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Technology in Clinical Practice

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I (McMinn) went hunting once—and only once—because a friend somehow convinced me that shooting at rabbits would be a worthy endeavor. Rabbits move quickly it turns out, so the one shot I took came much closer to my friend's dog than to the rabbit the dog was chasing. My friend agreed that it was a good time for me to stop my one and only hunting expedition.

Keeping up with technology in practice is a bit like rabbit hunting—the target moves too fast. Just when we figure out how to manage electronic billing in a confidential and ethical way, then we are asked to consider the nuances of virtual reality for treating anxiety disorders or the ethical implications of having a MySpace page or confidentiality issues pertaining to electronic medical records.

A decade ago, I was involved in two research projects to better understand how psychologists use technology (e.g., McMinn, 1998). In the intervening years, the rate of change in technology is nothing less than stunning and ten years of aging have rendered me less passionate about keeping up with the latest technological tools. So I recruited two young, bright doctoral students to help fill in the large gap that a decade brings. Together we have reviewed recent literature and asked various clinicians what sort of technologies they use in professional practice. We asked by posting our queries on various listservs, which is the way much professional dialog occurs these days. What follows is a summary of what we have learned about how technology is used in clinical practice, which we have separated into support functions (those technologies that help “behind the scenes” as the psychologist delivers professional services) and service delivery (direct applications of technology in providing professional assessments and interventions).

Technology and Support Services

Today's psychologist works in an office that bears great resemblance to that of 10 or 15 years ago, but the view is strikingly different behind the scenes. Whereas many clinicians have bravely opened e-mail accounts for themselves and ventured onto the World Wide Web, others have moved on to downloading podcasts, using cellular phones for business purposes, maintaining handheld personal digital assistants (PDAs),¹ implementing treatment planning software, communicating via Voice Over Internet Protocol (VOIP), keeping electronic records, billing electronically, and so on.

Consider a day in the life of Jill Psychologist, who stays current with the latest technological trends. She begins her day with a time of spiritual reflection and meditation. After a period of silence and meditative prayer, she downloads a podcast of a recent sermon from bible.org to her iPod and listens to it on her drive to work. When we asked Christian mental health professionals how they use technology in their daily life and work, most of those who responded offered ways that Internet sites have improved their access to faith resources. They mentioned biblegateway.com, bible.com, bible.org, beliefnet.com, probe.org, arcapologetics.org, relevantbibleteaching.com, and so on.

As she leaves the house, Jill checks to be sure her cellular phone is charged. Cellular telephones have become so commonplace that some clinicians may not remember how they have freed us from wearing pagers and finding the closest pay phone when a client is in crisis. Some clinicians use answering services in order to avoid giving out cellular phone numbers to clients, but still they benefit from the convenience of having a personal telephone with a confidential voice mail system and caller ID when dealing with professional matters. One clinician we consulted maintains a very limited clinical practice—just a few hours per week—and has opted to use a cellular telephone as his sole business number. This keeps his overhead costs low—because he does not pay for another business telephone line—while still allowing his clients to leave confidential voice mails when he is not available to take phone calls.

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Once in her office, Jill reviews an assessment report on a client. Intrigued by some of the symptoms described by the client, she retrieves her handheld PDA and consults her electronic version of the DSM. Based on what she finds, she develops a 12-session treatment plan using her treatment planning software (e.g., wiley.com/legacy/therascribe/default.htm) and then faxes it to the insurance company who needs to see the treatment plan before authorizing more therapy sessions. The amount of information available to clinicians through electronic means is staggering compared to previous generations, and the ease of transmitting information is also enhanced through technology.

The office phone rings and caller ID reveals who is calling. Jill knows what this call is about, and chooses to let it go to confidential password-protected voicemail. Although Jill intends to speak with this particular client later in the morning, she still has a few questions for a colleague who is consulting with her about this case. Jill takes a seat at her desk and quickly logs on to the Internet. Her colleague's e-mail response is waiting for her. Although the message seems vague, Jill realizes it is better not to share anything more specific by e-mail because of confidentiality concerns. She makes a mental note to phone her colleague later. Jill also notices an email from a client who is out of town caring for a sick relative. Jill sends her a quick e-mail to confirm their VOIP web-conference appointment for 2:30 p.m. (e.g., skype.com). As will be discussed later, VOIP provides an alternative for distance therapy that is much less expensive than earlier videoconferencing technologies.

