

PRACTICE REVIEW

Using Technology Within the Treatment of Eating Disorders: A Clinical Practice Review

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The focus of this clinical practice review is to provide clinicians a framework for incorporating technology into the treatment of eating disorders (EDs). We detailed studies that were published within the past 11 years (2002–2012) and that included at least 10 participants. Our primary aims were to describe how technology has been used to enhance the delivery of ED treatment as well as report the effectiveness of these technology-based interventions. We also provided clinical applications and considerations for clinicians who wish to use technology within their own practice. We found that a range of technologies (e.g., televideo, e-mail, CD-ROM, Internet, text message) have been used as a means to either deliver or enhance treatment at various levels of care (e.g., therapy, guided self-help, treatment adjunct). The majority of the studies were based on cognitive-behavioral principles and included samples diagnosed with bulimia nervosa (BN), binge eating disorder (BED), or subclinical levels of BN or BED. Most researchers reported positive results, with a few caveats such as technology-based interventions may not be optimal for individuals with more severe pathology, and some individuals described wanting more personal interaction. The overarching finding was that technology may be successfully integrated within ED treatment and may offer new ways to extend ED interventions to individuals who may not otherwise have access to specialty ED care.

Keywords: eating disorders, technology, telehealth, therapy, guided self-help

Technology is growing at a fast rate, and new technological advances offer rich areas for growth within mental health care. Researchers have begun investigating how technology can be integrated into treatment for a number of disorders (for review, see Hailey, Roine, & Ohinmaa, 2008). We review how various forms of technology (e.g., smart phones, Internet, CD-ROM) are being used in different ways (e.g., self-help, aftercare) within the treatment of eating disorders (EDs). We have provided summaries of how technology has been implemented throughout different levels of care, beginning with the highest level of therapist interaction (i.e., therapy) to the least interactive (i.e., self-help) as well as both technology-based treatment adjuncts and aftercare interventions. Our aim is to offer a review of how technology has been used within the past 11 years (2002–2012) and to discuss its effective-

ness in the treatment of EDs. We limited our review to studies that included at least 10 participants in order to focus our discussion on interventions that have been developed beyond the case series phase. Additionally, we have provided resources (see Tables 1 and 2) in order to help clinicians navigate and implement technology-based ED interventions into their own practice.

Therapy

The highest degree of integration between psychotherapy practice and technology is the actual administration of psychotherapy via devices such as the telephone, e-mail, and videoconferencing. In studies of technology-administered psychotherapy, research questions have focused on the acceptability of the format for both parties, the relative efficacy of technology-administered therapy versus traditional “face-to-face” therapy, and the greater accessibility of the technology-supported format. Four groups of researchers have used technology to deliver ED psychotherapy. Robinson and Serfaty (2008) conducted a randomized control trial (RCT) comparing an e-mail-based cognitive-behavioral therapy with a self-directed writing group and a wait-list control group. The first innovation in this trial was to contact a large number of potential patients by e-mail through mass mailings. Once patients were engaged, the therapists used e-mail to elicit history, encourage food monitoring, and identify and change maladaptive ED cognitions and behaviors. The e-mail treatment lasted three months and averaged two e-mails per week. At the end of treatment, significantly fewer individuals met criteria for an ED in the e-mail

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Table 1
Available Resources for Incorporating Technology Into Practice

Resource	Link
American Telemedicine Association	http://www.americantelemed.org/
Center for Telehealth and e-Health Law	http://ctel.org/
Internet-based treatment: a comprehensive review	http://www.behavioralhealthce.com/
Telemental Health Guide	http://www.tmhguide.org/
Telehealth Institute	http://telehealth.org/
Telemental Health Resources	http://t2health.org/
Telehealth Resource Center	http://www.telehealthresourcecenter.org/
US Department of Health and Human Services	http://www.hrsa.gov/ruralhealth/about/telehealth/index.html

condition (~22%) compared with the wait-list control group, of which all members were still diagnosed with an ED at follow-up. The authors speculate that the e-mail successfully recruited one-fifth of the potential individuals with EDs who were contacted (based on base rates) and suggest that e-mail provides a means to reach a large group of people who may not otherwise seek treatment or have access to an ED clinic.

