A LOOK INTO THE FUTURE OF PSYCHOTHERAPY: THE POSSIBLE ROLE OF COMPUTER TECHNOLOGY

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FACT SHEET: ILLUSTRATIVE FINDINGS

<u>**THE CHALLENGE**</u>

Approximately 70% of individuals in need of psychological services do not receive them.

80 million Americans live in areas of the country where there is a shortage of mental health professionals.

Only 10% of those who meet criteria for substance abuse receive treatment.

Where mental health providers are available a variety of barriers may interfere with help-seeking including transportation difficulties, costs, time, child care issues, concerns about stigma and the like.

CAN COMPUTER TECHNOLOGY HELP ADDRESS THESE MENTAL HEALTH CHALLENGES?
(See Kazdin & Blasé, 2011 for a discussion of ways to "reboot" psychotherapy and Maheu et al. 2000, 20005; Perle et al. 2011)

<u>Consider that:</u>
70 % of all American adults use the Internet with more than half surfing more than an hour each day.

More than 50% of Americans have some form of high speed Internet access. 60% report that they first consult online resources when seeking solutions to health problems, including mental health problems such as depression.

90% of young people in the U.S. use the Internet and 61% access it daily; 75% of 12-17 year olds now own cell phones in the U.S. 25% of young people use the Internet as a source of mental health information.

In January, 2012 there were over 500,000 APPS for the IPhone and over 10 billion downloads worldwide, according to Apple.

Munoz (2010) discusses ways that evidence-based Internet interventions can be used to reduce health disparities worldwide.

ILLUSTRATIVE APPLICATIONS COMPUTER TECHNOLOGY TO ADDRESS MENTAL HEALTH NEEDS

1. Computers have been used in the form of mental health APPS, email communication and instant messaging with clients, online chat rooms, social networking, self-help interventions, video conferencing to train therapists and provide supervision, online

therapy websites, Internet therapy of direct treatment services to clients and contact with patients in between treatment sessions and aftercare.

2. Development of APPS that can be used with iPhones, iPads, Androids and other mobile devices. These are available through iTunes. There are APPS for anxiety disorders (social anxiety, panic disorders, obsessive compulsive disorders, and PTSD); depressive disorders and suicidality. For example, there is an APP whereby depressed, suicidal patients can create a personalized HOPE CHEST where the individual can include reminders of Reasons to Live or ways to increase Happiness ("A buddy who prompts you to maintain positive activities", Novotney, 2011a, b). Mohr (as reported by Clay; 2012) has developed smartphone sensors that track where users are and what they are doing and how it meets their behavioural treatment goals. It can also send congratulatory notes.

There are APPS that provide Ways to relax, Control anger, Moderate substance abuse, 12 Step Stop Smoking, Engage in weight loss, and over-all well being. In the areas of childhood disorders, there are APPS for social anxiety, antisocial behavior and necropsies, ways to cope with divorce and handle parental military deployment (Leis-Newman, 2011).

Another trial examined a website aimed at educating parents about prevention and early intervention (Dietz et al., 2009). The Website had information about anxiety disorders, depression, treatment options, what parents can do, and the links to other resources. The Website was found to improve knowledge and self-efficacy in handling mental health issues.

CAVAET - - there is a need to critically evaluate the efficacy of these many APPS, as there was concerns about evaluating the many self-help books that are on the market.

3. Mobile devices are also being used to assess, diagnose, treat and prevent health problems such as insomnia, smoking, diabetes, prenatal care, falls among the elderly, safe sex, physical activity, chronic disease, breast cancer and treatment adherence (Clough & Casey, 2011; Ritterand & Tate, 2009).

For example, Dimeff et al. (2011) report that in the near future there will be easily digestible smart pills with tiny transmitters and antenna that tracks medication adherence when swallowed and wearable body sensors that monitor health-related behaviors like smoking. For instance, a person quitting smoking might receive the following message from his or her "lungs":

> *"Don't even think about smoking. It's been 4 hours since your last cigarette. Carbon monoxide in your blood has already dropped by half and I'm pinker already."*

4. APPS have been developed to help individuals track and share daily changes in their moods (www.mood247.com) and to receive via text messages suggestions on ways to alter their moods and cope with stressors. Dimeff et al. (2011) have developed a DBT coach (Dialectical Behavior Therapy helper). The DBT coach assesses an individual's

emotional intensity and cravings to use drugs on a 1 to 10 scale. The DBT coach then uses an Interactive format to help the individual cope more effectively. A <u>cautionary</u> <u>note</u> that some APPS that provide individuals with ways to self-monitor mood changes are sponsored by pharmaceutical companies as a means to promote the needs to use their antidepressant medication.

