

Taking medicine for HIV proves hard to swallow for many people

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Highly active antiretroviral therapy has increased the longevity and quality of life for people living with human immunodeficiency virus. But it requires strict adherence in taking the medicine, something that is extremely difficult for many individuals to do.

Two new University of Washington studies illustrate just how hard it is to make sure people take their HIV medication. One study looked at the effects of drinking [alcohol](#) on adherence and showed the risk for non-adherence was double among drinkers compared to abstainers. The second study evaluated interventions using peers, electronic pagers or both, and showed that these tools promoted no lasting improvements in adherence rates.

"HIV is unique in the adherence levels needed to be effective," said Jane Simoni, a University of Washington psychology professor who specializes in studying adherence. She is the lead author of the pager-peer paper and a co-author of the alcohol study.

"Typical adherence for people taking medication is 50 percent. But 50 or 60 percent adherence isn't going to work for HIV medications and will lead to resistance to the drugs. Taking drugs for HIV is a lifetime commitment; you are married to the pills," she said.

The alcohol paper analyzed data from 40 previous studies involving more than 25,000 people and established that drinking does have a consistent effect on adherence across studies.

"Drinking quantity, more than frequency of drinking, is associated with non-adherence," said Christian Hendershot, lead author of the alcohol study. Hendershot is now a postdoctoral researcher at the University of New Mexico after earning his doctorate at the UW. Because the various studies had different criteria for drinking, the researchers used meta-analysis to examine three categories - any drinking, [moderate drinking](#) and problem drinking.

The latter was defined as meeting the National Institute on [Alcohol Abuse](#) and Alcoholism criteria for at-risk drinking - 14 drinks a week or more than 4 in a day for men - or meeting criteria for an alcohol use disorder.

"In general, people who drank alcohol had nearly twice the risk of non-adherence. But the risk of non-adherence went up as the level of drinking went up," he said. "At problem levels of drinking we see a higher probability of non-adherence."

However, Hendershot cautioned that these findings don't necessarily hold for all people on HIV medication and who drink.

"Alcohol may have a causal effect, but there also may be other factors affecting both alcohol and adherence that partly explain the association. We need to treat people individually."

For the peer-pager study, researchers recruited 224 patients being treated at a Seattle clinic. Patients were randomly assigned to one of four treatment groups - pager, peer, combined peer-pager and treatment as usual - for three months.

Patients with peer support attended twice-monthly meetings with other participants and trained HIV-positive peers who provided medication-related social support. Peers also called participants weekly to provide

more one-on-one feedback. Participants in the pager group were asked to carry a customized device when they were awake. The two-way pagers came with messages that were timed to each participant's daily medication schedule. The pagers also sent educational, humorous and adherence assessment text messages. Participants in all four groups also received the usual care at the clinic including an educational program that provided information about the medication and adherence in a series of three meetings with a pharmacist, nutritionist and case manager.

The participants completed self reports on their adherence two weeks after the study began and again at three, six and nine months. An electronic pill cap and bottle also was used to monitor medication taking. Every three months they also had blood drawn to measure the levels of [HIV](#) and white blood cells in their system. For this study, adherence was defined as taking medication 100 percent of the time over the past seven days. The typical patient on the highly [active antiretroviral therapy](#) takes one or two pills once or twice a day.

Simoni said patients who had peer support initially showed some increased adherence levels, but this didn't persist once the support ended. The pagers did not successfully promote adherence at any point.

"We can change adherence a little, but it disappears when the intervention is taken away," Simoni said. "Even though you are capable of doing something that doesn't mean you are motivated to do it all the time. Just ask anyone, 'Did you exercise yesterday?' 'Floss your teeth?' 'Avoid sweets?'"

"Add to this the complication that a person has to take these meds every day for a life-threatening disease. There is a lot of emotional baggage surrounding the disease and the pills, and the medications have severe side effects."

So what is needed to promote better adherence?

"I wish I knew," said Simoni. "We looked for less intensive solutions. But they didn't work. What we need are very individualized comprehensive programs. And to sustain adherence, the intervention must be as dynamic as the changes in people's lives."

The studies also have broader societal implications and Simoni believes adherence will be a major problem in the years ahead as the nation's aging baby-boom population takes its medications to stay healthy.

More information: The studies were published in the *Journal of Acquired Immune Deficiency Syndromes*.

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