Clinical Decision Making in Pain Management: Contributions of Physician and Patient Characteristics to Variations in Practice

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Background

- Although there has been a great deal of focus on treatment of cancer pain, 70% of patients who die of cancer will have unrelieved cancer pain.
- Previous studies have shown that physician and patient characteristics affect the adequacy of cancer pain management.
- To improve assessment and management of pain, it is critical to understand physician characteristics that are associated with optimal pain management.
- This study was designed to describe approaches to pain management by using a series of clinical vignettes to compare the quality of pain management by the types of pain, to investigate differences in care by patient characteristics, and to determine if physician characteristics play a role in physician variability towards pain management.

Methods

- A 4-page survey was designed to assess physician knowledge, attitudes, and prescribing habits for pain management.
- The survey included 9 clinical vignettes to examine physician's management of acute, chronic, and cancer pain, as well as scenarios with varying patient gender, age, and race.
- The survey was distributed through the mail to randomly selected licensed Michigan physicians who provided clinical care. Follow-up surveys and reminder cards were sent to encourage participation.
- Pain management fellows and attending physicians were asked to grade the survey responses for appropriateness, ranging from optimal treatment (i.e. clear improvement in the treatment regimen) to worst treatment (i.e. new treatment inferior to current treatment). Every vignette was also accompanied by the option to refer the patient to a pain specialist.
- An abbreviated non-responder questionnaire was sent to determine reasons for non-participation.

Results

- 368 physicians completed the survey out of 1553 surveys that were successfully distributed.
- 63% of responding physicians were in primary care, while 36% were specialty physicians.
- There was no difference in gender, age, race, or type of practice between responders and those completing the non-responder questionnaire.
- More than 75% of physicians identified their goals for pain relief as "absolute", "complete" or "adequate pain relief without distress", regardless of the pain type.
  - 40% reported this goal for terminally ill patients, 25% for cancer patients, and 5% for chronic pain patients.
  - Identification of complete pain relief as the goal for chronic pain treatment was significantly lower than for other types of pain (p=0.05).
- In the clinical vignettes, responding physicians were most likely to choose the optimal treatment for acute pain after prostatectomy, while they were most likely to choose the worst treatment for acute pain after cesarean section.
- For the clinical vignettes for acute post-operative pain paired by gender (myomectomy for a women compared to prostatectomy for a man), the man was more likely to receive fair or optimal treatment (74% vs. 51%, p<0.001).
For cancer pain, the man was more likely to receive optimal treatment or referral to a pain specialist (81% vs. 59%, p=0.01).

There was no difference in adequacy of treatment in the clinical vignettes paired for ethnicity (sickle cell anemia for a black woman compared to rheumatoid arthritis in a white woman).

For the clinical vignettes pairing patients by age (rheumatoid arthritis in a 35-year-old woman compared to arachnoiditis in a 74-year-old woman), the younger patient was more likely to receive poor or worse treatment while the older woman was more likely to generate a referral to a pain specialist (p=0.03).

Physician goals for pain relief were the best predictor for overall adequacy of pain treatment (p=0.48).

Frequency of treating acute pain was the best predictor of a physician's adequacy in treating acute pain.

**Authors' Conclusions**

- For all vignettes, a large part of the average vignette score could be attributed to the physician's goal for pain relief and his/her frequency in prescribing pain medications.
- Significant discrepancies were seen for physician goals depending on the type of pain, with a lower pain relief goal for chronic pain than for other types of pain.
- The study did not include enough minority or women physicians to determine the impact of physician gender or ethnicity on the pain care they provided.
- Although clinical vignettes were used in this trial, it is recognized that they are not necessarily representative of real-world situations, as many details are omitted in the vignettes, and patients' responses to treatment were not given.
- Overall, physicians provided optimal management for both cancer pain and acute pain.
- Physicians indicated that patients should talk about their pain concerns and they supported non-pharmacologic methods of pain management.
- The frequency of treating pain was associated with the best management of acute pain, while physician education on pain management was only associated with improved pain management in specialty physicians, indicating that educational efforts alone may not be adequate in improving physicians' pain management.
- This study is consistent with other studies in showing that a patient's age and gender may influence the way he/she is treated for pain; other studies have also shown that patient ethnicity plays a role in pain treatment, although this study did not.

**Discussion**

There is significant variability in the management of patients with pain. The current study attempts to address patient and physician characteristics that might be predictive of adequacy of pain management. The primary findings of this study are not surprising: 1) patient age and gender affect pain treatment and 2) the more frequently physicians treat pain, the more likely they are to choose optimal pain treatments. It is important to keep in mind that the use of clinical vignettes does not necessarily reflect real-world situations. One of the most important factors in guiding pain management is patient self-assessment of his/her own pain and pain relief. This information was not available in these vignettes and may have influenced the specific results of this study. Regardless, it is clear that both physician and patient factors play a role in influencing pain management. Improving physicians' understanding of these factors may ultimately lead to improvement in the treatment of pain.