Priming can negate stressful aspects of negative sporting environments, study finds

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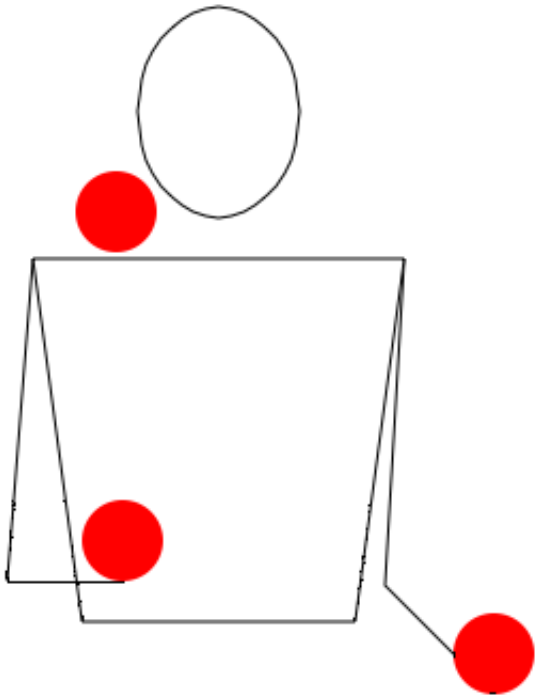

Credit: University of Kansas

The scene is ubiquitous in sports: A coach yells at players, creating an environment where winning is the sole focus and mistakes are punished. New research from the University of Kansas shows that when

participants find themselves in such an environment, a priming session that includes information about how successful athletes sustain motivation over time can help keep cortisol, a hormone linked to stress and negative health outcomes, in check.

Researchers recruited college students to take part in a 30-minute training session in which they were taught to juggle. All of them were taught in an ego-involving climate in which only those who showed ability or talent were praised and those who made mistakes were called out. However, before taking the class, participants were randomly assigned to a brief priming session in which an experimental group learned about research on optimizing motivation with athletes, employing Achievement Goal Perspective Theory, whereas the control group learned about the history of sport psychology.

The study, authored by Michael Breske; Mary Fry, associate professor of health sport & exercise science; Andrew Fry, professor of health sport and exercise science, and Candace Hogue, was published in the journal *Psychology of Sport and Exercise*. Breske and Hogue were KU graduate students at the time of the study, although Breske is now a doctoral student at the University of Missouri, and Hogue is a faculty member at Penn State-Harrisburg. The findings show that, despite the ever-present nature of ego-driven climates in sport, preparation can make a difference.

"Unfortunately, there are still many ego-involving climates in sport where the focus is on who's the best or most talented," Mary Fry said. "In the long term we can, hopefully, create more positive climates, as extensive research is revealing the many benefits, but in the short term we may be able to help athletes cope better with negative sport environments."

The participants' cortisol levels were measured five times throughout the

session via saliva samples. Two baseline measures were taken, and three more samples were taken over the 30 minutes immediately after the session to measure if and how the levels changed. Levels spiked for those in the control group who learned about the history of sport psychology. Interestingly, cortisol stayed stable for those who learned about the latest research findings in sport motivation. Participants also answered questions about their confidence and anxiety levels before and after the session. All participants, despite their priming session, reported their anxiety increased and confidence decreased.

"Being in an ego-involving environment is not a good thing. There is so much negativity, and people don't have fun," Fry said. "But it's notable that those who were given information about how top athletes optimize their motivation had a buffered cortisol response. Simply telling participants that successful athletes define success based on their personal effort and improvement, and cooperation with their peers, set them up to have a reduced physical response to the negative environment they experienced. That brief priming session really helped."

The participants were told that everyone who takes part in studies at the lab goes through education sessions prior to the experiment, and they did not know the sessions had a connection to the larger study or that others were receiving a different primer.

Once in the juggling sessions, instructors created an ego-involving climate by singling out those who showed natural ability for praise or calling out an individual by name who showed improvement. Those who struggled or made mistakes were "punished" or called out with comments such as "you're really making this hard," or asking if they'd ever taken part in activities that required hand-eye coordination. The researchers acknowledge those punishments are much less severe than in typical sporting activities in which coaches or trainers sometimes scream or curse at players, or punish mistakes with physical measures such as

pushups, but note they create a similar environment.

As Breske explains, "I think this study is really exciting because of the impact it could have on parents and athletes. We know that many athletes will likely experience negative sport environments in their lives, and we know that even the most well-intentioned coaches might lack the knowledge and experience needed to create a caring/task-involving climate. As researchers, we are hoping to educate coaches on the best strategies for creating positive climates, but a lot of the data addressing why kids drop out of youth sports suggest that we might lag behind in getting that message across. I think our study was really unique in that it addresses the issue in a bottom-up fashion. Why couldn't parents give kids the message that athletes need to stay focused on their personal effort and improvement, and cooperation with teammates? That is the key to getting the most out of sport, regardless of negative messages coaches may be sending. Clearly, this isn't the long-term solution, but it might help some athletes cope with their current circumstances."

The findings not only add to a growing body of evidence that supports the advantages of a positive (caring/task-involving) sporting climate, they specifically highlight the health implications of negative sporting climates. Young people who are turned off by the stress of such environments are less likely to continue or return to such activities and can be driven away from physical activity, which can lead to health problems such as obesity, diabetes and many others. Those who do continue often see increased cortisol levels, a significant contributor to negative effects of chronic stress which have been linked to impaired immunological, cardiovascular and neurological functioning, expression of disease and impairment in the body's ability to build muscle and recover from physical exertion.

The researchers, who have previously published research on learning to juggle in both caring/task-involving versus ego-involving climates and

the related cortisol levels, chose juggling as a physical skill to use in measuring environments because it is a good equalizer.

"Juggling is a good activity because it levels the playing field," Fry said. "We've had star athletes who are slow to pick it up and nonathletes who pick it up quickly. But in the caring/task-involving climate, everyone improves more. Plus, it's fun. I've never met anyone who can't learn to juggle."

The results suggest that many people besides coaches can make a difference in how athletes deal with negative sporting environments.

"This research is valuable in that we don't always have control over the environments that we're in, but we do have control over how we process that environment and our mindset regarding what it means to be successful," Hogue said. "As we see from this study, there are important implications for athletes' mental and physical health."

When parents, trainers, teachers and friends help athletes gauge success based on their effort and improvement, regardless of the messages they may be receiving on sport teams, athletes may be able to avoid some of the outcomes associated with negative sport experiences.

Provided by University of Kansas