Paxton, McLean, Gollings, Faulkner, and Wertheim (2007) studied a more interactive form of Internet-based therapy called "Set Your Body Free," (Gollings & Paxton, 2006) in which participants were randomized to receive face-to-face versus Internet-based treatment or delayed treatment. All participants received the treatment manual that provided ED-focused psychoeducation, change strategies, a treatment topic guide, and out of session activities. The Internet-based condition involved synchronous (scheduled, real-time, two-person) communication with a therapist in an online chat-room coupled with an asynchronous discussion board (where people posted "threads" and anyone could respond). The interventions included the exploration of the patient's motivation and readiness to change, self-monitoring of food intake and body dissatisfaction, analysis of the self-monitoring records, the relationship between self-esteem and body image, the role of the thin-ideal in interpersonal relationships, and cultural pressures on eating and body size. At the end of the program, the therapist and patient reviewed problem-solving and relapse-prevention strategies. Subjects in both conditions reported reduced ED symptoms

(e.g., self-reported body image concerns, dietary restraint, and bulimic symptoms), with small to medium effect sizes observed in the Internet group at termination. There were stronger initial effects in the face-to-face condition; however, interestingly, participants in the Internet group continued to make gains, reaching similar levels of symptom reduction at 6 months follow-up. Some limitations noted were the variance in participants' keyboard skills, which may have reduced some individuals' participation, difficulties in relaying the same amount of information as in traditional talk therapy, and computer problems that resulted in four participants' premature termination. Gollings and Paxton (2006) tested the same program, also comparing it with face-to-face treatment, in a subclinical population (i.e., women with high body dissatisfaction and disordered eating) and found significant reductions of body image dissatisfaction and binge eating. In this study of women with subsyndromal symptoms, however, the observed changes reflected large effect sizes, and there were not significant differences between the two conditions.

The fourth study also included a face-to-face condition, but the technology-supported therapy condition attempted to replicate the experience of traditional psychotherapy more closely. In this study by Mitchell et al. (2008), participants diagnosed with bulimia nervosa (BN) or "eating disorder not otherwise specified" (EDNOS) with binge eating and compensatory behaviors not reaching the current diagnostic level were randomized to face-to-face cognitive-behavioral therapy (FTF-CBT) or telemedicine

Table 2
Eating Disorder Telehealth and Online Resources

Resource	Author	Link
SALUT (CBT-based guided self-help for BN and BED)	Carrard et al., 2006, 2011, in press; Nevon et al., 2006	http://www2.salut-ed.org/demo/
Eating Disorder Examination (Edition 16.0)	Fairburn, Cooper, & O'Connor (2008)	https://webedit6.medsci.ox.ac.uk/psychiatry/research/researchunits/credo/assessment-measures-pdf-files/EDE160D.pdf
Eating Disorder Examination Questionnaire (EDE-Q 6.0)	Fairburn & Beglin (2008)	https://webedit6.medsci.ox.ac.uk/psychiatry/research/researchunits/credo/assessment-measures-pdf-files/EDE-Q6.pdf
CBT and Eating Disorders Resources	Fairburn (2008)	http://www.credo-oxford.com/6.2.html
Set Your Body Free	Gollings & Paxton (2006); Paxton et al. (2007)	http://www.nedc.com.au/resource/69/set-your-body-free
StudentBodies	Taylor et al., 2006	http://www.beyondblackboards.com/StudentBodies.aspx
Overcoming Bulimia Online	Williams et al. (1998)	http://www.overcomingbulimiaonline.com

Note. BED = binge eating disorder; BN = bulimia nervosa; CBT = cognitive-behavioral therapy.

CBT (TV-CBT). In the TV-CBT condition, therapy sessions were conducted via video conferencing—allowing patients and therapists to view each other while speaking. Owing to the state of technological accessibility at the time, subjects in the TV-CBT group were required to travel to a special facility in order to access state-of-the-art videoconferencing facilities. Results indicated similar levels of ED symptom reduction in the two groups (Mitchell et al., 2008) and equivalent therapist alliance in both conditions, though therapists reported a subjective preference for the FTF format (Ertelt et al., 2011). The authors noted that the TV-CBT sessions were conducted at distal sites, were often difficult to schedule, and subject to technical difficulties. Despite these limitations, rates of binge/purge cessation were comparable between the two groups as well as compared with other RCTs investigating the treatment of BN (see Bacaltchuk, Hay, & Trefiglio, 2009). Participants in the TV-CBT condition also reported reduced shape/weight concerns, though the reductions in eating concerns were greater in the FTF-CBT condition. The researchers concluded that difficult to reach areas may benefit from TV-CBT protocols and that telemedicine offers a valid way to help individuals with EDs. Given recent technological advances, such as the general accessibility of Internet programs that provide a face-to-face phone connection and smart phone features that provide hand-held videoconferencing, technology-supported face-to-face psychotherapy may be much more realistic at this point.

