

The Psychiatrist as Clinical Computerologist in the Treatment of Adolescents: Old Barks in New Bytes

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Psychiatry is in the midst of deciding how to join the computer revolution (1). We would like to contribute to this effort by suggesting that whatever psychiatrists decide to do with computers, we should remain mindful of what makes for *good* psychiatry. What has changed is technology; what should remain constant are the hard-won principles and guidelines of good psychiatry. We suggest—and illustrate with two case vignettes—that whatever previously unimagined psychiatric endeavors psychiatrists ultimately birth using computers, we will put them to some very old uses. Furthermore, we can be guided in our decisions about what to do with computers and how to do it by what we have learned from our past. We hope to illustrate that, to no one's surprise, these new technologies help fashion further examples of classic psychotherapeutic phenomena and dilemmas—old psychiatric wines in new digital bottles but all very recognizable varietals.

As Tom Standage discussed in *The Victorian Internet* (2), much of what we regard as unique and novel about the computer age would have been very familiar to Victorians first encountering the growth of telegraphy. Similarly, the growing literature on virtual communities (3–5) has provided new examples of such familiar human themes as aggression, love, rivalry, sex, friendship, loneliness, growth, and loss. While manifesting their own unique elements, activities such as hacking, programming, and web design are not essentially different from other human experiences involving exploration, analysis, and creativity.

Over the years clinicians have incorporated many technological innovations into their practices—the telephone (6), the one-way mirror (7), videotape (8), and the pager (9, 10), for example. Each innovation has presented physicians with new challenges, and each has enhanced our ability to care for patients. Computers present us with but the latest in a long history of technological history in medicine. Physicians are already using computers to assess clinical problems (11), offer treatment advice or collegial consultation (The Virtual Home of Dr. Bob, <http://www.dr-bob.org>), foster therapeutic communities (Star-

bright Foundation, <http://www.starbright.org>), enhance or conduct psychotherapy (Calipso, <http://www.calipso.co.uk/html/index.htm>; Mindstreet, <http://www.mindstreet.com>), educate (Mayo School of Continuing Medical Education, <http://www.mayo.edu/cme/cme.htm>; Grand Rounds, Department of Psychiatry, University of Chicago Pritzker School of Medicine, <http://psychiatry.uchicago.edu/grounds>), and advocate for the mentally ill (National Alliance for the Mentally Ill, <http://www.nami.org>)—all new but familiar. Of course, our patients have also adopted these technologies and have thereby repackaged some familiar clinical phenomena. For example, when we hear of “cyber-addictions” (Center for Online Addiction, <http://www.netaddiction.com>), “day-trading tragedies,” and “24-7” Silicon Valley workweeks, do we not recognize compulsions, gambling, and obsessive overwork?

The following two cases are quite different; our intent is to illustrate the Internet both as a feature of the modern psychiatric landscape and as a tool for modern psychiatric intervention. We hope to launch discussions of the variety of issues likely to face clinicians venturing forth in this brave new World Wide Web.

Case 1: Computer-Facilitated Enhancement of Social Life for a Patient With Social Phobia

Abe (not his real name) was 15 years old when his parents referred him to a child psychiatrist. Abe and his parents had become increasingly disaffected over his lack of friends. His parents were exasperated because “He doesn’t even try to make friends.” Their efforts to help by offering suggestions or making arrangements for activities with his peers were met with rejection or disinterest. For his part, Abe felt that his parents were intrusive and pushy and did not believe him when he said he would “work it out” himself.

During the initial assessment, Abe’s parents also brought up, as a minor concern, the amount of time Abe was spending “in his room on the computer.” Abe’s father was employed in a computer-related firm and made extensive use of computers both professionally and personally. The parents had purchased a computer for Abe because they believed that computer literacy was important. They had, however, become concerned that Abe was substituting time logged into chat rooms for time spent socializing with friends “in the real world.” Abe confirmed that he spent many hours weekly in chat rooms, on occasion spending the majority of a weekend day online, but he saw nothing wrong with these activities.

