

Bringing Psychotherapy to Primary Care: Innovations and Challenges

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The segregation of mental health treatment and primary medical care in our health care system is increasingly recognized as anachronistic, as a majority of patients with psychosocial problems are turning to primary care providers. Accordingly, the development and dissemination of evidence-based psychotherapeutic interventions compatible with the constraints of primary care is becoming increasingly urgent. This article discusses the importance of finding feasible ways to bring psychotherapy to primary care, examines interventions either specifically adapted for primary care or consistent with its constraints, assesses the compatibility of these interventions with the primary care environment, considers barriers inhibiting the widespread integration of such interventions into primary care, and discusses future directions.

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At the dawn of the 21st century, a paradigm change is emerging in which previously drawn lines of demarcation between the mind and the brain are giving way (Beitman & Saveanu, 2005), making the demarcation between mental health care and primary medical care in Western health care systems seem increasingly

anachronistic on a theoretical level. That it may also have outlived its usefulness on a practical level is demonstrated by evidence that many individuals who seek mental health care do so from primary care providers (Kessler et al., 2005; Norquist & Regier, 1996). In developing countries with severe shortages of mental health professionals and a lack of organized mental health services, the integration of mental health services within primary care is increasingly recognized as essential to the accessibility of treatment for mental illness (World Health Organization, 2008). As it becomes clear that researchers and clinicians from both primary care and specialized mental health settings must find ways to adapt to the changing health care landscape, a large body of literature is developing that examines the possibilities for integrating mental health treatment with primary medical care.

This article specifically focuses on the integration of psychotherapy in primary care. While psychotherapy is by no means the only service that the psychology field has to offer in primary care settings, it remains an integral component of evidence-based and guideline-consistent treatment for most mental disorders (American Psychiatric Association, 2000) and is preferred to pharmacotherapy by a majority of patients (Churchill et al., 2000; Unützer et al., 2003). Accordingly, a crucial component of the integration of mental health care and primary medical care is the development and dissemination of evidence-based psychosocial treatments that are specifically designed to be compatible with the constraints and competing demands of the primary care system (Coyne, Thompson, Klinkman, & Nease,

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2002; Gray, Brody, & Johnson, 2005). Several authors have recently provided useful reviews of various aspects of the developing literature on psychotherapy in primary care (Cabassa & Hansen, 2007; Hemmings, 2000; Raue & Schulberg, 2005; Roth & Fonagy, 2005; Skultety & Zeiss, 2006; Wolf & Hopko, 2008). However, these reviews have not focused on the compatibility of the interventions they discuss with primary care goals and the challenges that must be addressed in order for these interventions to achieve widespread acceptance in primary care settings. Robinson (2005) submits that most evidence-based mental health treatments in their traditional forms are unlikely to work well in a primary care setting, with its very different patient populations and philosophies of care. This article discusses the importance of finding feasible ways to bring psychotherapy to primary care, examines a range of psychotherapeutic interventions that are either specifically tailored for primary care or consistent with its constraints, assesses the compatibility of these interventions with primary care goals, and discusses barriers that have prevented the widespread integration of mental health services into primary care.

WHY INTEGRATION OF MENTAL HEALTH CARE AND PRIMARY MEDICAL CARE MATTERS

Many have described primary care as the current de facto mental health system in the United States (Strosahl, 1996, 1998; Unützer, Schoenbaum, Druss, & Katon, 2006). Indeed, national epidemiological and other studies indicate that about half of those seeking treatment for mental disorders seek help from primary care providers alone (Kessler et al., 2005; Norquist & Regier, 1996). The use of specialty mental health care appears to be falling, whereas the use of primary care providers for mental health needs is rising (Olfson et al., 2002; Wang et al., 2006). Yet even those who seek help from primary care providers tend to prefer psychotherapy to medication for the treatment of mental disorders (Brody, Khaliq, & Thompson, 1997; Churchill et al., 2000; Unützer et al., 2003). Nonetheless, even when barriers such as cost and inconvenience are minimized or even eliminated, a small percentage of patients actually follow through with referrals to specialized mental health care (Coyne & Thompson, 2003; Dwight-

Johnson, Unützer, Sherbourne, Tang, & Wells, 2001; Jaycox et al., 2003).

