Evolving Potential of Mobile Psychiatry: Current Barriers and Future Solutions

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How will mobile mental health technologies change the nature of the psychiatrist-patient relationship? And do these technologies truly deliver what they promise?

DIGITAL MEDIA IN PSYCHIATRY

Has it happened to you yet? A patient brings in a smartphone and asks you to review data collected by an app. Another patient asks if you recommend an app to help monitor mood. A different patient asks if you think a certain app for cognitive behavioral therapy may be effective. Understanding some of the fundamental opportunities and challenges of psychiatry apps provides a foundation for addressing their role in clinical care.

From fitness trackers that document patient activity levels to smartphone apps that promise real-time symptom updates, new sensors and apps are constantly being developed for psychiatry. It is estimated that there are currently more than 400,000 health care–related apps with thousands specific to psychiatry.¹ National organizations, such as the British National Health Service, have begun to offer official recommendations for selecting psychiatry-related apps. Likewise, professional organizations (eg, the American Psychological Association) have issued practice updates to reflect the growing importance of this technology. With large technology companies (eg, Apple, IBM) entering this market, the pace of new offerings is likely to increase.² While the rate of new app launches is a benchmark of technical progress, their short- and long-term efficacy, cost, and safety—and a host of privacy and legal issues—have yet to be determined.

Interest in mobile mental health has increased as psychiatric patients increasingly own and use smartphones and technology. Research suggests that patients not only own smartphones, but they are also amenable to using them for their clinical care.³,⁴ While many patients, especially those who are older, may not yet own a smartphone, ownership is projected to continue to increase rapidly over the next several years. This increased interest is not unique to psychiatry—there has also been a proliferation of apps for diabetes, pain management, rheumatology, ophthalmology, and many other fields.⁵-⁸ Each field is working to better understand the role of smartphone technology in clinical care—and psychiatry is no exception.

Psychiatrists may question where this technology is headed and how it can change the nature of the psychiatrist-patient relationship and future clinical practice in terms of diagnosis and treatment. Given the current and predicted shortages of psychiatrists and mental health clinicians, it is likely that the new technologies will provide greater accessibility to psychiatric care.⁹,¹⁰ These devices can monitor, communicate, triage, and even assist in the diagnosis and treatment of psychiatric disorders.¹¹ They can also collect real-time patient data, including self-reports, behavioral changes, and physiological parameters.¹² Use of these new technologies and subsequent data analysis may create a paradigm shift with respect to how psychiatric disorders are classified, their diagnostic criteria, and new standards of care.
But do these mobile mental health technologies truly deliver what they promise? Although early data appear to be supportive and rapidly expanding, there is scant evidence for the actual effectiveness of these technologies. They can capture unprecedented amounts of data (eg, social network activity), which necessitates the development of novel research methodologies to ensure that the data are reliable and valid, can be understood, and can be applied to clinical practice. For example, smartphones can collect real-time geolocation data (although translating it into clinically meaningful information is still a topic of active research). When one considers other potential data streams from smartphones—such as call logs, text message logs, voice samples, and accelerometer data—the picture becomes even more complex. Now that psychiatry can collect “big data,” novel research methods are needed to analyze, validate, and understand it.

A number of other issues remain despite the potential of smartphones for psychiatry. Of special concern with psychiatric patients are privacy and confidentiality, which can be compromised in various ways, including loss of devices, malicious hacking attacks, poor app design, and errors by users and developers. While encryption and security technologies continue to evolve, so do vulnerabilities. Thus, these matters may not be settled by technology alone because some risk will likely always remain. Instead, patients/users and clinicians may need to discuss whether the benefits outweigh the risks.

If patients are willing to accept the risks, what happens if an app fails and a diagnosis is missed or there is an adverse event? While the vast majority of published literature on psychiatry-related apps has been positive, recent results suggest some liabilities. For example, in one study a blood alcohol calculator app was surprisingly associated with increased rather than decreased rates of drinking among male study participants. Although the app associated with increased drinking was state sponsored and used in the comparison group, the results raise the important point that without clinical data, the utility of individual apps is unknown and some may actually be harmful. Given the overall paucity of efficacy data for smartphone interventions in psychiatry, more high-quality clinical trials are a research priority.

Liability issues associated with adverse events or outcomes linked to mobile apps are also largely unknown. Professional societies, legislative bodies, and the judicial system have not kept pace with these rapid advances in technology. The American Psychiatric Association formed a task force to evaluate smartphone apps in February 2015, and other professional societies are also beginning to closely examine the role of digital tools such as smartphones in clinical care settings. These actions will help psychiatrists assume the perceived and inherent risks of recommending apps in the routine clinical care of their patients.

Reimbursement for the time psychiatrists spend monitoring and treating patients with the new technologies still needs to be addressed. If psychiatrists are to successfully bill for mobile interventions, then clinical trials that demonstrate efficacy are a first step. Will apps become the 21st-century electronic equivalent of prescription medications with proprietary and generic formulations, third-party authorization, governmental approval, and standards for conflicts of interest and disclosure by “prescribing” psychiatrists? Psychiatrists and patients, along with technology, have the potential and opportunity to shape the role of new devices and apps for clinical care. By focusing on outcomes research, ensuring security and privacy, reviewing legal polices, evaluating risks versus benefits, and creating professional guidelines and recommendations, psychiatry has the opportunity to direct the future of mobile health technologies that can improve clinical care.

**Disclosures:**

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**References:**


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