

Conversation With: UTSW's Madhukar Trivedi Talks The Potential of Depression Research

CONVERSATION WITH 10/14/2016 | by Matt Goodman



Dr. Madhukar Trivedi, who is in charge of depression research at UT Southwestern Medical Center. (Photo Credit: Southwestern Medical Foundation)

Often, in covering healthcare, researchers speak of seeing an inflection point in the condition they've been seeking to understand. The public rallies around the topic, agrees that figuring out how to treat it or eradicate it is of the utmost importance, and the money and resources flood in to fund large-scale studies. The opportunities attract other researchers, and suddenly there's a complex web of the industry's smartest minds coalescing over the challenge to better understand something

that ails society. You've seen this with heart disease and with cancer. Most recently, we've seen it with degenerative brain diseases like Alzheimer's.

And now, that inflection point is coming for depression. That's according to Dr. Madhukar Trivedi, the Julie K. Hersh Chair for Depression Research and Clinical Care at UT Southwestern. Trivedi is heading up the Center for Depression Research at the Peter O'Donnell Jr. Brain Institute. The center got its start from a \$5 million gift, which helps diversify the funding sources. Trivedi previously paid for depression research with grants from the National Institutes of Health and other public sources—and those have specific applications that Trivedi and his fellow researchers must follow. Not to mention, they expire.

Trivedi recently discussed this at a private event held by the Cary Council, a young professional group tied to the Southwestern Medical Foundation. He touched on these aspects and explored the potential of treating depression as a brain disease, complete with biomarkers that can pinpoint depression in the brain. According to the World Health Organization, more than 121 million people worldwide suffer from depression. And unlike heart disease or Alzheimer's, it's something that arrives early in life and remains, making the stakes that much higher. The WHO estimates that it costs the global economy \$1 trillion each year.

And so D Healthcare Daily got Trivedi on the phone to go a bit deeper about the importance of his research. This interview has been edited for length and content.

D Healthcare Daily: You say it's important that depression be something that's recognized as a public health crisis, that we all need to rally to help figure this out.

Trivedi: This is a very common problem, so it affects a lot of people; both people who go through depression, anxiety, bi-polar disorder, but also their families and their employers. They also feel the effects from it. In the academic arena, the scientific arena, we can continue to do the work, and we will. But there needs to be a large focus like there's been around other major medical issues like cancer, Alzheimer's, and HIV, where the community became extremely involved.

We end up creating an environment where there's not as much acceptance of people who are suffering from it. The stigma and lack of information around these things become a big hurdle so people don't get diagnosed and those that do don't follow through with their treatment because the barriers of family support and societal support. So the more we do to make it a collective goal rather than the goal of some researchers is the only way to make a big impact. We are at an inflection point with this because the capacity to understand brain function is rapidly advancing. We have better tools to study the brain, we also have better understanding on where we

should be focusing that attention on, and I think that if we as a whole community really take this on, then we will get to a point where we don't have to see the losses.

DHCD: The Center for Depression Research was funded last year with a \$5 million gift from the Hersh Foundation. What did depression research at UT Southwestern look like before the dedicated center entered into the equation?

Trivedi: We've been working on depression research for a long time. At the risk of sounding immodest, we've done large trials and treatment studies to look at pathways to creating evidence for how best people should be treated for depression. We did a large trial called the Star D trial, which is still the largest (depression) trial ever done with funding by the NIH. We did another looking at biomarkers, biological functions in the body, so we can start characterizing people's depression biologically. That was also funded by NIH. That work has been very expansive, but a lot of work was already taking place. I think that the gift from the Hersh Foundation, and also the commitment, adds to all that, it allows us to now expand.

NIH grants are very prestigious and we get them all the time, but they are still time limited. They're four or five year grants. What the center is now taking on is the task of really identifying people with depression, and we also have a large project identifying kids who are "at risk" based on their family histories. We're following them for a long time to be able to pursue the paths of developing lab tests, so we can have a test we can use so we can diagnose and determine treatments for patients. That investment in long term planning is something where these gifts can help us.

DHCD: You mentioned being at an inflection point. This seems like degenerative brain disease, where more resources are coming in for the research.

Trivedi: Absolutely. I think that's a very good, apt way to describe it. We're getting to where heart disease was 30 years back or cancer was 20 years back and things like Alzheimer's and Parkinson's Disease was, so this is similar to that. We now have much better tools and better understanding. People don't argue, or at least most people don't argue anymore, that depression is a brain disease. So we are now doing very sophisticated brain imaging at UT Southwestern to subtype people with depression and how it relates to your brain circuits. We are beginning to define depression not by just symptoms but the neurocircuit that is not functioning well. What that does is two things: it allows us to have evidence of this function that a person is experiencing related to brain function, and we can focus on these circuits and learn how we can improve their function.

DHCD: So I want you to make a business argument for why it's important to get to the bottom of how to best treat depression.

Trivedi: The World Health Organization has been talking about this for the last five to 10 years. Depression will become the world's leading cause of health related disability by 2030. It will exact a cost from society larger than all of the other medical illnesses, in fact larger than heart disease and cancer combined, according to the health economists that look at this. But at a granular level, when a patient has depression we always worry about them being absent from work.

But more importantly, we published a very big paper last month showing it's not the absenteeism, but it is also presenteeism. We asked patients who were in our study to tell us, when you are not at your best at work. They say during the period of the depression that at least 4 to 6 hours of their work per week they are not functioning. This is based on self-reports. So the cost in terms of societal costs, granularly costs in terms of the patient and their employer, are huge, and that can be quantifiable.

And then obviously there's the cost to the person themselves, their self-esteem, their spouses and their kids; it's just huge. One important part to remember when we talk medical illnesses, often the culture and the news media understandably focuses on things like diabetes, hypertension, heart disease, Alzheimers, and they're all diseases of the middle age. In depression, half the people with depression will have their first episode before the age of 30. So they are really going to spend a fairly expansive period of their lives having the illnesses compared to someone who develops Alzheimer's. So by the sheer amount of time someone goes through this is longer so the impact of costs is larger.