

Bringing Internet-based education and intervention into mental health practice: afterdeployment.org

Josef I. Ruzek^{1*}, Julia Hoffman², Robert Ciulla²,
Annabel Prins¹, Eric Kuhn¹ and Gregory Gahm²

¹National Center for PTSD, VA Palo Alto Health Care System, Menlo Park, CA, USA; ²National Center for Telehealth and Technology [T2], Tacoma, WA, USA

Background: Internet-facilitated interventions may offer numerous advantages in reaching the large numbers of military service men and women exposed to traumatic events. The Internet is now a primary source of health-related information for consumers and research has shown the effectiveness of web-based interventions in addressing a range of mental health problems.

Objective: Clinicians can learn how to bring Internet education and intervention into routine care, to help clients better understand mental health issues and learn skills for self-management of problems.

Method: The Afterdeployment.org (AD) Internet site can be used by health care professionals serving U.S. military personnel returning from Iraq and Afghanistan, and their families. The site currently addresses 18 key domains of functioning, including post-traumatic stress, sleep, anger, alcohol and drugs, and military sexual trauma. It provides an extensive amount of client and family education that is suitable for immediate use by clients and providers, as well as the kinds of interactive workshop content and self-assessment tools that have been shown to be helpful in other treatment contexts.

Results: AD can be utilized in clinical practice in a variety of ways: as an adjunct to treatment for PTSD, to supplement existing treatments for a range of post-deployment problems, or as the primary focus of treatment for a client.

Conclusions: AD represents a kind of service that is likely to become increasingly available in coming years and that is important for mental health providers to actively explore as a tool for extending their reach, improving their efficiency, and improving quality of care.

Keywords: *Post-traumatic stress; PTSD; Web, online; combat; war; military; veteran*

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Military deployments commonly expose service men and women to a range of stressors, including potentially traumatic events involving threat of death and exposure to suffering of others. Such deployments have many consequences for service members, families, and communities, sometimes including mental health and physical health problems and difficulties with interpersonal and work/school functioning. In the past 10 years, more than 1.5 million US military service members have been deployed in support

of Operation Enduring Freedom (OEF) in Afghanistan and Operation Iraqi Freedom (OIF). Behavioral health problems are common in these recent returnees (Hoge et al., 2004; Hoge, Auchterlonie, & Milliken, 2006). Problems include depression (Tanelian & Jaycox, 2008), anxiety (Hoge et al., 2004), posttraumatic stress disorder (PTSD; Thomas et al., 2010), stress-related sleep problems (Peterson, Goodie, Satterfield, & Brim, 2008), hypertension (Granado et al., 2009), eating disorders (Jacobson et al., 2009), and substance abuse including

alcohol problems (Dervaux & Laqueille, 2008; Fear & Wessely, 2009). Almost a fifth (17%) of service members returning from Iraq screen positive for PTSD six months after deployment (Milliken, Auchterlonie, & Hoge, 2007) and almost a quarter (23%) screen positive for traumatic brain injury (TBI) in postdeployment assessments (Terrio et al., 2009). It is also important to note that the suicide rate among service members has reached record levels (Department of Defense Suicide Event Report (DoDSER): Calendar Year 2008 Annual Report, 2008; Hoge et al., 2006; Kang & Bullman, 2009).