Generally, technology-delivered therapies have yielded positive results, though interventions with the greatest level of therapist interaction resulted in higher abstinence rates (i.e., 40% in TV-CBT, Mitchell et al., 2008) than the least interactive interventions (i.e., 23% in e-mail therapy, Robinson & Serfaty, 2008). This suggests that there is an optimal level of therapist interaction needed to see the best rates of symptom reduction. Furthermore, there are additional problems to be solved. Traditionally, psychiatrists and psychologists consider face-to-face contact necessary to fully assess the general mental (and physical) state of the patient's health. It is not clear whether important diagnostic or other clinical information might be missed when therapist-patient contact is provided solely via technology, though self-report alliance ratings tend not to show differences between telehealth and traditional interventions when other variables are controlled. Additionally some research also suggests that individuals (in a nonclinical sample) report greater levels of self-disclosure and closeness in face-to-face contact (Mallen, Day, & Green, 2003). There may be more subtle differences in the therapeutic process that have not been yet assessed by objective methods of assessment.

Research is needed to confirm the safety and clear benefit of exclusively technology-provided therapy as well as the legality and legal protections. Nonetheless, given the difficulty many individuals with EDs have accessing expert services in their area, technology clearly provides an opportunity for increased treatment access. Although therapy delivered via technology holds promise, it seems that there is a necessary level of support in order to promote substantial behavior change.

Guided Self-Help

The next level of care, in which individuals with EDs conduct the majority of their own therapeutic activities under the guidance of a practitioner, has been termed "guided self-help." Guided

self-help has proven particularly useful in the treatment of EDs, given the ease of self-administration for potent forms of behavioral interventions (e.g., self-monitoring food intake and symptoms, developing behavioral strategies to delay or avoid binge eating, ceasing checking behaviors such as self-weighing). Guided self-help CBT with a face-to-face guidance component has demonstrated efficacy in the treatment of EDs (except anorexia nervosa) in multiple clinical trials (Thompson-Brenner et al., *in press*; Wilson & Zandberg, 2010). Multiple research groups have now also used technology to administer the guidance component of guided self-help for EDs. Carrard et al. (2006, 2011, *in press*) and Nevenon, Mark, Levin, Lindstrom, & Paulson-Karlsson (2006) evaluated an online CBT program for patients with BN/EDNOS and Binge Eating Disorder (BED)/subthreshold BED. The program involved online sessions and weekly supportive e-mails. The seven modules reviewed were as follows: (1) "Prepare for change," which explored motivation for treatment; (2) "Observe yourself," which involved self-monitoring of ED symptoms; (3) "Change your behavior," which focused on regular eating and behavioral strategies to prevent binge eating; (4) "Change the way you think," which challenged automatic thoughts; (5) "Solve your problems," which included problem-solving techniques; (6) "Assert yourself," which provided assertiveness training; and (7) "Prevent relapse," which reviewed the skills from earlier modules and relapse-prevention tips (Carrard et al., *in press*). The program was modified for BED and included additional modules such as "physical activity," "binge triggers," and "meal plans" (Carrard et al., 2011). Each step included lessons, examples, and exercises (Carrard et al., 2006). Participants were also able to see graphs related to their ED symptoms (e.g., number of meals and binge episodes [Carrard et al., 2006]).

Patients across these studies experienced reduced ED symptoms and reported satisfaction with the program. In the first study, 17% of the first sample with BN reported being "abstainers" (i.e., no longer binged or purged), 69% reported reduced binge behavior, and 59% reported reduced purge behavior (Carrard et al., 2006). Self-reported cognitive symptoms (e.g., body dissatisfaction, perfectionism) were also reduced after the program (Carrard et al., 2006). Nevenon et al. (2006) reported that patients with BN reduced vomiting significantly, from three and a half times per week to two and a half times per week, and that participants with BN and EDNOS reported reduced dietary restraint and weight phobia. Of note, the clinical significance of the vomiting-reduction rate was questionable, and the reductions in binge eating observed were statistically nonsignificant. The authors suggest that the low completion rate may have accounted for the lack of significant findings. In the third study focused on participants with BN, 10% to 49% showed clinical improvement across ED symptoms (Carrard et al., *in press*). More than one-third of the BED sample reported abstaining from binge eating postintervention and showed significant improvements in related ED symptoms such as shape concerns and body dissatisfaction (Carrard et al., 2011). These studies suggest that Internet-based guided self-help holds promise to benefit patients who have difficulty accessing face-to-face psychotherapy; however, issues with treatment completion and with suboptimal response—perhaps particularly among more severe patients—require additional attention.

