If your heart is broken, taking aspirin can help

Mark Fenske

It turns out that heartache is more than a metaphor.

The fact that we use an injury-related term to describe psychological distress makes sense, given the similar origins in the brain of both physical and emotional pain.

Brain-imaging studies have shown that the unpleasant emotions linked with physical pain are associated with activity in the dorsal anterior cingulate (near the top and centre of the frontal lobe) and anterior parts of the insular cortices (folded deep between the frontal and temporal lobes).

Increased activity in these brain regions also accompanies the sting of social rejection.

Social relationships are critical for a healthy, well-functioning brain. Maintaining connections with others promotes feelings of well-being and has many benefits for our physical health. Interacting with others has even been shown to enhance cognitive performance later on.

Given the importance of our relationships with others, it is critical to know when something goes wrong. Perhaps this is why social pain – loneliness, rejection, being dateless on Valentine's Day – can feel so intense.

That the affective components of physical and psychological pain arise through similar neural operations may explain why the people who are more sensitive to physical pain – those who report greater unpleasantness from a bump on the head – are indeed also those who report greater unpleasantness in the face of social rejection.

In this way, the intensity of your reaction when something hot presses against your skin can predict the level of distress you might feel if someone deliberately excludes you from a game or other social activity.

The striking overlap in the neural origins of physical and emotional pain can also be seen when we empathize with those who are in physical distress. It seems we can quite literally feel their pain through our compassion and the mutual activation of brain regions associated with pain's unpleasant aspects.

It's also clear that the emotional-physical connection goes well beyond the confines of the skull. Indeed, the results of a recent study suggest that heartache can literally slow our pulse. Figuring out who we like is something each of us does routinely. But learning that similar evaluations are being made about us can give us pause. And finding out that someone doesn't like us can be momentarily heart-stopping.

If the brain elicits painful feelings in a similar way for heartache as it does for headache, shouldn't there also be similar way to alleviate both? Perhaps there is. A group of social psychologists recently demonstrated that the common painkiller acetaminophen was effective at reducing social distress.

Compared to individuals given a placebo, those given daily acetaminophen reported fewer hurt feelings over a period of three weeks. The researchers also examined brain scans of individuals experiencing social rejection and found that those taking acetaminophen showed reduced activity in the regions of the brain associated with pain's unpleasant aspects.

So is the answer to pop a Tylenol every time you feel snubbed? Probably not.

But the common basis of physical and social pain does suggest that both types of distress should be taken seriously. While the hurt of feeling rejected might have been previously dismissed as something that's "all in your head," it should not be overlooked any more readily than the agony of an abscessed tooth. Both indicate that something is wrong. Directly addressing the source of pain is better than masking its effects.

Kindness is another way to prevent and alleviate social distress. Being considerate and showing patience in your interactions with others can benefit everyone involved.

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