

Mobile app with evidence-based decision support diagnoses more obesity, smoking, depression

February 19 2015



Smartphones and tablets may hold the key to getting more nurses to diagnose patients with chronic health issues like obesity, smoking, and depression -- three of the leading causes of preventable death and disability. Credit: Columbia University School of Nursing

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diagnose patients with chronic health issues like obesity, smoking, and depression—three of the leading causes of preventable death and disability. Mobile devices loaded with a custom app that prompts clinicians to follow evidence-based guidelines to make treatment decisions and document care plans makes nurses significantly more likely identify these health issues during routine exams, according to a study from Columbia University School of Nursing published in the *Journal for Nurse Practitioners*.

"What clinicians need is decision support tools that fit into their workflow and remind them of evidence-based practices," says lead study author Suzanne Bakken, PhD, RN, FAAN, FACMI, Alumni Professor of Nursing and Professor of Biomedical Informatics at Columbia Nursing. "Our app focused specifically on the work that nurse practitioners do to identify health problems, counsel patients, and coordinate care plans, resulting in higher diagnosis rates and more opportunities for intervention."

The study evaluated diagnosis rates for tobacco use, adult and pediatric depression, and obesity during 34,349 patient exams conducted by 363 registered nurses enrolled in nurse practitioner programs at Columbia Nursing. Students were randomly assigned to use [mobile apps](#) with or without decision support for guideline-based care.

For each of the [health issues](#) studied, mobile apps with decision support features resulted in significantly higher diagnosis rates than apps with only bare-bones tools for recording results from a patient exam.

Increased diagnosis rates with decision support were:

- Seven times more obese and overweight (33.9% vs. 4.8%)
- Five times more tobacco use (11.9% versus 2.3%)
- 44 times more adult depression (8.8% versus 0.2%)
- Four times more pediatric depression (4.6% versus 1.1%)

The app may have worked because, unlike software aimed at physicians that focuses more on diagnostic codes needed for medical billing, it prompted [nurse practitioners](#) to follow evidence-based clinical guidelines to screen, diagnose, and manage specific conditions and encouraged detailed conversations with patients about their health, Bakken says.

For tobacco screening, for example, the app prompted nurses to ask not just about cigarettes but also about other products such as chewing tobacco. To diagnose patients who are overweight or obese, the app calculated body-mass-index to quickly pinpoint people who might benefit from weight-loss counseling and other interventions. And with [depression](#), the app prompted nurses to ask a series of questions to make it easier to identify patients with depressive symptoms.

The paper is titled "The Effect of a Mobile Health Decision Support System on Diagnosis and Management of Obesity, Tobacco Use, and Depression in Adults and Children" and it appeared in the November/December 2014 issue of the journal. Co-authors from Columbia Nursing are associate professors Haomiao Jia, PhD and Rita John, DNP, EdD.

Provided by Columbia University Medical Center

Citation: Mobile app with evidence-based decision support diagnoses more obesity, smoking, depression (2015, February 19) retrieved 13 May 2024 from <https://medicalxpress.com/news/2015-02-mobile-app-evidence-based-decision-obesity.html>

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