

Behavior

Bruce Bower reports from Miami at the annual meeting of the American Psychiatric Association

Depression: Rates in women, men . . .

Researchers have consistently reported that women in the United States suffer from major depression at roughly twice the rate men do. Extensive international data now indicate that in many other countries, depression similarly afflicts more women than men, although absolute rates of depression vary greatly from one country to another.

Depression rates peak at two points in women's lives, asserts Myrna M. Weissman of Columbia University. The child-bearing years of the late twenties to the early thirties usher in the first sharp rise, followed by a comparable crest in the postmenopausal years of the late forties to early fifties. Men display no pronounced jumps in depression rates during adulthood, Weissman says.

Postmenopausal depression hikes were observed in women born from 1925 to 1940, she says. Future work will look for this effect in women born later. Depression rates have increased substantially in women and men born since 1945, the New York scientist notes (SN: 12/5/92, p.391).

Weissman's data come from 10 population surveys completed during the 1980s in Canada, Puerto Rico, Germany, Italy, France, Lebanon, New Zealand, Korea, Taiwan, and the United States. Participants ranged in age from 18 to 64 and completed interviews that probed for symptoms of depression.

In all countries, separated and divorced men exhibited much higher rates of depression than their married counterparts. In general, separated and divorced women suffered only slightly more depression than married women, while in Korea and Taiwan, their depression rates were identical.

A related study, based on data from the same U.S. survey that Weissman used, finds that Jewish men suffer from an elevated rate of major depression, comparable to that for Jewish women. The usual doubling of depression rates in women held true for non-Jews, whether religious or not, contends Itzhak Levav of Brown University in Providence, R.I.

About 13 percent of Jewish men experience major depression in any given year, around the same proportion as in Jewish and non-Jewish women but more than twice the rate in non-Jewish men, Levav reports. He and his coworkers analyzed community surveys taken in Los Angeles and New Haven, Conn.

Jewish men show low levels of alcoholism, perhaps accounting for their higher depression rate, Levav proposes.

. . . and stress effects across sexes

Some investigators theorize that women have high depression rates in part because they are more sensitive than men to stressful personal experiences. In some women, severe stress may cause rumination and worry that triggers depression up to 6 months later, they argue.

A greater number of women than men encounter stressful events in the months before a bout of major depression, contends Ellen Frank of the University of Pittsburgh School of Medicine. But women show no special sensitivity to stress, she argues; both sexes get depressed in response to the same types of upsetting family and personal incidents, usually within 2 months.

Frank and her colleagues studied 39 men and 96 women undergoing treatment for major depression. Participants listed stressful events in their lives from the 6 months before becoming depressed. The researchers then rated these incidents for severity.

Depressed men and women responded similarly to divorce, romantic breakups, and other types of severe personal stress, Frank says. Half of the women reported at least one such event, compared with one-third of the men.

Biology

John Travis reports from the American Society for Microbiology meeting in Washington, D.C.

Digging into TB's history with genetics

Talk about a late diagnosis. Probing genetic fragments recovered from the skeletal remains of a man who died more than 1,000 years ago, two British researchers believe they have confirmed that he was afflicted with tuberculosis. In the process, they may have unearthed a way to resolve a medieval mystery surrounding the deadly disease.

From written records of the Middle Ages, researchers have concluded that tuberculosis ran rampant in Europe at that time. But the only physical evidence supporting this contention—namely, lesions and other bone distortions often caused by tuberculosis—has come from analyses of skeletons taken from cemeteries of the period. The puzzle, says molecular biologist Ronald A. Dixon of the University of Bradford in England, is that "the historical record suggests a much larger number [of cases] than the cemeteries indicate."

So Dixon and his colleague Charlotte Roberts isolated bits of DNA from the bones of eight skeletons taken from a medieval graveyard in northern England. Then, with the same methods physicians routinely use today to diagnose tuberculosis, they amplified the fragments and studied the genetic sequences. For the one skeleton with lesions suggesting tuberculosis, they identified a stretch of DNA unique to *Mycobacterium tuberculosis*, the pathogen responsible for the disease.

The scientists, who plan to study more medieval skeletons, believe their method will uncover a higher incidence of medieval tuberculosis than bone studies have revealed. "We want to be useful to archaeologists," says Dixon.

Microbes muddle Shroud of Turin's age

In the interplay between science and religion, science usually sides with the skeptics. But now a bit of microbial science suggests that skeptics have too quickly dismissed the possibility that the Shroud of Turin might indeed be the burial cloth of Jesus Christ, as many believe.

In the 1980s, researchers examined samples from the shroud for the presence of carbon-14, a radioactive atom that decays over time. The amount found, they concluded, pegged the linen cloth as medieval, less than 700 years old.

But microbes may have interfered with those dating results, making the shroud appear younger than it actually is, asserts a research team led by Stephen J. Mattingly and Leoncio A. Garza-Valdes of the University of Texas at San Antonio.

The group has for years studied how various microbes can coat artifacts and natural objects with "biogenic varnishes," plasticlike coatings synthesized by bacteria or fungi. From microscopic examination of small samples of the shroud, they recently concluded that some of these same varnishes coat the linen fibers.

Further examination of bits of fabric by two techniques, infrared spectroscopy and mass spectroscopy, indicated that the samples were not pure cellulose, linen's main constituent. The Texas team next found that their samples harbored a number of microbes—specifically, ones that have been found to grow in natron, a bleaching agent that may have been used on the cloth in the past.

Past radiocarbon dating, suggest Mattingly and Garza-Valdes, could not distinguish between the linen's cellulose and the microbes and their coating, which may be of much more recent origin. "What you are reporting is the age of the mixture, not the age of the linen," says Garza-Valdes.

To resolve the shroud's true age, the researchers hope to obtain another sample and process it with an enzyme that breaks down cellulose—and no other suspected contaminant—into glucose. They could then date the glucose by carbon-14 analysis. "If we can isolate the glucose, that will be the answer," says Mattingly.