While the need to address the psychological impact of combat deployments represents an important public health problem (Ruzek, Vasterling, Schnurr, & Friedman, 2011), there are many challenges in responding to the need. Service delivery models must consider the immediate and long-term effects of multiple deployments, limitations in resources available in some settings (e.g., rural communities), the fast-paced operational tempo typifying military culture, and potential deterrents to obtaining care (e.g., scheduling barriers, transportation difficulties). Such barriers, and the concerns that some military personnel have about potential stigmatization associated with seeking face-to-face care (e.g., getting care may be seen as a sign of weakness or might negatively affect career potential), may further deter military service members and veterans from obtaining the much-needed care (Hoge et al., 2004). In this context, Internet-facilitated intervention may offer numerous advantages. Technology bypasses common barriers such as transportation and scheduling difficulties, and can facilitate access via 24/7 “always-on” availability. Since resources obtained via Internet-based applications can be downloaded privately, technology can support access to confidential, non-stigmatizing support. Content across the spectrum of technology tools and devices can be designed to be evidenced-based, and users can exercise greater control over when and where to utilize resources, no longer needing to wait until the next mental health appointment is available. Technology can assist in addressing the high-volume needs that can challenge the finite resources characterizing most clinic settings. Importantly, technology has a particular synergy within the military culture. Below, we summarize the current state of research on Internet-based mental health and posttrauma interventions, describe one Internet-based resource—afterdeployment.org (AD)—designed to enable active duty service personnel, Veterans, and their families to self-manage challenges related to postdeployment stress reactions, and outline ways of bringing AD into clinical care.

Online mental health interventions

The Internet is now a primary source of health-related information for consumers. This is also true of issues related to psychological trauma. Following the terrorist attacks of September 11, 2001, approximately 53 million

people sought information via the Internet (Rainie & Kalsnes, 2001). Challenges remain, however, in ensuring the accuracy of information provided, and the usefulness and accuracy of many informational websites is unclear. Bremner, Quinn, Quinn, and Veledar (2006) reviewed the quality of information provided on 80 trauma-related websites. Forty-two percent of sites were judged to have inaccurate information, 82 percent failed to provide a source of content, and 41 percent did not use a mental health professional in the development of the content. Only 18% of the sites provided any scientific references. However, authoritative websites that are grounded in research on PTSD do exist (e.g., National Center for Posttraumatic Stress Disorder (NCPTSD) site: www.ptsd.va.gov; International Society for Traumatic Stress Studies site: www.istss.org) and are much used: the NCPTSD site is registering over a million hits per year.

The utility of Internet programs goes beyond simple provision of information. Research has shown the effectiveness of web-based interventions in modifying a range of health care behaviors, such as physical exercise, diabetes self-management, and weight loss (Ritterband et al., 2003). A large body of research also provides substantial evidence for the potential effectiveness of web-based interventions in successfully treating a range of mental health and behavioral problems (Marks, Cavanagh, & Gega, 2007), including anxiety and depression (Anderson, Jacobs, & Rothbaum, 2004; Kaltenthaler et al., 2006; Newman, Szkodny, Liera, & Przeworski, 2011; Reger and Gahm, 2009), and problem drinking and smoking (Marks et al., 2007).

Internet-based interventions for trauma survivors are receiving increased research attention (e.g., Hirai & Clum, 2005; Lange et al., 2003; Litz, Williams, Wang, Bryant, & Engel, 2004; Ruggiero et al., 2006) and studies to date provide preliminary support for the use of specific web-based treatments in reducing posttraumatic stress (PTS) symptoms, compared to wait-list, and supportive counseling control conditions. For example, several studies of the Interapy intervention (Lange, Van De Ven, Schrieken, & Emmelkamp, 2001; Lange et al., 2003; Knaevelsrud & Maercker, 2007, 2010) have demonstrated the impact of that program. The intervention contains informational pages describing symptoms of PTS and pathological grief as well as imaginary exposure and writing assignments. Individuals complete 10 expressive writing assignments across a 5-week intervention period. Although this program is delivered via the web, live practitioners are also involved: mental health providers review the writing assignments and give feedback and instructions. Results have demonstrated significant PTSD symptom reduction with moderate effect sizes for college and community samples,

and improvements maintained at 18-month follow-up (Knaevelsrud & Maercker, 2010).

Klein et al. (2009, 2010) have evaluated a 10-week Internet intervention that is delivered entirely online with email support from a psychologist. The intervention includes education, anxiety management instruction, cognitive restructuring, and imaginal and *in vivo* exposure. Individuals diagnosed with PTSD showed significant reductions in PTSD clinician severity ratings and self-report measures of PTSD.