A set of research studies investigating guided self-help programs have also included additional contact between counselors

and participants, with the aim of boosting the therapeutic alliance, promoting retention, and increasing effect. For the guided self-help component, Ljotsson et al. (2007) provided BED/BN (threshold and subthreshold) patients with *Overcoming Binge Eating* (a self-help book for reducing binge eating; Fairburn, 1995) and provided therapists with *Guided Self-Help for Bulimia Nervosa. Therapist's Manual* (Fairburn, 1999). To augment the effect of the manuals, the program included an online moderated discussion group and e-mail support from graduate students. This study found positive results, with 46% of participants who completed the program reporting no binge/purge behavior and significant improvements in associated cognitive symptoms at the end of treatment and at follow-up. Jacobi, Volker, Trockel, & Taylor (2012) reported similar results for individuals with subthreshold EDs using "StudentBodies," an eight-session Internet-based CBT program originally designed for ED prevention (Taylor et al., 2006), with online discussion groups moderated by graduate students. Specific exercises focused on improving body image by confronting mirrors, regulating emotions through mindfulness, accepting emotions, social support, and cognitive restructuring. Participants also filled out a weekly symptom checklist. Participants in the treatment group reported significant reductions in ED psychopathology and greater rates of abstinence from dietary restraint, bingeing, and compensatory behaviors as compared with the control group (45% vs. 19%). Another version of the protocol, "Student2Bodies-BED," (SB2-BED) was adapted for overweight adolescents with binge eating. This 16-week program targeted binge eating, weight maintenance, and physical activity. It included psychoeducation, interactive self-monitoring journals, an asynchronous discussion group, weekly letters of encouragement, and motivational messages. Jones et al. (2008) conducted an RCT of SB2-BED and demonstrated that SB2-BED reduced rates of binge eating and shape/weight concerns and produced additional weight loss compared with a wait-list control group.

Another intensive Internet-based, interactive, multimedia, guided self-help program for BN was tested with a college student sample in the United Kingdom. "Overcoming Bulimia Online" (Williams, Aubin, Cottrell, & Harkin, 1998) included eight CBT-based lessons, group and individual online guidance, and supportive e-mails from therapists. Homework was assigned, and feedback was provided on the participant's progress. In one treatment study, participants who received the treatment showed significant reductions in bulimic symptoms (i.e., approximately two-thirds were abstinent or reached subclinical levels of bulimic symptomatology as compared with one-third in the delayed treatment condition at 3 months follow-up; Sánchez-Ortiz et al., 2011), and patients reported appreciating the flexibility of the program (Sánchez-Ortiz, Munro, & Schmidt, 2007). Adolescents with BN also reported reduced binge eating and compensatory behaviors using "Overcoming Bulimia Online," with 38% reporting being in remission or subclinical symptoms at 3 months follow-up. The most frequently reported positive feedback about the program was focused on the educational information about ED triggers, causes, and consequences (Pretorius et al., 2009).

Drawbacks to the observed benefits of these studies included high dropout rates across programs, which have led to the suggestion that Internet-based programs are not best suited for individuals with more severe ED pathology (Carrard et al., 2006, 2011, in press; Nevenon et al., 2006). For example,

participants with BED who reported greater shape or weight concerns were more likely to dropout of two of the online programs (Carrard et al., in press; Jones et al., 2008). Of note, other research suggests individuals with greater shape concerns disproportionately dropout of nontechnology-based guided self-help CBT compared with those in therapist-delivered CBT (Thompson-Brenner, Grilo, Thompson, Shingleton, & Franko, 2012); therefore, these greater dropout rates among those with higher cognitive symptoms in technology-administered guided self-help programs may not be related to the technological method of administration. Further research is needed on this point.

