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FEATURE: PERSPECTIVE

Preparing Residents and Fellows to Address Ethical Issues in the Use of Mobile Technologies in Clinical Psychiatry

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Mobile technology holds promise for identifying, tracking, and addressing mental health issues across large numbers of people. Given the burden of mental disorders felt throughout the world, such innovation is welcome—and yet the rapid advancement of mobile health technology has outpaced both clinical evidence and regulatory oversight, introducing a number of serious ethical concerns [1]. Early experience suggests that individuals using mobile health technologies, such as smartphone apps, encounter issues related to confidentiality, deception, and commercial exploitation [2, 3]. People who live with mental illnesses may have greater likelihood and more serious negative consequences of these issues—due to stigma, threats to informed decision-making, and lessened access to care—than others in the general population [4]. These concerns may have the greatest impact in the professional lives of residents and fellows, especially those who may more rapidly embrace technological innovation in their clinical work than their more senior colleagues. Academic psychiatrists may or may not wish to incorporate mobile health technologies in their clinical care practices, but they certainly should engage with their trainees to learn more about such advances so that there is an opportunity to learn and reflect on the rapidly changing nature of clinical psychiatry. Moreover, academic psychiatrists and their trainees should approach such innovation with keen attention to ethical implications.

Recognizing the ethical aspects of engaging mobile mental health technologies is an important first step in navigating the complexities of digital psychiatry and ensuring that patient care practices involving technology are both safe and appropriate. Confidentiality issues are common but perhaps underappreciated in mobile health, because mobile apps can and do collect a tremendous amount of personal information, and some companies may base their business model around the selling of personal profile data, for example, to pharmaceutical companies or health systems [5]. Deception has already emerged in the early deployment of mobile mental health technologies. Luminosity, which sells cognitive training programs and apps directly to consumers, recently settled charges by the US Federal Trade Commission because of the company's claims that its programs could delay cognitive symptoms associated with dementia [3]. These examples underscore the potential for commercial exploitation of individuals who live with or at risk for mental disorders—people who may feel embarrassed and marginalized because of their symptoms. Such individuals could be reassured by the appearance of privacy associated with "direct to consumer" use of a phone or other mobile device for their mental health needs. Unfortunately, these digital health consumers pay for supposed services that do not yet have a sufficient evidence base to demonstrate their potential value to improving personal health. And because so little is known and even less is disclosed to consumers, full and authentic informed consent is not yet, or perhaps ever, possible [6]. In the absence of appropriate safeguards, consumers of mobile mental health technology encounter a number of threats to ethical standards normally expected in clinical care and research. Such topics should be introduced to residents and fellows in didactic

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discussions of clinical innovation and ethics, incorporating relevant background resources [7].

The ethics of innovation, very importantly, should also be integrated into clinical supervision (see Table 1) [8]. Ideally, the supervisor will collaborate with the trainee in identifying ethical issues present in the patient's care and will assess whether new or more complex ethical issues accompany the use of mobile mental health technology. Once these steps have been taken, the supervisor should work closely with the trainee in gathering and/or reviewing additional information and necessary expertise that may be helpful in understanding the proposed novel technology. The supervisor should support the resident or fellow in clarifying potential benefits and risks involved in incorporating a novel technology into the care of the patient. The supervisor should work with the resident or fellow to explore possible responses to the clinical ethical issues involved in use of the proposed novel technology and try to anticipate different outcomes, taking care to safeguard against negative consequences. The supervisor should provide guidance and support as the trainee implements a decision, for example, obtaining informed consent for use of the novel technology as an adjuvant to usual care. Finally, the supervisor should create a context for reflection and prospective efforts to review the use of the novel technology in the patient's care. Such practices help to foster ethical habits and skills in clinical care.

Given the ever-increasing interest in mobile health and the observation that it holds promise—even if as yet unproven—for bringing benefit to individuals on a large scale, we encourage our academic colleagues to learn about the digital tools that exist and to clarify whether they are being used, or could be used constructively, in their training clinics. As with innovation such as texting in psychotherapy, the psychiatrist supervising a resident or fellow should begin by helping the trainee to consider whether the use of mobile technology offers benefit to the patient. Is there a potential for the mobile technology to improve patient health or to enhance the goals of the patient-psychiatrist relationship? If there is a potential benefit, the psychiatrist can next ask whether there are potential risks to the patient or to the therapeutic relationship. What safeguards may be introduced to minimize risk?