5. The Comprehensive Soldier Fitness program that is designed to enhance resilience in service members uses a Soldier Fitness Tracker System to provide ongoing assessment, (Fravell et al. 2011). See Meichenbaum (2012) Roadmap to resilience Guidebook for a list of supportive Websites, self-help interventions available to returning service members.

6. Computer technology has also been used with clients in the form of <u>Electronic Questionnaires.</u> For example, see the following illustrative Websites www.drinkerscheckup.com and www.rethinkingdrinking.niaaa.nih.gov designed to access and provide normative comparison information for substance abuse, or http://cust.cfiapa.org/ptgi/inlax/cfm to assess Post traumatic growth.

7. Mobile phones have been used to provide real-time in vivo feedback to the patient and his/her psychotherapist.

Such a form of patient feedback has been developed by Lambert, Miller, Duncan and their colleagues. Psychotherapists can <u>track patient progress</u> and identify patient`s at risk for deterioration or drop out using the Electronic Outcome Questionnaire (OQ45) that compares the patient`s progress to recovery curves. The OQ45 provides patient feedback in terms of psychological disturbance, interpersonal problems, societal role functioning and quality of life. This information can be sent directly to the therapist so he or she can alter intervention strategies accordingly. (See Lambert et al., 2005).

8. Use of computer technology to reduce treatment drop-out. Consider that the modal number of visits in independent practice settings is one and the rate of treatment drop-out varies around 47% across different settings. (Barrett et al. 2008). Given that 11 to 13 sessions of evidence-based interventions are required for 50%-60% of clients to be considered recovered (Hansen et al. 2002; Lambert, 2007), any computer-based interventions that can mitigate such drop-outs would enhance treatment effectiveness. One way to encourage help-seeking behavior and reduce drop-out from therapy is to use modeling films, in the form of client `story-telling`. For example, see three projects that I have been involved with (www.warfighterdiaries.com; www.MakeTheConnection.net/ stories-of-connection for returning service members) and www.reachout.com for adolescents. In each instance, a Constructive Narrative treatment perspective has guided the development of these Websites (see Meichenbaum, 2012).

9. Computer technology has been used to enhance client adherence to therapy and to conduct aftercare interventions. (Clough & Casey, 2011).

10. Use of <u>Internet therapy</u> with a post disaster population (Benight et al. 2008; Ruggiero et al. 2006; Taylor & Luce, 2003) and with patients experiencing PTSD (Lange et al. 2003; Litz et al. 2007; Tuerk et al. 2010) and complicated grief (Wagner and Maeraker, 2007). For example, Wagner and Maeraker conducted a randomized controlled trial of the effectiveness of a five-week Internet-based cognitive-behavioral treatment program for complicated grief. The patient improvement was evident at a 1.5 year follow-up. Mohr (2012) has developed an Internet intervention for depression (see www.apc.org/monitor/digital/mohr.aspx). See Clarke et al. (2008) for a description of a self-help skills program to overcome depression and Derry-Palumbo and Zeine (2005) for examples of online therapy procedures.

Christensen et al., (2002, 2004, 2006) have conducted controlled trials using the Internet to prevent depression. The trial compared a website giving information about depression and its treatment (Blue Pages: www.bluepages.anu.edu.au) with a website providing cognitive-behavior therapy (Moodgym: www.moodgym.anu.edu.au) and an attention-placebo control intervention. The information website was found to increase the participants' understanding of treatments for depression relative to other interventions, although it did not improve professional help seeking. The information website reduced depressive symptoms and produced effects equivalent to those of the cognitive behavior therapy website. These therapeutic benefits were found to be maintained over 12 months.

Roberts (2011) has edited the December Issue of <u>Professional</u> <u>Psychology</u> on various telehealth interventions.

