COMMENTARY

Computers and Psychotherapy: Are We Out of a Job?

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Over the past 15 years, technology has increasingly been incorporated into the provision of psychotherapy with studies emerging demonstrating the effectiveness of such models. However, randomized controlled trials remain scant and little is known about the impact of computer technology on the therapeutic alliance. The studies reported in this section are among the first randomized clinical trials of computer-assisted or internet-based therapies. The following commentary provides a brief overview of each paper and highlights the key issues involved.

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Overview

Over the past 15 years, technology has increasingly been incorporated into the provision of psychotherapy. Technologies such as e-mail, video conferencing, texting, the Internet, and computer programs have been explored as ways to support treatment or as sole mechanisms to provide therapy (see Barnett, 2011). Empirical studies and reviews of computer-assisted and Internet-based therapies are now emerging that demonstrate the effectiveness of these models in reducing distress (e.g., Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010; Barak, Hen, Boniel-Nissim, & Shapira, 2008). However, randomized controlled trials of these models remain scant, and little is known about the impact of computers on the therapeutic alliance. The studies reported in this section are among the first randomized clinical trials of computer-assisted or Internet-based therapies and were initially presented at the 2012 annual meeting of the Society for Psychotherapy Research.

Individual Computer-Assisted Cognitive–Behavioral Therapy for Depression

The first article by Eells and colleagues provides an overview of computer-assisted cognitive–behavioral therapy (CCBT) for depression and reviews three such programs. According to the authors, one of the major advantages of computer-assisted therapy is

that it reduces clinician contact to roughly a third of traditional face-to-face therapy thereby lowering costs and therapist time. Furthermore, computer programs offer increased efficiency of treatment by structuring the delivery of the didactic components of CBT and making it more accessible to patients. However, the authors are careful to point out that development costs, reimbursement issues, and rapidly changing technology are potential limitations to its acceptance.

Although reviewing three computer-assisted or Internet-based CBT programs for depression, the article focuses primarily on the development and testing of *Good Days Ahead*; a computer-assisted program developed by one of the authors (Wright). *Good Days Ahead* is a 12-session multimedia program designed to supplement therapist-delivered CBT. Focusing on the psychoeducational components of CBT, it is interactive and uses live actor patients to model the presentation of depression, treatment interventions and activities, and progress throughout the program. Other than the initial session, each session consists of 25 min with the therapist followed by 25 min using *Good Days Ahead*. Pilot studies of the program have shown high patient satisfaction and significant reductions in depressive symptoms with no difference between *Good Days Ahead* and traditional CBT. To determine whether these findings can be replicated, a larger randomized trial is currently underway in which 172 depressed patients are randomly assigned to 8 weeks of treatment with either CCBT using *Good Days Ahead* (12 sessions) or standard 20-session treatment with CBT.

The strength of this computer-assisted therapy lies in the use of CBT-trained therapists to provide weekly face-to-face therapy and to clarify any issues in regard to exercises and homework. However, one of the major limitations of this and all models of CCBT is the potential reduction in therapeutic alliance—although *Good Days Ahead* provides more direct therapist contact than most other models and encourages ongoing oversight of computer activity by the therapist. For example, via a special portal, therapists can review a patient's computer activity and comment in session on patient progress and offer suggestions for improved use.

Group CCBT for Anxiety

Because individual treatment is costly and demands significant clinician time, group treatment has become more popular and has been shown to be equally as effective as individual treatment for depression and anxiety (for meta-analyses, see Cuijpers, van Straten, & Warmerdam, 2008; McRoberts, Burlingame, & Hoag, 1998). The second article, by Newman, Przeworski, Consoli, and Taylor, presents a randomized trial of computer-assisted group therapy for generalized anxiety disorder (GAD). Within group treatment, mobile technology may further enhance treatment by offering individualized attention and unique opportunities for clients to practice and apply techniques outside of the treatment session.

In a three-arm design, Newman and colleagues evaluated the effect of adding mobile technology to a brief group treatment. Patients were randomized to a standard 12-session CBT group treatment for GAD, a brief 6-session group treatment, or a brief 6-session group treatment with computer assistance via a Palm pilot. The mobile technology was used to provide therapy content and homework exercises. For example, in one phase of the intervention, the mobile device gave hourly alerts to promote self-monitoring of anxiety triggers. Self-monitoring in itself is an effective intervention, and by using this technology, patients were encouraged to incorporate it into their everyday life.

The results of this study showed that after treatment, the brief 6-session computer-assisted group evidenced greater reductions in distress than the brief 6-session group without the computer supplement. Interestingly, the brief 6-session computer-assisted group was just as effective as the 12-session group, despite its shorter duration. The computer-assisted treatment was successful in reducing the duration of the intervention (and potential cost) without compromising outcome. However, additional research is needed to determine whether specific components of the technology are responsible for treatment effectiveness. For instance, do the homework exercises account for more of treatment effectiveness than reminders for self-monitoring? It is also important to consider how time in the group setting can be best used and whether or how it should be altered when computer assistance is added.