Many technological advances are particularly useful in today's fast-paced culture. Gone are the days when every communication required a phone call or a letter sent through the postal service; fax, e-mail, and pdf attachments have become extremely popular. So also the days of furious note-taking and hand cramps from filling out paperwork by hand are growing obsolete. Laptop computers, with their security features and other available software, make electronic record keeping and chart maintenance faster, easier, and, most important, secure. Bills can be submitted electronically rather than printing out each bill, stuffing envelopes, and sending them through the postal service. While saving time, simplifying tasks, and contributing to the efficiency of a psychologist's practice, technology has the potential to free up the clinician to focus more time on clients and their presenting issues.

Still, some technological changes seem to require vast amounts of time to learn and maintain, and may actually distract clinicians from patient care. Every technology described here has practical and ethical implications, and revisions in regulatory guidelines have not progressed at the same blinding speed as technological change. This requires individual mental health professionals to consider carefully matters such as time efficiency, confidentiality, privacy, informed consent, and state and federal regulations whenever considering any new technology.

Technology and Service Delivery

It is not just that technology aids in the support functions of mental health professionals; technology now influences nearly every level and type of psychological care. Though diverse, these direct service delivery technologies can be generally grouped as computerized diagnosis and assessment tools, computerized therapy tools, supplemental self-help applications, professional web sites and networking, and distance therapy tools.

Computerized Diagnosis and Assessment Tools

Computers have been used in administering, scoring, and interpreting psychological tests for quite some time now, as have computerized interviewing and diagnostic tools (McMinn, 1998), but recent technological advances have caused a proliferation in software for interviewing, diagnosis and assessment, both on-line and off-line. Examples of online assessments can be found at Multi-Health Systems (mhs.com) and the Psychological Corporation (harcourtassessment.com), among others. Some test publishers are developing online administrations of psychological tests with a dynamic database so that normative samples can grow over time. Gathering and collecting client data in an electronic format may become standard in the future.

Another innovation is decision support software, which is often available for handheld PDAs as well as personal computers. This software guides clinicians through a set of assessment questions, then provides a diagnostic impression and empirically supported treatments (e.g., *Diagnostica*, at medicinerules.com). Some decision support software goes well beyond assessment and diagnosis and can also be used for various dimensions of practice management—from tracking therapeutic progress according to prevailing benchmarks to suggesting modification of treatment plans, optimal

time for termination, and suitable referrals. Decision support software is especially likely to appeal to those in health care administration who attempt to optimize cost-benefit ratios. One example of comprehensive practice management software is Epitomax (psytechsolutions.net).

Computerized Therapy Tools

Computerized therapies are controversial because they can easily be construed as obstacles to a human-to-human therapeutic interaction. In fairness, most of the computerized therapies are intended to be used as adjunctive tools in the context of a real therapeutic relationship or as alternatives for those who cannot enter therapy because of distance or cost. For example, a client might be given opportunity outside the therapy session to participate in a computerized tutorial on restructuring dysfunctional thoughts, improving self-image, making responsible sexual choices, drinking responsibly, and so on. Most often these computerized tools are used in cognitive-behavioral interventions (e.g., Whitfield, Hinshelwood, Pashely, Campsie, & Williams, 2006). Studies have supported the use of technology-assisted CBT therapies for depression, anxiety, panic and phobias, weight control, smoking cessation, and a multitude of other routine care issues. Computerized interventions are not limited to cognitive-behavioral therapy; they have also been utilized in areas such as pain management, child counseling and play therapy, sex therapy, group therapy, and treatment for schizophrenia, autism, and traumatic brain injury.²

Some computer applications are used in the therapy session itself—most notably this occurs with virtual reality (VR) applications. In VR, clients wear headsets or otherwise view a computer output that recreates a stimulus that triggers an emotional response. This brings the possibility of *in vivo* exposure into the therapy office. Post Traumatic Stress Disorder and other anxiety related issues such as social anxiety have been treated for over a decade now by the use of VR programs. During this time the VR programs have become more and more sophisticated, and now have a significant body of research that supports their efficacy (e.g., Rizzo, Rothbaum, & Graap, 2007).

Supplemental Self-Help Applications

Whereas ten years ago assigning homework for a client often included the use of paper and a pencil, today many clients are instead working through life problems on sophisticated self-help computer programs. For example, *Mastering My*

Life (asktbs.com/ms.html) is an Internet-based program to help a person examine different aspects of life, identify what is not working, and develop practical solutions. Using special programs called "Guided Sessions," *Mastering My Life* helps customers think through various problems and make effective decisions. The Guided Sessions were developed by a psychiatrist, and mimic sessions with a live therapist. A second example is that therapeutic diaries are being replaced with electronic versions on PDA's that collect time-stamped written, verbal, and even physiological data. For those without the budget for a PDA, mobile phones are being used in a similar fashion. A computer at the psychologist's office can be set to call clients at regular intervals, collecting data from them through the use of automated interactive voice response (IVR) systems. These IVR systems commonly use digitized human speech to administer clinical rating scales and structured interviews with the client, which is then used for computer-based assessment of the clients' mood and symptoms (Maheu, Pulier, Wilhelm, McMenamin, & Brown-Connolly, 2005).