Internet materials have the capacity to reach large numbers of survivors affected by war, disasters, or other events affecting large groups. Ruggiero et al. (2006) developed a stand-alone web-based program for survivors of disaster and terrorist assault. The program provides information in brief modules addressing a wide range of survivor issues and applies empirically supported cognitive-behavioral approaches within the web environment. Modules focus on PTSD/panic, depression, worry, alcohol, marijuana, and other drugs. Of the 1,035 residents and survivors of the New York City Trade Center terrorist attacks who were approached, 325 (31.4%) logged onto the site and 27.5% (285) consented to participate. Participants liked using the site and 83% of the completers in the study said they would recommend it to family or friends. The project illustrated the feasibility of providing Internet programming to large numbers of trauma survivors.

Research on Internet intervention with survivors of war-related trauma is also beginning. In a study focused on active duty service members with PTSD symptoms related to the Pentagon terrorist attack of September 11, 2001 or to combat in Iraq or Afghanistan, Litz, Engel, Bryant, and Papa (2007) found that their minimal contact Internet intervention was more effective in reducing PTSD symptoms and improving end-state functioning than a supportive Internet site at 6 months after treatment.

Most web-based interventions for trauma survivors have been designed as therapist-assisted interventions. Interapy (Lange et al., 2001, 2003; Knaevelsrud & Maercker, 2007) and DeStress (Litz et al., 2007) require significant input from the provider. For example, Interapy involves a mean per-client total of 14 hours of therapist time, and the study by Litz et al. (2007) involved a 2-hour initial face-to-face session supplemented by periodic telephone contact. Research indicates that Internet interventions are more likely to be effective under such conditions of at least some therapist (or other support person) involvement (Newman et al., 2011). Attrition from web-based interventions is high in the absence of provider contact to facilitate completion. There is relatively little evidence at present for the effectiveness of trauma-related Internet interventions that are completely self-administered (e.g., Hirai & Clum, 2005).

Afterdeployment.org (AD)

Work to date suggests that delivery of evidence-informed, Internet-based interventions to trauma survivors is feasible and that posttraumatic distress can be significantly reduced in some contexts. In 2006, the US Congress passed the National Defense Authorization Act, which mandated that the Department of Defense (DoD) conduct a pilot project aimed at creating “(A) Internet-based automated tools available to military and civilian health care providers for the early diagnosis and treatment of posttraumatic stress disorder, and for tracking patients who suffer from posttraumatic stress disorder; and (B) Internet-based tools available to family members of members of the Armed Forces in order to assist such family members in the identification of the emergence of posttraumatic stress disorder” (National Defense Authorization Act for Fiscal Year 2006: Public Law 109–163—JAN. 6, 2006, 2006; Title VII, Subtitle C, Sec. 721, pp. 212–213). In 2007, the National Center for Telehealth and Technology (T2) was funded by the TRICARE Management Activity to develop and maintain this set of Internet-based tools, which took the form of a website called AD. Collaborators from other US government departments (e.g., Department of Veterans Affairs) were gathered to contribute expertise on all elements of this undertaking. AD was designed to harness the potential of Internet-based interventions to educate and support military personnel in coping with postdeployment stress challenges (Bush, Fairall, McCann, & Ciulla, Under review). The site serves as the premier web-based resource for returnees from Iraq and Afghanistan, and their families.

Throughout the site development, priority has been placed on developing: content that is credible and comprehensive in scope; a program that allows users to access educational and behavior-change tools independent of a healthcare provider; a graphical interface (i.e., site “look and feel”) that is commensurate with the serious nature of the content and that offers an intuitive navigation scheme; content provided via multiple modalities (text-based, interactive, multiple media) to support a range of learning styles; tools constructed in such a way as to support a self-guided/self-paced format; a program that emphasizes privacy (no registration requirements); and content that normalizes postdeployment adjustment problems.

