

Comparison of Patient Reported Visual Analog Pain to Physician vs Nurse in Operative and Nonoperative Foot and Ankle Setting.

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Statement of Purpose

The purpose of our study was to explore the difference between the VAS score among the surgical and nonsurgical patients when obtained by a nurse and a physician.

Methodology and Hypothesis

Patients were divided into two groups: The first group consisted of 10 patients who presented to the clinic for non-surgical visits; the other 10 presented for surgical consultation related to foot and ankle pathology. A pictorial VAS was used where 0 and 10 indicated "no pain" and the "worst possible pain," respectively. Each patient pointed to his or her current level of pain on the pictogram. A podiatric resident physician and a nurse interviewed each patient and collected information separately. Statistical analysis was performed using chi-square analysis where $p < 0.05$ was statistically significant. We hypothesized that there would be a significant difference in the VAS measures acquired by the physician and the nurse for both the surgical and the nonsurgical groups.

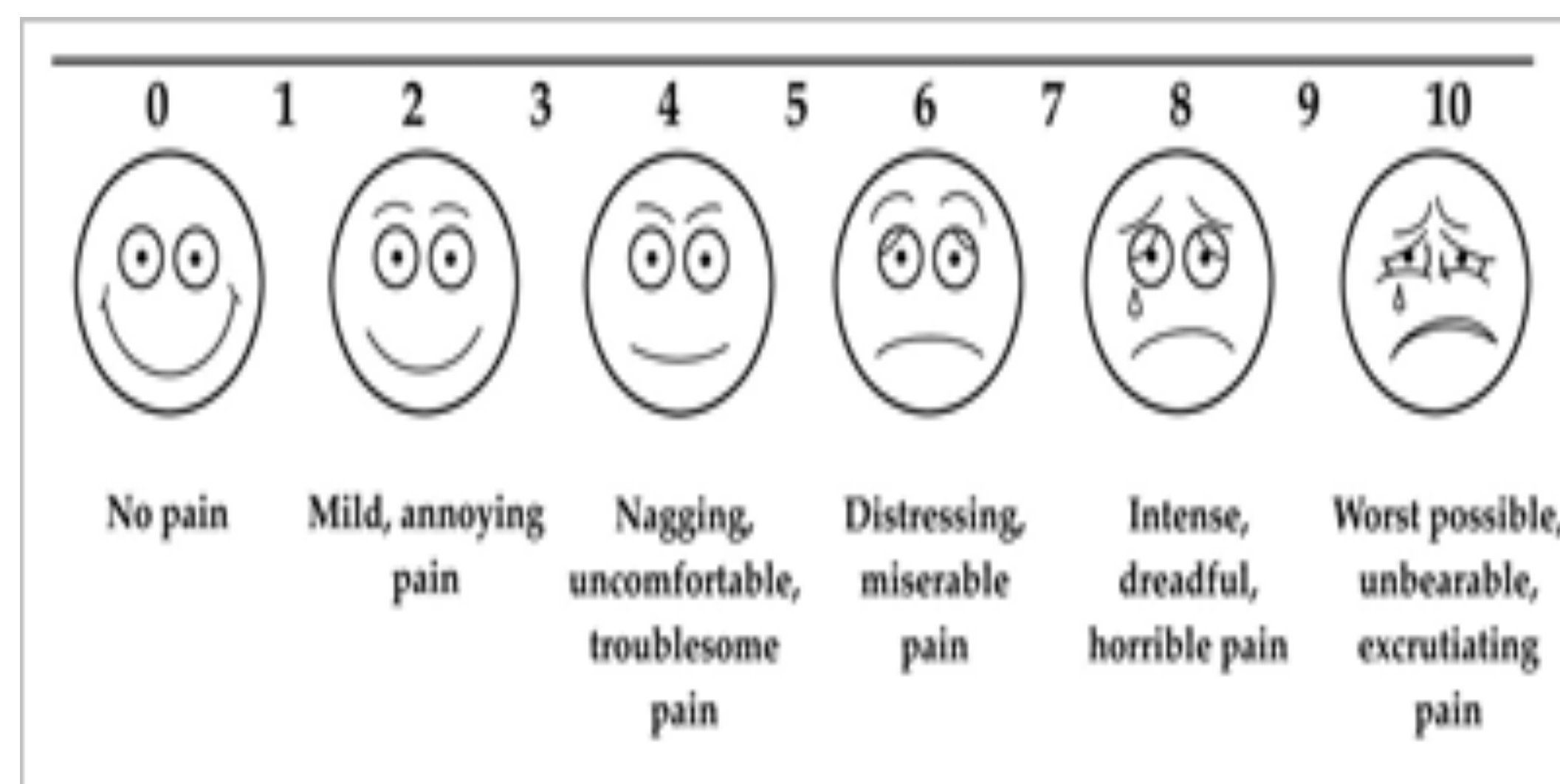


Figure 1: The Visual Analog Scale used during the interview

Procedures

No surgical procedures were performed during the evaluation. Patients may have undergone surgery prior to the evaluation.

Literature Review

