Is sexual addiction the real deal?

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Controversy exists over what some mental health experts call "hypersexuality," or sexual "addiction." Namely, is it a mental disorder at all, or something else? It failed to make the cut in the recently updated Diagnostic and Statistical Manual of Mental Disorders, or DSM-5, considered the bible for diagnosing mental disorders. Yet sex addiction has been blamed for ruining relationships, lives and careers.

Now, for the first time, UCLA researchers have measured how the brain behaves in so-called hypersexual people who have problems regulating their viewing of sexual images. The study found that the brain response of these individuals to sexual images was not related in any way to the severity of their hypersexuality but was instead tied only to their level of sexual desire.

In other words, hypersexuality did not appear to explain brain differences in sexual response any more than simply having a high libido, said senior author Nicole Prause, a researcher in the department of psychiatry at the Semel Institute for Neuroscience and Human Behavior at UCLA.

"Potentially, this is an important finding," Prause said. "It is the first time scientists have studied the brain responses specifically of people who identify as having hypersexual problems."

The study appears in the current online edition of the journal *Socioaffective Neuroscience and Psychology*.

A diagnosis of hypersexuality or sexual addiction is typically associated with people who have sexual urges that feel out of control, who engage frequently in sexual behavior, who have suffered consequences such as divorce or economic ruin as a result of their behaviors, and who have a poor ability to reduce those behaviors.

But, said Prause and her colleagues, such symptoms are not necessarily representative of an addiction—in fact, non-pathological, high sexual desire could also explain this cluster of problems.

One way to tease out the difference is to measure the brain's response to sexual-image stimuli in individuals who acknowledge having sexual problems. If they indeed suffer from hypersexuality, or sexual addiction, their brain response to visual sexual stimuli could be expected be higher, in much the same way that the brains of cocaine addicts have been shown to react to images of the drug in other studies.

The study involved 52 volunteers: 39 men and 13 women, ranging in age from 18 to 39, who reported having problems controlling their viewing of sexual images. They first filled out four questionnaires covering various topics, including sexual behaviors, sexual desire, sexual compulsions, and the possible negative cognitive and behavioral outcomes of sexual behavior. Participants had scores comparable to individuals seeking help for hypersexual problems.

While viewing the images, the volunteers were monitored using electroencephalography (EEG), a non-invasive technique that measures brain waves, the electrical activity generated by neurons when they communicate with each other. Specifically, the researchers measured event-related potentials, brain responses that are the direct result of a specific cognitive event.

"The volunteers were shown a set of photographs that were carefully

chosen to evoke pleasant or unpleasant feelings," Prause said. "The pictures included images of dismembered bodies, people preparing food, people skiing—and, of course, sex. Some of the sexual images were romantic images, while others showed explicit intercourse between one man and one woman."

The researchers were most interested in the response of the brain about 300 milliseconds after each picture appeared, commonly called the "P300" response. This basic measure has been used in hundreds of neuroscience studies internationally, including studies of addiction and impulsivity, Prause said. The P300 response is higher when a person notices something new or especially interesting to them.

The researchers expected that P300 responses to the sexual images would correspond to a person's sexual desire level, as shown in previous studies. But they further predicted that P300 responses would relate to measures of hypersexuality. That is, in those whose problem regulating their viewing of sexual images could be characterized as an "addiction," the P300 reaction to sexual images could be expected to spike.

Instead, the researchers found that the P300 response was not related to hypersexual measurements at all; there were no spikes or decreases tied to the severity of participants' hypersexuality. So while there has been much speculation about the effect of sexual addiction or hypersexuality in the brain, the study provided no evidence to support any difference, Prause said.

"The brain's response to sexual pictures was not predicted by any of the three questionnaire measures of hypersexuality," she said. "Brain response was only related to the measure of sexual desire. In other words, hypersexuality does not appear to explain brain responses to sexual images any more than just having a high libido."

But debate continues over whether sex addiction is indeed an addiction. A study published in 2012 by Prause's colleague Rory Reid, a UCLA assistant professor of psychiatry, supported the reliability of the proposed DSM-5 diagnostic criteria for hypersexual disorder. However, Prause notes, that study was not focused on the validity of sex addiction or impulsivity, and did not use any biophysiological data in the analysis.

"If our study can be replicated," she said, "these findings would represent a major challenge to existing theories of a sex 'addiction.' "

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