Table 1 Addressing ethics topics related to clinical innovation in trainee supervision

- Collaborate with the trainee in identifying ethical issues present in the patient's care.
- Collaborate with the trainee in gathering and/or reviewing additional information and necessary expertise that may be helpful in understanding the proposed novel technology.
- Support the resident or fellow in clarifying potential benefits and risks involved in incorporating a novel technology into the care of the patient.
- Explore possible responses to the clinical ethical issues involved in use of the proposed novel technology and try to anticipate possible outcomes.
- Provide guidance and support as the trainee implements a decision, for example, obtaining informed consent for use of the novel technology as an adjuvant to usual care.
- Create a context for reflection and review of the use of the novel technology and relevant issues that are clinically and ethically important.

For both the supervisor and the supervisee, evaluating the benefit/risk ratio may be difficult, given the limited evidence base documenting potential clinical risks and the breadth and severity of psychiatric symptoms that some individuals experience. Such uncertainty is an ideal issue for careful consideration in clinical supervision, because it may better prepare the resident or fellow for similar clinical challenges in the future. Together, the supervisor and trainee should consider different scenarios. What happens if the patient initially agrees to the use of technology but then later rescinds the decision? What happens if the patient believes that he or she is being monitored and then acts unsafely, thinking that a "safety net" is in place? Alternatively, what happens if a patient becomes paranoid about the use of technology? Thinking through such scenarios in relation to a specific patient will allow for an enriched discussion of the patient's needs and of whether engaging technology in treatment may or may not be appropriate.

Assuming the patient and psychiatric resident or fellow and the supervisor agree that the benefits outweigh the risks and that technology use does not threaten but rather enhances the psychiatrist-patient relationship, it is important to next obtain informed consent from the patient. Similar to performing consent for a therapy or medication, elements of an ethical conformed consent around technology use should include assessing decision-making capacity, openly discussing the risks and benefits with the patient, and addressing potential pressures that the patient may feel to use technology [9]. The information-sharing process should include disclosure of known and theoretical benefits, as well as harms and the limits of the current evidence regarding clinical effectiveness of mobile technologies. The mobile technology should be considered as an adjuvant to the therapeutic relationship and discussed in this way, that is, as an additional tool that may help strengthen or augment the treatment. Risks such as breach of confidentiality should be discussed, and all parties should understand how the technology platform respects the patient data it collects. For example, the business model of some mental health apps is to market and sell patient data with third parties and industry—a practice few psychiatrists or patients are aware of [10]. Thus, it is important for the supervisor and resident or fellow to review the privacy policies of technology platforms, which outline how companies respect and utilize the collected data. Although research is lacking on the privacy policies of mental health apps, a recent study noted that up to 81 % of diabetes apps lack a privacy policy entirely,

underscoring the potential risk of failing to check and review [11].

The informed consent dialog also should explicitly review alternatives to the mobile health technology, because alternatives tend to be the most often forgotten element in consent processes [12]. A final element in the informed consent process is voluntarism, and the psychiatric resident or fellow should be mindful of coercive forces that may potentially influence the patient to ask for mobile technology in the treatment (e.g., direct-to-consumer advertising). Discussions of such nuanced issues related to information disclosure and sharing, confidentiality, and voluntarism in patient care may be very valuable in the supervisor-supervisee interaction and could naturally lead to dialog about other key issues, such as trust, communication, and fiduciary responsibilities in the doctor-patient relationship. Issues like confidentially are especially interesting to educators because they span traditional notions of privacy and respect for persons but also extend toward digital safeguards such as strong passwords, encryption protocols, and secure Internet connections. Thus, to supervise residents, it may be necessary for psychiatric educators to themselves receive basic education on best practices in health information technology via workshops or seminars.

Over time, as mobile technology is integrated into the therapeutic relationship, the psychiatrist should inquire about the experience and comfort of the patient and explore whether technology use fits with evolving treatment expectations and goals. Similar to how psychosocial interventions or pharmacological agents are evaluated continually in the context of a treatment plan, mobile technology use should also be appraised within this frame, fostering attunement and a salutary balance of benefits and risks of innovative practice. Supervising residents and fellows in a manner that actively addresses the ethical issues intrinsic to clinical innovation may help create an enduring framework in the minds of present-day residents or fellows who will encounter transformative technological change in the coming decades and whose professional lives will be shaped by such advances.

Compliance with Ethical Standards

Disclosure On behalf of both authors, the corresponding author states that there is no conflict of interest.

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