11. For individuals with <u>Substance abuse</u> disorders, Carroll et al. (2008) have developed a social network system of (CBT4CBT) and has on-line training for therapists. Schumacher et al. (2011) have demonstrated how to train therapists in Motivational Interviewing procedures using computer technology. King et al. (2011) has developed Internet addiction treatment. See Williams et al. (2009) for a description of a web-based alcohol intervention program.

Cell phones have been built with a GPS system in them, so when an individuals who have substance abuse problems get near their favorite "watering hole" (an area where they imbibe alcohol or use drugs), the individual's cell phone will ring and provide a variety of coping strategies.

12. Psychotherapists have treated patients via <u>video teleconferencing</u> serving those who live in rural areas. They provide psychological services remotely via telephone, Email or videoconferencing. Improve access to care for people who have mobility problems or for those who avoid treatment due to stigma concerns, or other barriers.

13. Use Computer Technology to Train Psychotherapists and Provide Supervision (***See Barnett et al. 2011 and June Issue Vol. 48 <u>Psychotherapy</u>)***

Illustrative training Websites
Cognitive-behavioral trauma-focused therapy
        www.musc.edu/tfcbt
Cognitive Processing Therapy
        www.musc.edu/cpt
Cognitive-behavioral approach for treating cocaine addiction
        http://www.drugabuse.gov/txmanuals/cbt/cbt1.html.
Training in Motivational Interviewing
        http://www.motivationalinterview.org

Discussion of Internet and Video Technology in Psychotherapy Supervision and Training see Barnett (2011) and June Issue Psychotherapy (vol.48. No 2).

14. There are also computerized therapy Rating Scales that can be downloaded and used to improve Therapeutic Alliance in individual, couple, and family treatment approaches (See Escudero et al. 2011; McCullough et al. 2011 - - www.softa-soatif.net and www.4TOStrainer.com).
Therapists can also access APPS that provide information of how to assess and treat individuals with Traumatic Brain Injuries, PTSD and other psychiatric disorders (Richardson et al. 2009).

15. Another form of computer technology use has been the development of immersive virtual reality psychotherapy where people don goggles and headphones and are transported into a three dimensional world that can include realistic sights, sounds and even smells that are computer-generated and controlled. For instance, one can create war-related scenes, substance abuse relapse prevention scenes, phobia-avoidant situations, each individually tailored to the needs of the client. In this way, exposure-based interventions, refusal skills, social interactive skills can be practiced by clients. A form of Second Life scenario using Avatars has also been used for training purposes (See DeAngelis, 2012 for a listing of companies that provide training on ways to use Virtual Reality Tools). The relative effectiveness of this technology needs to be established.

16. Use of computer technology as adjunctive tools to psychotherapy, especially with children and adolescents. For example, video games such as "Treasure Hunt" and "Personal Investigator" have been used with children (see www.secondlife.com). Khanna and Kendall (2010) have developed a computerized Camp-Cope-A-Lot for children who are socially anxious. For adolescents who are depressed, there are Avatar-based Beat-The-Blues Websites. See www.melissainstitute.com website for a listing of such computer based interventions (Meichenbaum, 2010 - - Adolescent depression conference). Also, see companion Website www.teachsafeschools.org for ways to address issues of bullying and cyber bullying.

17. Finally, psychotherapists have used computer and Skype technology to provide individualized psychotherapy. The use of such direct service video-based treatments has raised a number of issues of computer-based versus face-to-face treatment approaches, and concerns about safety, privacy, legal, ethical and practical issues.

ISSUES IN USING TELEMENTAL HEALTH INTERVENTIONS

(See Division 29 Report from the Task Force in Telepsychotherapy, Judge et al., 2011)

1. Issue of Effectiveness. Several meta-analytic studies have been conducted that compare Internet-based therapy versus face-to-face treatment (Barack et al., 2008; King et al., 2011; Perle et al., 2011). Also see Journal of Technology in Human Services, 26, No. 2; Clinical Psychology: Science and Practice, 2009, 16, Vol. 3. There were no statistically significant differences between Internet-based and face-to-face interventions. Video conferencing designed to deliver patient interventions showed high patient and therapist satisfaction and yielded positive treatment outcomes. Moreover, the therapeutic alliance scores in online therapy were found to be equal to face-to-face sessions. Clients tend to disclose more information about themselves to the computer, and over the Internet when compared to face-to-face interactions. Online therapies encourage self-disclosure and reflection. Online assessments have been found to be as effective as live assessments (See Perle et al. 2011 for specific references).