Studies consistently show that a dishearteningly low percentage of patients are receiving appropriate treatment for psychological disorders, especially in primary care settings (Wang, Berglund, & Kessler, 2000; Wang et al., 2005; Young, Klap, Sherbourne, & Wells, 2001). Many patients remain untreated, and much treatment falls below accepted standards of care, especially for minorities and those without insurance coverage for mental health care (Wang et al., 2000, 2005). A cross-sectional national survey conducted by Young et al. (2001) found that, of patients seeking treatment for a probable anxiety or mood disorder, 80.5% of those treated only by a primary care physician, 11.4% of those treated only by a mental health specialist, and 10.1% of those treated by both did not receive appropriate care (defined in reference to relevant treatment guidelines).

The situation is even more dire in the developing world, where mental health care can be scarce when it is offered at all (Saxena, Thornicroft, Knapp, & Whiteford, 2007; Wang et al., 2007). The World Health Organization (WHO), in a 2001 World Health Report devoted to mental health, called for global and national initiatives to address the lack of adequate mental health resources and inequalities in access to care. The Report offers ten recommendations; the first, described as a *fundamental step*, is to provide treatment for mental disorders in primary care (World Health Organization, 2001, p. 110). Among the advantages cited in the Report are providing access to care for the largest number of people, reducing stigma, improving screening and treatment of mental disorders, and improving the treatment of physical disorders for those with mental illness as well as the psychological aspects of physical illness.

In the United States, the President's New Freedom Commission on Mental Health issued a report in 2003 that made similar findings and conclusions. The Commission reported that the American mental health system remains fragmented, and that mental health problems are not adequately addressed in primary care settings (New Freedom Commission on Mental Health, 2003). The Report noted that mental disorders are underdiagnosed and undertreated in primary care,

that most individuals with common mental disorders do not receive appropriate treatment in primary care, and that referrals to mental health specialists are often not completed due to barriers including lack of available specialists, insurance restrictions, and stigma. The Commission recommended that evidence-based collaborative care models that include consultations between primary care providers and mental health specialists be implemented in primary care and reimbursed by insurers.

INTEGRATED PRIMARY CARE

Primary care providers and mental health specialists can collaborate in many ways, from merely exchanging information to working collaboratively to deliver services (Blount, 1998). *Integrated primary care* is a term used to describe treatment models at the most collaborative end of the spectrum, where mental health care and primary medical care are blended in a primary health care setting, with providers working as a unified team, often with a single treatment plan for each patient (Blount, 1998). One well-developed model of integrated care is the Primary Care Behavioral Health Model, in which behavioral health providers deliver brief consultative interventions and co-manage behavioral health conditions in a primary care clinic as part of a primary health care team (Robinson, 2005; Robinson & Reiter, 2007; Strosahl, 1996, 1997, 2000). *Collaborative care* is another term frequently used to refer to multidisciplinary approaches that integrate primary care and specialty care, including mental health care. Such integrated or collaborative care models are the subject of an ample body of research and commentary, and evidence for their effectiveness (which is beyond the scope of this article) is substantial (e.g., Blount, 1998; Gilbody, Bower, Fletcher, Richards, & Sutton, 2006; Oxman, Dietrich, & Schulberg, 2005; Simon et al., 2001; Strosahl, 1997, 1998, 2000).

