

One-third of US adults may unknowingly use medications that can cause depression

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Dima Qato. Credit: UIC/Jenny Fontaine

A new study from University of Illinois at Chicago researchers suggests that more than one-third of U.S. adults may be using prescription medications that have the potential to cause depression or increase the

risk of suicide, and that because these medications are common and often have nothing to do with depression, patients and health care providers may be unaware of the risk.

The researchers retrospectively analyzed [medication](#) use patterns of more than 26,000 adults from 2005 to 2014, which were collected as part of the National Health and Nutrition Examination Survey. They found that more than 200 commonly used prescription drugs—including hormonal birth control medications, blood pressure and heart medications, proton pump inhibitors, antacids and painkillers—have depression or suicide listed as potential side effects.

Published in the *Journal of the American Medical Association*, the study is the first to demonstrate that these drugs were often used concurrently and that concurrent use, called polypharmacy, was associated with a greater likelihood of experiencing depression. Approximately 15 percent of adults who simultaneously used three or more of these medications experienced depression while taking the drugs, compared with just 5 percent for those not using any of the drugs, 7 percent for those using one medication and 9 percent for those taking two drugs simultaneously.

The researchers observed similar results for drugs that listed suicide as a potential side effect. These findings persisted when the researchers excluded anyone using psychotropic medications, considered an indicator of underlying depression unrelated to medication use.

"The take away message of this study is that polypharmacy can lead to depressive symptoms and that patients and [health care providers](#) need to be aware of the risk of depression that comes with all kinds of common prescription drugs—many of which are also available over the counter," said lead author Dima Qato, assistant professor of pharmacy systems, outcomes and policy in the UIC College of Pharmacy. "Many may be surprised to learn that their medications, despite having nothing to do

with mood or anxiety or any other condition normally associated with depression, can increase their risk of experiencing depressive symptoms, and may lead to a depression diagnosis."

Qato notes that the study also shows an important trend of increasing polypharmacy for medications with depression, particularly suicidal symptoms, as a potential adverse effect. This makes the need for awareness of depression as a potential side effect even more pressing.

The researchers found use of any prescription medication with a potential depression adverse effect increased from 35 percent in the 2005 to 2006 period to 38 percent in the 2013 to 2014 period.

Approximate use of antacids with potential depression adverse effects, like [proton pump inhibitors](#) and H2 antagonists, increased from 5 percent to 10 percent in the same period. Use of three or more drugs concurrently increased from 7 percent to 10 percent, approximately.

For prescription drugs with suicide listed as a potential side effect, usage increased from 17 percent to 24 percent, and use of three or more drugs concurrently increased from 2 percent to 3 percent.

"People are not only increasingly using these medicines alone, but are increasingly using them simultaneously, yet very few of these drugs have warning labels, so until we have public or system-level solutions, it is left up to patients and [health care professionals](#) to be aware of the risks," Qato said.

Qato says that solutions worth further study may include updating drug safety software to recognize depression as a potential drug-[drug](#) interaction, so that [health care](#) professionals, including pharmacists, are more likely to notice if a patient is using multiple medications that may increase risk. Or, including evaluation of medication use in the depression screening and diagnostic tools used by doctors and nurses and

recommended by the U.S. Preventive Services Task Force, especially when it comes to persistent or treatment-resistant depression.

"With depression as one of the leading causes of disability and increasing national suicide rates, we need to think innovatively about depression as a public health issue, and this study provides evidence that patterns of medication use should be considered in strategies that seek to eliminate, reduce or minimize the impact of [depression](#) in our daily lives," Qato said.

Co-authors on the study are Katharine Ozenberger of UIC and Columbia University's Mark Olfson. Qato and Olfson both noted financial disclosures potentially relevant to the study.

More information: *Journal of the American Medical Association* (2018). [DOI: 10.1001/jama.2018.6741](https://doi.org/10.1001/jama.2018.6741)

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