“[E-mail] thereby provides “demand feedings” without patients having to worry about directly imposing on their clinicians at those very moments.”

Although Abe initially stated that he was willing to participate in therapy simply to get his parents “off of [his] back,” he gradually allowed himself to participate as a patient. After a few sessions, Abe confessed that he himself sometimes worried that he might never have friends. In particular, he found it difficult to be in groups where his peers talked about dating or mixed-gender activities when he had never come close to going on a date.

Abe spent much of the initial therapy sessions discussing computers. His use of computers could in part be conceived of as defensive, in that he clearly appreciated the control and the relative anonymity offered by the chat rooms in contrast to face-to-face social interactions. In addition, however, he clearly enjoyed (and needed) the feelings of mastery and competence afforded by his expertise with computers. Because of the importance of computers for Abe, and because of the relative strength he displayed and felt in this area, his therapist elected to reveal some of his own knowledge of computers. These self-revelations led to fruitful discussions of what it would be like to meet the therapist in a chat room or whether Abe had perhaps already done so. This talk led to further conversations about social relatedness (or social anonymity) and the differences between computer relations and face-to-face relations. For example, Abe initially stated that meeting in a chat room would be more intimate for him than live therapy since he was much more open—more himself—in chat rooms. From there the therapy moved to discussions of trust, self-image, and self-esteem.

At one point the therapist asked which chat rooms Abe frequented. Abe was initially hesitant to reveal this information, recognized his hesitancy, and became curious about it. With clear trepidation, Abe began to think more about and discuss just who the therapist was to him, why he cared what the therapist thought of him, what the therapist might do with this personal information about him, and what it would be like to have a relationship with the therapist online as well as face-to-face. Parenthetically, the therapist had never participated in any of Abe's chat rooms but chose not to reveal this to Abe despite his occasional questioning. By this point in the therapy Abe could both appreciate the use of such neutrality and enjoy the therapeutic challenge it presented to him.

Coincidentally, at about this time Abe was both dismayed and intrigued to discover that his best chat room companion was a girl. He had simply assumed that “she” was a “he” (12). Furthermore, he learned that she also lived in the same area and that they shared interests in areas other than computers. Abe's discussions of computers in therapy were soon crowded out by discussions of this girl. What would it be like to meet her? What did she look like? What would she think of him? He spun out several fantasies about a meeting, some primarily rescue fantasies, others focusing on themes of disappointment or rejection. All the while the online relationship continued. At the girl's instigation, they agreed to meet for coffee. Abe came into the session after the meeting expressing disappointment. The girl was not beautiful, not the fantasy princess he had been longing for. He went on to describe a classic adolescent first meeting—silliness, awkwardness, earnest discussions—all quite typical for such meetings but all new to him. He was, of course, anxious about their next meeting in the chat room, but

it went “OK.” After a series of subsequent online and face-to-face meetings, they tacitly agreed to become friends rather than boyfriend-girlfriend. She introduced him to some of her friends in another area of interest, and his social life (outside of his computer) began.

Discussion of Case 1

This case illustrates some ways in which computers can enter the processes of therapy. In this instance, Abe's use of computers assisted in his transition from social isolation to improved social functioning. Sherry Turkle (13) referred to this role for the computer as that of a transitional object. Most of us can recall patients who have made similar transitional use of the telephone or correspondence. The related dynamic themes concerning social isolation, identity, and the transition to adulthood were addressed in psychotherapy no differently because of the involvement of computers than they would have been with patients who made use of other means to the same defensive and adaptive ends. While it has been suggested that computers might be responsible for decreased involvement with other people (14), in this case computers facilitated human contact, and other research supports this possibility (15).

