Patient Perspectives on the Perceived Effectiveness, Ease of Use, and Satisfaction of Different Pain Rating Scales for People Living with Chronic Pain

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ABSTRACT

Pain is a complex, subjective experience that can be difficult to measure and ensuring that the tools utilized are accurately describing the patients' experiences is critical for better patient care. Our goal is to evaluate five common pain rating scales based on perceived effectiveness, ease of use, and patient satisfaction. We hypothesized that the descriptive scales will be preferred over the non-descriptive scales.

To better understand patient perspectives, we distributed a survey to patients living with chronic pain at the Oregon Health & Science University (OHSU) Comprehensive Pain Center.

Currently, eighteen patients have completed the survey with mixed results on patient preference. When asked to describe their pain, participants discussed their unique experiences including different types of pain, varying levels of pain throughout the day, and how their pain is often complex, exhausting, and poorly understood with the current pain scales utilized in clinical practice. Eight participants chose the Defense and Veterans Pain Rating Scale (DVPRS) as the most effective in describing their pain and five people chose the Brief Pain Inventory (BPI). Three participants chose the Mankoski Pain Scale (MPS). Two people selected the Verbal Rating Scale (VRS). No participants chose the Numerical Rating Scale (NRS) and many voiced concerns that ranking their pain with a single number was highly ineffective.

Trends in the data suggest patients prefer a pain scale that describes the experiential aspect of chronic pain which may explain why functional pain scales like the DVPRS and BPI were chosen by patients more frequently. Ensuring the scales we utilize represent the patients' experiences is critical to help translate the patient experience to clinicians. We hope to optimize survey accessibility, better determine the effectiveness of these scales, and subsequently help clinicians improve the quality of patient care.

OBJECTIVES

- Determine which scales patients identified as having a higher perceived effectiveness at accurately describing their pain
- Determine which scales patients identified as having a higher ease of use
- Determine which scales patients identified as having a higher satisfaction

INTRODUCTION

Chronic pain is the most common driver of adults seeking medical care (CDC), resulting in an annual cost of $560-636 billion each year in medical care, lost productivity, or disability services in the United States (IOM 2011*)*. According to an analysis of 2016 National Health Interview Survey (NHIS) data done by the CDC, it was estimated that about 20.4% of U.S. adults have chronic pain (Dahlhamer et al. 2018). The International Association for the Study of Pain and World Health Organization define chronic pain as pain that persists for longer than 3 months and/or pain that persists after tissue healing. As this condition affects so many individuals, it is of vital importance to investigate the dimensions of chronic pain.

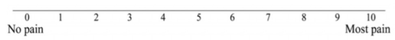
Pain is a complex, subjective experience unique to patients that can be difficult to measure and communicate to clinicians. Ensuring that the tools we utilize to collect this information can accurately describe the patients' experience is critical to help clinicians better understand and thus subsequently provide higher quality patient care. There are many pain measurement tools that are used by clinicians to better understand their patient's pain. In this study, five scales were evaluated by patients with chronic pain for effectiveness, ease of use, and satisfaction. The scales used are the Defense and Veterans Pain Rating Scale, the Mankoski Pain Scale, the Verbal Rating Scale, the Brief Pain Inventory, and the Numerical Pain Scale.

STUDY DESIGN

- Patients of OHSU's Comprehensive Pain Center in Portland, OR aged 18 years or older with any chronic pain diagnosis were recruited for this 19-question survey through their After Visit Summary (AVS) and through flyers that were displayed in the waiting room.
- The survey began by obtaining informed consent from the participants. They were then asked to describe their pain in their own words. Next, they were presented with images of the scales, each followed by three statements: "This scale helped me effectively describe my pain to my doctor", "This scale was easy to use and understand", and "I am satisfied with this pain scale". They were asked to select yes, somewhat, no, or N/A to each of these statements.
- Finally, the participants were asked to choose the scale that was most effective at describing the quality of their pain, followed by a free response question asking them to describe why they chose that scale and a free response question that allowed the participants to state any additional information they would like to share.
- Of 23 total responses collected over 15 weeks, 18 were included in the analysis: 13 were fully completed and 5 were 83% complete.
- The free text responses were analyzed by identifying key code words and grouping those into themes.

RESULTS

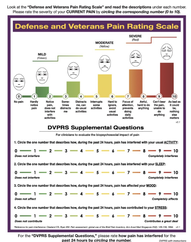
Numerical Rating Scale (NRS)



	% NRS effective?	% NRS easy?	% NRS satisfied?
yes	0.00%	47.06%	5.88%
somewhat	64.71%	23.53%	41.18%
no	35.29%	29.41%	52.94%

NRS Average % "Yes" Overall: 17.65%
NRS Average % "No" Overall: 39.21%

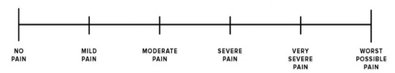
Defense and Veterans Pain Rating Scale (DVPRS)



	% DVPRS effective?	% DVPRS easy?	% DVPRS satisfied?
yes	41.67%	70.59%	56.25%
somewhat	58.33%	17.65%	31.25%
no	8.33%	11.76%	12.50%

DVPRS Average % "Yes" Overall: 56.17%
DVPRS Average % "No" Overall: 10.86%

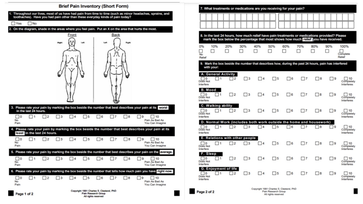
Verbal Rating Scale (VRS)



	% Verbal effective?	% Verbal easy?	% Verbal satisfied?
yes	12.50%	61.11%	11.76%
somewhat	43.75%	22.22%	35.29%
no	43.75%	16.67%	52.94%

