

Women report feeling pain more intensely than men: study

January 23 2012

Women report more-intense pain than men in virtually every disease category, according to Stanford University School of Medicine investigators who mined a huge collection of electronic medical records to establish the broad gender difference to a high level of statistical significance.

Their study, to be published online Jan. 23 in the *Journal of Pain*, suggests that stronger efforts should be made to recruit women subjects in population and clinical studies in order to find out why this gender difference exists.

The study also shows the value of EMR data mining for research purposes. Using a novel database designed especially for research, the Stanford scientists examined more than 160,000 pain scores reported for more than 72,000 [adult patients](#). From these, they extracted cases where disease-associated pain was first reported, and then stratified these findings by disease and gender.

"None of these data were initially collected for research, but this study shows that we can use it in that capacity," said Atul Butte, MD, PhD, the study's senior author.

The [medical literature](#) contains numerous reports indicating that women report more pain than men for one or another particular disease, noted Butte, a professor of systems medicine in pediatrics. "We're certainly not the first to find differences in pain among men and women. But we

focused on [pain intensity](#), whereas most previous studies have looked at prevalence: the percentage of men vs. women with a particular clinical problem who are in pain. To the best of our knowledge, this is the first-ever systematic use of data from electronic medical records to examine pain on this large a scale, or across such a broad range of diseases."

The study's first authors were Butte's graduate student Linda Liu and postdoctoral scholar David Ruau, PhD, who splits his time between Butte's group and that of co-author Martin Angst, MD, professor of anesthesia. David Clark, MD, PhD, a professor of anesthesia, was another co-author.

[Electronic medical records](#) are deployed in about 1-2 percent of hospitals now, but that should approach 100 percent within the next few years as the United States continues to move toward EMRs, Butte said. Thus, large-scale research using clinically collected data will become increasingly feasible.

In this case, the scientists tapped an existing data archive that has been designed specifically for ease of research: the Stanford Translational Research Integrated Database Environment, or STRIDE. Pioneered by the medical school's chief information officer, Henry Lowe, MD (who is also an associate professor of systems medicine in pediatrics and director of Stanford's Center for Clinical Informatics), STRIDE aggregates clinical data on patients cared for at Stanford Hospital & Clinics and Lucile Packard Children's Hospital, making this data searchable for approved research projects.

Butte's team selected only adult records and looked for gender-related differences in pain intensity as reported on 1-to-10 scales, in which a zero stands for "no pain" and 10 for "worst imaginable." Their search algorithm combed through de-identified EMR data for more than 72,000 patients, and came up with more than 160,000 instances, ranging across

some 250 different disease categories, in which a pain score had been reported.

"If someone's reporting that they're in pain, they're probably going to be given medication, which might reduce any subsequently measured pain score," said Butte. To get pain estimates that weren't as confounded by subsequent pain-relief medications or procedures, his group analyzed only the first pain-intensity score reported by a patient per encounter with a hospital-associated health professional.

The search identified 47 separate diagnostic categories for which there were more than 40 pain reports for each gender. The sample included more than 11,000 individual adult patients, of which 56 percent were women and 51 percent of them white. The researchers were able to further analyze these 47 categories by condensing them into 16 disease clusters: "musculoskeletal and connective tissue" (in which the biggest [gender differences](#) in reported pain intensity were observed), "circulatory" and so forth.

"We saw higher pain scores for female patients practically across the board," said Butte. Those reported differences were not only statistically significant, but also clinically significant. "In many cases, the reported difference approached a full point on the 1-to-10 scale. How big is that? A pain-score improvement of one point is what clinical researchers view as indicating that a pain medication is working."

While the overall results tended to confirm previous clinical findings — for example, that female fibromyalgia or migraine patients report more pain than their male counterparts — the search also unearthed previously unreported gender differences in pain intensity for particular diseases, for example acute sinusitis and "cervical spine disorders," more commonly known as neck pain.

The study's results come with a few caveats. First, the investigators made the assumption that patients' pain hadn't already been treated—for example, that they hadn't already self-medicated with over-the-counter painkillers — by the time they showed up in the emergency room, doctor's office or neighborhood health clinic (or, equivalently, that the men and women were equally likely to have done so).

Other possible confounders include the setting in which pain was reported, Butte said. "Will an 18-year-old male report the same pain intensity with or without his mom present, or in the presence of a male vs. a female nurse? We can't be sure." But the sheer size of the study probably washes these concerns out at least to some extent, he said.

The third caveat is perhaps the most controversial. "It's still not clear if women actually feel more pain than men do," said Butte. "But they're certainly reporting more pain than men do. We don't know why. But it's not just a few diseases here and there, it's a bunch of them — in fact, it may well turn out to be all of them. No matter what the disease, women appear to report more-intense levels of pain than men do."

To get to the bottom of this, Butte's team plans to search EMRs to see if they can find some objective measurement — an already commonly measured blood-test variable, for instance — that correlates highly with reported pain. "We want to find a biomarker for [pain](#)," he said.

Provided by Stanford University Medical Center

Citation: Women report feeling pain more intensely than men: study (2012, January 23) retrieved 18 April 2024 from <https://medicalxpress.com/news/2012-01-women-pain-intensely-men.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is

provided for information purposes only.