The site’s original 12 topics were developed in response to language in the US Congress National Defense Authorization Acts that directed the DoD to stand up a web portal to address PTSD and other mental health conditions commonly experienced following a deployment. In fact, in subsequent iterations, the site has increasingly taken on a more “holistic” approach, introducing topics (Resilience; Stigma) and features (provider training) that are not exclusively focused on

symptomatic problems or concepts related to psychopathology.

The site currently addresses the 18 key domains of functioning listed in Table 1. Users logging on to AD can take an assessment, view an educational video, read topical text, and learn a skill such as progressive muscle relaxation, time management, or sleep hygiene in the context of highly interactive exercise workshops. Each of the topic areas includes all of these options, and a user can access any of the functions either by selecting the topic of interest and navigating for appropriate tools or by selecting the type of engagement she/he is seeking and then locating an appropriate topic area. For example, if a user is experiencing depression, she/he can choose the depression topic from the home page and then decide whether to view videos, take an assessment, read about the problem, or engage in an exercise workshop.

Table 1. Current AD topic areas and online self-assessments

Topic areas	Online self-assessments
Adapting to physical injury	Alcohol and drugs
Alcohol and drugs	Anger
Anger	Anxiety
Anxiety	Caregiver stress
Depression	Depression
Families and friendships	Forgiveness
Families with kids	Friendship
General life stress	Generosity
Health and wellness	Gratitude
Mild traumatic brain injury	Hope
Military sexual trauma	Marital satisfaction
Post-traumatic stress	Mild traumatic brain injury symptom management
Resilience	Nicotine dependence
Sleep	Optimism
Spirituality	Panic
Stigma	Parenting confidence
Tobacco	Perceived social support
Work adjustment	Physical injury resilience
	Post-deployment social support
	Posttraumatic stress
	Resilience
	Satisfaction with life
	Sexual trauma
	Sleep
	Spirituality
	Stigma
	Stress
	Work adjustment
	Worry

Alternatively, the same user could click on assessment from the home page and, after browsing the list of assessments, select the depression scale to use. Ultimately, the goal has been to give the user as much control as possible and to ensure that the site is easily navigable for individuals with varying needs. Key features of the site include:

- 18 topic areas, each with associated videos, assessments, self-management workshops with interactive exercises, and links to related resources, as noted earlier.
- Online assessments for 29 postdeployment issues.
- Separate portals for service members, veterans, families, and providers, respectively.
- Social features including community forums, AD Facebook, Twitter, and YouTube channels/domains.
- Refreshing features including expert blogs, quarterly newsletters, RSS Feeds, and a live chat feature linking to the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE) outreach center.
- A directly streamed AD podcast series “There and Back,” as well as access to archived podcasts on iTunes.
- Extensive resources and links, including a resource locator pointing to locations nationally for personal mental health support; libraries; frequently asked questions (FAQs); help and glossary; and a press kit.
- User participation options, including links for users to provide feedback and participate in polls and research surveys.

One of the primary benefits of AD is that users can self-pace their efforts and access resources privately and on their own schedule. In the event that Internet-based self-administered care is found to be insufficient, users can elevate their care telephonically via the site’s hotlines, or by chatting via instant messaging with trained professionals available 24 hours per day from the DCoE Outreach Center. While many of the site modules (PTS, depression, and substance abuse) provide users with tools to limit the impact of behavioral health conditions (tertiary prevention), the inclusion of content not focused on psychopathology, such as resilience, health and wellness, and spirituality, gives users opportunities to address areas that target personal and emotional growth (primary prevention).

If they are to access the site, potential users must feel secure about the privacy and confidentiality of their responses. The AD privacy policy is referenced in the Policy tab available in the home page footer: “We do not create individual profiles or collect personally identifiable information.” It is also recommended that users do not include any personal information, especially Social

Security numbers, in comments, feedback, or contact requests. There is no registration requirement to access the site's voluminous content. The exception is site features that allow a user to store information. Even in those cases, registration is anonymous; the site collects no personal health information. AD was designed to provide the military and veteran community with a private, confidential, and online self-care solution.

