Headaches Linked to Mental Disorders

A new study published in the Journal of Pain reported an association between a broad range of preexisting mental disorders and subsequent onset of severe or frequent headaches.

Several studies have shown that headaches are linked with emotional problems and occur twice as often in individuals with depressive/anxiety disorders. However, it is not yet clear if the relationship between emotional problems and headaches is confined to depression and anxiety or includes a broader spectrum of mental illnesses.

A multinational team of researchers evaluated global data from 19 World Health Organization World Mental Health Surveys in different nations involving more than 50,000 participants. They investigated the association between preexisting mood, anxiety, impulse control, and substance use disorders with subsequent onset of frequent or severe headaches.

Results showed that after adjusting for influences of sex, age, and mental disorder comorbidity, a broad range of mental disorders increased the likelihood of developing severe and frequent headaches by 40%. The authors also found that respondents (<21 years old) with early-onset preexisting mental disorders had a 21% higher risk for developing headaches than those with later onset mental disorders.

Emotion-Recognition Treatment for Children With Autism Spectrum Disorder

Researchers at the Institute for Autism Research at Canisius College found a unique emotion-recognition treatment highly effective for children with high-functioning autism spectrum disorder (HFASD). Findings from the clinical trial, published in the Journal of Autism and Developmental Disorders, provide strong support for the effectiveness of the enhanced treatment.

The research team developed a treatment that included Mind Reading computer instruction, repeated practice opportunities for emotion recognition and expression between the children and clinical staff, and reinforcement for accurately recognizing and expressing emotions in facial expressions. Treatment was administered during 24 sessions (two 90-minute sessions per week) over 12 weeks. A total of 43 children (ages 7 to 12) with HFASD participated; 22 were randomly assigned to receive treatment and 21 were assigned to a wait-list control condition.

Psychotic Experiences Related to Suicide Lead to New Suicide Prevention Strategies

A study published in JAMA Psychiatry examined the prevalence of suicidal ideation and suicide attempts among adults who reported psychotic experiences. The respondents, drawn from a large national sample, were found to be more likely to report concurrent ideation and attempts than adults without psychotic experiences.

The study examined the association between 12-month suicidality and psychotic experiences using cross-sectional survey data drawn from a large, general population-based sample of U.S. households identified through the Collaborative Psychiatric Epidemiology Surveys (2001-2003); it included 11,716 individuals who were 18 or older and used an oversampling design of racial/ethnic minority groups intended to make the findings applicable to a broad demographic.

The researchers found that assessment among individuals with suicidal ideation has potential clinical and public health use in reducing the prevalence of attempts, particularly attempts with intent to die. However, depressive, anxiety, and substance use disorders did not readily identify those at risk for attempts among respondents with suicidal ideation.


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Children in the treatment group demonstrated significantly better emotion-recognition skills and were rated as significantly better at facial-
emotion recognition and expression by their parents compared to children in the control group. Children in the treatment group also had significantly lower parent ratings of autism symptoms compared to the control children. Follow-up ratings collected 2 to 3 months after treatment indicated that the significant gains in emotion recognition and expression and the reduction in autism symptoms were maintained.

This is the first randomized trial of the Mind Reading computer program for children with HFASD, and results suggest that the software can be especially effective when additional treatment elements, including repeated real-life practice opportunities and reinforcement, are included.


**Depression Prevents Ability to “Shake It Off”**

The pain of social rejection lasts longer for individuals with untreated depression; their brain cells release less of a natural pain- and stress-reducing chemical (i.e., natural opioids). Findings published in Molecular Psychiatry examined depressed and non-depressed individuals using specialized brain-scanning technology and a simulated online dating scenario.

The research used an imaging technique (i.e., positron emission tomography [PET]). The depressed individuals met criteria for major depressive disorder and none took medication for the condition. Before having their brains scanned, the 17 depressed and 18 non-depressed participants viewed photos and profiles of other adults. Each participant selected profiles of individuals they were most interested in romantically.

During the brain scan, participants were informed that the individuals they found attractive were not interested in them. PET scans made during these moments of rejection showed the amount and location of opioid release, measured by looking at the availability of mu-opioid receptors on brain cells. The depressed participants showed reduced opioid release in brain regions regulating stress, mood, and motivation.

When participants were informed that their choices liked them, depressed and non-depressed individuals reported feeling happy and accepted. However, the positive feeling in depressed individuals disappeared quickly after the period of social


**Using Belief to Treat Addiction**

Identical cigarettes led to a discovery by scientists at the Virginia Tech Carilion Research Institute. Study participants inhaled nicotine, but showed significantly different brain activity. Why? Some were told their cigarettes were nicotine-free. The scientists tracked the brain responses using functional magnetic resonance imaging.

After smoking, volunteers played a reward-based learning game while their brains were scanned. The researchers used computational models of learning signals thought to be generated by the brain during these kinds of tasks. Individually tracked signals of each participant were specifically influenced by beliefs about nicotine.

The team found that the individuals who believed they had smoked nicotine cigarettes made different choices and had different neural signals than others even though both groups had consumed the same substance. The scientists also found that individuals who believed they had smoked nicotine had significantly higher activity in their reward-learning pathways. Those who did not believe they had smoked nicotine did not exhibit those same signals. Researchers found that belief could erase or enhance the effects of nicotine in participants who were under the influence of the active drug.

Scientists might be able to harness this belief system, capable of inducing physiological changes, to reverse-engineer addiction.

acceptance ended and may be related to altered opioid responses. Only non-depressed participants went on to report feeling motivated to connect socially with others.

The researchers informed participants that the “dating” profiles and rejection/acceptance were not real. Nonetheless, the simulated online dating scenario was enough to cause an emotional and opioid response. Staff gave depressed participants information on treatment resources.


Teens and Synthetic Marijuana

With names like Spice, K2, and Scooby Doo, synthetic cannabinoids (i.e., synthetic marijuana) are often sold as legal alternatives to marijuana. In 2011, synthetic marijuana was used by more than 1 in 10 (11.4%) high school seniors in the United States, making it the most commonly used drug after real marijuana. A new study in Drug and Alcohol Dependence is one of the first to examine risk factors for use of synthetic marijuana among a large, nationally representative sample of teens. The study used data from Monitoring the Future, a nationwide ongoing annual study of behaviors, attitudes, and values of American secondary school students. The study examined data from 11,863 students who were asked a variety of questions to gauge their use of natural and synthetic marijuana from 2011-2013.

The researchers found that race and sex were significantly correlated with synthetic marijuana use. Compared to females, males were consistently at greater risk for synthetic marijuana use and more frequent use. African American students were 42% less likely to report synthetic marijuana use and 36% less likely to report more frequent use than White students. The researchers also found that students who used other substances were more likely to use synthetic marijuana. Reporting lifetime use of any illicit drug other than natural marijuana more than doubled the odds for use. Frequency of lifetime marijuana use was the strongest correlate, with more frequent use further increasing odds of synthetic marijuana use.

Further investigation is needed to determine if synthetic marijuana serves as a gateway drug to natural marijuana and other illicit drugs. Research is needed to determine whether teens are still turning to this form of marijuana in states where recreational marijuana use is now legal.

For more information on synthetic cannabinoids, refer to the article by Salani and Zdanowicz, “Synthetic Cannabinoids: The Dangers of Spicing It Up,” in the current issue of the Journal of Psychosocial Nursing and Mental Health Services on pages 36-43.