All indicators suggest that technology may be an inherent part of psychotherapy delivery in the next decade. This article serves as an introduction to a special issue of *Journal of Clinical Psychology: In Session* devoted to technology in psychotherapy. Articles in this series feature self-help Internet sites, computer-administered psychotherapy, adjunctive palmtop computer psychotherapy, virtual reality psychotherapy, interactive voice messaging systems, biofeedback via ambulatory physiological monitoring, synchronous and asynchronous online support groups, and use of electronic mail by psychotherapists. As illustrated by many of the articles in this issue, technological advances may extend psychotherapy beyond the therapy hour and increase psychotherapy dissemination, client motivation, and compliance. © 2003 Wiley Periodicals, Inc. J Clin Psychol/In Session 60: 141–145, 2004.

Keywords: technology; psychotherapy; computer; virtual reality; interactive voice messaging systems; biofeedback; ambulatory psychological monitoring; online support groups; e-mail

As technology has advanced rapidly over the last decade, so has the development of technological applications to psychotherapy. Such technological applications are wide ranging and include self-help Internet sites, computer-administered therapy, adjunctive palmtop computer therapy, virtual reality therapy, interactive voice messaging systems, and biofeedback via ambulatory physiological monitoring. As we present in this issue, this technology offers several advantages to the practitioner. For example, it can be used to give clients objective feedback about what is contributing to their problems as well as about how they are responding to therapy. Some applications have been used to treat problems that are particularly difficult to treat or for which qualified therapists are hard to find. Further, technological applications may even motivate clients toward readiness for therapy or to comply with and apply assigned homework. Thus, as in other arenas, technological applications have the potential to make the job a bit easier for psychotherapists.

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Many psychotherapists are initially uncomfortable with the idea of using technology in therapy. Discomfort may arise from apprehensiveness that technology may interfere with the development of a therapeutic relationship or may increase the likelihood that clients will terminate early. Since the alliance between client and therapist consistently predicts therapeutic benefit (Orlinsky, Grawe, & Parks, 1994), it is understandable that psychotherapists would be cautious about introducing anything that might prevent the development of a good alliance. However, research to date shows that contrary to many fears, technology need not compromise the therapeutic relationship, and in some instances technological interventions may even be preferred. For example, Ghosh, Marks, and Carr (1988) found that more people declined to participate in a therapist-delivered therapy than in a computer-administered therapy for panic disorder. In addition, Ghosh and Marks (1987) found that compliance to treatment was higher in a computer-administered condition than it was in individual therapy. Further, studies consistently find no difference in dropout rates between computer-administered and traditional therapies (Buglione, DeVito, & Mulloy, 1990; Carr, Ghosh, & Marks, 1988; Ghosh & Marks, 1987; Ghosh et al., 1988; Newman, Kenardy, Herman, & Taylor, 1997b). At the conclusion of therapy, studies also demonstrate equal rates of satisfaction between traditional and technology-administered approaches (Ghosh et al., 1988; Newman, Consoli, & Taylor, 1997a; Newman et al., 1997b).

Available evidence also suggests that clients do not need prior experience with technology to use it in treatment. For example, in one of the case studies presented by Gega and associates (this issue), a client who was initially apprehensive about the use of a computerized self-help system was fully won over after using the system and experiencing its advantages. Similarly, in the case study presented by Meuret and colleagues (this issue), the client had no prior experience with a battery-operated capnometry device that she was asked to use in conjunction with breathing exercises at home. Nonetheless, she was able to use and benefit from it. Likewise, in a study of a computer-administered client interview, although half of the participants had no prior experience with computers, only 18% rated the interview as somewhat or very unpleasant (Farrell, Camplair, & McCullough, 1987). Other researchers (Carr, Ghosh, & Ancill, 1983; Greist et al., 1987; Stillman, Roth, Colby, & Rosenbaum, 1969) found that even severely disturbed patients could make use of technological applications. I have had a similarly positive experience using three different palmtop computer programs with outpatient adult clients seeking treatment for panic disorder (Newman, Kenardy, Herman, & Taylor, 1996) and generalized anxiety disorder (Newman, Consoli, & Taylor, 1999). Even the most technologically phobic clients seem able to master and regularly use these technologies once a psychotherapist takes the time to show them what they need to do.

There also is evidence that technology can gather information of greater quantity and higher quality than clinician-administered assessments (e.g., Angle, Ellinwood, Hay, Johnson, & Hay, 1977; Erdman, Klein, & Greist, 1985; Ferriter, 1993; Fowler, 1985; Greist & Klein, 1980; Lucas, Mullin, Lunar, & McInroy, 1977). For example, when questioned about sensitive areas such as criminal history, alcohol blackouts, sexual disorders, and suicidality, clients will disclose more substantive information to a computer than to a clinician (e.g., Angle et al., 1977; Carr et al., 1983; Ferriter, 1993; Lucas et al., 1977). Several studies (Erdman, Greist, Gustafson, Taves, & Klein, 1987; Erdman et al., 1985; Greist et al., 1973) also found that computer interviews lead to more accurate predictions of clients who will attempt suicide when compared to the predictions of
clinicians who know the clients. This suggests that in some cases, computer interviews may be preferable to clinician-administered interviews.

