Cultural and Linguistic Challenges in Pain Assessment: Rethinking Semantic Questionnaires for Rehabilitation Settings

Roberto Casale[1], Kestutis Petrikonis[2], Farooq Azam Rathore[3]

Abstract

Semantic pain questionnaires, translated and validated in different languages from the original English version, are widely used to collect patient self-reports. Their use present significant challenges, as pain is a deeply personal experience influenced by individual, cultural, and linguistic factors, making it difficult to achieve consistent interpretation across diverse populations and cultures. Pain questionnaires are effective in research with carefully selected participants but may be less reliable in everyday 'real world' rehabilitation settings. Patients from rural areas with limited education may describe their chronic back pain as "a heavy burden on my life," whereas patients exposed to medical terminology might say "I have persistent, dull, aching pain in my lower back." Despite similar pain, their descriptions highlight a gap shaped by cultural and educational backgrounds. In rehabilitation, awareness of these biases is particularly important. Improvement in patient interviews will increase our ability to treat pain and pain related disability.

Keywords: Pain assessment, rehabilitation, questionnaires, cross-cultural validity, patient-reported outcomes

DOI: https://doi.org/

Introduction

Acute pain is a physiological response to harmful events that protects the organism. In contrast, chronic pain no longer functions as a warning mechanism and is now recognized as a distinct disease entity with fundamentally different pathophysiological mechanisms. Chronic pain itself frequently becomes the predominant clinical problem.[1] Chronic pain is inherently disabling - there are virtually no chronic pain conditions that exist without some associated functional limitation. It can manifest either as a primary disabling condition or compound existing pathological disability requiring comprehensive rehabilitation strategies.[1,2]

A cornerstone of chronic pain assessment is the patient's self-report: how individuals use language to describe their pain experience. This critical aspect of pain communication remained surprisingly understudied in medical literature until the early 1970s, when the McGill Pain Questionnaire (MPQ) was developed. This questionnaire, based on a Canadian English-speaking population, became the first standardized tool for pain description.[3]

The Hidden Problems

The McGill Pain Questionnaire and its shorter form (MPR-SF2) have been translated and validated in numerous languages, including Urdu, suggesting that pain descriptors could be comparable across linguistic boundaries.[4] However, fundamental questions remain about the true equivalence of pain understanding across cultures as individuals' interpretation of pain descriptors varies significantly based on cultural background, early experiences, and societal context.[5] This variability is particularly evident in clinical settings. Despite having similar anatomical diagnoses and pain severity, individuals from different populations perceive, describe, and cope with pain in diverse ways Significant variations in how pain is perceived and reported exist even among populations that appear culturally similar.[6]

Studies comparing back pain experiences between English-speaking (Americans and New Zealanders) and Latin language-speaking (Mexicans and Italians) patients with identical pain intensity levels demonstrated marked cross-cultural variations in healthcare expectations, coping strategies, and self-perceived ability to manage pain.[7] Differences become even more pronounced when comparing developed versus developing nations, where social contexts may differ dramatically from the Western settings where most questionnaires originated.[8] Such variations are further complicated by the finding that pain symptoms can persist and vary in severity over time, making standardized assessment even more challenging.[6]

This challenge is particularly relevant in rehabilitation settings, where recent national surveys indicate that while 99.6% of practitioners treat pain, only 76% routinely measure it, suggesting a significant gap between pain recognition and assessment.[9] This discrepancy is further highlighted by the significant impact of pain symptoms on

---

OPUSmedica Persons, Care & research NPO, Piacenza, Italy; [2]Clinic of Neurology, Kauno Klinikos Hospital, Lithuanian University of Health Sciences, Kaunas, Lithuania; [3]Quetta Institute of Medical Sciences (QIMS), Quetta, Pakistan.

Correspondence: Farooq Azam Rathore. e-mail: farooqrathore@gmail.com
ORCID ID: 0000-0002-4759-0453

daily functioning and overall quality of life[6] Patients often use metaphorical use metaphorical language to describe their pain, aiming to convey their experiences to healthcare providers.[6] These metaphors, deeply rooted in cultural and personal experience, may not easily translate into standardized questionnaire formats.[10]

The Two Faces of Pain

Researchers are increasingly attempting to minimize and standardize pain descriptors, seeking to create more concise assessment tools.[11,12] Paradoxically, mass media and digital communications are simultaneously flooding our daily lives with pain-related discourse, unconsciously teaching patients standardized ways to describe their pain experiences. This creates what could be termed a "politically correct" patient-doctor lexicon, transforming inherently private experiences into public narratives. The result is a self-referential linguistic loop between the IASP definition of pain, standardized questionnaire descriptors, and everyday language.

