Power poses don't help and could potentially backfire, study shows

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Coren Apicella, an assistant professor in the psychology department in the School of Arts & Sciences

The idea behind power poses, that if you stand in a "powerful" position, broad posture, hands on hips, shoulders high and pushed back, you will suddenly feel psychologically and physiologically stronger, is intuitively appealing, especially for people without much confidence. The problem is that it's simply not true, according to University of Pennsylvania researchers Coren Apicella, an assistant professor in the psychology department in the School of Arts & Sciences, and Kristopher Smith, a

fourth-year psychology Ph.D. student.

Apicella and Smith attempted to replicate the original power pose study by Dana Carney, Amy Cuddy and Andy Yap, which got much attention when it appeared in 2010 in the journal Psychological Science. The initial study reported increases in feelings of power, risk taking and testosterone and a decrease in cortisol. The Penn researchers found no support for any of the original effects, what's called embodied cognition, results they published recently in Hormones and Behavior.

"We did find that if anything—and we're skeptical of these results, because we'd want to replicate them—that, if you're a loser and you take a winner or high power pose, your testosterone decreases," Apicella said.

In other words, Smith said, "people might not be able to 'fake it until they make it,' and in fact it might be detrimental."

The pair started working on this study two years ago, with the aim of putting the power pose concept into a relevant ecological context grounded in evolutionary theory. They opted to use as their starting point the notion of contest winners and losers. Before a competition, animals make their bodies as large as possible, gritting their teeth, making their hair stand on edge. In some situations, humans can similarly showcase displays of confidence intended to intimidate an opponent.

"We know that hormones change in this competitive context, especially testosterone," Apicella said, referring to a well-known finding called the "winner-loser effect." "Winners experience a relative increase in testosterone compared to losers. The evolutionary theory for that is, if you just won a competitive interaction, that testosterone may be motivating you to take on future competition. If you lost, it's saying, back off, you don't want to get your butt kicked again."

With that as the backdrop, the Penn researchers brought in nearly 250 college-age males from the Philadelphia region to take part in their study. Participants provided a saliva sample to offer a baseline measure for testosterone and cortisol levels, then took part in rounds of tug-o-war. One person was declared the strong man, the other the weak man.

"They would then make a high, low or neutral power pose," Smith explained, based on a random placement into one of the three groups.

High power poses enable a body to take up more space (think of the Wonder Woman stance); low power poses constrict the area a body occupies (picture someone hunched over). While posing, study subjects viewed faces on a computer screen, the same images used in the original study, then 15 minutes later, the researchers took a second saliva sample to measure the same hormones they looked at to start.

"We didn't find any support for this idea of embodied cognition," Apicella said.

As for the potential results showing that power poses could actually cause harm, the scientists describe in their paper a series of studies in the 1970s that asked why low-ranking sparrows simply didn't fake a higher ranking. A researcher tested this by painting low-status birds' plumage to match that of the dominant birds. "The legitimate high-ranking birds persecuted the 'fakers,'" the Penn researchers wrote.

"Our study is more in line with these results," Apicella said. "This was one of several tests that didn't go in the direction predicted by embodied cognition."

The current findings are not the only to suggest that the effects of power posing are not real, adding to the evidence that has accumulated since the 2010 study. Some say the inability to replicate that first work doesn't

matter, that they'll continue touting its results regardless. But to scientists working in social science fields, it makes a big difference, particularly in a landscape described as a replication crisis for psychology, one where, in an analysis of 100 published papers, only 36 percent showed replications with significant findings.

"As scientists, we care about the truth," Apicella said. "There's so much skepticism about research in general, especially research coming out of social science. Studies like the original power pose work can be harmful because they delegitimize good work."

To that end, and especially given the recent failed replications, Apicella cautions researchers continuing to work on this topic to tread lightly. "Even if power poses were found to work in the short term," she said, "we don't know if they could backfire in the long term."

More information: Kristopher M Smith et al, Winners, losers, and posers: The effect of power poses on testosterone and risk-taking following competition, *Hormones and Behavior* (2016). DOI: 10.1016/j.yhbeh.2016.11.003

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