Self-Help

Three studies have used technology to facilitate pure self-help without any form of professional guidance (e.g., supportive e-mails or chat rooms with a trained professional). Two studies (Bara-Carril et al., 2004; Schmidt et al., 2008) used the CD-ROM version of "Overcoming Bulimia" (Pretorius et al., 2009; Sanchez-Ortiz et al., 2007; Sánchez-Ortiz et al., 2010; Williams et al., 1998; reported above). The program consisted of eight modules covering the consequences associated with EDs, common risk factors and cultural factors, self-monitoring of food intake and mood, assertiveness training, cognitive restructuring, problem solving, how to "live to the full" (e.g., "how to face your fears" and "how to build your confidence"), and planning for the future. Bara-Carril et al. (2004) reported that approximately three-quarters initiated the program, and 42% of these participants completed all eight sessions. The authors reported reduced binge/purge behavior (with large effect sizes). However, individuals with more severe pathology were less likely to participate in the CD-ROM program (Bara-Carril et al., 2004). Schmidt et al. (2008) found that only two-thirds of those randomized to the CD-ROM condition took up the intervention and, of this subset, one-half completed seven or eight of the eight sessions. Although just under two-thirds of those who were generally adherent to the protocol were abstinent from BN behaviors at 3 months follow-up, the authors were discouraged by the suboptimal adherence rates noted above (Schmidt et al., 2008).

Shapiro et al. (2007) developed another CD-ROM CBT-self-help program for obesity and BED and compared it with clinician-led Group CBT. The CD-ROM program included information about balanced nutrition, healthy living, psychoeducation, basic CBT principles with detailed examples and interactive exercises, relapse prevention, and self-monitoring. The program included photos, detailed illustrations and videos as well as six characters coping with weight issues to help make the protocol realistic and life-like. They also developed the program so that it would be applicable to individuals of different races and backgrounds. They found that those in the CD-ROM group continued to use the program after the end of treatment, and the majority of those on the wait-list opted for the CD-ROM option over Group CBT. There were no significant differences between groups, with 13% abstinence from binge eating in the CD-ROM group. Despite these low abstinence rates, the authors concluded that CD-ROM-based self-help seems to be acceptable and the initially preferred mode of treatment for overweight individuals with BED, though anecdotal

reports suggested that those who used the CD-ROM would have liked more support and interaction.

Adjunct to Treatment

Two studies have investigated adjunct technology-based interventions. *Le Grange, Gorin, Dymek, & Stone (2002)* piloted a technology-based monitoring system. Participants diagnosed with BED were prompted six times each day on a programmable wristwatch to record their thoughts, mood, and eating in a printed diary for the first 2 weeks of CBT treatment. The results did not indicate an advantage of the wristwatch prompting, though participants did significantly reduce their binge eating to less than an average of two binges per week from baseline to posttreatment.

Shapiro et al. (2010) piloted a text message-monitoring system in which participants with BN submitted nightly text messages reporting their binge/purge episodes and urges to binge/purge during their course of CBT. They then received an automated text message response providing personalized feedback (e.g., “Good job with resisting your strong urge to purge today. Try harder to not give into the binge eating tomorrow. Call a friend instead.”) Participants reported high satisfaction and were generally adherent to texting nightly. ED behaviors reduced from an average of six binges and 14 purges per week to two-and-a-half binges and approximately four purges per week postintervention.

Aftercare

Similar to treatment adjuncts, text messaging has been used for stand-alone aftercare interventions. *Gulec et al. (2011)* investigated an Internet-based aftercare intervention called “EDINA” (Internet-based Aftercare for Patients with Eating Disorders; name translated from Hungarian) for patients with BN/EDNOS, with the aim of maintaining treatment gains postdischarge. The program involved psychoeducation (e.g., recognizing signs of relapse), a forum for peer support, professional consultation during group and individual chat sessions, and symptom monitoring with feedback messages. The program was found to be acceptable, with >80% of participants rating the program as “good” or “excellent” and more than three-quarters noting that it helped them cope with their problems more effectively. Additionally, just under one-half of the participants noted that the “opportunity to get professional advice” was particularly helpful, and ~80% were satisfied with the support they received from the therapist during the online chat sessions. Although the authors did not report specific changes in symptoms, they did conclude that the program was both feasible and well-accepted (*Gulec et al., 2011*).

The evidence supporting the use of text messaging to promote continued benefit following treatment for BN is mixed. *Bauer, Okon, Meermann, & Kordy (2012)* randomized patients with BN who were discharged from an inpatient hospitalization to receive text messages for 16 weeks versus usual care. Participants were asked to report levels of body dissatisfaction and frequency of binge or purge behavior. Using a computerized algorithm, text messages were sent in response to provide support and personalized feedback regarding the level of their ED symptoms. Those who received the text message intervention were more likely to remain abstinent (i.e., 51% of completers were abstinent in the intervention condition compared with 36% in the control group) at

