



FOR IMMEDIATE RELEASE

July 6, 2019

Contact: Mike Maggio
ABAI Public Relations
312-968-9199

When It Comes to Preventing Risky Behaviors, ‘Phone First’ *Study Says Hi-Tech Incentive Programs Can Cut Smoking, Drug Abuse*

Continuing advances in mobile phones and other Internet technologies are enhancing and broadening rewards-and-incentives programs for monitoring and promoting abstinence from smoking, alcohol and other unhealthy behaviors.

So, say scientists in a new report, *Technology-Based Contingency Management in the Treatment of Substance Use Disorders*, which appears online this month (July) and is scheduled for third-quarter publication in the Association for Behavioral Analysis International (ABAI) journal *Perspectives on Behavior Science*.

The term, contingency management, refers to use of “tangible rewards,” such as food vouchers, cash and prize opportunities, for encouraging patients to adhere to addiction treatment protocols and avoid smoking and drugs of abuse.

Literally hundreds of prior studies and clinical trials have demonstrated the effectiveness of contingency management initiatives in substance abuse treatment, the study authors contend. “Contingency management is one of the most rigorously tested and broadly successful applications of behavior analytic principles.” However, the reach of such programs in the past has been fairly limited because they have depended primarily on in-person monitoring visits from treatment centers to nearby patient homes.

Primary features of technology-based contingency management are a monitoring procedure to detect drug use, a reinforcement delivery procedure and an authentication process to verify the end-user’s identity – all performed remotely and all requiring connection to the Internet.

Advancements in these information technologies are “expanding the geographical reach of contingency management from local to nationwide,” while improvements in sensors are “permitting detection of cigarette, alcohol and cannabis use with mobile phones” and the latest software is automating all aspects of these programs, study authors say.

In fact, several companies are even developing wrist-worn sensors for continuous alcohol monitoring, and at least one research group is considering an electrochemical tattoo for alcohol detection, making patients' adherence to incentive programs even easier to monitor technologically, writes lead study author Jesse Dallery Ph.D., of the Department of Psychology, University of Florida, Gainesville.

Technology-based approaches also allow group contingencies that harness online communities and are useful for targeting a variety of risky health behaviors.

Such "new tools have the potential to dramatically increase [patient] access [to contingency management programs] while maintaining high levels of treatment fidelity," says Dallery, who is joined in the study by co-authors:

- Bethany Raiff Ph.D., associate professor, Department of Psychology, Rowan University;
- Michael J. Grabinski, a computer scientist and systems engineer, who has led development of novel, technology-based therapeutic interventions
- Lisa A. Marsch Ph.D., director of the Dartmouth Center for Technology and Behavioral Health and the Andrew G. Wallace professor in the Department of Psychiatry at the Geisel School of Medicine, Dartmouth College.

Despite the advancements, "one critical missing ingredient" is evidence that technology-based incentive programs can be effective in managing and changing behavior over the long term.

Technology-based programs of shorter duration might prove meaningful for preventing unhealthy behaviors during pregnancy, perioperative care or, perhaps, during critical periods of adolescence, but more evaluation of the results of longer-term programs is necessary, study authors say.

That's because most applications of reward-and-incentive programs do not involve relatively quick fixes but address risky lifestyle behaviors that have persisted for 10 years, 20 years or more, writes Dallery.

The scientists suggest that contingency management approaches with the greatest potential for long-term success may be those that do more than simply monitor smoking or drug use but offer a variety of "treatment components."

As an example, Dallery cites reSET, the first digital therapeutic technology approved by the federal Food and Drug Administration. ReSET is a mobile phone-based program that delivers the skills-development component of Community Reinforcement Therapy; complements standard outpatient therapies for opioid, alcohol, cocaine, marijuana and stimulant abuse; and includes in-person contingency management monitoring.

Pivot, a mobile, Bluetooth-enabled carbon-monoxide breath detector for smoking, also includes mobile phone-based therapeutic components and personalized coaching, study authors say.

“A growing number of researchers are recognizing the important interactions between [negative] health behaviors,” writes Dallery. Sedentary behavior, poor sleep quality, unhealthy eating, [problematic] alcohol consumption and smoking cigarettes – all have additive or interactive effects in increasing risk for disease, he says.

By targeting multiple behaviors using contingency management, providers can have a greater impact in lowering a person’s overall risk for disease, Dallery states. Concurrently, advances in technology may prove instrumental in enhancing the effectiveness of contingency-management approaches.

“Technology can be employed unobtrusively and continuously to detect virtually all health-risk behaviors,” with the one exception, for now, being unhealthy eating, he says.

Although further, corroborating investigation is needed, technology-based contingency management eventually could make monitoring of some drugs like nicotine, alcohol and cannabis “relatively efficient for extended durations,” while automation would mean fewer staff and less cost for program implementation and management, the scientists conclude.

The group cautions, however, that developing and refining an effective maintenance intervention program to reduce or prevent risky health behaviors must be done with “careful application of the conceptually systematic principles of behavior analysis.”

#####