Computers were also the immediate focus for both transference and countertransference experiences. Again, these experiences were dealt with on the basis of familiar psychotherapeutic principles rather than seeing them as somehow different because computers were involved. For example, Abe's fantasies about meeting his therapist in a chat room could as readily have been about meeting the therapist in any other locale—for example, in class or while shopping. One author, for example, had a patient guiltily confess to secretly reading the therapist's publications. The virtual nature of the encounter, occurring online rather than in the physical world, does not change the essential dynamics. The therapist's consideration of whether or not to discuss his own experience with computers exemplifies a countertransference issue and differs little from similar decisions the therapist makes about whether or not to discuss shared academic experiences, avocations, books, or movies.

While the image of the social misfit glued to a computer in avoidance of social contact is a persistent one, several studies support the notion of the computer as social assistant (16–18). Several distinctions have become evident, for example, between the online group format (chat rooms) and traditional group social interactions. The fact that participants assume greater equality online has frequently been cited as a major benefit of computer-mediated communication (19). Leadership dominance is diminished, interactions tend to be longer, and anxiety in interacting may be reduced. Zimmerman's findings on differences between computer-mediated and face-to-face interactions among emotionally disturbed adolescents (20) suggest that computer-mediated communication may facilitate emotionally rich, relationship-oriented verbal interaction; more consistently evoke positive object relations stances that are more likely to be expressive affect-laden communications concerned with interpersonal relationships; and

diminish certain traditional gender differences common in group communications.

Case 2: E-Mail as an Adjunctive Treatment Tool in the Outpatient Management of an Adolescent With Anorexia Nervosa

Bonnie (not her real name), a 17-year-old high school senior, had suffered from anorexia nervosa for several years. At age 16, this 5'4" girl's weight had fallen from 115 to 88 lb. After several months of treatment with a psychologist and taking paroxetine, 40 mg/day, prescribed by her family physician, Bonnie's weight gradually increased to 100 lb, at which point she was first seen by a psychiatrist. She described herself as "stuck." She had not menstruated since age 12, her food choices were markedly restricted, she ate no real meals, and she was exercising about 1–2 hours per day. She estimated her caloric intake to hover between 700 and 1200 kcal/day and rarely to reach 1700 kcal/day. She had no binge eating, purging, or substance use. She still felt that her thighs were too big, and she complained of ongoing symptoms of depression and anxiety, feeling "empty" and indecisive, and being irritable with her family regarding food issues.

When first seen in consultation, neither Bonnie nor her parents would even consider having her enter a hospital program. A treatment program was devised to include elimination of active exercise, a 2000–2500-calorie diet with ongoing consultations with her registered dietitian, dual energy X-ray absorptiometry to assess bone mineral density, continuing medication therapy, outpatient therapy on a weekly to every other week basis, regularly scheduled office visits for Bonnie and her mother, a bibliotherapy program regarding eating disorders for Bonnie and her family, and a steady stream of e-mail messages to the psychiatrist between sessions, in which she was to focus on the amount and variety of her meals and other issues pertinent to cognitive, behavioral, and emotional aspects of therapy. Looming behind this plan was the threat of hospitalization in an eating disorders unit, supported by her parents, if she did not make adequate progress within 2 months.

At the start of the program, Bonnie was informed that e-mail was not necessarily an entirely secure or confidential way to communicate, that she should be careful about what she wrote, and that the e-mails would become part of her permanent medical record. She agreed to use e-mailing as described. She planned to use her private e-mail account from school. Bonnie made very good progress in treatment. Before departing for college in a distant state 7 months after her initial consultation, she e-mailed her psychiatrist several times each week. Reprinted with her permission is a small sample of illustrative exchanges:

Week 1: Hi Dr. Yager-meister! How are you today? I'm doing ok. I'm feeling confident that I can do this. Today I have had no diet soda yet and don't plan on drinking any. I am going to eat a p-nut butter and pita sandwich instead of a light bread sandwich. I'm going to buy myself a regular yogurt and eat a total of 1900 cal total. I'm a little nervous but also positive that I can do this. B

Week 2: Hey Dr. Y! Happy Thanksgiving—too bad the vacation's over. I had a bad Thanksgiving day...I got very uncomfortable and anxious at the place we went and I ended up going home. I felt horrible but got over it. I'll tell you about it on Thursday....Thanks for typing back....Oh yea, I had a package of p-nut [candy] on Saturday. WAHOO! Later!—B.