Professional Web Sites and Networking

When we asked CAPS members about how they used technology, we were reminded that one common use of technology is for therapists to develop web pages that include both self-help resources and marketing information about their own practices (e.g., CAIRforYou.com). These web pages serve a dual purpose of "giving psychology away" to people around the world who may be seeking accurate information about mental health problems and treatments while also promoting the local clinical practice of the clinician who has developed the vision for the website.

Another CAPS member described how he has developed an eCommunity which allows people to write freely about religious and spiritual issues as related to mental health. He writes, "I have seen Christian people share openly about their struggles, because people do not merely talk theory; they also share themselves with others in relationships. I have taken one episode from the many years and many 'stories' and condensed it for a chapter in a coming book about Life Communities ... We are hoping to draw people from the global gestalt community to explore a theistic worldview, trusting that the Living God will encounter them in the process" (P. Brownell, personal communication, August 13, 2007).

Distance Therapy Tools

Distance therapy has been available by teleconferencing for some time, but the associated equipment and telecommunication costs were prohibitive for most mental health professionals (McMinn, 1998). Now the Internet has made various distance therapy options affordable. For consumers in rural areas, the use of Internet-based mental health programs has become a powerful tool for accessing formerly scarce resources. Indeed, it was originally the need of these underserved communities that fueled the creation of early distance therapy tools. E-mail, internet chat-room, and teleconferencing (videoconferencing) are still widely used, though some of these earlier therapeutic distance tools have begun to fade as internet providers continue to expand service and increase bandwidths. With a USB 2.0 web camera (\$100 or less), a high speed internet connection, and free communication software (e.g., skype.com), a therapist and client can now communicate from anywhere in the world. Both verbal and non-verbal cues are available because the conversation can include a video feed along with the audio feed. Skype boasts an encrypted connection that makes communication confidential. This also creates options for distance supervision and mentoring as well as psychotherapy.

Whereas most internet-based therapy is intended to replicate a real-life encounter in a therapy office, some recent approaches are much more unconventional; they seem to be more about creating anonymity rather than reducing distance. For example, some psychotherapists offer services where the clients appear physically disguised in the form of a customized digital avatar, interacting with therapists who themselves are represented by digital alter egos. Therapy flows in the normal manner, only with therapist and client interacting naturally through the use of voice over communication headsets. Internet based group therapy meetings are growing daily, with many clients joining groups that they might avoid without the security of being concealed behind digital avatars. The perceived anonymity that cyber-space provides is a significant contributor to the recent surge of digitized therapy, though other factors such as time-management, distance, and disabilities also are contributors to the public demand for these distance therapies. Of course anonymity has disadvantages, especially when it comes to therapy where an important part of the process is to be known by another person.

Conclusion

Any conversation about rapidly-changing delivery systems in mental health needs to be accompanied with a caveat about ethical practice. Many questions about ethics have not been fully considered because the rate of technological change has not allowed for deep and systematic reflection on ethical implications. For example, when a psychologist in Iowa provides distance therapy to a client in Florida, is the Iowa license sufficient? Or could the psychologist be providing the unlicensed practice of psychology in a state where he or she is not credentialed? Complex confidentiality concerns must also be raised with electronic record keeping and transmission of information. How many therapists keep adequate password protection systems in place for their electronic records? And are the appropriate passwords contained in the therapists' wills so that in the case of death the records can be passed to another responsible party? And what becomes of disposed computers? How does one assure that discarded disk drives are erased so that old clinical records will not be unintentionally revealed to others? Is it acceptable for an online therapist to charge by the minute rather than the hour? What sort of psychometric standards should apply to online assessment tools? All these questions and many more linger in the wake of rapid technological movement.

Despite the numerous ethical challenges, it seems clear that technological change will be part of contemporary life and clinical practice. If anything, the change will accelerate over time. The challenge for Christian clinicians is to balance an openness to change with ethical sensibilities and the time-honored truths about human nature that cause people to seek psychotherapy in the first place. Like faith, psychotherapy is ultimately a relational matter.

Notes

1. PDAs include products such as iPAQ Pocket PC (see hp.com), Palm Centro (see Palm.com), iPhone (apple.com/iphone), Blackberry (blackberry.com), and many more.

2. References are available upon request from Dr. McMinn.

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