Bringing Afterdeployment.org into practice

Since it was launched in August 2008, the site has been marketed in several ways. Initially, there was a broadcasted announcement to key military stakeholders. Since then, the site has been presented at national and international conferences, made the subject of a public service announcement and military radio interviews, and referenced online via several online articles. The site also has an evolving presence on social media sites, such as Facebook and Twitter.

As previously noted, therapist support of Internet-based interventions enhances outcomes, with at least one meta-analysis finding that the effect size for therapist-assisted programs was $d = 1.0$ as compared to $d = .27$ for programs without therapist support (Spek et al., 2007). Furthermore, Internet-based self-help programs are rarely completed, with some studies suggesting a completion rate of less than 1% if there is no clinical contact (Christiansen, Griffiths, Groves, & Korten, 2006; Eysenbach, Powell, Englesakis, Rizo, & Stern, 2004). Similar findings have been observed for the workshops available on AD. For example, a small minority of users selecting the PTS workshops completes all eight workshops. Therapist support and involvement, therefore, appears to be a key determinant in the success of Internet-based education and interventions programs.

It is estimated that more than 25% of users visiting ad.org are providers. A provider portal is now the third most frequently visited page on the website. It brings assessment tools, client worksheets, PowerPoint presentations ("briefings"), continuing education materials, and Veterans Affairs (VA)/Department of Defense (DoD) clinical practice guidelines to providers. Clinical support tools (e.g., therapist manuals) are being developed for frequently used workshops, with video demonstration of specific cognitive-behavioral therapy (CBT) skills.

AD can be utilized in clinical practice in a variety of ways. Providers working on a particular problem (e.g., PTSD) may want to assess and monitor other problem areas that are not the primary focus of treatment (e.g., sleep). In this case, AD assessments, psychoeducational materials, and workshops can be used as an *adjunct* to treatment for PTSD. AD can also be used to *supplement* existing treatments. For example, clinicians can monitor progress in their treatment of PTSD by having clients complete the PTSD Checklist (PCL) on AD or assigning

particular AD workshop exercises that reinforce aspects of their treatment. Finally, clinicians can decide to use AD as the *primary focus* of treatment for a client. This fully incorporated option can include selecting a topic area with the client and completing related assessments and exercises during face-to-face sessions. In contrast, some clinicians may want to encourage *casual exploration* of the topics and materials on AD, and/or to emphasize the social media features of the site for peer-to-peer support.

Although the clinical applications of AD are numerous, providers must consider several important client and practice characteristics before using AD in their practices.

Client considerations

Foremost among these are the types and severities of the client's presenting problems. Clearly, if the client is in crisis or a risk to himself/herself or others, web-based intervention should not be offered as the first line or exclusive type of treatment. Likewise, clients who are severely disordered or have challenging comorbidities, including severe personality disturbance and uncontrolled substance use disorders, would most likely require more intensive, traditionally delivered care. That being acknowledged, web-based intervention can be used as a powerful adjunct to care and/or should be reconsidered as client conditions stabilize.

Another important client characteristic to consider is treatment motivation. As with traditional forms of treatment, client motivation to engage in web-based interventions and make life changes is vital to intervention success (Newman et al., 2011). Clients who are already actively addressing their trauma-related issues are more likely to engage and benefit from web-based interventions. Those who are struggling with ambivalence about expending effort to make improvements to their condition would benefit more from interventions designed to help move them to decide to actively work toward treatment engagement (i.e., motivational interviewing), which might include web-based programs designed for such purposes.

Client self-efficacy regarding personal ability to manage and persist in addressing posttrauma difficulties should also be evaluated. Trauma coping self-efficacy has been found to predict psychological adjustment following many types of traumatic stressors (Benight, Ruzek, & Waldrep, 2008). Clients who have perceptions of a low capability to handle and overcome their posttraumatic reactions may require more therapist involvement to help them build the confidence needed to address these challenges.