Wittgenstein's concept of public versus private languages provides a useful framework for understanding this dichotomy.[13] Certain pain descriptions employ spatially and temporally defined characteristics - volume, intensity, duration - attributes typically reserved for physical objects or measurable quantities. For example, "I see a red stinging shingle on the back of my right hand" uses words that align with clinically recognizable descriptors. These physical properties are observable, shareable, and ultimately comprehensible - what the MPQ categorizes as "sensory descriptors.[6]

However, this same logical framework fails when attempting to capture pain's affective dimensions. Pain, similar to emotions such as love or basic sensations like hunger and thirst, often cannot be fully captured by structured measurement tools and remains a deeply personal experience These experiential aspects, classified in the MPQ as "affective and evaluative descriptors," are inherently resistant to quantification.[14] This creates a fundamental paradox in pain assessment: while pain manifests as a physical condition we perceive bodily, its full experience may transcend purely physical description.

Two Lines of Thinking

This paradox leads to two different perspectives on the relationship between pain, language and communication.[13] The first conceptualizes pain as fundamentally private - "my pain is not your pain" - while simultaneously representing a near-universal aspect of human experience.[6] This perspective suggests pain remains fundamentally inaccessible to others, resisting true intersubjective understanding as similar pathophysiological conditions, pain perception and reporting vary significantly across individuals and populations.[14]

This is particularly evident in a daily-based clinical settings among rural populations where pain is often described simply as "something that hurts," without the elaborate descriptors expected in modern medical contexts.[9] This leaves clinicians - trained in standardized assessment tools - struggling to formulate appropriate rehabilitation programmes. The challenge becomes even more pronounced in cross-cultural contexts, where linguistic and cultural differences may further limit the utility of standardized questionnaires.[6,14]

The second perspective suggests that pain perception, meaning, and bio-psycho-social effects are fundamentally shaped by language through shared experiences and discourse.[15] However, this approach paradoxically leads to what might be called a "flattening" of pain expression - standardized questionnaires reduce the rich tapestry of personal pain experience to a limited set of socially acceptable descriptors reflecting current cultural norms rather than individual experience.[14] This creates a striking dichotomy: on one side are patients with limited vocabulary - including those with neurological conditions - who can barely articulate beyond "pain hurts," while on the other are individuals so acculturated to medical discourse that they employ "perfect" descriptors learned through previous medical encounters, potentially masking their true experience.[16]

Randomized Control Trials and Real-World Studies

These critical observations regarding the (a-critical) use of pain descriptor questionnaires in differentiating neuropathic from nociceptive pain (not to mention nociplastic) extend beyond theoretical concerns.[6] While easy-to-use questionnaires based primarily on symptom self-reporting are increasingly promoted as tools for improving diagnosis and management,[5] their effectiveness varies significantly between research and clinical settings. Research protocols with carefully selected patient groups and strict inclusion criteria may demonstrate questionnaire utility for specific therapeutic interventions. However, these same tools often prove less effective in "real world" rehabilitation settings where such restrictive criteria rarely reflect clinical reality.[14,15]

Recent developments in real-world research, leveraging large databases and advanced computational methods, are increasingly being applied in rehabilitation settings.[8] These approaches are producing real-world evidence (RWE) that challenges traditional questionnaire-based clinical research paradigms. This shift is particularly relevant for rehabilitation practice, where complex patients with multiple comorbidities and severe impairments represent the norm rather than the exception.[16] Studies show that pain symptoms can vary significantly over time and interact complexly with other conditions, making standardized assessment tools less reliable in these populations.[6]

The reality of rehabilitation settings demands a more holistic approach that incorporates functional disability assessment and lifestyle considerations.[16] This is particularly evident when examining pain's impact on daily activities and quality of life - aspects that may not be adequately captured by traditional questionnaire formats.[6,14] The challenge lies in developing assessment methods that can accommodate both the rigorous requirements of clinical research and the complex, multifaceted nature of real-world patient experiences.[15]

Conclusion and recommendations (Tab.le 1)

In rehabilitation and pain medicine we will probably continue to use pain questionnaires undaunted as they are. However, it is of utmost importance to be aware of the biases they contain, especially where linguistic ability to describe pain is limited by socio-cultural and neurological impairment.

Understanding pain's dual nature - as both physical condition and personal experience - requires a more nuanced approach. We propose combining standardized assessments with flexible methodologies that capture individual pain narratives, while maintaining quantifiable aspects needed for clinical research. For patients with communication limitations, whether from neurological conditions or cultural-linguistic barriers, modified assessment approaches should focus on pain's impact on function and quality of life.

Advancing pain assessment in rehabilitation requires integrating standardized measurement tools with individualized pain descriptions to ensure a comprehensive evaluation This involves developing databases capturing qualitative experiences alongside standardized measures, and rehabilitation-specific frameworks considering both neurological and functional limitations.

It is therefore necessary to improve patient interviews and begin creating large databases with computational methodologies to generate real-world evidence. This will help us extract the most truthful information about pain-related disability while respecting the fundamentally private nature of the pain experience. From what has been said, some recommendations and possible future directions can be suggest.