   Drop out rates from web-based interventions were low relative to other types of self help and face-to-face interventions.

2. Issues of Safety. When conducting Internet-based psychotherapy the issues of assessment of suicidality and crisis management are important concerns. Fenichel et al. (2002) report that computer-based measures were better predictors of suicidal feelings than face-to-face clinical interviews. There is a need to ensure accessibility to psychotherapists and emergency resources in the patient's locale when therapy is being conducted over a distance.

3. Privacy Issues and Security Concerns. Psychotherapists need to check the server to ensure for encrypted programs and protected passwords. There is a need to warn clients about the limits of confidentiality and the need for informed consent (Maheu et al. 2005; Reed et al. 2000). Ensure that HIPPA compliance rules are followed.

4. Set limits with patients. For example, do not befriend clients through FACEBOOK and limit therapist self-disclosure.

5. Check Licensure and Jurisdictional concerns across state lines. See ***www.apapracticecentral.org/advocacy/state/telehealth-slides*** for a 50-state review of telehealth laws, as well as the Association of State and Provincial Psychology Boards Website ***www.asppb.net.*** They created a credential called the Interjurisdictional Practice Certificate that facilitates temporary practice in other jurisdictions.

6. Issues of Reimbursement using telemental health interventions, insurance coverage. Should psychotherapist charge the same amount as when doing face-to-face treatment, when there are no overhead charges?

7. When is telepsychotherapy <u>contra-indicated</u>? Issue of patient online literacy and attitude toward computer. Use Computer Self-efficacy Scale (Manring et al., 2011). Question use of telepsychotherapy with delusional patient or with patients with Internet addiction.

8. Telepsychotherapy may be particularly helpful with socially anxious clients, or with clients who are concerned about stigma like military personnel. For instance, Tripler Army Medical Center in Honolulu have provided Internet counselling to distant service members.

9. Psychotherapists need training and familiarity using telehealth technology. How to use Skype, Google Talk, how to use eye contact. Concerns raised when psychotherapist turns away from the camera to take notes. This may be misinterpreted by the patient. Psychotherapist needs to check volume, clarity, position and other logistics. (See Abbass et al. 2011 and Manring et al 2011 for detailed directions on how to use Webcam technology.

10. For additional discussion of issues of Informed Consent, Malpractice Insurance Protection, Confidentiality, Billing, Technical and Ethical Issues and training see the following Websites.
<u>APA Practice Central</u>

apapracticecentral.org/advocacy/state/telehealth-slides.pdf

<u>National Register</u>

www.nationalregister.org

<u>State Licensure</u>

http://www.asppbinet/14a/pages/index.cfm?pageid=345

<u>Ohio Psychological Association</u>

www.ohpsych.org/resources/1/files/Comm%20Tech%20Committee/OPATelepsychology guidelines41710.pdf

<u>Canadian Psychological Association</u>

www.cpa.ca/aboutcpa/committees/ethics/psychserviceselectronically/

EXAMPLES OF COMPUTER-BASED PROGRAMS I HAVE BEEN INVOLVED IN

1. Work with National Guard - - Train treatment staff and create IPOD technology for returning service members and ways to reduce suicide rates.

2. Create Melissa Institute Websites www.melissainstitute.org and www.teachsafeschools.org. These have had over 2 million HITS worldwide. Project target reading instruction as a means to reduce antisocial behavior and the development of a Principal Checklist.

3. Work on ways to reduce relapse rate in clients with substance abuse using GPS cell phone technology (see www.chess.wisc.edu/chess/home/home.aspx- - Centre for Health Enhancement Systems Studies).

4. Work on Stress Inoculation Training (NASA project, Training high stress groups See Roadmap to Resilience (Meichenbaum, 2012).

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Additional Resources

American Telemedicine Association Telemental Health Special Interest Groups (*www.americantelemed.org*). Evidence-based telehealth interventions
www.americantelemed.org/files/public/standards/EvidenceBasedTelementalHealth_Withcover.pdf

Australian Web Portal that evaluates and rates Internet and Mobile Interventions based on level of evidence.
http://www.beacon.anu.edu.au

Ohio Psychological Board Telepsychology Guidelines.
www.ohpsych.org/professionalissues.aspx

Department of Defense National Center for Telehealth and Technology (T2)