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Self-efficacy boosts physical activity in osteoarthritis patients

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Credit: Andrea Piacquadio from Pexels

Osteoarthritis patients that are more confident in their abilities in the morning go on to be more physically active throughout the day, according to a team of Penn State researchers.

The findings suggest that self-efficacy—one's confidence in their ability to do something— influences physical activity independent from other such factors as pain, mood and support from a spouse. The researchers, who published their results in the journal *Health Psychology*, said the study could give insight into how to better design physical activity interventions.

Ruixue Zhaoyang, a postdoctoral fellow in Penn State's Center for Healthy Aging and lead author on the paper, said that although earlier research has found physical activity to be one of the best ways to reduce and manage symptoms of osteoarthritis, pain often prevents patients from being as physically active as they should be. As a result, stiffness and deterioration in muscle strength tend to worsen.

While previous studies have examined physical activity among people with other chronic conditions, researchers have yet to explore the psychological aspect of activity in people with osteoarthritis.

"Osteoarthritis is a common condition, and we wanted to look at how we can help people who suffer from it improve their activity levels," Zhaoyang said. "Self-efficacy is a very strong predictor of people's physical activity, and we wanted to see how it specifically affects this population."

Over the 22 days of the study, 135 participants recorded their self-efficacy each morning by answering such questions as, "How confident are you that you can be physically active today despite pain?" They also answered questions about their mood and how much pain they were feeling.

The participants then wore an accelerometer throughout the day, which measured the intensity of their physical activity and how many steps they took.

At the end of the study, the researchers found that participants' self-efficacy had a significant positive effect on their steps and moderate-intensity activity throughout that day, even when controlled for such factors as pain, mood and support from a spouse.

Zhaoyang said one of the interesting aspects of the study was that it not only compared self-efficacy from person to person, but also day to day within the same person. This gave the researchers a better idea about how daily fluctuations in self-efficacy influence a person's activity.

The researchers saw that even if a person's self-efficacy was lower than another participant's, it still resulted in more physical activity as long as it was higher for them personally.

"It's all about what you think you're able to do. If you feel more confident than you generally are, you're more likely to be physically active that day," Zhaoyang said. "It's not about your confidence compared to other people, it's about comparing it within yourself. If you feel more confident than yesterday, you are more likely to be more active than yesterday."

They also said that the effect of a bump in self-efficacy failed to carry over to the following day.

"We measured whether self-efficacy can influence activity into the next day, and we did not find that was true," Zhaoyang said. "So for someone who's trying to help someone become more active, if you boost their confidence today, but don't do it tomorrow, the effect will disappear."

Lynn Martire, a professor in the Department of Human Development and Family Studies who also worked on the study, said the results could help inform intervention programs that aim to help people become more active. With the effect of self-efficacy only lasting a single day, the

timing of motivational messaging is key.

"There are many exercise interventions that aim to increase activity through self-efficacy, and we're seeing that the number one way to do that is to help people become more physically active to begin with and then build on it," Martire said. "And with mobile technologies like smartphones and FitBits, it's getting easier to give people feedback in the right amount of time."

Provided by Pennsylvania State University

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