Poor social support has been shown to be one of the most consistent and powerful predictors of development of PTSD following trauma exposure (Brewin, Andrews, & Valentine, 2000). Better social support has also been

shown to be an important moderator for successful treatment of posttraumatic difficulties (e.g., Thrasher, Power, Morant, Marks, & Dalgleish, 2010). Therefore, the client's social support should be carefully evaluated. If the client has few or no supportive others to rely upon, prescribing a web-based program alone would probably not be indicated, particularly given the isolation and avoidance common in those struggling with PTSD.

Providers should also inquire about the client's past efforts to use self-help interventions, including web programs as well as other forms of self-help (e.g., books, peer groups). Information should be gathered about what specific self-help interventions were found helpful for what particular issues. Likewise, unsuccessful attempts to use self-help programs should be assessed. Having a good sense of these past efforts will inform not only whether a web-based intervention should be considered at all, but also what level of therapist engagement will be required for success.

Probably, most important is the treatment preference of the client. It is probably safe to assume that honoring clients' choice of treatment will facilitate success. Clients who are prescribed interventions without their input or counter to their own desires and values most certainly will lack motivation to engage in and ultimately will not benefit from such an approach. Given the sustained drive and effort required to benefit from an Internet-based intervention, providers should endeavor to capitalize on the client self-determination rather than working to undermine it.

Practice characteristics

An essential requirement of using AD in clinical practice is familiarity with standardized assessments and CBT principles and skills. For example, providers interested in PTSD will need to have a working knowledge of the PCL, as well as the necessary and sufficient conditions for effective exposure and trauma disclosure. Without this background knowledge, proper and effective assistance will be compromised.

While AD will be useful in the context of many mental health programs and practices, AD may also be especially attractive to providers working outside of traditional mental health settings. For example, colocated behavioral health providers working in primary care settings are often limited to a small number of brief sessions. The materials on AD may be well suited for this setting because clinicians can "assign" documentaries to watch, skills to practice, and assessments to complete. Completion of the assignments can then be used to inform appropriate level and setting of care.

An important practice requirement is access to a computer and the Internet. A broadband Internet connection that supports a consistent minimum of 256 kbps download speed is needed. AD can be used by any

Windows or Macintosh that uses one of the following web browsers: Internet Explorer® (6 or higher), Firefox® (3.5 or higher), and Safari® (4 or higher). Because of the large number of video-based materials, a sound card (or built in sound capacity) with speakers or headphones is needed. For navigation and completion of written exercises, a mouse and keyboard should be available. To optimize viewing, screen resolution should be set at a minimum of 1024 by 768. Software requirements include a web browser as well as Adobe® Flash Player. A PDF reader should also be installed (Adobe Reader® or Preview).

Afterdeployment.org: posttraumatic stress (PTS)

The most frequently visited topic area on AD is PTS. Providers interested in this topic may want to begin by evaluating their knowledge of PTSD, trauma, and military culture. The provider portal provides links to continuing education materials on each of these topics, as well as to the VA/DoD clinical practice guideline for the management of PTS. If additional training is needed on cognitive behavioral therapy in general, providers can find valuable information on the website for the Association for Behavior and Cognitive Therapies (<http://www.abct.org/Home>).

The site focuses on PTS, rather than PTSD, because it is designed to facilitate self-management of PTS reactions and addresses both PTSD and sub-clinical symptomatology. In the context of early posttrauma intervention, it can be used to supplement early face-to-face preventive help. Where PTSD is evident, it can serve as a patient and family education tool and provide problem-specific intervention materials.