8 months follow-up, suggesting that the intervention helped participants maintain treatment gains. In contrast, participants in a second study investigating a 6-month text message “step-down” stand-alone intervention after outpatient treatment for BN/subclinical BN were generally not adherent. Participants were asked to respond to five questions weekly pertaining to their ED and mood symptoms and were also given the option to send unprompted text messages regarding their progress. Approximately one-half of the sample did not view the text message content as positive (i.e., not personal enough) or incrementally helpful, though 47% of participants reported abstinence from or subclinical levels of binge eating postintervention. However, there was no control group with which to compare these results. Despite this negative feedback, the most common positive feedback was that “when [they were] having a bad week, [they] felt the texts were encouraging and made [them] feel better and more hopeful about the next week. When [they were] doing well the texts reminded [them] how far [they’ve] come and made [them] feel proud of that” (*Robinson et al., 2006*).

Conclusions and Clinical Applications

Overall, the studies reviewed here found generally positive results. Technology ranging from text message to Internet-guided self-help are viable ways to enhance or deliver multiple levels of treatment for EDs. E-mail interventions are hypothesized to reach individuals who may not have sought treatment, web-based self-help interventions offer flexible programs, and video-based therapy may reduce the burden of traveling to a specific clinic. Drawing from the results, we suggest that more interactive forms of technology-based interventions in less severe populations yield the greatest results and show the greatest promise.

Some limitations of the studies reviewed have practical implications worth noting. Perhaps most importantly, the samples used in the studies discussed above were composed of individuals diagnosed with BN, BED, or subthreshold levels of ED symptoms, and all treatments used in the studies were conducted on an outpatient basis. There is a paucity of studies investigating technology-based interventions in samples with anorexia nervosa (AN). To our knowledge, only technology-based pilot studies (with a maximum of five participants) have been conducted in this population (e.g., *Treasure, Macare, Mentxaka, & Harrison, 2010; Yager, 2003*). The limited number of studies is likely owing to the medical risks associated with the illness (*Mitchell & Crow, 2006*). Technology can reduce the role of a live therapist, which may be inappropriate for individuals suffering from acute AN, who typically require a high level of care owing to medical complications associated with severe malnutrition. Moreover, the majority of the studies incorporated CBT-based principles (as opposed to other psychotherapeutic approaches such as interpersonal therapy [IPT] or others). We hypothesize that this is owing to the fact that CBT skills and lessons may be more easily translated to technology platforms. In the most simple of translations, however—wherein psychotherapy is administered virtually identically to traditional face-to-face therapy, but conducted via an Internet or smart phone-based telehealth format—it should be possible to investigate whether the use of technology and the difference in physical proximity has any effect on the process or outcome of more relational or affect-focused interventions. These observations sug-

gest that when considering using technology with practice, clinicians must think carefully about what skills or lessons are most easily delivered via technology and what populations would benefit most from such treatment delivery.

Clinicians interested in incorporating telehealth services into their practice should also be aware of potential obstacles that can arise when delivering interventions via technology. First, multiple ethical considerations must be reviewed (See Table 1 for resources). The risks to confidentiality are heightened with technology given that private information may be transmitted over insecure connections. Making clients aware of this risk and providing clients with tools as to how to best protect their private information is essential. Providers should take necessary steps to ensure protection to the best of their ability (e.g., encryption, passwords, firewalls etc.; Fisher & Fried, 2003). Second, interpersonal communication can be impacted by technology (e.g., providing therapy face-to-face may look and sound different than e-mailing or texting therapeutic advice; Ragusea & VandeCreek, 2003). Additionally, some research suggests that face-to-face communication compared with online communication results in greater feelings of closeness between individuals, though both formats result in equivalent emotional understanding (Mallen et al., 2003). Clinicians should also be aware of competency issues when incorporating technology into treatment. For example, it is important to understand terms such as bandwidth and resolution and consider how to best set up a treatment room (e.g., lighting, camera placement) when using teletherapy, as these factors can impact treatment delivery (Barnett & Scheetz, 2003). Finally, legal restrictions may apply to providing services across state lines, so it has been suggested that clinicians research and be aware of the limits of their license (Koocher & Morray, 2000). We have provided some resources regarding information, ethics and education surrounding telehealth in Table 1.

Technology offers the opportunity for clinicians to reach clients in innovative ways. The current review suggests that individuals with EDs can benefit from technology-based interventions either as a form of treatment or in addition to care as usual. Although certain precautions should be taken into consideration when using technology within one's practice, multiple resources are available to help guide clinicians, and research suggests that technology can enhance treatment.

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