In This Issue

In this issue, we have assembled articles that detail some of the most creative uses of technology in psychotherapy. The first article by Lina Gega, Isaac Marks, and David Mataix-Cols describes computer-aided self-help treatments for phobia/panic, nonsuicidal depression, obsessive-compulsive disorder (OCD), and generalized anxiety disorder (GAD). In the treatments for OCD and depression, clients were provided with a self-help booklet to guide them through the treatment and to instruct them on the use of a telephone to call a computer-operated, interactive voice system. Patients with panic disorder accessed a computerized self-help exposure program via the Internet or a PC at the clinic whereas patients with GAD could access the program via the Internet or any computer with a CD-ROM drive. All patients also had intermittent phone contact with a psychotherapist to answer questions or to provide advice. Case studies are presented using each of these systems with impressive results.

In the second article, Dan Squires and Reid Hester describe a computer-administered treatment for problem drinkers who are ambivalent about whether they want to change their drinking behavior. Clients used this program in the clinician’s offices; the entire treatment took about two hours. As illustrated in the three case studies presented by these researchers, the computer-administered intervention appeared to play a very important role in motivating clients to seek additional psychotherapy for their drinking.

In the third article, Gerhard Andersson and Viktor Kaldo review the use of Internet self-help therapy as a means to treat tinnitus. As noted by the authors, there are very few psychotherapists who know how to treat tinnitus, and thus dissemination of therapy for this disorder is particularly important. In addition, these authors list advantages of Internet therapy not present in self-help therapies disseminated via workbook or videotape.

The fourth article by Amy Przeworski and myself presents the use of a palmtop computer program as an adjunct to group psychotherapy for GAD and social phobia. Unlike the use of other types of computers, the advantages of the palmtop are that it can be carried by clients wherever they go, can be programmed to remind clients to practice specific therapy techniques in natural settings, and can serve as a real-time assessment tool. In addition, it can be used to prompt patient compliance and to gather more accurate information than would be the case if one relied on retrospective information from the client. Using ongoing data collected by the computer during the course of therapy, we present several graphs of a client’s progress during therapy.

In a very interesting application of virtual reality, Hunter Hoffman and colleagues describe the treatment of a patient who suffered from severe burn pain. Because safety concerns (i.e., potential for electric shock) had previously precluded the use of virtual reality during water immersion, these researchers built a special nonelectrical virtual reality helmet for use in a hydrotank. Using this system, they examined whether virtual reality reduced the extreme pain experienced by this burn patient as he was receiving a standard wound care treatment that included immersion in the hydrotank.

In the sixth article, Alicia Meuret, Frank Wilhelm, and Walton Roth describe a breathing method that makes use of respiratory biofeedback to teach participants to modify their breathing as a means of treating breathing irregularities associated with panic disorder. Patients wear a portable physiological monitoring device that provides feedback...
on their CO₂ levels and breathing rate, and are then assigned corrective breathing exercises. With the combination of physiological feedback and breathing changes, clients then learn how to breathe for optimal relaxation.

The final article by Deborah Tate and Marion Zabinski presents a clinician-friendly review of the research literature as it pertains to the use of computers in psychotherapy. In addition to reviewing the technologies highlighted by each of the foregoing articles, their article reviews information on synchronous and asynchronous online support groups, and use of electronic mail by therapists as a means of maintaining contact between therapy sessions. Tate and Zabinski also discuss many of the advantages and disadvantages of each technological application as well as the some of the ethical dilemmas faced by users of the technology.

All of these articles touch upon a current movement to make greater use of technology in psychotherapy. This movement is reflected in several recent journal series as well as the companion to this issue that appeared in the most recent issue of the *Journal of Clinical Psychology*. It is also reflected by a number of journals solely devoted to computers (e.g., *Cyberpsychology and Behavior, Computer Studies, Computers in Human Behavior, Human Computer Interaction, International Journal of Human, and the Journal of Telemedicine and Telecare*). In fact, a recent Delphi poll of a panel of 62 psychotherapy experts predicted that computerized therapies, use of virtual reality, self-help resources, and self-help techniques will substantially increase in the next 10 years (Norcross, Hedges, & Prochaska, 2002). Thus, this issue of the *Journal of Clinical Psychology: In Session* should both lead and reflect the future.

Select References/Recommended Readings