Week 6: Hi there. Sir. How are you today? I'm ok. Not great. Yesterday in gym I was wearing an outfit that I haven't worn in a while...it's always been smaller than my others, but it felt different. I started thinking about and noticing my body more. It sucked. I can tell my butt is bigger, and I feel like my thighs are humongous. They look gross to me when I look down at them. My stomach and waist feel different too. I feel gross I mean when I pay attention to my actual body. Physically I feel good—energetically and all. I'm a little sick with a cold, but other than that I'm ok. I feel awkward and a little sad about stuff, mostly my body and boys.... I just feel kinda blahh last night and a little today too. Maybe it's PMS...a freaky thing for me to think about! Maybe I just need to get back into the swing of things...I don't know. Thanx for reading (listening sorta). I'll talk to you more on Thursday. Bye-bye.—B*

Psychiatrist's response: Hi B—I'm glad to be able to comfort you. You're really on the right track, and "slumps happen." See you tomorrow.

Week 8: [Bonnie's weight was now about 108 lb.] Hey, Dr. Dude —...My hormones must be kicking in hard core because I've got zits all over my forehead! I don't really have much to tell you. Oh well....Talk to ya later.—B+

Psychiatrist's response: Hey! Congratulations on the zits—that's a great sign, having to do with return of hormones and health. They'll clear up OK. I'm sending you lots of good encouragement....Take care—keep up the good work. See you next week.

Week 12:....I had a very nice day. I ate a piece of pizza with my mom, but was reallllly big so I cut some of it off. I estimated about 400 calories for it. It was good but I felt incredibly full after eating it. I'm still alive though....B

Week 18: [Her weight was now about 115 lb.] YUCK!!!!!! I HAD A PERIOD!!!!!! I CAN'T BELIEVE I'M WRITING THIS TO YOU IN AN E-MAIL. IT'S DISGUSTING!!!!!! Talk with ya later, dude! B

After graduation and losing her personal e-mail account at high school, Bonnie started to use her father's e-mail account from home, and her messages trailed off appropriately. She still struggled with increasing her food choices but continued to make progress and maintain her improvement. Her care was transferred to a therapist near her college, and she has continued to do well, continuing to e-mail both her current therapist and, occasionally, her psychiatrist.

Summary and Evaluation

The focus of Bonnie's e-mail was her daily eating. Outcomes included a weight gain of 15 lb and reasonably good biological and psychosocial recovery. Bonnie's own assessment regarding the use of e-mail in her treatment—provided by e-mail, of course, and reproduced with her permission—was as follows:

Pros: It's great for keeping me in check with things... you know, incentive to do well! It's nice to hear back from you...it makes me feel like I'm more than just a once a week patient. Reading responses is encouraging. It's a good way to release what's on my mind at the moment that I might otherwise forget to mention in a session. Good way to stop what I'm doing and take a minute to reflect on how well I'm taking care of myself. Of all the things I HAVE to do in the day, it's the (or one of the) best things to HAVE to do.

Cons: It's one more thing to have to do! Reporting bad news because of my own doing! Forgetting to check-in regularly makes me feel bad :(

Then she contrasted her use of e-mail from her private school account with the use of e-mail at home:

It's a pain to log on to my dad's e-mail. I don't have my own private account at home...others can ("but don't") read my mail. Re: the privacy thing, my dad has access to these messages, but he says he doesn't ever read them. I believe him, but would rather keep things vague as you did in your previous message. By the way, thank you for your abstractness...for that one message, my dad opened it and sat here while I read it. "But he usually doesn't read them." I'm sure he was just being courteous and opening it for me cuz I was right here, but you never know...I was actually a bit scared that he would read a response that wasn't "abstract." Thank you again!

