

## Sex Differences and Depression

BY TOM HOLLON

Although most psychiatric disorders strike men and women with equal impunity, that cannot be said of the most common psychiatric problem, depression. Throughout the world, in countries as diverse as Taiwan, Lebanon, and the United States, for every depressed man, there are at least two depressed women. A symposium this past Spring on Gender and Depression sponsored by the National Institute for Mental Health, the Society for Women's Health Research, and the Smithsonian Institute brought together a large number of scientists exploring the subject. They discussed what is known and what remains a mystery about the relationship between depression and gender.

Before puberty, depression falls on girls and boys impartially. While depression rates then increase for all children, the increase is greater for girls, and, by age 15, a lifelong pattern emerges of depression affecting females twice as often as males.

"You could say the difference is because there are all these psychological things happening to girls during puberty—and that is a possibility," says Myrna Weissman, professor of psychiatry and epidemiology at Columbia University in New York. "However, this happens across cultures, where becoming a woman has different meanings." And she points out that after menopause women's depression rates go down. "So there is something about the changes in the hormonal cycle of women that is associated with the onset of depression."

"Depression is about more than just bad mood," explains Ellen Leibenluft, chief of the Unit on Affective Disorders at the National Institute of Mental Health. Depressed mood or anhedonia (inability to experience pleasure)

are required symptoms, but insufficient for diagnosis. In addition, there must be at least four other symptoms from a list including inordinate weight change, abnormal sleep patterns, feelings of worthlessness or guilt, inability to concentrate, suicidal thoughts, and psychomotor agitation (feeling sped up in body or mind).

Gender has no influence on some aspects of depression, such as the length of a depression episode and how often depression recurs. Depressed men and women lose comparable time from work, and complain similarly of inability to function professionally and maintain personal relationships.

### Differences

But differences are many. More women than men have what is called pure depression, meaning depression not preceded by another psychiatric illness. Most people, "about 60 percent of men and somewhat less than 60 percent of women," according to

stance abuse or conduct disorder.

Approximately 70 percent of individuals with generalized anxiety disorder (persistent and impairing worry) later develop depression. Anxious men and women are equally prone to depression, but anxiety and depression are associated with women because anxiety is more common to women.

Conduct disorder (aggression, destruction of property, and serious law violation) is more common to men and at least doubles the risk of depression. Similarly, men more often abuse drugs. For men depression is most frequently associated with hallucinogens and cocaine and, for women, with sedatives, tranquilizers, and diet pills. Alcohol is a difference with a twist: Alcohol abuse brings depression to men, while women tend to bring alcohol abuse to depression. Leibenluft declares alcoholism in the wake of depression a "malignant" sickness in women, with rapidly developing brain and liver damage and frequent suicide attempts.

About 15 percent of people with severe recurrent depressions eventually commit suicide. By high school age, attempted suicide is more common to females. But men more commonly complete suicide attempts because they resort to deadlier means, usually guns; women tend to take their own lives with drug overdoses.

Depression and gender are also linked by what are known as cognitive styles, says Carolyn Mazure, professor of psychiatry at Yale Medical School. Mazure describes cognitive style as "a way of thinking or viewing the world," and offers as illustrations the views of people who see the proverbial glass as half-full or half-empty. Two cognitive styles more common among women are associated with increased risk of depression. The first places "exaggerated focus on the need to please others and avoid disapproval." The other, called rumination, involves "rehearsing in one's mind over and over again the experience of something negative, being unable to let it go." Mazure



Leibenluft, first experience depression only after having other psychiatric problems. For a woman, depression often follows an anxiety or panic disorder; for a man, it's usually after sub-

suggests the dissatisfactions inherent in these styles ultimately promote a sense of hopelessness, opening a “gateway” to depression. She notes, though, that unsuccessful cognitive styles can be changed.