As with CCBT, potential reductions in the therapeutic alliance are a concern in computer-assisted group models. Providing treatment in groups rather than individually, by its nature, challenges the level of intimacy that can develop between a therapist and individual patient. Reducing therapist–patient interaction even further through the use of computer technology runs a significant risk to the development of a healthy alliance. However, as Newman et al. found, equivalent outcomes were obtained whether treatment was the standard 12 sessions or the brief 6-session computer-assisted therapy.

Internet-Based CBT for Anxiety

The final article in the series, by Berger, Boettcher, and Caspar, provides an examination of an Internet-based self-help program for anxiety disorders. Internet self-help programs have the potential to be the most cost-effective form of mental health treatment, as little or no therapist, counselor, or mental health professional time is needed. Furthermore, self-help programs have been shown effective for the treatment of a wide range of psychological disorders (for reviews, see Andersson, 2009; Cuijpers, Donker, van Straten, Li, & Andersson, 2010). These programs have several advantages over group or individual treatment. For example, timing is flexible, sessions can be shortened or lengthened as desired, and individuals in rural or underserved areas have more immediate access to care. To date, Internet-based self-help programs are primarily text-based and automated, thereby limiting individualization. Furthermore, treatment is standardized and tends to focus on a single disorder. But with comorbidity high among individuals with depression or anxiety, offering more patient-specific programs may be warranted.

In a randomized controlled trial of an Internet-based self-help program, Berger and colleagues compared three groups for the treatment of anxiety disorders: an Internet-based self-help treatment tailored to the individual, a standardized Internet-based self-help treatment, and a wait-list control group. Both the tailored and standardized treatments consisted of an 8-week self-help program based on CBT. In the tailored condition, modules were adapted to address a variety of anxiety disorders such as social anxiety, panic disorder, and GAD but did not include comorbid depression. All participants received weekly therapist support by e-mail and had access to an online discussion forum. After 8 weeks, both the tailored and standardized groups showed clinically and statistically significant improvement on disorder-specific and global outcome measures, as compared with the wait-list control. The effect sizes were large and similar to those of previous studies. Most interesting, however, was that the two active conditions were equally effective. Furthermore, the authors found no statistical difference between groups on treatment adherence, the number of treatment modules completed, or dropout rates. This equivalence in outcome may be due to the similarity of the two treatments in terms of treatment components. It is also possible that the participants in the standardized condition were able to use the learned skills to cope with other problems as well.

As is true for more traditional therapies, once shown effective any treatment needs to be examined using component analysis to understand how to best tailor interventions to the individual. For example, was it therapist support, online discussion groups, or homework compliance that significantly contributed to the treatment gains in this Internet-based program? Is alliance an important factor in outcome when Internet-based therapies hold no expectation for significant therapist interaction? To further increase efficacy (and cost–benefit ratio of the intervention), it will also be important to investigate which components the participants found most useful and to what extent they were used throughout the program.

Summary and Recommendations

These articles encourage us to consider the role of computer and Internet-based programs as adjuncts to therapy or as stand-alone treatments. Questions are raised as to whether these technologies benefit and/or hurt treatment. As the studies suggest, computer-assisted therapies can offer treatments that are equally as effective, require less time, and less therapist involvement than traditional models of therapy. These models can also provide greater access to mental health care for those in rural or underserved areas.

However, it is equally important to consider the limitations of these models especially in terms of the cost–benefit ratio. The initial financial investment associated with software development

is significant and may be risky, given that technology advances more quickly than research studies. For example, "mobile apps" on cell phones have received substantial public interest in the past few years, yet the research on this technology is just beginning. Momentary intervention is not the wave of the future; it is the wave of today. It provides the ability to truly navigate the world with therapeutic tools at the patient's hand. But research on the effectiveness of these models must find a way to keep pace.

Second, we need to determine whether the therapeutic benefit of treatment is in any way compromised by the addition of computer-assisted technology. The study currently underway by Wright and colleagues is a step in this direction and similar comparator research needs to be conducted for group and Internet-based therapies as well. Not only is there a need to examine possible differences in outcome, we must also determine the extent to which therapeutic alliance may vary between models—especially because alliance accounts for a significant portion of outcome variability (Martin, Garske, & Davis, 2000). Can we reasonably expect there to be a similarly strong alliance if therapist time is reduced from 50 to 25 min or not at all? With evidence emerging to suggest that alliance may be reduced in therapies provided via electronic means (Greene et al., 2010; Sucala et al., 2012), it is imperative that we examine the potential impact of alliance on outcome in these models.