The Visual Analogue Scale (VAS) is frequently used to measure the intensity of pain in many clinical settings¹. It also serves as a valuable tool that measures the treatment outcome. However, one study indicates that there is a significant difference when it is obtained by physician vs another healthcare professional¹. Often some patients overestimate the level of pain in the presence of a treating physician¹. At other times, they may underestimate¹. These are some possible reasons why some studies call for the use of other pain measuring scales in conjunction with the VAS to better understand the level of pain. Many repeated use of VAS during routine visits are shown to produce a recall bias in the patients^{2,3}. Such may cause providers to receive the least accurate information that may not be beneficial to assess the treatment efficacy.

Results

Two patient's scores were not included in the study due to incomplete data. Of the remaining 18 patients, the mean age was 55.6 (24- 78). Of these patients, 9 (50%) were female and 9 (50%) were male. The mean BMI was 27.8 (23-35). There were 5 (27.78%) patients with documented current Ibuprofen consumption for chronic pain during the time of the study. The mean difference in the VAS score was 3.9 (obtained by the nurse) and 4.6 (obtained by the physician) among the nonoperative patients. The Mean difference in the VAS scores among patients seeking surgical consult was 3.0 (obtained by the nurse) vs 1.3 (obtained by the physician). The information are graphically represented in figure 2 and figure 3.