In the midst of the growing interest in integrated care, Strosahl (1998) sounds a warning. He argues that the plethora of integrated care models being developed lack an underlying philosophical or system design basis, and that integrated care cannot move into the mainstream without more focus on three themes: co-location of mental health and primary care services,

collaboration between providers, and an integrated mission. Co-location, Strosahl says, is more than a matter of physical location; behavioral health specialists must practice as members of the primary care team. According to Strosahl, collaborative care that merely places a mental health provider who continues to provide traditional mental health treatment in the primary care setting can perpetuate the continued separation of mental health and physical health care and the accompanying problems and barriers to care. For care to be truly integrated, Strosahl suggests, a philosophical shift is required so that behavioral health is viewed as a front-line feature of primary care. The behavioral health provider would thus become a part of the primary care team, whose cost is built into the cost of primary care services and whose care is billed as a medical service just as laboratory services are billed. Strosahl describes such changes as a *reengineering of the health care system* (p. 165).

Gallo and Coyne (2000), like Strosahl, caution that specialty mental health providers cannot expect to import their work wholesale without modifications into the primary care setting, and that merely locating mental health providers in primary care may be overly simplistic. In recent years, the innovative efforts of researchers from both primary care and mental health disciplines have begun to establish an evidence base for psychosocial interventions that are workable within the constraints of primary care settings. Such interventions are examined below.

PSYCHOTHERAPEUTIC INTERVENTIONS IN PRIMARY CARE

Robinson (2005) identified several goals to guide the development and adaptation of empirically supported treatments that may be feasibly implemented in primary care. First, she recommends that such treatments should embrace the primary care philosophy of population-based care designed to be accessible by a large percentage of the population rather than the more intensive individual client-centered care typical in the specialized mental health sector. The remaining goals follow from this philosophy. Treatment protocols should provide a range of interventions that permit treatment of patients with varying symptom levels, including subthreshold symptoms, as well as patients with diverse ethnic and demographic backgrounds and those with comorbid

medical and mental disorders. To ensure adequate patient adherence, treatment length and intensity should be reduced, ideally to between four and six 30-min sessions, and should include psychoeducation and self-management skill components. Service delivery should be flexible enough to be delivered in various formats, such as in groups, by telephone, or individually. Interventions should include relapse prevention strategies. Finally, they should be designed to be delivered and supported by a health care team rather than an individual provider. These are useful guidelines with which to evaluate efforts currently underway to adapt or develop psychotherapeutic interventions for primary care.

Many of these interventions are adaptations of well-established psychotherapies with substantial empirical support, such as problem-solving therapy (PST), cognitive behavioral therapy (CBT), and interpersonal therapy (IPT) for depression, and CBT for panic disorder and generalized anxiety disorder (GAD). The discussion below examines adaptations to these established therapies in turn, and then surveys some recent psychotherapy delivery innovations and interventions, many of which require minimal clinician time to administer. The compatibility of each category of intervention with primary care goals as described by Robinson (2005) is assessed. We selected for inclusion representative studies that illustrate the feasibility and effectiveness (or lack thereof) of a range of psychotherapeutic interventions either specifically adapted for use in primary care or considered consistent with primary care constraints; we have not attempted to present an exhaustive review of every study investigating primary care interventions. The studies discussed below are compiled in Table 1.

PST Tailored for Primary Care

Problem-solving treatment for primary care (PST-PC) is a form of problem-solving therapy specifically adapted to be well suited for primary care because it requires fewer and briefer sessions than traditional CBT or IPT, may be delivered by physicians or nonphysicians without specialized mental health experience, and is well accepted by patients (Mynors-Wallis, 2005; Mynors-Wallis, Gath, Lloyd-Thomas, & Tomlinson, 1995; Williams et al., 2000).

Six sessions are recommended for the treatment of depression; fewer may be feasible for anxiety and adjustment disorders (Mynors-Wallis, 2005). The purpose of the treatment is not to resolve all of the patient's problems, but rather to use the problems as a means for teaching effective problem-solving skills (Mynors-Wallis et al., 1995; Williams et al., 2000). PST-PC has received more research attention than most other treatments adapted for primary care. Studies examining its effectiveness in treating major depression, dysthymia and minor depression, and other conditions are discussed below.