For ease of reading, they have been collected in Table 1.

Table-1: Comprehensive recommendations for Advancing Pain Assessment in Rehabilitation and Clinical Settings.
Here categories of problems, specific recommendations and key objectives to bridge the gap between research requirements and clinical reality while preserving the essential subjective nature of pain experience.

Category	Specific Recommendations	Key Objectives
Integration of Approaches	- Complement questionnaires with structured patient interviews	Capture more comprehensive pain experience
	- Document metaphorical descriptions and personal pain narratives	Preserve subjective nature of pain
	- Consider cultural and linguistic context	Ensure culturally sensitive assessment
Rehabilitation Setting Adaptation	- Develop assessment tools for patients with communication limitations	Address challenges of neurological impairments
	- Account for temporal variations in pain	Capture dynamic nature of pain
	- Consider functional impact alongside pain intensity	Provide holistic understanding of pain's effects
Real-World Implementation	- Create flexible assessment protocols	Accommodate diverse patient populations
	- Establish guidelines for patients with multiple comorbidities	Improve accuracy across complex clinical scenarios
	- Develop computational approaches to integrate multiple data sources	Enhance assessment technological capabilities
Future Research Directions	- Build comprehensive databases	Capture both standardized and qualitative pain data
	- Develop cross-cultural validation processes	Ensure global applicability of pain assessment
	- Create rehabilitation-specific pain assessment frameworks	Address unique challenges in rehabilitation settings

Success in implementing these changes will require ongoing collaboration between clinicians, researchers, and patients to ensure that pain assessment truly serves its fundamental purpose: understanding and alleviating patient suffering.

Acknowledgement: OPUSmedica -ODV- Non-Profit Organization, supported the bibliographical research and typing of the manuscript

Disclaimer: None.

Conflict of interest: None.

Funding disclosure: None

References

1. International Classification of Diseases, Eleventh Revision (ICD-11), World Health Organization (WHO) 2019/2021 https://icd.who.int/browse11.
2. Kress H G, Casale R. No (rehabilitation) gain without pain (management). Am. J. Phys. Med., 2013; 92: 90-92
3. Melzack R, Torgerson WS. On the language of pain. Anesthesiol. 1971 ;34:50-9
4. Sharif A, Amjad F, Arslan SA, Ahmad A. Translation and validation of urdu version short form-McGill pain questionnaire-2. BMC Sports Sci Med Rehabil. 2023 14;15:102.
5. Attal N, Bouhassira D, Baron R. Diagnosis and assessment of neuropathic pain through questionnaires, The Lancet Neurology. 2018;17:456-466

6. Petrikonis K, Sciupokas A, Samusyte G, Janusauskaite J, Sulcaite R, Vaitkus A. Importance of pain evaluation for more accurate diagnosis of painful diabetic polyneuropathy. Medicina. 2010;46:735-42.
7. Sanders S H,Brena Steven F,Spier, Curtis J, Beltrutti, ,McConnell H.Quintero O,.Chronic Low Back Pain Patients Around the World: Cross-Cultural Similarities and Differences. Clin J Pain 1992; 8:317-323.
8. Vollert J, Kleykamp B, Farrar J; Gilron I. et al. Real-world data and evidence in pain research: a qualitative systematic review of methods in current practice. PAIN Reports. 2023; 8: e1057
9. Casale R, Boldrini P, Christodoulou N. Pain, its diagnosis and treatment in a rehabilitation setting: A national survey. G Ital Med Lav Ergon. 2021;43:74-81.
10. Casale R. Thesis: Algesiometry: Questionnaires on pain. Analysis of semantic and lexical categories of pain adjectives, University Press Pavia, Academic Year 1986-87
11. Melzack R. The short-form McGill Pain Questionnaire. Pain. 1987;30:191-197.
12. Bouhassira D, Attal N, Alchaar H, et al. Comparison of pain syndromes associated with nervous or somatic lesions and development of a new neuropathic pain diagnostic questionnaire (DN4). Pain. 2005;114:29-36.
13. Wittgenstein Ludwig, The meaning of a word is its use in the “language” (PI 43), Philosophical Investigations, Blackwell Edrs: Oxford, 1997.
14. De Silva T, Hodges PW, Costa N, Setchell J. Potential Unintended Effects of Standardized Pain Questionnaires: A Qualitative Study. Pain Med. 2020;21:e22-e33.
15. Wideman TH, Baria AT. Assessing Pain Research: A Narrative Review of Emerging Pain Methods, Their Technosocial Implications, and Opportunities for Multidisciplinary Approaches. Front Pain Res. 2022;3:896276.
16. Munday I, Kneebone I, Newton-John T. The language of chronic pain. Disabil Rehabil. 2021;43: 354-361.