A third factor to consider in the use of computer-assisted and Internet-based therapies is therapist support and training. Although therapist support associated with Internet-based treatments is significantly lower than that for in-person or even computer-assisted treatments, significant resources are still required to provide the weekly e-mail support (as described by Berger et al.). How is this time to be compensated? Does the reduced level of therapist involvement in these treatments require specific training? If so, who will pay for the training and should it be regulated in some way? Could nongraduate-level clinicians be employed to provide these treatments?

Specific to Internet-based self-help programs, a fourth concern is the possible overinclusion of patients with subthreshold conditions. For example, in the study by Berger et al., the use of subthreshold cutoff scores resulted in >63% of the sample classified as having an anxiety disorder. Overinclusion provides patients the opportunity to address nonprimary symptoms, which may not have otherwise received attention. However, inclusion of patients with comorbidity may unnecessarily detract from treatment of the primary diagnosis, thereby limiting treatment effectiveness. Additionally, what role should the participant play in deciding the focus of treatment? For example, a recent open-trial of an Internet-based tailored treatment in which participants chose the treatment modules, found comparable results whether modules were participant or clinician determined (Andersson, Estling, Jakobsson, Cuijpers, & Carling, 2011).

A fifth factor is the number of clinical and legal concerns associated with computer-assisted and Internet-based treatments. For instance, how can informed consent be fully insured if patients are not seen in person? Can we assume that patients have identified themselves truthfully and how might this alter concerns about danger to self or others? Moreover, there are professional concerns about licensure when providing treatment across state lines. At the present time, most states do not have formal regulations or policies regarding interstate telemental health practice or research (see Herbert et al., 2012). In states that do have such regulations, requirements are often vague and vary significantly by state. The recently formed APA Telepsychology task force is in the process of developing national guidelines for treatment to offer mental health clinicians the clarity needed to be able to provide treatment remotely.

Finally, the use of technology in psychotherapy raises new and challenging ethical questions and may alter our thinking about what makes therapy effective. Fundamental to mental health treatments are the principles of beneficence and nonmaleficence. When considering the addition of technology, we must ask to what extent computer-assisted and Internet-based treatments relieve patient suffering and whether or not harm may result. Current research suggests these models do relieve distress and improve functioning but only in select populations. For instance, nearly 25% of adults in the United States do not own a computer (2010 US census) and estimates of illiteracy or limited reading ability vary from 15% to 40%. Therefore, a significant numbers of individuals would not have access to these treatments and, due to social and economic factors, are likely to be among those most in need of treatment. Additionally, computer-assisted and Internet-based therapies have been developed and tested primarily for mild to moderate depression or anxiety, excluding those with more serious or chronic disorders. Despite the limitations, these models can offer support to a large number of individuals suffering from mental health disorders and increase therapist availability for treatment of more complex and severe cases.

When considering technology-assisted treatment, we must also be mindful of the differing responsibilities and obligations of therapists. For instance, despite the reduced face-to-face time, therapists still need to review patient online work, ensure understanding of program activities, and check for compliance. Because these models rely on typed responses, errors in what is written, implied or assumed, are far more likely to occur and are not as easily clarified as in face-to-face treatments. To deal adequately with such challenges, we need to think through carefully the degree to which technology-assisted treatments may require skill and training different from traditional treatments.

Maintaining privacy and ensuring confidentiality are always of concern and are likely more problematic for computer-assisted and Internet-based treatments. With interventions and responses conducted, documented, and stored on computer files, we must develop methods to ensure privacy and maintain the confidentiality of these data. We must also determine whether computer interactions should be considered a part of the treatment record and, if so, how the data will be protected and/or shared in regard to legal or clinical requests.

Commensurate with the aforementioned ethical concerns is the importance for therapists to be appropriately and fairly compensated for their time, expertise, and level of responsibility. But will patients view therapist input as less valuable when services are provided online or are complemented with a computer program? Will third-party payers be less inclined to cover these treatment models or cover at a significantly reduced rate? If Internet-based self-help programs, such as that described by Berger et al., so reduce therapist involvement that it is virtually eliminated, what implications result for the field? As has been true for industry workers, are we to be displaced by technology?

The answer to the question posed in the title of this commentary is a resounding NO. With mental health problems on the rise and growing concern about the lack of mental health professionals available, there is room for therapeutic models in which clinical care is augmented with mobile technology. Computer-assisted therapies and Internet-based self-help programs should not be viewed as a replacement for standard therapy but as a means to maximize resources in a stepped-care approach. Furthermore, finding ways to bring psychotherapeutic skills into the daily lives of patients can be an effective strategy for initiating and maintaining change.

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