



The SAGE Encyclopedia of Abnormal and Clinical Psychology

Mobile Applications for Psychological Treatment

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The advances in and widespread adoption of mobile technology after the turn of the 21st century led to an explosive growth in software applications (apps) designed to perform particular functions on smartphones and other portable devices. The emergence of apps that share psychological knowledge or help implement psychological interventions represents a seminal step in the history of efforts to integrate technology into the practice of psychology. Such mental or behavioral health apps are also integral to both the *quantified self movement* (tracking aspects of one's daily life to improve functioning) and the broader field of *mHealth* (using mobile technology to support health care).

The proliferation of psychology apps, their increasing integration into both clinical practice and the daily lives of individuals, and their potential to profoundly alter the delivery of mental health services underscore the importance of practitioners being familiar with this technology. This entry provides an overview of the advantages and uses of psychology apps, the emerging empirical data related to their use, and issues likely to affect their widespread adoption by clinicians.

Advantages

The use of psychology apps, as either therapeutic adjuncts or self-help tools, is associated with numerous advantages, many of which reduce the obstacles associated with traditional methods of delivering or disseminating psychological interventions.

Convenience

By virtue of embedding information and techniques in portable devices that people are highly familiar with and typically carry at all times, apps make therapeutic content highly accessible. They dramatically reduce the reliance on paper forms (e.g., mood diaries) while providing a more inconspicuous and secure (via password protection) means of reviewing content and recording clinical data. Many apps also provide automatic storing of entries, charting functions, and the ability to export content to a clinician for review in advance of therapy sessions.

Cost-Effectiveness

Psychology apps tend to be low cost, with many being free and most priced at only a few dollars. In addition to being far less expensive than traditional self-help books and client workbooks, apps used as adjunctive therapy tools may yield cost savings by saving clinicians' time or reducing the total number of sessions required to achieve therapeutic goals.

Tool Integration

There are countless ways for psychology apps to leverage the features of mobile devices for therapeutic ends. Notification alerts can remind clients about appointments and prompt them to complete homework assignments. Text messages can provide support, goal reminders, and the ability to send or receive therapeutic content. Internet browsers can be used to access resources that offer psychoeducation, support groups, and crisis intervention. Audio and video capabilities enable ready-access guided instructions and models for target skills (e.g., relaxation), real-time client recordings for later review (e.g., videos of things to savor), and the ability to deliver services remotely. Apps can also use tools such as global positioning system

and motion sensors to provide passive monitoring of a variety of behavioral and biomedical variables (e.g., activity level, sleep) for a wide range of therapeutic purposes (e.g., assessment, stress management, activating clients).

Extending the Reach, Efficiency, and Impact of Psychological Services

Whether applied as self-help resources, first-stage interventions in stepped-care models of treatment, or adjunctive tools in psychotherapy, apps may herald a paradigm shift in the delivery of mental health services. Their widespread accessibility, low cost, and ease of use may serve to overcome barriers to care related to geography, transportation, physical limitations, finances, and stigma, thereby providing a means of extending the reach of care to traditionally underserved populations. Apps also have the potential to make traditional therapy more efficient and effective by enhancing client engagement, the frequency and validity of clinical data collection, homework compliance, the practice and acquisition of target skills, clinical record keeping, and the generalization of treatment effects.

Clinical Uses

Apps target a wide and ever-increasing range of clinical disorders and issues. These include, but are not limited to, anxiety, depression, bipolar disorder, posttraumatic stress, substance use, attention-deficit/hyperactivity disorder, psychosis, eating disorders, autistic spectrum disorders, stress, gambling, suicidality, traumatic brain injury, sleep, weight management, diet/nutrition, exercise, relationship distress, and parenting. Other apps reflect specific treatment approaches and aim to facilitate their implementation. Examples include cognitive behavioral therapy, dialectical behavior therapy, mindfulness, acceptance and commitment therapy, behavioral activation, positive psychology, parent training, eye movement desensitization and reprocessing therapy, twelve-step programs, applied behavior analysis, exposure therapy, behavioral sleep medicine, and problem solving. As described herein, many psychology apps are designed to transfer the core components of mental health services to mobile devices.

Psychoeducation and Accessing Resources

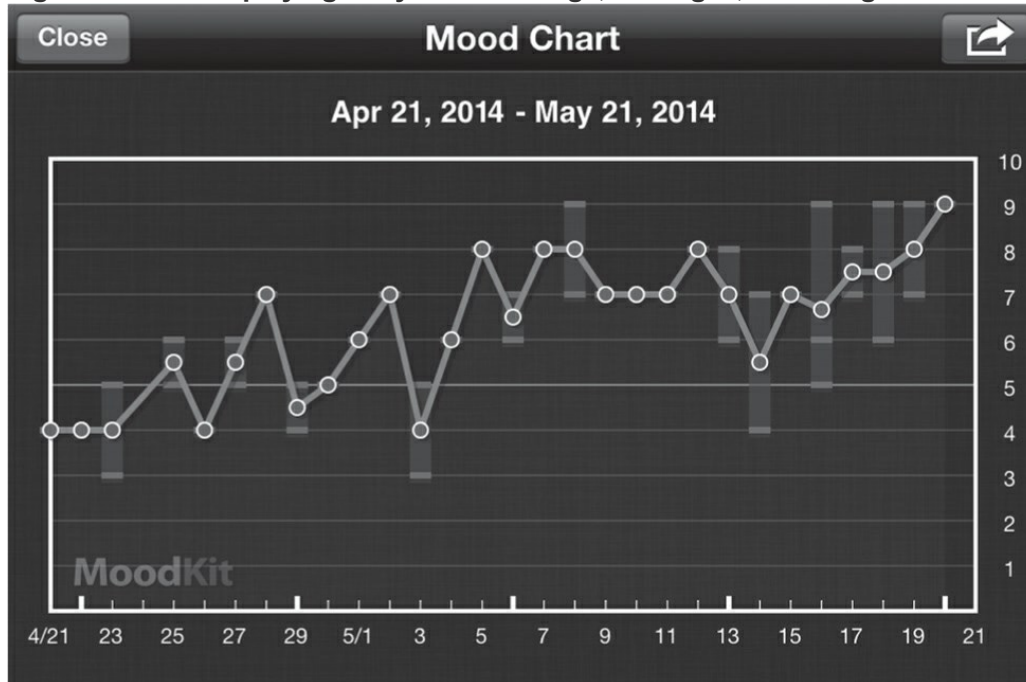
Apps can provide educational information to clients related to disorders, psychological principles, treatment approaches, and specific interventions. They can also assist providers and clients alike in accessing relevant resources. For professionals, these include practice guidelines, diagnostic criteria, guides to evidence-based interventions, medication databases, and peer-reviewed research. For clients, apps can facilitate their creating and accessing social support networks and can connect them quickly to suicide prevention or other crisis hotlines.