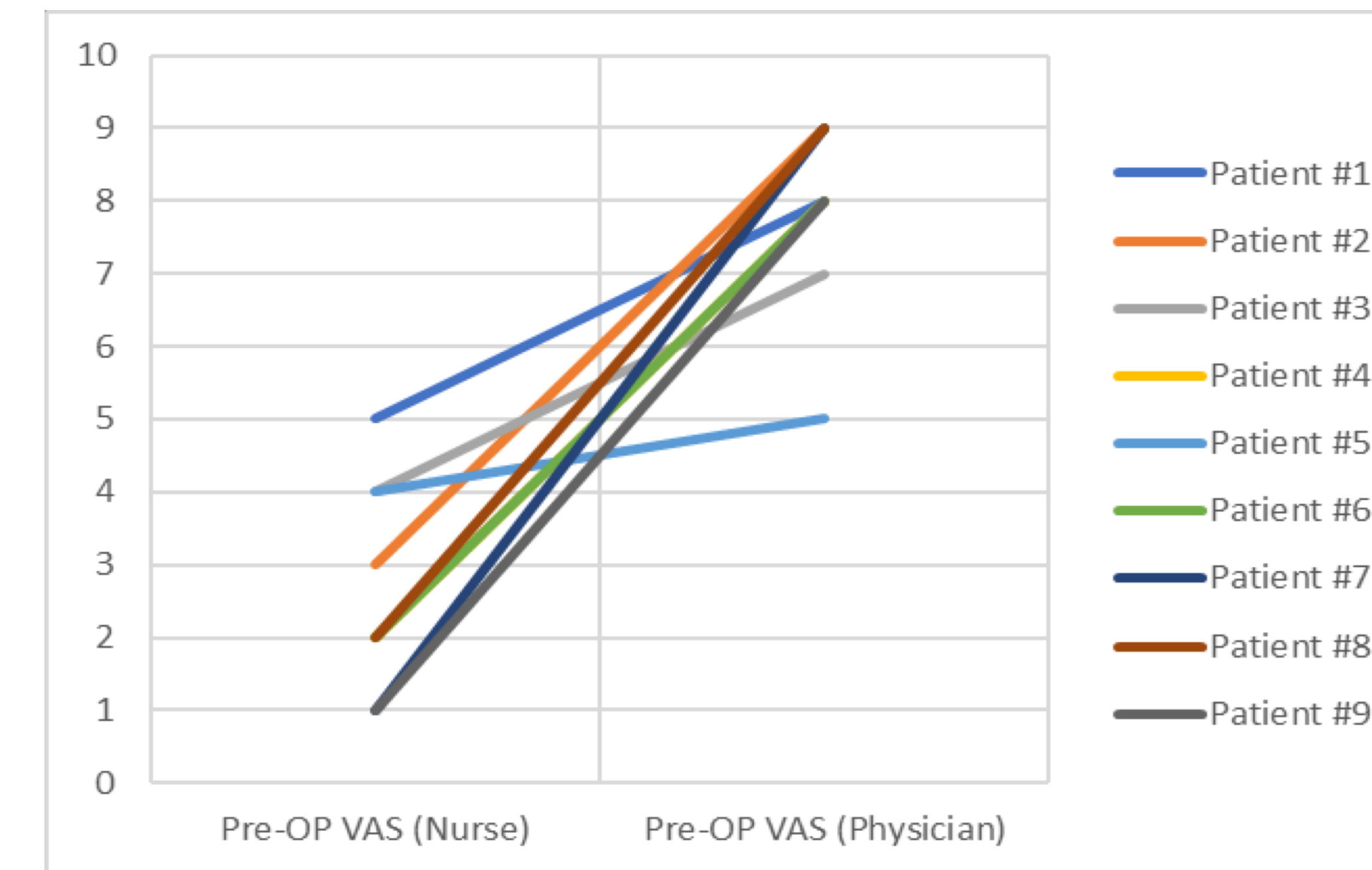


Figure 2: Measurements obtained by both nurse and physician for each of the nine patients who presented for the surgical consults. A statistically significant difference (95% confidence) was noted ($p < .001$).