VRS Average % "Yes" Overall: 28.46%
VRS Average % "No" Overall: 37.78%

Brief Pain Inventory (BPI)



	% BPI effective?	% BPI easy?	% BPI satisfied?
yes	38.89%	16.67%	23.53%
somewhat	55.56%	72.22%	41.18%
no	5.56%	11.11%	35.29%

BPI Average % "Yes" Overall: 26.36%
BPI Average % "No" Overall: 16.32%

Mankoski Pain Scale (MPS)

0 Pain Free	No medication needed.
1 Very minor annoyance - occasional minor twinges.	No medication needed.
2 Minor annoyance - occasional strong twinges.	No medication needed.
3 Annoying enough to be distracting.	Mild painkillers are effective. (Aspirin, Ibuprofen.)
4 Can be ignored if you are really involved in your work, but still distracting.	Mild painkillers relieve pain for 3-4 hours.
5 Can't be ignored for more than 30 minutes.	Mild painkillers reduce pain for 3-4 hours.
6 Can't be ignored for any length of time, but you can still go to work and participate in social activities.	Stronger painkillers (Codeine, Vicodin) reduce pain for 3-4 hours.
7 Makes it difficult to concentrate, interferes with sleep You can still function with effort.	Stronger painkillers are only partially effective. Strongest painkillers relieve pain (Oxycontin, Morphine)
8 Physical activity severely limited. You can read and converse with effort. Nausea and dizziness set in as factors of pain.	Stronger painkillers are minimally effective. Strongest painkillers reduce pain for 3-4 hours.
9 Unable to speak. Crying out or moaning uncontrollably - near delirium.	Strongest painkillers are only partially effective.
10 Unconscious. Pain makes you pass out.	Strongest painkillers are only partially effective.

	% Mankoski effective?	% Mankoski easy?	% Mankoski satisfied?
yes	64.29%	47.06%	31.25%
somewhat	28.57%	47.06%	56.25%
no	7.14%	5.88%	12.50%

MPS Average % "Yes" Overall: 47.53%
MPS Average % "No" Overall: 8.5%

Scales Selected As "Most Effective" Overall

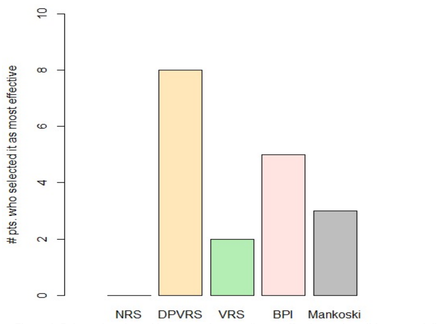


Figure 1. Pain scale selected by respondents as "most effective at describing my pain"

DISCUSSION

Currently in the literature, there is little information available about the preferences of chronic pain patients in pain rating scales. In the qualitative findings of this study, survey respondents living with chronic pain exhibited preference toward pain scales that were perceived to include elements of specificity, ease of use, objectivity, simplicity, comprehensiveness, and ability to communicate the impact of pain on activities of daily living. DVPRS was perceived to incorporate most of these desirable elements.

- DVPRS was most highly rated for ease of use and satisfaction, while it was second most highly rated regarding efficacy.
- The MPS was perceived to communicate the context of pain more effectively.
- The BPI was favored mostly due to its ability to communicate specific location of pain but was most described as somewhat effective, somewhat easy to use, and somewhat satisfying.
- Survey results show that respondents found the VRS to be easy to use, but not effective or satisfying compared to other scales as it received only slightly more favorable responses than the NRS.
- No respondents chose the NRS as their preferred pain rating scale, suggesting this commonly used method of characterizing pain does not meet the needs of most people living with chronic pain. While NRS was generally categorized as easy to use, no patients found it to be effective and respondents were generally unsatisfied.

Several other themes emerged from the collected data. Individual patients were passionate about their preferences and frustrations with current pain rating practices. In their comments, patients repeatedly emphasized the stark differences between acute and chronic pain, and their frustration that the difference does not seem to be highlighted in many of the pain scales. One patient found the VRS "seemed to be designed with acute pain in mind." Another observed that the MPS only "looks at a point in time." Based on our qualitative analysis, several patients emphasized that only asking about acute pain does not allow their provider to have a sufficient picture of how complex and variable their chronic pain can be on a day-to-day basis. This study suggests that patients rely on pain rating scales to communicate their condition to their providers, however their preferences remain absent from current use and best practices. A more robust response pool would be instrumental in making a definitive recommendation; however, it is evident through this study that the patients surveyed are not satisfied with the tools they are being given currently. Only through an understanding of patient preferences with incorporated reliability and validity testing can providers implement the best inventories to support their patients.

CONCLUSION

In the clinical setting, a numerical pain score is routinely collected from patients and is frequently referred to as the "fifth vital sign." Data from our ongoing survey shows that many patients with chronic pain do not like this traditional pain scale with zero out of eighteen participants choosing it as their overall preferred pain scale. Survey respondents have shown a preference for the descriptive pain scales over the traditional NRS and VRS with DVPRS being favored as the preferred overall pain scale noting its specificity, ease, and objectivity.

While our survey is still ongoing with the goal of reaching one hundred participants, we have gained important insights into patient perspectives on these pain scales and hope to better elucidate patient preferences between these surveyed scales when data collection is complete. With this study, we hope to identify the most effective communication tools between patients and providers to improve the overall patient experience and better address their needs. Following completion of this study, we would be interested in surveying physician perspectives to determine the information that most strongly guides treatment plans for chronic pain. Integration of these two perspectives would improve overall communication around pain and ultimately positively impact both the ability to give and receive chronic pain care.

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