Discussion of Case 2

Several issues merit discussion. This case suggests that we need to carefully learn about how using adjunctive e-mail in therapy can facilitate our clinician-patient relationships. At the same time, we have to institute safeguards to ensure that patients are not harmed and that appropriate professional boundaries between clinicians and patients are strictly observed. Here are several ways in which e-mail might help in treatment, particularly with adolescents (21):

1. E-mail concretely increases the frequency and amount of contact time between patients and clinicians engaged in therapeutic processes, thereby increasing the patients' sense of being in touch with, touched by, looked after, and contained by their clinicians. Bonnie sometimes wrote extensive notes, pouring her yearnings and frustrations into her e-mails. Of note, the process required far less time from her psychiatrist, who quickly read the notes and who responded with brief, generally nonspecific, encouraging replies.

2. E-mail enables patients to write and send messages whenever they feel most needy or interested in therapy. It thereby provides "demand feedings" without patients having to worry about directly imposing on their clinicians at those very moments.

3. E-mail invites patients to say whatever they would like without having to contend with their clinicians' immediate emotional feedback signals. It was clear that Bonnie felt relaxed using e-mail, addressing and conversing with the psychiatrist in a much more informal tone than she normally used in face-to-face conversations in the office.

4. By having to report in via e-mail on a quasi-daily basis, patients are forced to be constantly aware of their eating-related behaviors and of being in therapy. Bonnie and several other patients focused on this point. Having to e-mail on a frequent basis requires that they be attentive and usually honest.

5. By providing their clinicians with certain details via e-mail (in this case, calorie counts and/or eating-disorder-related behavior and symptom logs), patients may free up office time otherwise devoted to conveying this information for clarifications and additional discussion of more meaningful issues.

Given the various demographic and clinical characteristics of anorexia nervosa, adjunctive e-mail therapy may, theoretically, be particularly well suited for adolescents with this disorder. At the same time, although minimal in our experiences, potential negative consequences of e-mail therapy may include the following:

1. Unwanted disclosures resulting from lack of privacy in sending and receiving e-mail messages (particularly a risk if the writer shares an e-mail address with other family members and if the clinician inadvertently includes the patient's messages in the reply and/or fails to reply using nonspecific, discreet messages).

2. Clinician failure to recognize urgent and troubled communications meriting phone and/or face-to-face contact.

3. Clinician failure to respond in a timely or adequate fashion where e-mail will not suffice either for assessment or reassurance for seriously distressed patients who may communicate crises via e-mail.

4. Patients using e-mail excessively or sending inappropriate messages. In the latter instances, as in cases in which patients neglect their e-mail assignments as a form of resistance to treatment, such issues always require face-to-face discussion, as with other transference-related interactions.

5. Boundary issues may emerge. E-mail seems to inherently encourage familiarity and spontaneity. While this may be helpful in treatment, it may also lead to misunderstandings about the nature of the relationship. As with any such misunderstanding, it is best to address the issue directly. As well, psychiatrists should be mindful of this potential in their use of e-mail and take care not to encourage undue familiarity or excessive dependence.

Research and experience regarding the use and limitations of e-mail as an adjunct to psychiatric therapy are in their infancy. The field needs to quickly define patients, problems, and situations in which the use of e-mail may, conceivably, be dangerous or harmful. It is possible that adding an e-mail component to outpatient treatment of

children and adolescents with other psychiatric disorders may increase adherence and also increase effectiveness for the reasons provided. Certainly, additional larger-scale trials are needed to show if adjunctive e-mail treatment might benefit not only cognitive behavior therapies (in which e-mail may take care of some diary-keeping business) but other kinds of outpatient treatment as well, including individual interpersonal psychotherapy and family psychotherapies. However, at this point, until research is conducted and precise guidelines are developed, we do not advocate the extensive use of e-mail with patients suffering from severe boundary problems.