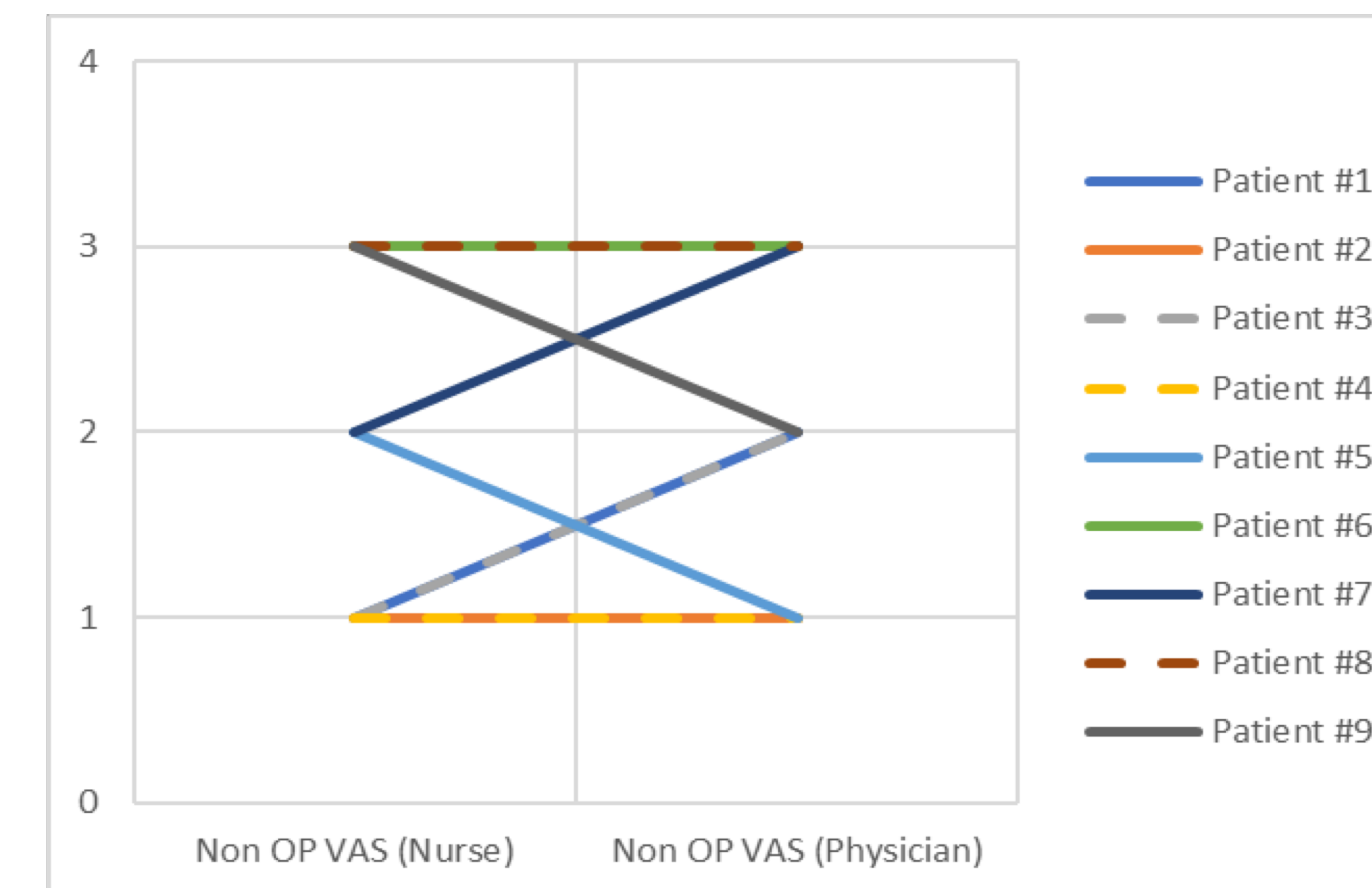


Figure 3. The non surgical patients' measurements statistically significant difference (95% confidence) in the VAS obtained by nurse and physician ($p < .001$).

Analysis and Discussion

The Visual Analogue Scale is a valuable tool in a podiatric clinical setting. The VAS requires little training to administer and score⁶. It was found to be acceptable to patients⁶. In this case study, we found that the patients who presented for surgical consultations claimed that they had far more pain than their non-surgical counterparts. Based on the analysis, we also discovered a significant difference between the measurements obtained by a nurse versus a physician. This series looks to illustrate that there are disparities when VAS is used in a podiatric clinical setting. Further randomized control trials are needed to better understand the reliability.

References

- 1) Johnson, E. W. (2001). Visual Analog Scale (VAS). *American Journal of Physical Medicine & Rehabilitation*, 80(10), 717-719. doi:10.1097/00002060-200110000-00001
- 2) A Comparison Of The Verbal Rating Scale And The Visual Analog Scale For Pain Assessment. (2004). *The Internet Journal of Anesthesiology*, 8(1). doi:10.5580/1a73
- 3) Cohen, I. T. (2004). Using the Visual Analog Scale. *Anesthesiology*, 100(6), 1621. doi:10.1097/00000542-200406000-00046
- 4) Bushnik, T. (2018). Visual Analog Scale. *Encyclopedia of Clinical Neuropsychology*, 3606-3607. doi:10.1007/978-3-319-57111-9_1788
- 5) Wewers, M. E., & Lowe, N. K. (1990). A critical review of visual analogue scales in the measurement of clinical phenomena. *Research in Nursing & Health*, 13(4), 227-236. doi:10.1002/nur.4770130405
- 6) Huskisson, E. (1974). Measurement Of Pain. *The Lancet*, 304(7889), 1127-1131. doi:10.1016/s0140-6736(74)90884-8