



MENTAL HEALTH

Monsters in the mirror

Researchers are probing how brain circuitry goes awry in people with body dysmorphia and how to treat the condition.

BY ELIE DOLGIN

Jessica's body-image problems started early. In middle school, it was the frizziness of her hair. In high school, it was the size of her nose. Then last year, during law school in Massachusetts, Jessica's insecurities about her looks ballooned into a full-blown fixation. At the age of 25, she began to worry non-stop about the smallest signs of ageing. (At Jessica's request, we are using only her first name.)

She hated her hands, which she saw as blotchy and venous. She thought the skin on her face was thin and wrinkly. She would search for grey hairs and pluck them out of her head. Obsessing over these features occupied Jessica's thoughts for up to ten hours each day. "I had all these doomsday ideas about what my appearance

meant for my future," she says. "I had this fundamental belief that if I didn't look like a fresh ingénue that no one would give me a chance."

Then, last year, Jessica saw an advertisement on the subway that would change her life. Psychiatrists at the Massachusetts General Hospital in Boston and the Rhode Island Hospital in Providence were looking for study participants with a condition called body dysmorphic disorder (BDD). This severe mental illness is characterized by chronic, often delusional, pre-occupations with non-existent or slight flaws in appearance that extend far beyond vanity. That is when it clicked for Jessica. Maybe her problems were not physical, but psychological.

BDD shares a number of features with obsessive-compulsive disorder (OCD), and it is often managed in much the same way — through a

combination of antidepressants (typically at high dosages) and talk therapy. However, BDD is not simply a clinical variant of OCD, and in the past few years researchers have begun to explore ways to tailor treatments to specifically address people's excessive concerns over their appearance.

Some targeted forms of psychotherapy are the focus of randomized controlled trials, and researchers are scanning patients' brains to learn more about how to correct the neural circuitry that is responsible for BDD. "We can now offer empirically based treatments that often work," says Katharine Phillips, a psychiatrist at Alpert Medical School of Brown University in Providence, and author of *Understanding Body Dysmorphic Disorder* (Oxford Univ. Press, 2009).

Relief cannot come soon enough for Jessica and others with the condition. "It's very painful to have this disorder," says Sabine Wilhelm, a psychologist at Massachusetts General Hospital. "Some patients are so sick that they're almost completely housebound."

COSMETIC CONCERNS

BDD manifests in many ways. One person might think his eyebrows are uneven or that his muscles are too small. Another obsesses over her pointy chin or acne scars. "Any body part can be the focus of concern," says Wilhelm.

Consumed by their imagined ugliness, people with this condition often have severe depression, and engage in substance misuse and life-threatening behaviour. According to data compiled by Phillips and her colleagues, the suicide rate of those with BDD is at least 22 times greater than that of the general population — making BDD one of the most lethal psychiatric conditions.

The disorder affects around 2% of the overall population, and yet most cases go unrecognized and untreated. Instead of seeking the help of mental-health counsellors, many people with BDD visit cosmetic surgeons, dermatologists and dentists. Most patients who have appearance-enhancing procedures, however, simply shift the focus of their concerns or they continue to worry about imperfections in the treated area.

Lisa Ishii is a plastic surgeon at Johns Hopkins School of Medicine in Baltimore, Maryland, who is calling on physicians in her field not to operate on people with BDD. "They don't need cosmetic surgery," she says. "They need psychiatric care." Ishii and her team have begun to use a two-stage screening process — a questionnaire followed by a clinical interview — to distinguish patients with BDD from those who are merely dissatisfied with certain physical traits¹. This approach not only helps people to find the right type of care, Ishii says, but it also protects the interests of plastic surgeons — some of whom have been sued, physically threatened or even killed by dissatisfied people with BDD².

Still, many surgeons are reluctant to implement such a screening instrument because they

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believe that their intuition serves them well enough. “And therein lies the problem,” Ishii says. She has unpublished survey data showing that most cosmetic surgeons think that they can pick up whether a patient has BDD without psychiatrically validated scales and measures. “But actually,” says Ishii, “most can’t.”

FORCED EXPOSURE

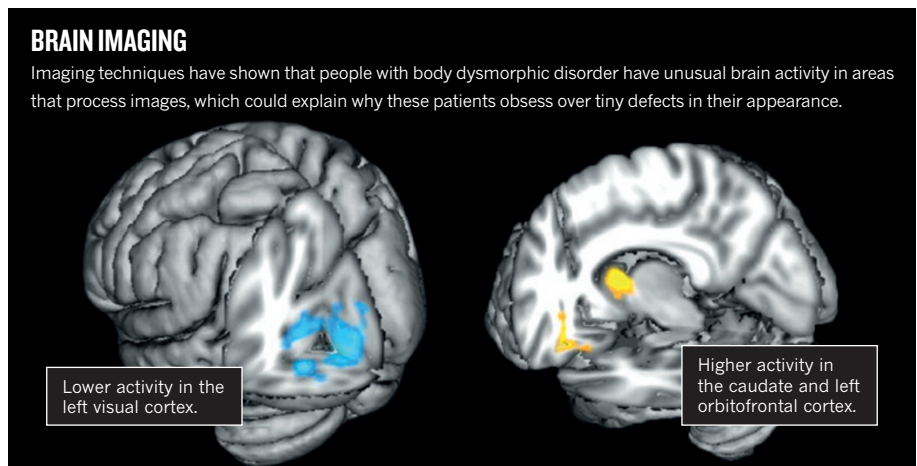
The trial that Jessica discovered is run by Phillips and Wilhelm and is testing whether a treatment strategy known as cognitive behavioural therapy (CBT) is more effective than supportive psychotherapy at helping people with BDD cope to with and overcome the disorder. Jessica was randomly assigned to the CBT group. In February 2015, she attended her first therapy session. For the next six months, she learned new skills to challenge and sidestep negative thoughts whenever they arose.

