Study shows when people feel anxious they are less reliable at reading emotions in other faces

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(Medical Xpress)—A team of researchers with the MRC Integrative Epidemiology Unit and the U.K. Centre for Tobacco and Alcohol Studies has found evidence of impaired emotional face reading by people when they are feeling anxious. In their paper published in *Royal*

Society Open Science, the group describes a series of experiments they carried out with different groups of volunteers and what they the found.

Most people know that anxiety makes people become more self-centered, but now, it appears we may actually misinterpret what we see when experiencing anxiety. In this new effort, the researchers artificially induced anxiety in groups of volunteers and then tested them on their ability to read facial emotions, and found that when anxious, people can make mistakes.

In the first experiment, the researchers asked 21 volunteers to look at pictures of people's faces and choose from a list of possible emotions. They were all then asked to don face masks delivering a bit more carbon dioxide to their lungs than is normal. The gas causes people to feel anxious, raises their blood pressure and speeds up the heart rate—just like naturally induced anxiety. The volunteers were then asked to repeat the first experiment. The researchers conducted another similar experiment in which volunteers were shown more faces with more variation in facial expressions. They then repeated both experiments with a whole new group of volunteers. The researchers report that on average, the anxiety-riddled volunteers were 8 percent worse at correctly identifying the emotion expressed on another person's face. They were also more likely to incorrectly see anger in the face of someone expressing happiness.

The researchers also conducted an online study in which participants looked at faces and chose which emotion was depicted—each was also asked to fill out a questionnaire regarding their current anxiety level and their anxiety levels in general. After analyzing results from 1,994 participants, the researchers found that those who reported feeling more anxiety at the time they were taking the study were less accurate than were those with lower or normal levels. Interestingly, they also found that those who reported a history of anxiety were actually better than

average at reading emotions in the faces of others.

Abstract

High trait anxiety has been associated with detriments in emotional face processing. By contrast, relatively little is known about the effects of state anxiety on emotional face processing. We investigated the effects of state anxiety on recognition of emotional expressions (anger, sadness, surprise, disgust, fear and happiness) experimentally, using the 7.5% carbon dioxide (CO_2) model to induce state anxiety, and in a large observational study. The experimental studies indicated reduced global (rather than emotion-specific) emotion recognition accuracy and increased interpretation bias (a tendency to perceive anger over happiness) when state anxiety was heightened. The observational study confirmed that higher state anxiety is associated with poorer emotion recognition, and indicated that negative effects of trait anxiety are negated when controlling for state anxiety, suggesting a mediating effect of state anxiety. These findings may have implications for anxiety disorders, which are characterized by increased frequency, intensity or duration of state anxious episodes.