Depression and anxiety differentially influence physical symptom reporting

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Researchers have for decades hypothesized that negative emotions lead to inflated reports of common physical symptoms, like headaches or an upset stomach. But a new University of Iowa study suggests that two negative emotions –- depression and anxiety –- influence symptom reporting in different ways.

Published in the latest issue of the *Journal of Personality and Social Psychology*, the study indicates that people who feel depressed report experiencing a higher number of past symptoms. People who feel anxious, by contrast, report more symptoms in the present moment.

Understanding how factors such as mood influence symptom reporting is important because physicians make diagnosis and treatment decisions based on the symptoms patients report, how intense they are, and how frequently they occurred, said study author Jerry Suls, a professor of psychology in the UI College of Liberal Arts and Sciences and a visiting scientist at the National Cancer Institute in Washington, D.C.

Previous studies have linked inflated symptom reports to "negative affect," a disposition also known as neuroticism. One-fifth of the population is believed to have this general tendency, which involves frequent feelings of anger, anxiety, fear, irritation or sadness. However, when the UI researchers examined the influence of temperament on symptom recall, they isolated each emotion rather than lumping them together.

"Our data suggest that a person who walks into a physician's office feeling sad will tend to recall experiencing more symptoms than they probably really did," Suls said. "If a person comes into the physician's office feeling fearful, they're more likely to scan their body and read any sensations they're experiencing at that moment as something wrong. We believe this is because depression is associated with rumination and exaggerated recall of negative experiences, while anxiety is associated with vigilance for potentially negative things in the present time."

Suls co-authored the study with Bryant Howren, a post-doctoral scholar in the UI Department of Psychology and the Center for Research in the Implementation of Innovative Strategies in Practice (CRIISP) at the Veterans Affairs Medical Center in Iowa City.

In the first part of the study, 144 undergraduate students completed questionnaires to assess their level of "depressive affect," and indicated which of 15 common physical symptoms they'd experienced in the past three weeks. Even after factoring out physical signs of depression, like appetite changes or sleep loss, researchers found that people who felt more depressed believed they had experienced more symptoms.

"Is it possible they actually did experience more symptoms? Sure," Suls said. "But all of these folks were nominally healthy. It's likely that each one experienced roughly the same number in terms of actual symptoms, but those who happened to be feeling blue thought they had experienced more."

Another phase of the study examined current symptom reporting. A sample of 125 undergraduates were assigned to groups. To induce a specific mood, each group wrote in detail for 15 minutes about an experience that made them feel angry, anxious, depressed, happy or neutral. They then completed a checklist to indicate which of 24 symptoms (weakness/fatigue, cardiorespiratory, musculoskeletal, and

gastrointestinal) they currently felt. Participants in the anxious mood category reported higher numbers of physical symptoms.

"People could say, 'Well, you made them anxious –- isn't that going to produce a physiologic reaction, like a pounding heart or sweaty palms?'" Suls said. "But we observed a general increase in all current physical symptoms -– fatigue, for example, which isn't typically a consequence of feeling fearful or nervous."

Researchers repeated the writing exercise with another group of 120 students -– only this time they asked participants to report both current and retrospective symptoms. On average, people in the anxious group reported five current symptoms, while those in the depressed and neutral groups only reported one or two. Reflecting on the past three weeks, the sad participants reported experiencing seven symptoms on average, while the other groups only recalled about three.

"Making people feel sad didn't influence what they reported feeling at the moment, but it was associated with reporting having had more symptoms in the recent past," Suls said. "With anxiety, we saw exactly the opposite. They didn't report more symptoms over the past three weeks, but at the moment they reported more."

Suls and Howren aren't encouraging health care providers to discount symptoms by virtue of the patient's mood. They do, however, encourage medical professionals to be aware that different emotions appear to play into how patients perceive their current and past symptoms.

"Ideally, a doctor would engage with the patient briefly to get a sense whether they're experiencing anxiety or sadness at the time of the visit," Suls said. "In some cases, it may be worthwhile to ask a significant other what they've observed in terms of symptoms, or to ask the patient to keep a symptom diary to ensure accuracy."

The age of participants was a limitation of the study, though the authors intentionally chose healthy college students to reduce confounds. Other studies indicate that emotional instability (such as depressed or anxious moods) decreases around age 40, so older adults may be less subject to recall or encoding biases associated with physical symptoms. Suls and Howren will focus future symptom-reporting research on older or chronically ill adults.

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