As in Bonnie's case, patients need to be informed that e-mail is not necessarily a secure mode for communication. For the reasons illustrated, they should always be encouraged to use a private rather than shared e-mail address and be advised to not write things they would not want others to see. Negroponte (22) calls this practicing "safe text." In order to comply with the Health Insurance Portability and Accountability Act of 1996 regulations regarding patient confidentiality, we have now established a secure, practice-based web site with MEDEM (<http://www.medem.com>), a web-based company supported by numerous medical professional associations, including the American Psychiatric Association, the American Medical Association, and many others. Members of the APA can register their practices online without charge and establish personal web pages that include encrypted e-mail communication systems. The procedures for setting up this system are quite simple.

Because of complex issues concerning informed consent and confidentiality, the American Medical Association has recently issued a white paper based extensively on "Guidelines for the Clinical Use of Electronic Mail with Patients," published by the American Medical Informatics Association Internet Working Group (23). In accord with these guidelines, the American Medical Association's Board of Trustees has recommended the following for physicians who choose to use e-mail for selected patient and medical practice communications:

1. Establish a turnaround time for messages. Do not use e-mail for urgent matters.
2. Inform patient about privacy issues. Patients should know who besides the addressee processes messages during the addressee's usual business hours and during the addressee's vacation or illness and that the message will be included as part of the medical record.
3. Establish the types of transactions (prescription refilling, appointment scheduling, etc.) and the sensitivity of subject matter (HIV, mental health, etc.) that are permitted over e-mail.
4. Instruct patients to put the category of the transaction in the subject line of the message for filtering purposes: prescriptions, appointments, medical advice, billing questions, etc.
5. Request that patients put their names and patient identification numbers in the body of the message.
6. Configure automatic reply to acknowledge receipt of messages.

7. Print all messages with replies and confirmation of receipt and place in the patient's paper chart.

8. Send a new message to inform the patient of completion of the request.

9. Request that patients use the "autoreply" feature to acknowledge their reading of clinicians' messages.

10. Develop archival and retrieval mechanisms.

11. Maintain a mailing list of patients, but do not send group mailings in which recipients are visible to each other. Use the blind copy feature in software packages.

12. Avoid anger, sarcasm, harsh criticism, and libelous references to third parties in messages.

In its Guidelines for Physician-Patient Electronic Communications (<http://www.ama-assn.org/ama/pub/category/2386.html>), the American Medical Association recommends that physicians

1. Develop patient-clinician agreement forms for informed consent for the use of e-mail. These agreements should be discussed with patients and documented in their medical records. Agreements should contain these statements:

- a) Terms (from the American Medical Association's Guidelines for Physician-Patient Electronic Communications).
- b) Instructions for when and how to convert e-mail messages to phone calls and office visits.
- c) Policies to hold harmless health care institutions for information loss due to technical failure.
- d) Policies that waive encryption requirement, if any, at the patient's insistence.
- e) Descriptions of security mechanisms in place, including the following:
 - i) Using a password-protected screensaver for all desktop workstations in the office, hospital, and home.
 - ii) Never forwarding patient-identifiable information to a third party without the patient's express permission.
 - iii) Never using the patient's e-mail address in a marketing scheme.
 - iv) Not sharing professional e-mail accounts with family members.
 - v) Not using unencrypted wireless communications with patient-identifiable information.
 - vi) Double-checking all "to" fields before sending messages.

2. Develop performance standards of at least weekly backups of e-mail into long-term storage. Define "long-term" as the term applicable to paper records.

3. Commit policy decisions to writing and electronic forms specifying

- a) That the policies and procedures for e-mail be communicated with all patients and documented in the patient's records.
- b) That the policies and procedures for e-mail be applied to facsimile communications, where appropriate.

A full discussion of these issues and of the guidelines can be accessed at <http://www.ama-assn.org/meetings/public/annual00/reports/bot/bot2a00.rtf>.

