Medical Xpress

How vaccine-related fears affect the flu shot experience

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A novel long-term study of how vaccine-related fears influence flu shot outcomes has found that these fears not only reduce vaccination, but also fuel symptoms of dizziness and lightheadedness at the time of the

injection.

These fears can have such a hold on some people that they may get a flu shot one year, but skip it when the next season comes around, the survey results showed.

The pandemic enabled an evaluation of COVID-19 vaccine intention and uptake as well. Responses suggested that the combination of vaccine-related fears and feeling dizzy and lightheaded while getting a flu shot led some people to say they weren't likely to get the COVID vaccine—and then not get it.

While researchers already knew these fears and symptoms exist, this study showing their impact on outcomes points to the need for interventions that address fear and potential dizziness at the time of vaccination—which hasn't been studied very much, said study author Jennifer Kowalsky, assistant professor of psychology at The Ohio State University Newark campus.

"Interventions could be developed that help people face fears—people who want to get vaccinated but have fears holding them back," Kowalsky said. "Beyond targeting fears, we could also improve the experience when the person is getting vaccinated to reduce the risk and severity of symptoms."

The study was published recently in the journal *Applied Psychology: Health and Well-Being*.

There is one technique recommended by the World Health Organization that could help people sustain oxygen flow to the brain—which may help fend off feelings of lightheadedness—when they're getting a vaccine, Kowalsky noted. Called applied muscle tension, it involves crossing your legs and repeatedly tightening core and lower body muscles to briefly

raise blood pressure. A 2018 study led by Kowalsky found this practice can reduce feelings of lightheadedness and dizziness (called vasovagal symptoms) with people highly fearful of blood and needles undergoing a simulated blood draw. She plans to further evaluate the technique's effectiveness in vaccine settings.

For the current study, Kowalsky recruited participants who were at least 18 years old and living in the United States through Amazon Mechanical Turk. She conducted three surveys over the course of almost two years, first asking 2,508 participants about the existence and severity of vaccine- and blood draw-related related fears in October 2019.

In May and June 2020, she received responses from 1,077 of those participants (591 who had not gotten the most recent flu shot and 486 who had) about the degree of any feelings of faintness, dizziness, weakness and lightheadedness they experienced while getting their most recent flu shot. This survey also asked participants about their intention to get a flu vaccine the following season and a COVID-19 vaccine when it became available. In a final survey in June and July 2021, 643 remaining participants reported on whether they had received a flu and COVID-19 vaccine.

Results showed that a younger age was linked to greater vaccine-related fears and more symptoms of dizziness and lightheadedness during and after a flu shot. And no matter what it was about vaccination that scared people—needles, pain, feeling faint or possible side effects—a higher level of overall fear was associated with more intense symptoms of dizziness or lightheadedness.

"These symptoms have health and safety implications, because they increase the risk of falling," Kowalsky said. "For clinicians, it's relevant to have this in mind, that fear can predict those reactions. If someone shares they are feeling fearful, keeping a close eye on them is important

because they may be at risk for those feelings of dizziness or lightheadedness."

A more detailed analysis of flu shot outcomes showed that having vaccine-related fears lowered intentions to get vaccinated, which in turn led to a decision not to get a shot—in some cases, even those who were vaccinated in the 2019-20 season opted out during the 2020-21 flu season.

"We should not assume that a person who has been vaccinated in the past will automatically get vaccinated again," Kowalsky said.

When it came to coronavirus vaccine decisions, a combination of fear and feelings of dizziness and lightheadedness with a 2019-20 flu shot contributed to lower uptake of the COVID-19 shots when they did become available, the analysis found.

As a specialist in prosocial health behavior, or doing things that benefit the health of others, Kowalsky is extending her research program on fear and vasovagal symptoms' influence on blood donation to vaccination, which has dropped globally since 2020 despite being one of the world's most successful public health interventions.

"People who are afraid to have blood drawn still give blood, and people who are afraid of vaccines still get vaccinated," she said. "But knowing some don't go through with getting a subsequent shot creates intervention opportunities to address the effect of fear on vaccine adopters. Their experience matters."

More information: Jennifer M. Kowalsky, Predicting COVID-19 and seasonal influenza vaccine uptake: The impact of fear and vasovagal symptoms, *Applied Psychology: Health and Well-Being* (2022). DOI: 10.1111/aphw.12380

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