

Researchers Use Cell Phones to Collect Real-Time Data on Substance Use

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(PhysOrg.com) -- Scenario: A group of friends are drinking at the local pub, when one gets a cell phone call. He takes it in a quiet corner; nothing unusual. But this isn't a "What's Up" call from a friend: It's a "What-are-you-doing-right-now?" call from an automated voice system programmed to collect data in real time, via cell phone, from participants enrolled in research studies on alcohol, marijuana and the situational factors that surround their use.

R. Lorraine Collins, PhD, a health behavior researcher at the University at Buffalo, devised this simpler and more efficient way of collecting data by adapting an earlier method that depended on Palm Pilots and other personal digital assistants, or PDAs.

She currently is using this cell-phone-based interactive voice response technology, or IVR, in a new three-year, \$1.39 million study funded this September by the National Institute on Drug Abuse, to investigate whether physical activity can help decrease marijuana use by young adults.

She also will use this technology in a new two-year, \$783,474 study, funded by the National Institute on [Alcohol Abuse](#) and Alcoholism through the American Recovery and Reinvestment Act, to analyze moods, motives and social factors in study participants who use malt liquor and other substances, in combination or separately.

Collins, a professor in UB's Department of Health Behavior and

associate dean for research in the UB School of Public Health and Health Professions, has been studying various aspects of substance abuse for more than 20 years, particularly psychosocial, personality and environmental factors associated with [alcohol](#) abuse, drug use and problem behaviors in young adults.

She described the cell phone-IVR method in a 2003 publication in the *Journal of Experimental and Clinical Psychopharmacology*. She showed that, in what is known in the psychology research community as "ecological momentary assessment" (EMA) or "right here, right now" data collection, cell phones are more familiar to research participants and therefore training is easier; and that with IVR, data is stored instantly, removing any issues around the loss of information.

"This is an interesting and useful way to collect data," said Collins. "It eliminates the problems associated with study participants having to recall their behavior, and cell phones are ubiquitous with young people, who are our main targets in these studies. We capture their data right away. It's all computerized and stored immediately."

The study on exercise and marijuana use will investigate the potential of regular physical activity or exercise to serve as a positive alternative to drug use among 18-25 year olds who smoke marijuana a minimum of twice a week.

"The goal is to reduce their marijuana use and associated negative consequences that can range from changes in reaction time (which could affect driving) to respiratory problems, neurocognitive problems and lower academic achievement," said Collins.

In this program of research, researchers will examine whether the intensity of exercise affects participants' marijuana craving, their intent to use and actual use, and if -- and how much -- exercising with or

without a marijuana-smoking friend affects their craving over 24 hours and up to seven days.

Each study will be conducted for 14 days, and will collect detailed and real-time data through automated [cell phone](#) calls and from accelerometers, which participants will wear to register their level of physical activity.

"We expect that the knowledge gained from this study will foster the development of more useful strategies for preventing and treating marijuana use and abuse," said Collins.

The malt liquor study will use the same cell phone data-collection method to study the role of moods, motives and the influence of friends during social situations in young adults using alcohol and other substances, separately or at the same time.

"Malt liquor is a unique, high-alcohol-content (6-11 percent alcohol by volume) 'beer' that is packaged in large 40 oz. containers and marketed to promote excessive drinking," said Collins. "Its low price and ready availability appeals to vulnerable populations, such as young adults and persons who live in minority and low-income urban communities, and other substances also are readily available in these communities.

The researchers will study personality characteristics and negative emotions in participants, as well as their beliefs, expectations, motives and the influence of peers.

"The results from 21 days of reports from participants should provide greater understanding of the role of factors in the situation (e.g., location, activities, participants' moods) that are associated with the use of multiple substances," said Collins. "We hope what we learn from this study will help us develop strategies to reduce the risk of substance

abuse in vulnerable young adults who use both malt liquor and legal or illegal drugs."

Provided by University at Buffalo ([news](#) : [web](#))

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