Major Depression. Mynors-Wallis et al. (1995) conducted a study in which 91 primary care patients with major depression were randomly assigned to PST-PC (though it had not yet gained this moniker), pharmacotherapy plus standard clinical management, or pill placebo plus standard clinical management. The investigators found no significant difference between PST-PC and pharmacotherapy on any outcome measures, and patient satisfaction with PST-PC was high. In a later study, Mynors-Wallis, Gath, Day, and Baker (2000) found that the combination of PST-PC and antidepressant treatment was no more effective than either treatment alone for major depression.

Dysthymia and Minor Depression. Evidence for the effectiveness of PST-PC for dysthymia and minor depression is mixed. In a study by Barrett et al. (2001), 241 primary care patients with dysthymia or minor depression were randomly assigned to receive either PST-PC, paroxetine, or a pill placebo. Dysthymia remission rates for patients treated with PST-PC (56.8%) and for those treated with paroxetine (80%) were superior to the remission rate for those receiving a placebo (44.4%). However, the remission rates for minor depression were similar for all three groups. The investigators concluded that PST-PC should be considered an alternative to pharmacotherapy for dysthymia, but that watchful waiting is an appropriate treatment for minor depression.

In a companion study in which 415 primary care patients aged 60 or older were randomized to receive PST-PC, paroxetine, or pill placebo, Williams et al. (2000) found that paroxetine, but not PST-PC, was

Table 1. Psychotherapy adaptations and innovations for primary care

Study	Type	Interventions	Population	Treatment effects
<i>PST-PC</i> Mynors-Wallis et al. (1995)	RCT	PST-PC; pharmacotherapy; pill placebo	91 adult PC patients with major depression	PST-PC and pharmacotherapy superior to placebo; no difference between PST-PC and pharmacotherapy
Mynors-Wallis et al. (2000)	RCT	PST-PC; pharmacotherapy; combination of PST-PC and pharmacotherapy	151 adult PC patients with major depression	All patients improved; no significant difference among treatment groups
Barrett et al. (2001)	RCT	PST-PC; pharmacotherapy; pill placebo	241 adult PC patients with dysthymia or minor depression	Dysthymia remission rates superior for treatment groups compared to control; minor depression remission rates similar for all three groups
Williams et al. (2000)	RCT	PST-PC; pharmacotherapy; pill placebo	415 PC patients age 60 or older with dysthymia or minor depression	Pharmacotherapy, but not PST-PC, superior to placebo
Hegel et al. (2002)	Data analysis	Analyzed combined data from Barrett et al. (2001) and Williams et al. (2000) studies	See above	Predictors of response to PST-PC included capacity to understand and apply PST-PC techniques, having a CBT therapist, and lower initial depression severity levels (dysthymia only)
Catalan et al. (1991)	RCT	Brief problem-solving therapy; usual care	47 adult PC patients with various symptoms (e.g., anxiety, depressed mood, irritability, sleep disturbances, somatic problems)	Brief problem-solving therapy superior to usual care
Mynors-Wallis et al. (1997)	RCT	PST-PC by community nurses; usual care by physician	70 adult PC patients with emotional disorders	No clinical difference between PST-PC and usual care; but PST-PC group had fewer days off work, which offset higher cost of PST-PC
Kendrick et al. (2006)	RCT	PST-PC by community nurses; generic mental health care by nurses; usual care by GPs	247 adult PC patients with new episodes of anxiety, depression, and life difficulties	No clinical difference between groups on outcome measures; both costs and satisfaction higher in groups receiving nursing care
<i>CBT</i> Roy-Byrne et al. (2005); Craske et al. (2005, 2006)	Translational	CBT adapted for primary care plus pharmacotherapy; usual care (usually pharmacotherapy)	232 adult PC patients with panic disorder	Combination of CBT and pharmacotherapy superior to usual care; CBT treatment intensity and number of follow-up telephone calls predicted 12-month outcome (more sessions/calls associated with lower anxiety sensitivity)
Stanley et al. (2003)	Randomized pilot study	CBT-GAD/PC; usual care	12 older adult PC patients with generalized anxiety disorder	All patients who received CBT-GAD/PC, but only one of six assigned to usual care, demonstrated significant improvement in worry and anxiety
Stanley et al. (2009)	RCT	CBT conducted in primary care; usual care	134 older adult PC patients with generalized anxiety disorder	CBT superior to usual care on measures of worry severity, depressive symptoms, and general mental health; no difference between groups on GAD severity
Scott et al. (1997)	RCT	Brief cognitive therapy plus usual treatment by physician; usual CBT; control	48 adult PC patients with depression	Brief cognitive therapy plus usual treatment superior to usual treatment alone for depressive symptoms
Miranda and Muñoz (1994)	RCT	Play Your Cards Right intervention; usual care	150 adult PC patients with minor depression	CBT resulted in greater improvement in depressive and somatic symptoms compared to control condition
Lang et al. (2006)	RCT	Play Your Cards Right intervention; usual care	60 adult PC patients with various mental health diagnoses	Depressive and anxiety symptoms significantly improved in intervention group compared to usual care group, but many symptoms returned at six-month follow-up

