

Depression researchers look ahead for ‘golden age’ of research by drawing on cancer’s track record

When it comes to collective years lost to disability around the world, depression leads the pack. Some 350 million people suffer from it and, for afflicted individuals; it often lasts, for many years, according to the World Health Organization. Yet depression remains widely undiagnosed and untreated and researchers still haven’t developed widely effective treatments for the condition.

If only depression were more like cancer.

Cancer is, of course, terrible. It affects more than 32 million people and of those kills some 8 million a year. In developed countries, most people with recognized cancers receive treatment and, thanks to thriving cancer research over the last few decades, the C-word is no longer a death sentence.

Diagnosis and treatment of cancer seems light years ahead of that of depression, for a disease that has been around equally as long, if not longer. (Physicians in the Persian world were developing their ideas about melancholia—depression’s semantic ancestor—during the Islamic Golden Age in the 9th century.) But by looking to how cancer research has achieved such success, valuable insights can be gleaned for the field of depression—insights that could spark more hope for the future.

Perhaps the biggest discrepancy between the disorders is the available funds to treat them. The U.S. National Institutes of Health pumped about \$5.3 billion into cancer research in 2013, yet it spent only \$2.2 billion on mental-health research as a whole and a mere \$415 million on depression specifically. Similar funding patterns play out in Europe.

So how did cancer clinicians secure such a pot, and what would depression researchers have to do to get similar funding?

Cancer research owes some of its abundant funding to campaigning advocates and federal support. In 1971, the U.S. declared a ‘War on Cancer’ and victims, survivors, friends, and relatives took up the cause and campaigned tirelessly, with confidence and conviction.

Energy, confidence, and conviction: these are all qualities that the average person in the throes of depression can’t draw on. If they did, they probably wouldn’t be depressed. And energy, confidence, and conviction can be much harder to muster under the pall of social stigma. Depression, of course, is a mental disorder – to some people, this might as well make it imaginary. A physical illness, like getting cancer, is something that happens to a person, an insult inflicted by the environment or by fickle fate. Maybe they had a bad hand of genes; maybe they lived where the water wasn’t healthy. With depression and other mental illnesses, there’s an insidious perception that people somehow bring this on themselves. The symptoms of depression may look, to an outsider, like simple laziness. If the problem is “mental,” then shouldn’t the cure be simple self-discipline? A bit of positive thought?

This social stigma not only hobbles attempts to rally people to a “War on Depression” – it can actually

exacerbate the disease itself. Someone suffering from depression is already prone to crippling feelings of guilt, shame and frustration. If they're getting messages from friends, family, and society that they should feel like their disease is a character flaw and not an illness, you can imagine how it might create a negative feedback loop. Cancer patients, as a rule, can count on the socially endorsed support of friends, relatives, and employers. A person with depression may be risking their job in talking openly about their condition with their boss.

Many people still do not acknowledge that it is a legitimate condition, says Nelson Freimer, a psychiatric geneticist at the University of California, Los Angeles in an [article](#) in Nature News.

A large proportion of people believe depression is just something that we all feel. They think you should pull your socks up and get back to work. It's hard for crackpots to say that pancreatic cancer or breast cancer is not real. Yet somehow they can say that people with mental illness don't have a real illness.

Perhaps this has something to do with the tumor, an inarguably physical manifestation of cancer – an illness that might otherwise seem as invisible as depression.

In response to this “branding problem” efforts are under way to change how depression is defined and diagnosed in research. Thomas Insel, head of the National Institute of Mental Health in Bethesda, Maryland, pushed researchers funded by the institute to eschew classical psychiatric diagnoses, which tend to be indistinct and overlap. Instead there is a move toward focusing on well-defined traits, eventually leading to new diagnoses that are grounded in biology. Nestler says:

Ultimately, depression is as biological as cancer and heart disease; it is simply a matter of identifying the relevant molecules.



Credit: Shaury Nash, Cambridge University (Creative Commons)

When it comes to tracing down the biological origins of disease or disorder, cancer has again led the way with its ever-growing stable of genetic research. An influx of funding has helped generate a huge list of mutations linked to cancers, some of which can now be used to match a patient to a therapy. But no such research correlate exists for depression. The largest study so far — a search through the genomes of just over 16,000 patients with major depressive disorder and another 60,000 controls — has turned up just

one, as yet unconfirmed, genetic association.

There may be vast untapped potential in genetics research to determine genetic causes of depression and, with recent technological advances, the field is starting to show some hope. Scientists have already started to identify some of the genes that underlie some other mental-health disorders, such as schizophrenia. An international group of researchers known as the Psychiatric Genomics Consortium published an [analysis](#) of nearly 40,000 genomes from people with schizophrenia that together highlighted 108 different regions potentially linked to the disorder. The consortium now plans to do the same for depression, aiming to scrutinize up to 60,000 genomes from people with the condition.

Yet Jonathon Flint, a psychiatrist at the University of Oxford, UK, who has been looking for genetic links to depression for nearly two decades, says, in a Nature News [article](#) that the difficulty in nailing down depression's origins stems from the disorder's fuzzy definition. Grouping everyone with a diagnosis of major depressive disorder into one genetic study is like looking for the genetic risk factors for fever. Our current definition of depression, Flint goes on to say, "lump[s] together autoimmune disease, infection, cancer and a whole set of different conditions."

So what can be learned from the path of cancer research? Funding is key, obviously, but that funding was more forthcoming for cancer because it was a more specific, more tangible diagnosis, and, being rooted in the biology of the body, it carries little social stigma.

If depression researchers can redefine depression with a definition that is more tangible, more specific and more clearly linked to the biological roots of the disorder, it might be easier to get valuable support for research.

Already some scientists hope that the recent public and scientific interest in brain studies will push mental health research into a new golden age. Looking back to cancer, Tom Foley, a psychiatrist at Newcastle University in England says in a Nature News [article](#):

Cancer's a great inspiration: they've had a lot of investment and they've made big breakthroughs. There's no reason why we can't see the same things in depression.

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Additional Resources

- [Can you think your way out of the depression box?](#) Genetic Literacy Project
- [Mental health: If depression were cancer](#), Nature News
- [Mental health: Depression needs large human genetic studies](#), Nature News