

POLICY BRIEF

Are diabetes self-management apps based on evidence?

Translational Behavioral Medicine

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Citation: Brelanda J.Y., Yeh V.M., Yu J. Adherence to Evidence-Based Guidelines among Diabetes Self-Management Apps. 2013. Translational Behavioral Medicine, doi:10.1007/s13142-013-0205-4.

POLICY RECOMMENDATIONS

1. Some form of regulation on the quality or inclusion of evidence-based strategies for diabetes self-management apps is needed.
2. A policy requiring indication of the inclusion of evidence-based strategies for diabetes self-management will help consumers make informed choices when selecting these apps.

RESEARCH AND PRACTICE RECOMMENDATIONS

1. Future research should include the end user of apps. Information on why they chose the app and how they use it for glycemic control would help practitioners tailor interventions.
2. Partnerships between academics and app developers may be an important component of future health technology endeavors both in research and practice.

“It is critical for healthcare providers and the public to be aware of which apps promote empirically supported health behavior change techniques.”

Diabetes: a growing problem—The prevalence and rising rates of diabetes among Americans are of major public health concern. Curbing the increasing health care costs of treating and managing this disease is a priority; however, self-management in the form of medication and lifestyle changes is paramount.

A technological solution to self-management of diabetes—The development and use of smartphone health-related apps have increased exponentially in the last few years, but not all apps are supported by empirical research—and currently, it is not possible to search for those that are.

What should diabetes self-management apps include?—These apps should promote any of the seven self-management behaviors recommended by the American Association of Diabetes Educators (AADE7™). The AADE7™ provides an evidence-based framework for diabetes self-management and includes (1) healthy eating, (2) being active, (3) monitoring, (4) taking medications, (5) problem solving, (6) reducing risks, and (7) healthy coping.

How did the authors assess the diabetes self-management apps?—The authors of this study searched the Apple App Store in March 2012 for “diabetes” and 411 apps were retrieved with 227 relevant for this study. The description, features, reviews, and display for each of the apps were collected and analyzed. The apps were reviewed for the presence of AADE7™. The authors collected additional app features such as type of developer, app price, date of last update, and customer ratings.

To what extent are these evidence-based strategies included in diabetes self-management apps?

- The range of number of AADE7™ behaviors in the 227 apps was 0–6 with a median of 2.
- Apps most commonly featured the AADE7™ skills of healthy eating (44.9 %), monitoring of the biomarkers specified by the AADE7™ (48 %), and medication (46.7 %).
- The least commonly featured AADE7™ skill was healthy coping (5.7 %). Of the additional features catalogued, the most common was insulin delivery (39.2 %) and the least common was Bluetooth-compatible monitoring (1.8 %).
- The type of developer did not make a difference in the presence of AADE7™.
- Half of these apps allowed users to track diet or physical activity in relation to target values (e.g., out of range glucose levels) or other activities (e.g., physical activity).
- Almost 60 % of apps monitored biomarkers, most commonly in the form of blood glucose monitoring.
- Forty-eight percent of apps provided problem-solving assistance, but only two apps guided users through an interactive action plan to manage their diabetes.

BOTTOM LINE:

Smartphone apps can be useful tools in diabetes self-management, but they need to better incorporate evidence-based self-management behaviors.