Not Feeling Each Other's Pain

Men and Women Hurt Differently -- and Some of The Difference May Really Be in Their Heads

By Francesca Lunzer Kritz
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When I get a particularly nasty headache, I race for the ibuprofen bottle and down three 200-milligram tablets (a dose long ago approved by my doctor) and get on with whatever I was doing, comforted by the knowledge that I've taken action to dull the pain and that I will feel better soon. When my husband has a headache, he delays doing anything -- including telling me, for whatever comfort that might bring -- and succumbs to the ibuprofen (taking just two tablets) only when the pain is so severe he can't do much else.

Some might say our headache techniques are a manifestation of our quirky personalities -- and there may be some truth in that. But research presented at a University of Maryland Dental School conference this fall suggests my XX and my husband's XY chromosomes might also be partly to blame. While sex differences alone may not account for the variability of individual pain response, said keynote speaker Karen Berkley, a professor of neuroscience at Florida State University, growing research suggests that men's and women's nervous systems process pain information differently and act on it differently.

"Sex matters in pain, and a better understanding of this is going to lead to less pain in the world," Berkley said.

That could be because it might help clinicians fine-tune pain treatments as need grows. A new report by the National Center for Health Statistics (NCHS) shows that, as the U.S. population ages, patient complaints of pain and use of painkillers are rising, particularly in white women older than 45. Researchers are still trying to learn how much of the rise is sex-related and how much is tied instead to such factors as age, personality and overall health.

The dental school conference was not the first to consider the role of sex in pain perception. In 1998 the National Institutes of Health convened a panel on the subject; it concluded, based on early research, that women experience more pain than men, that women discuss pain more frequently than men, and that pain treatment that is effective for one sex may not work as well for the other. A cascade of research followed. Among the better-known studies:

· A 2003 study in the journal Circulation found that women, unlike men, are more likely to experience achiness or tightness, rather than pain, during a heart attack, and therefore don't necessarily seek prompt treatment.

· A 2003 study in the journal Gastroenterology found that areas of male and female brains reacted differently to pain, with the female brain showing greater activity in the emotion-based centers called the limbic regions, and the male brains showing greater activity in the analytic or cognitive centers.

· A review article on the male brain, published in November in the Journal of the American Medical Association, cited several published studies showing anatomical differences between male and female brains that could account for differences in experiencing pain.

But the goal at the University of Maryland meeting was not just to update research. The idea was also to devise guidelines to help standardize future research, says Joel Greenspan, a professor in the department of biomedical sciences at the dental school and a chairman of the pain conference. Without this, Greenspan says, it will be harder to compare findings or apply them in clinical practice.

For example, since studies show that men's tendency to delay pain treatment increases their risk during a heart attack, should pain scales be sex-specific to ensure more-prompt care? Or should women in a clinical trial of pain medication all start painkillers on the same day of their menstrual cycle so that researchers can factor in how estrogen might relieve or exacerbate pain -- and whether women need different doses of pain relievers than men?

Answers to these and other questions are expected to be published in a pain journal next year. For now, says Lee Ann Rhodes, an internal medicine specialist and head of the pain center at the Washington Hospital Center, there is not enough evidence to steer patients toward different pain relief options at the start of treatment on the basis of sex alone.

Clinicians are increasingly aware, however, that one person's pain reliever may not do the job for another.

Take Erica Gerber, 36, of Richmond, whose rheumatoid arthritis, a joint disease, was diagnosed four years ago. Gerber, who has since given up her job as a property manager because of pain and mobility problems, had assumed that she would get relief from the same arthritis drug that helps her father, 58. Not only did the drug not work for Gerber, but it temporarily reduced her liver function and caused hair loss -- side effects her father didn't have. Gerber now takes a different arthritis drug, which doesn't cause the same side effects but also doesn't relieve her pain as well as her dad's medication does for him.

Identifying pain treatments that work effectively for both men and women is crucial, experts say, as pain reports increase. Last month's NCHS annual report (Health, United States, 2006) was the first to include a special section on pain. The survey found that the use of narcotic drugs for pain relief had increased 30 percent since 1988.

One in four adults surveyed for the report said they had experienced a day-long bout of pain in the past month, and one in 10 said the pain had lasted a year or more. Women were more likely to report pain than men, and white women older than 45 were more likely than any other group to report pain. Chief among the sources of pain among women: low back pain, migraines and other severe headaches, and joint pain including arthritis. Among those 18 and older reporting back pain, there were a higher percentage of women than men in every age group, racial and ethnic group and economic group.

Margaret McCarthy, a professor of psychiatry and physiology at the University of Maryland School of Medicine, speculates that hormones, in particular estrogen, may be tied to more severe and frequent pain for women. Other researchers have theorized that estrogen has a protective role, which might help explain why older women, in whom estrogen levels have dropped, appear more prone to pain. Or their pain could be just age-related. For now, though, these are just theories.

Sherry Marts, vice president of scientific affairs at the Society for Women's Health Research, a nonprofit group based in Washington, says she views identifying pain treatments specific to women as one more piece "in our current move toward individualized medicine, with a goal toward giving the right drug to the right person at the right time." Marts says she hopes future research can include not just a better understanding of sex differences in pain perception but of different pain scales, so that women's efforts to gauge their pain isn't matched to men's -- something that has been known to result in the under-treatment of women for pain.

Still unclear is whether women's emotions affect their perception of pain more than men's do. In a study at the University of Bath in England last year, male and female volunteers put their arms in warm water for two minutes, and then in icy water for another two minutes.
According to the researchers, the women reported feeling the pain of the cold water sooner than the men and weren't able to endure the pain as long as the men could. When the groups were asked to think about the physical pain, rather than their emotions associated with the pain they were experiencing, the pain decreased for the men, but not for the women.

The finding, according to Ed Keogh, a psychologist from the Pain Management Unit at the University of Bath, suggests women seeking pain relief may benefit from coping strategies in addition to painkillers.

As research progresses, experts caution against foregone conclusions.

"It's clear that when pain gets very extreme, many of the sex differences disappear," Berkley says. "But that's important, too, because we don't want to get so caught up in the idea of differences in pain that we look to treat differently when we don't need to."

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