The adversities of life are risk factors for depression, but men and women are vulnerable to them in different ways, says Mazure. Men are prone to depression following loss of their immediate loved ones, divorce, and money and legal struggles. So are women, but women are also made vulnerable by the problems of their friends, and unsettling events like a change of residence or an illness in the family. Mazure explains that women’s cognitive styles, with greater emotional involvement in the lives of others, make them more vulnerable to depression. It is “the cost of caring.”

### **Sex differences in treatment**

Given the influence of gender on depression, do physicians treat depression differently in men than women? No, says Kimberly Ann Yonkers, associate professor of psychiatry at Yale. Although there may be some differences in how men and women respond to different types of antidepressant medications, generally the first line of treatment, Yonkers says the differences are too small to be clinically relevant. Leibluft argues that knowing how a person’s sex affects depression may be medically useful in a different fashion, helping doctors treat precursor disorders like anxiety and drug abuse. Treating these problems early might be tremendously beneficial, “preventing some of the later onsets of depression.” **BW**

*Tom Hollon writes about science and medicine from Rockville, Md.*

# News

## FROM THE FRONTIER

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The group taking the 200-mg dose of ginseng reported a 2.5 percent increase in positive feelings overall and the group taking the double dose of ginseng reported a 7.7 percent increase. However, the group that took the sugar pill also reported an increase in positive feelings of five percent. Furthermore, the researchers say that these results are insignificant, since they all fall within the margin of error anyway, meaning that there was no statistical difference between any of the groups. While the beneficial effects of ginseng on the sick or elderly were not examined, the research team concludes that, “as ginseng is widely marketed by manufacturers to *healthy people of all ages*, its therapeutic and restorative claims should continue to be scientifically assessed.”

••• **Big Brain, Strong Memory** Researchers believe they have uncovered one of the secrets behind good memory. In a study of the brains of birds, scientists at the Institute of Cell, Animal, and Population Biology at University of Edinburgh reported that animals with an enlarged hippocampus perform better in tasks measuring spatial memory, suggesting a correlation between hippocampus size and memory persistence. The study appeared in the June 5 issue of *Proceedings of the National Academy of Sciences (PNAS)*.

Robert Biegler and the research team captured and examined a total of sixteen birds in the wild: eight coal tits, which are food-storing birds, and eight great tits, nonstoring birds. Other studies have found that the coal tit has a larger hippocampus. The birds were trained to perform a memory task consisting of a series of white squares that would appear on a computer-controlled screen. Images

appeared and would disappear after the bird pecked at the square. When all the images were gone, two squares would light up, one that had previously contained an image, and one in a new location. If the bird pecked the square where the image was, it was rewarded with a peanut. The test increased in difficulty as the number of images — and thus the number of choices — increased.

The coal tits consistently performed better in this test than the great tits, proving that the food-storing birds had a more developed spatial memory and confirming the research team’s hypothesis. The study authors note that while this experiment supports the theory of hippocampus size and strength of short-term memory, it did not test long-term memory. They speculate that a better short-term memory may aid in the storage of long-term memories, allowing the food-storing birds to locate items months after hiding them away.

••• **Longer-Lasting ADHD Drug as Effective as Smaller-Dose Version** In the results of a clinical trial, scientists found that a new version of the most commonly prescribed ADHD drug, formulated to last 12 hours, is as effective as the regular three-times-a-day medication. The results suggest a future choice for parents who worry about medicating their children several times a day. The study appeared in the June issue of *Pediatrics*, the journal of the American Academy of Pediatrics.

William Pelham, professor of psychology, pediatrics, and psychiatry at University at Buffalo, New York and colleagues examined 68 children diagnosed with ADHD, ranging from age six to twelve. In the weeklong, double-blind study, children were randomly assigned to receive the standard three times a day dose of methylphenidate (MPH), the once-daily version of the medication, or a placebo.

Parents and teachers filled out daily behavior evaluation forms on the children, and each child spent twelve hours in a classroom laboratory on

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