pain after nerve block resolution, assessed on postoperative day 1

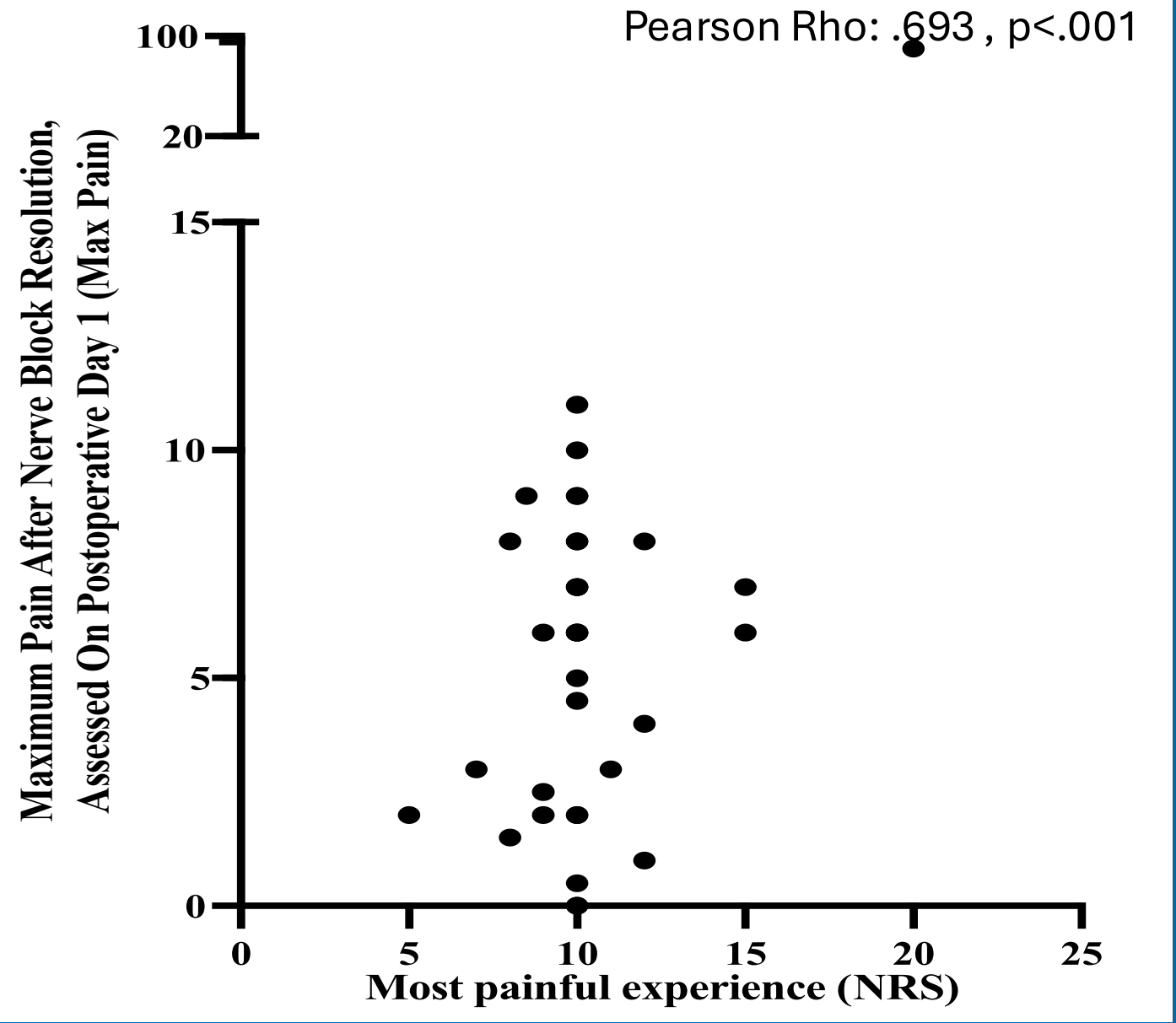


Figure 2B : A higher pain rating for one’s “most painful experience” was associated with higher maximum pain after nerve block resolution, assessed on postoperative day 1

Quotes from patients describing their most painful experience

Small Bowel Obstruction
PCS: 8; Max pain: 7
MPE:10; SPCS: 0

“Small bowel obstruction, every time. Insanely painful. Well, the one in 1996 was so bad that I passed out in my bathroom floor and woke up in my own vomit. And the other one, I was just so incapacitated by pain that my then wife and a good friend, basically dragged me into a car and hauled me into the emergency room. And, yeah, I don’t know. I think I’d rather have a fingernail pulled out without – just because you’re lying there, and your abdomen feels like it’s about to explode, so I don’t think there’s anything like it. And it goes on, right, so they wait 48 hours to hope that it resolves by itself, and then every time in the aftermath, I’d been out in record time, like two days or four days or something like that. And you’re above the moon because you think it’s over, and then you get this rebound bowel obstruction because of the edema, which is equally unpleasant.”

Ankle Wound
PCS: 22; Max pain: 11
MPE: 10; SPCS: 2

“Somebody putting a needle in my ankle with an open wound. Yeah, I’d say that’s the most painful. Yeah, when the meat is hanging off. When I start [...] usually when I start swearing, I’m in sufficient pain. It seemed like every time they told me they had to put 10 shots, 11 shots, and I got the first shot, it seemed like I was [...] I couldn’t [...] didn’t know if I could bear the other 9 more shots, or 10 shots that were coming. I was glad [...] I was happy it was over when it was over. I don’t know why they couldn’t just put me asleep instead of putting needles in my wound.”

Bowel Surgery
PCS: 3; Max pain: 2.5
MPE: 9; SPCS: 3

“Yeah. When I got that pain, I had to get emergency surgery, but the bowel pain, the stomach pains, it was unbearable and it got worse and worse over time. Had it for a couple days and then got emergency surgery and [...] the staples broke after surgery. It was very painful. I remember screaming when I was a kid.”

Foot Wound
PCS: 16; Max pain: 3
MPE: 7; SPCS: 2

“I haven’t had a lot of real painful experiences. I suppose the wound on the left foot that I’ve had difficulty healing has probably been psychologically and physically the most painful part of my life, ever. I never had pain like that before, and I was always fortunate to be able to do what I wanted, and this has made it more difficult to do exercise, to do the things – hike. To do the things that I like to do, and so that’s been painful. Not so much physically painful, but psychologically painful.”

Results/ Conclusions:

- Higher catastrophizing about pain at baseline was related to both greater procedural pain, and higher pain after nerve block resolution.
- Most patients have a memorable previous most painful experience, and how they remember and relate to it may impact their experience with pain after nerve block resolution.
- Understanding both pain catastrophizing and previous pain experiences may give providers insight as to how to manage patients during painful procedures.