Assessment

Apps may be used to administer interviews, questionnaires, and rating scales. They provide a convenient means of assessing symptoms, client progress, and outcomes. Self-monitoring is an integral part of many evidence-based treatments, and apps confer advantages over traditional assessment methods in this regard. In contrast to paper forms and retrospective accounts, apps are likely to yield both greater amounts of data (due to improved client adherence) and more valid data (due to contemporaneous assessment in real-world settings). Indeed, apps hold great promise for promoting the real-time, ecologically valid data collection

sought by ecological momentary assessment. Assessment data collected via apps can be reliably stored, easily shared with clinicians, tracked over time, and presented in useful visual displays (see [Figure 1](#)). Apps can track a variety of clinical variables spanning mood ratings, thoughts, and a wide range of behaviors (e.g., sleep, diet, exercise, medication compliance).

Figure 1 Chart Displaying Daily Mood Ratings, Averages, and Ranges



Source: MoodKit—Mood Improvement Tools. Copyright 2014 by Thriveport, LLC. Reprinted with permission.

Skill Building

Apps can enhance the skill-building elements that make up the core components of many evidence-based therapies. Skills targeted by apps include relaxation, mindfulness, cognitive restructuring, problem solving, assertiveness, emotion regulation, and parenting techniques, among others. Apps can improve the acquisition of skills by providing guided instructions, video models accessible at the point of performance, the recording of practice sessions for therapist review, and even the option of real-time coaching by clinicians. Moreover, some apps incorporate gaming elements to elicit greater motivation and reinforcement for practicing and applying target skills.

Empirical Support

Given the disparity between the time required to conduct and publish high-quality research and the rapid pace of innovation in mobile technology, it is not surprising that the empirical study of psychology apps has lagged behind their growth and adoption. Nonetheless, studies on the usability, feasibility, and effects of psychological apps appeared increasingly in the half-decade following their introduction in 2008. Results of these studies, which spanned a range of clinical concerns, were generally promising. End users reported moderate to high rates of satisfaction with mental health apps, regarded them as useful, and demonstrated improved adherence to self-monitoring and other components of treatment. Reduced

symptoms were reported for a range of clinical issues, including depression, anxiety, stress, and substance use. As of 2014, however, these findings needed to be viewed with caution as well as enthusiasm for several reasons. The number of studies conducted was relatively small as were their typical sample sizes. The quality of the studies was variable, with few randomized controlled trials. Moreover, follow-up assessments tended to be absent, making the maintenance of gains unknown.

Factors Influencing Adoption

Quality Standards

Developers of psychology apps vary in their motivations and command of both the conceptual underpinnings and the implementation of evidence-based practice. This results in apps of highly variable quality and, in all likelihood, efficacy. The lack of adequate quality control mechanisms means that apps may contain inaccurate information, deviations from evidence-based practice, and technical bugs that degrade their benefits. Ideally, professional guidelines pertaining to the use of mental health apps along with widely accepted app certification systems will emerge to assist clinicians and the public in selecting apps that are safe, effective, and well matched to their needs.

Legal-Ethical Issues

The emergence of psychology apps is rapidly outpacing the development of legal, ethical, and practice guidelines pertaining to their use. The integration of apps into clinical practice raises myriad issues pertaining to the security of client data, standards of care, therapeutic boundaries, clinicians' scope of competence, and, potentially, interjurisdictional practice. Ongoing efforts by regulatory bodies and professional organizations (e.g., the American Psychological Association, the American Telemedicine Association) to reduce the legal and ethical uncertainties associated with the use of apps in clinical practice should help promote their adoption.

Training

Many clinicians, particularly those whose training predated the digital age, may be inhibited about integrating apps into their practice due to a lack of familiarity with and confidence in mobile technologies. Others may be comfortable with apps but may lack any formal training on how to use them responsibly and effectively with clients. The thoughtful integration of mobile app technology into graduate training programs, as well as the emergence of a continuing education and support infrastructure, should promote increased acceptance of mental health apps, along with their ethical and competent use.

See also [Computer-Assisted Assessment](#); [Computerized Cognitive Behavioral Therapy](#); [Experience Sampling](#); [mHealth](#); [Self-Monitoring](#); [Teletherapy](#); [Treatment Accessibility](#)

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Further Readings

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