APA and the American Academy of Child and Adolescent Psychiatry will undoubtedly review these guidelines

to affirm and/or modify them with respect to psychiatric practice. Some expansions and modifications of these guidelines for conducting e-mail communications with adolescent patients may be in order. We also note in passing that the principles enumerated here may also apply to other therapeutic uses of the Internet, such as chat rooms, educational presentations or interactions, dissemination of medical records, or communications among treating clinicians.

Discussion

Computers have become part of our everyday lives. We as psychiatrists are already making substantial use of computer technology, and computers have become a part of our everyday professional lives. We are using computers for routine word-processing and data management, billing and financial processes, replication of paper-and-pencil instruments, and statistical analysis. Increasingly, we will also be using computers for artificial intelligence applications, augmentation of human effort, and substitution for human effort.

In our experience, clinicians often worry that computers in psychiatry will compromise therapeutic values, that the technology will dehumanize psychiatry, or that computers are somehow monstrous (i.e., Frankenstein's monster, the golem). While these are risks, they are not foregone conclusions, and early evidence suggests the opposite. In our experience, patients are more accepting of computer-assisted psychiatry than are clinicians. Patients rely on the psychiatrist, not the computer. Recall, too, that much of what is familiar to us about psychiatric practice is new to our patients, and computer-assisted psychiatry is but one of many novel experiences for our patients. As well, children (and adolescents) spontaneously use computers therapeutically; put more familiarly, they *play* with computers, and play can heal. Resistance to new treatment modalities and new technologies is a great tradition with us.

In addition to the matters discussed, other clinical issues may emerge when computers are more directly involved in psychiatric practice, for example, when they are used to take initial histories or when they are used to run psychotherapeutic or psychoeducational programs. Patients and their families are increasingly using the web to search for the information they need. They will continue to challenge us to provide them with better distance care and will undoubtedly come up with new, innovative, and challenging uses for computers and distance technology in the service of their health needs. There are many reasons for us to anticipate and look forward to such developments. In an evaluation of the use of computers in a self-help group, Schneider and Tooley (16) found that computers enhance the message and the participation. Computers, they suggest, help people to participate by diminishing the fear of failure, eliminating the need for face-to-face contact, and removing social cues.

Computers may be particularly helpful in treating autistic children. Years ago Colby (24) described research using computer-based instruction with autistic children in

which 13 of 17 nonspeaking autistic children began voluntarily using speech for social communication after having opportunities to play and interact with symbols on a computer. Geoffrion and Goldenberg (25) provided further evidence that computer-based exploratory learning systems could result in greater responsivity in autistic children.

We anticipate that computers may be used in helping patients with various clinical problems by means of guided self-help using manuals for cognitive behavior therapy and other sorts of guided homework. For example, computers have recently been used to engage and help individuals with early or subclinical eating disorders in college-based preventive interventions (26). Similarly, web-based support groups and chat groups for patients with a variety of psychiatric disorders already exist. To our knowledge, little systematic assessment has been conducted on the impact of these programs on participants. Preliminary studies of psychiatric consumers with schizophrenia, bipolar illness, and major depression have shown that e-mail support groups may be extremely educational, motivational, and helpful (unpublished data of C. Pederson et al.). We can anticipate increasing use of distance communication and distance learning by patients and their families—individually, in small groups, and through regional and national advocacy groups.

As with all new forms of practice, the profession will have to be exceptionally attuned to ethical matters, including issues involving informed consent, confidentiality, privacy, do-it-yourself therapy, liability, billing, boundaries, efficacy, and nontherapeutic uses of clinical information (e.g., collection of information by managed care entities to judge cost-effectiveness). As we have discussed, these are new challenges but familiar issues. (For those with a special interest in this area, we suggest Hsiung's recent review [27].)

We need to remain skeptical and aware of the limitations of new technologies, and we should not be tempted to promise more than we can deliver. We need to clearly determine what aspects of care suffer if they lack face-to-face contact and what can be responsibly managed through distance care. As well as adapting (or rejecting) significant innovations and truly creative efforts, we may find much of worth in the simpler uses of computers for helping us connect with, stay in touch with, and provide care for our patients.

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