Providers can examine the assessment tools relevant to PTSD. The PCL is the most frequently used self-report measure of PTSD (Elhai, Gray, Kashdan, & Franklin, 2005), and can be used to screen for PTSD, and track client improvement. Scoring is based on three acuity levels (low, moderate, and high), with significant improvement reflected in change from a more severe acuity level to a less severe acuity level. Although research on the PCL is extensive (McDonald & Calhoun, 2010), its use is not a replacement for a face-to-face clinical assessment. Clinical judgment is needed to establish problem severity, diagnosis, degree of comorbidity, and functional impairment, as well as client motivation, efficacy, and preference. Although no studies have directly compared an online version of the PCL with one administered in person, Emmelkamp (2005) argues that online assessments have psychometric properties similar to those done in person.

The psycho-educational materials on AD are consistent with the content of the interactive workshops (see below), written at an eighth grade level, and graphically

appealing. The e-library for PTS gives readers an easy way to learn more about PTS symptoms followed by an overview of how to identify and manage trauma triggers as well as stress reactions. The client handouts available on the provider portal give detailed instructions on how to monitor stress reactions and how to implement two evidence-based coping tools. In addition to these materials, the videos available under PTS allow clients to select the experiences and characteristics of someone similar to them (e.g., age, race, branch of service), which may enhance acceptance and reduce stigma.

Currently, there are eight, 30-minute, interactive workshops on PTS. Originally designed to be completed in a sequential manner, the workshops bring users through different exercises. Each exercise is based on sound cognitive or behavioral change principles and can be individually tailored for each client. For example, the exercise on triggers gives a list of potential triggers within several categories (sounds, smells, sensations, etc.); users select those that apply and type in additional triggers that are unique to them. Similarly, the exercise for exposure allows the user to build his or her own fear hierarchy. In the future, documentaries will be used to deliver much of the psycho-education content of the workshops, and specific exercises will be housed in a “workbook” that does not require sequential completion. In other words, clients and providers can select exercises based on need and preference.

Future directions

From its initial launch in August 2008 through March 2011, the DoD web application *afterdeployment.org* has received 153,697 visitors. Virtually all of this activity has been in the context of completely self-managed care. To maximize the impact of AD, development of a stepped-care approach that enables users to systematically obtain the level of care that their needs require should be explored. To build such stepped-care capacity, it will be important to explore ways of encouraging mental health and primary care providers to bring AD (and other developing technology tools) into care. The potential for Internet-facilitated care to improve treatment outcomes has been demonstrated for some mental health problems, and there has also been some preliminary demonstration of the capacity of such an approach to increase efficiency of care. Gega, Marks, and Mataix-Cols (2004) described the operation of a clinic designed to integrate web-based mental health interventions into routine clinical practice. In this study, nurse practitioners screened clients prior to participation and offered live or telephone advice if the client got stuck when using one of the several programs focusing on phobia/panic, non-suicidal depression, obsessive-compulsive disorder, or general anxiety/mild depression. Clients could use a self-help system as often as they wished and were scheduled for six brief therapist

contacts. Results indicated that significant effect sizes of 0.8 or more were achieved with three of the four programs. Although there was a marginal preference for human versus computer care, providers applying the web-based self-help programs saw 355 referrals compared to an average of around 50 referrals per year served in face-to-face care. Clients had a mean support time from clinicians of 64 min (not including the 30-min screening); previous face-to-face administration of the interventions required more than 8 hours of care.

The AD intervention described here has not yet been formally evaluated and research is required to establish efficacy of specific sections of the site. However, AD provides an extensive amount of carefully constructed client and family education that is suitable for immediate use by clients and providers, as well as the kinds of interactive workshop content and self-assessment tools that have been shown to be helpful in other treatment contexts. AD represents a kind of service that is likely to become increasingly available in the coming years and that is important for mental health providers to actively explore as a tool for extending their reach, improving their efficiency, and improving the quality of care that they deliver.

Conflict of interest

There is no conflict of interest in the present study for any of the authors.

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***Josef I. Ruzek**

National Center for PTSD
VA Palo Alto Health Care System
795 Willow Road, Menlo Park, CA 94025, USA
Tel: +650 614 9999
Fax: +650 617 2701
Email: Josef.Ruzek@va.gov