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Unequal outcomes

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A Hopkins surgeon focuses his research on finding out why certain groups of patients fare more poorly after trauma.

By Jamie Manfuso

When a gunshot victim or a badly injured motorcyclist arrives in an emergency department, there's an expectation that the patient will get the best trauma care that the hospital can provide. Equally, there is the belief that this treatment will come regardless of whether the patient is insured or uninsured, white or African-American, a hardened criminal or law-abiding citizen.

So why is Hopkins trauma surgeon Adil Haider devoting his research to seeing if certain groups of seriously injured patients in the United States have poorer outcomes than others?

In their research, Haider and colleagues have discovered that African-Americans and Hispanics, as well as the uninsured, are more likely to die after being struck by motor vehicles, even after the severity of the injury is taken into account. They have found that black victims of motorcycle crashes are one-and-a-half times more likely to die from their injuries than similarly injured whites, although many more of the black victims were wearing helmets. They learned that black children with traumatic brain injury have worse clinical outcomes and more difficulty with speech, walking and/or feeding than similarly injured white children.

Haider's research has raised eyebrows—and sometimes even the ire of fellow surgeons—by asking whether trauma care truly is untouched, as many believe, by the disparities that plague other parts of medicine. He acknowledges that his area of research is in its infancy and that there's no obvious cause for the results he's found. "Why would you expect trauma care to have disparities to begin with?" says the assistant professor. "There is near-universal access to 911. We don't check insurance when you come into the ER. You can just come right in, so trauma care should be immune to this."

Still, he's made a strong case that differences do exist and that the health care field needs to figure out what's at the bottom of them.

"I've not said that we knowingly treat patients differently," he says. "But we do need to understand if these disparities are real and where they come from."

Surprising results

Haider is blazing a trail in a new realm of health disparities research. Much of the work in this field has looked at outcomes where it seems more obvious that differences would crop up.

One can understand, for instance, how patients without insurance would have worse management of diabetes than those with coverage. One could also imagine how cultural differences might creep in during a clinic visit when a physician and patient are of different backgrounds.

Internist Lisa Cooper, a health disparities researcher who has studied those patient-provider dynamics, says she was somewhat surprised when Haider began to uncover differences in trauma outcomes, although previous research done outside of Hopkins has raised that possibility. One such study found that patients with long-bone fractures were less likely to get pain medication, or they received lower doses of the medication, if they belonged to a racial minority. Another showed that minority patients with clear indications of heart attack were less likely to receive treatments known to be effective for them.

In those cases, there may be cultural differences that affect the way the patient and the provider communicate about the heart attack, says Cooper, a mentor of Haider whose work in disparities won her a MacArthur Foundation “genius” grant in 2007. “But most of the time, when someone comes in with severe trauma, the deciding factors are more objective than telling you that they have a pain in their chest. So in that way, [Haider’s research] gave me pause.”

Ellen MacKenzie, chair of health policy and management at the Johns Hopkins Bloomberg School of Public Health, says she was doubtful several years ago when Haider expressed his interest in looking at trauma disparities. “I don’t think you’re going to find much there,” she recalls saying. She found his later discoveries to be fascinating.

“I admire his courage to pursue this area,” says Mac-Kenzie, also an adjunct faculty member in the Department of Emergency Medicine. “He’s charting new territory, but he’s gaining believability. I’ve heard some of the more senior trauma surgeons saying that this is really interesting and important work. They say that if they’re doing something subconsciously that they can fix, they want to know that.”

Still, some remain unconvinced that true differences exist or that, if they do, there’s anything to be done to fix them. They argue that Haider’s research can’t possibly account for all of the factors that determine how a patient will fare after experiencing trauma.

Following one of Haider’s presentations at a national conference of surgeons, a well-known leader in the field complemented him on his talk, then added, “I just wish you weren’t wasting your time on something that’s not real.”

Haider’s response: “I hope you’re right, but I think we need to find out.”

Looking inward

As he tries to piece together the trauma disparities puzzle, Haider isn’t past scrutinizing his own attitudes and actions.

He recalls one of his first cases as an attending trauma surgeon at Hopkins. It was a teenage girl who showed up in the Emergency Department with a gunshot wound to the abdomen. She was rushed to the operating room, where she underwent surgery for injuries to multiple organs and major blood vessels—procedures that required 37 units of blood. Despite going into cardiac arrest on the OR table, she survived and was recovering. But after 17 days and several other surgeries, she began refusing treatment.

Her caregivers, including Haider, were unhappy. Their attitude was, *She doesn't care that we did so much for her.*

"But all of us collectively—and I most importantly—misspoke," remarks Haider. The reason for the girl's behavior was that she was suffering from extreme anxiety. She had actually been shot when a suspected criminal took her hostage during a standoff with police. Making matters worse, that man was being treated in the same ICU where she stayed, creating extreme tension.

"We weren't giving her the special care that she needed," says Haider. "And that's not because we're biased against her. That's because we've grown accustomed to a different kind of gunshot victim in the ED. She came from a community where people get trauma all the time, and we were treating her like someone who was used to this. But she wasn't."

After sitting with the girl for a while, he realized that he and the care team had missed her post-traumatic anxiety and symptoms of fear. "She almost felt like we were going to hurt her every time we walked into her room," he says. They arranged for a psychiatrist to talk with the girl, and she agreed to continue treatment and counseling.

Reflecting on the event, Haider says he doesn't believe that physicians intentionally treat some patients preferentially. "But I wonder if we may subconsciously treat people a little differently."

Whether that is the case is one of the questions being asked by Haider, Cooper and their colleagues in this field, as they study how patients and physicians interact.

Other explanations

Providers' attitudes are but one of several possible explanations for the gaps in patient outcomes that Haider and colleagues have uncovered. Public policies, social factors and even biological causes may also provide clues.

One factor may be the quality of hospitals in which some trauma patients receive care. At a national conference of surgeons in mid-February, Haider presented research showing that after an injury, patients treated at hospitals with high proportions of minority trauma had higher rates of death compared with similarly injured patients who were treated at hospitals with predominantly white patients. At the same time, within a given category of hospital—predominantly majority, mixed or predominantly minority—white patients and minority patients did not experience different outcomes.

One possible explanation for these findings is that predominantly minority hospitals, because they treat high numbers of uninsured patients, may not have the financial wherewithal to invest in improving the quality of care.

"If we can focus on these hospitals and help them out, we may be able to decrease disparities overall," Haider says.

Another study—showing that adolescent girls have lower mortality than adolescent boys following traumatic shock—leads to other ideas about the source of disparities. This finding, in combination with other studies finding no difference in prepubescent boys and girls, lends credence to a theory that hormonal differences may play a role in the outcomes.

Cooper says the factors influencing outcomes are so complex that they may not be totally understood from a national database of trauma data—one of Haider's main research tools—and some high-wire statistical analyses. For instance, two patients of different racial or ethnic groups may both appear to be healthy on the face of things. But if one of those people eats poorly because

she lives in a neighborhood with few options for healthy foods, she may be prone to have a worse response to trauma than the other. Other hard-to-measure dynamics may also have an impact.

“We know that exposure to financial stress and discrimination actually causes biological changes that cause poor health,” Cooper says. “To what extent do these kinds of factors set people up not to respond well to trauma? It’s hard to know.”