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## Women & Mental Health: Taking a Targeted Treatment Approach

Dr. Wilner:

You're listening to *NeuroFrontiers* on ReachMD. I'm your host, Dr. Andrew Wilner, and I recently spoke with Dr. Maheen Mausoo Adamson, Clinical Associate Professor of Neurosurgery at Stanford School of Medicine and the Clinical Research Director for Rehabilitation Services at the Veterans Administration Palo Alto. Here's Dr. Adamson now, discussing her research exploring a more targeted approach to treating mental health disorders in women.

Dr. Adamson:

I actually did a survey last year during the first month of quarantine from March to April and it was an international survey that looked at perceived stress and we did it in five languages and we did it in eleven countries and we got some really good data, we published it. The population that came out to be highly stressed in that international survey was young women. They seemed to have a lot more stress than males of the same age and this is eleven countries across the world and that's a civilian sample and there may be veterans in it, we didn't ask that question 'cause it was an anonymous survey. But I think it's important enough that the VA and Department of Defense as well as the Institute of Medicine have really recommended taking steps to reduce this health and mental health and quality of life disparities.

Now one thing that's really important in mental health, there's a ton of treatments available right? And the treatments could be from pharmacological treatments versus noninvasive treatment such as biofeedback, cognitive rehab, and what I do, which is brain stimulation. So another word for brain stimulation is neuromodulation and one of the techniques is repetitive transcranial magnetic stimulation, which is using electromagnets and certain frequencies to either inhibit or excite neurons in the brain. The protocol is FDA approved for major depressive disorder. It's used widely in the civilian world and it's also being used in the VA. And we already know that there are sex-related variances in treatment. We've known that from pharmacology, and we also know that in non-invasive treatments.

What's really important is when you're actually using these treatments in the clinic and you're actually treating a women versus a man, you have to tailor these treatments for mental health in women because you have to look at their symptom profile and you have to look at their brain architecture, and also social determinants of health, which includes income, zip code, obviously sex and education and age. We did a study which was published last year in which we looked at the number of studies that report three types of brain stimulation. We looked at deep-brain stimulation, we looked at electro-convulsive therapy, and we looked at repetitive transcranial magnetic stimulation. In that review, we looked at 54 studies and we searched to see how many of these studies reported sex differences. Out of the 54 studies, only 7 studies reported sex differences. Reporting sex differences in table 1 of your research paper where you just divide the group into male and female is not enough. What's important is to actually look at men and women and their treatment profiles and actually elaborate on what exactly do you recommend in rehab?

One reason it's important is because what they have shown is that the excitatory, inhibitory, map that you're changing with any kind of stimulation, can be actually dependent on the menstrual cycle. So there's an example from epilepsy that women who have epilepsy, their cortical excitability is dependent on the menstrual cycle phase, as opposed to women who don't have epilepsy. So menstrual cycle can actually affect when you are brain stimulating. And that doesn't mean that this is the only thing you have to pay attention to, but it should be involved when you're treating people with any kind of mental health disorder. These inclusive variables really do help us tailor treatments and I think you will have better outcome if you put all these factors in when you're starting treatment.

Dr. Wilner:

That was Dr. Maheen Mausoo Adamson, discussing her research exploring a more targeted approach to treating mental health

disorders in women. For ReachMD, I'm Dr. Andrew Wilner. To hear my full conversation with Dr. Adamson and to find other programs in our series, visit [ReachMD.com/NeuroFrontiers](https://ReachMD.com/NeuroFrontiers), where you can be part of the knowledge. Thanks for listening!