When people think of mental illness related to body image, the first thing that usually comes to mind is anorexia or associated eating disorders. But, the lesser known body dysmorphic disorder (BDD) is five times more prevalent than anorexia and also causes higher levels of psychological impairment.

In the world's largest neuroimaging research in disorder published in the prestigious journal Psychological Medicine, Monash University's Dr Ben Buchanan found there was a weak connection between the amygdala, the brain's emotion centre, and the orbitofrontal cortex, the rational part of the brain that helps regulate and calm down emotional arousal.

The main symptom of BDD is excessive fear of looking ugly or disfigured. Central to the diagnosis is the fact that the sufferer actually looks normal.

"People with body dysmorphic disorder believe a particular feature of their face or body part is unbearably ugly," Mr Buchanan said.

"Many seek unnecessary cosmetic surgery or skin treatments but sadly only a few receive appropriate psychological support.

"When body dysmorphic disorder sufferers become emotionally distressed about their looks, they find it very difficult to wind down because the emotional and rational parts of their brain aren't communicating effectively."

Mr Buchanan's research also suggests the mechanism by which treatment for BDD reduces symptoms.

"It looks like cognitive behaviour therapy (CBT) actually changes the brain by strengthening the connections between the orbitofrontal cortex and amygdala," Mr Buchanan said.

"Similar to exercises that a physiotherapist prescribes to strengthen muscles, CBT strengthens brain pathways."