Part of CBT involves exposing people to the thoughts and situations that create intense anxiety for them. Patients then learn how to face the anxiety without engaging in the behaviours that reinforce and maintain their symptoms. For Jessica, this meant going out in public without makeup — something she had not done since her university days. At first, Jessica says, “it felt like being sort of naked.” But thanks to the coping tools she learned for dealing with unhelpful patterns of thinking and behaviour, Jessica often goes entire days without her cosmetic defences. “CBT has been tremendously successful for me,” she says. “There are certain scenarios where these cycles of negative thoughts will increase in frequency. But now I have the skills to put the kibosh on them.”

Jessica is not alone. In an earlier trial at Massachusetts General and Butler Hospital in Providence, Phillips, Wilhelm and their team found that 50% of participants showed improvements in their symptoms after 12 weeks of CBT compared with 12% of those who did not undergo therapy⁷. Everyone in the study then received a 22-session course of CBT and 24 of 29 people who finished the trial responded favourably. To test whether this dramatic response rate was thanks to the specifics of CBT and not just the therapeutic experience more broadly, Wilhelm and Phillips set up the larger, randomized trial of 120 participants that Jessica took part in.

These are two of a number of trials the researchers have been involved in. Phillips recently presented the results of a study of relapse rates among people with BDD after they stop taking antidepressants. And Wilhelm is running a 50-person, placebo-controlled trial to test whether a neurotransmitter-activating drug called D-cycloserine can enhance the behavioural learning that happens during CBT — a strategy that has worked in the treatment of anxiety disorders such as OCD.

But aside from the few clinical centres that specialize in BDD, CBT is not widely available. And even when the therapy is an option, many patients feel too ashamed to openly discuss their



problems with a therapist. Psychiatrist Christian Rück and his colleagues at the Karolinska Institute in Stockholm hope to overcome these obstacles by delivering CBT over the Internet — a practice known as iCBT.

In a 12-week pilot study of iCBT, they found that 18 of 22 patients responded to therapy⁴. At the first International Conference on BDD in London in May, Rück's team presented impressive follow-up results. In a 94-person, randomized trial, iCBT outperformed supportive psychotherapy. The web-based protocol still requires therapist involvement through a built-in e-mail system, but each mental-health professional spends, on average, about 10 minutes with a patient each week, instead of the usual 45–50 minutes. With iCBT, “there might be one or a few people in Sweden who could treat a whole nation”, Rück says.

“They don’t need surgery, they need psychiatric care.”

BRAIN RETRAINING

To explain the biological basis of BDD and responses to therapy, many scientists have turned to neuroimaging. Psychiatrist Jamie Feusner at the University of California, Los Angeles, and his colleagues have shown that connectivity patterns between brain regions in people with BDD are different from those of individuals without body-image problems⁵ — and that brain activity is particularly abnormal in areas that are responsible for processing visual stimuli⁶ (see ‘Brain imaging’).

This irregular visual system in the brain could explain why people with BDD tend to obsess over minute body details, but miss the bigger picture. To help rewire the brain, Feusner is testing a type of perceptual retraining that involves activities designed to help people adjust their visual balance from detail-oriented to global processing. One such exercise attempts to modulate eye gaze by asking individuals to view a digital photograph of their face and then hold their visual focus within a target circle between the eyes (instead of on, say, a barely visible facial scar). Another presents

the same picture but for only a split-second, forcing the brain to process the face more holistically. If such interventions lessen symptoms of this disorder, Feusner says, they would be “the first to be directly informed by knowledge of aberrant neurobiology in BDD.”

Phillips is also probing the genetics of BDD in search of new drug targets. In collaboration with a team at the University of Toronto in Canada, she identified a gene that encodes a brain receptor involved in the transport of the neurotransmitter γ-aminobutyric acid (GABA) that may be implicated in the development of the disorder⁷. The researchers are now engineering mice with mutations in this gene to create the first BDD-specific animal model. They plan to assess how early life stressors in these mice affect the development of grooming behaviours (people with BDD are commonly preoccupied with grooming). Eventually, they hope to test which drugs offer symptom relief too.

As for Jessica, her treatment was so successful that she rarely dwells on her appearance for more than about 30 minutes per day — a massive reduction from the 10 hours she was spending. Before finding psychiatric help, Jessica had met with a dermatologist, who had recommended laser surgery to remove a series of tiny bumps called syringomas that had developed under her eyes. She had all but committed to go through with this surgery. But, she says, following her therapy, “I’ve decided not to do it.” Thanks to CBT, those bumps are “no longer these outsized disfigurements that I once perceived them to be,” Jessica says. “They’re so small, it doesn’t really matter.” ■

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