Table 1. (Continued)

Study	Type	Interventions	Population	Treatment effects
<i>IPC</i> Klerman et al. (1987)	Pilot study	IPC; comparison group of untreated participants	128 adult PC patients with symptoms of anxiety, depression, or distress	IPC resulted in greater symptom improvement than untreated comparison group
Mossey et al. (1996)	RCT	IPC; usual care	89 medically ill older adults with subthreshold symptoms of dysthymia or major depression	IPC resulted in greater improvement in depressive symptoms and self-rated health than usual care
Neugebauer et al. (2007)	Open pilot study	IPC by telephone	17 miscarriage women	Depression levels reduced after six-week IPC treatment by telephone
<i>Telephone interventions</i> Mohr et al. (2008)	Meta-analysis of 12 studies	Telephone-administered psychotherapy; control	Adults with depressive symptoms	Psychotherapy by telephone associated with significant decrease in depressive symptoms compared to control conditions and to pretreatment symptom levels
Bee et al. (2008)	Meta-analysis of 13 studies	Psychotherapy by remote communication; control	Adults with depression or anxiety disorders	Pooled effect size of .44 for remote depression therapies compared to control conditions and of 1.15 for remote anxiety therapies
<i>Computerized and Internet-based interventions</i> Reger and Gahm (2009)	Meta-analysis of 19 studies	Internet-based and computer-based CBT interventions for anxiety; therapist-delivered CBT; Internet-based CBT; control	Adults with anxiety symptoms	Internet-based and computer-based interventions superior to control conditions and equivalent or superior to therapist-delivered CBT
Spek, Cuijpers, et al. (2007)	Meta-analysis of 12 studies	Internet-based CBT for depression	Adults with mood or anxiety disorders	Effect sizes of interventions for anxiety symptoms higher than those of interventions for depressive symptoms; difference possibly related to clinician support
Kalenthaler et al. (2008)	Review of 16 studies	Computerized CBT self-help intervention with ERP techniques; systematic relaxation treatment; therapist-guided ERP	Adults with mild to moderate depression	Drop-out rates similar to those for other types of therapy; most rated treatment favorably
Greist et al. (2002)	Randomized study	Computerized CBT self-help intervention with ERP techniques; same intervention with telephone support from therapist only if participant-initiated	218 adults with obsessive-compulsive disorder	Computerized CBT more effective than systematic relaxation but less effective than therapist-guided ERP in reducing symptoms
Kenwright et al. (2005)	Randomized study	Computerized CBT self-help intervention with ERP techniques from therapist; same intervention with telephone support from therapist only if participant-initiated	44 adults with obsessive-compulsive disorder	Treatment compliance and symptom improvement greater for scheduled telephone support group than participant-initiated support group
Proudfoot et al. (2003)	RCT	CBT intervention (Beating the Blues); usual care by physician	167 adult PC patients with anxiety and/or depression	CBT intervention superior to usual care
Proudfoot et al. (2004)	RCT	CBT intervention (Beating the Blues); usual care by physician	274 adult PC patients with anxiety and/or depression	CBT intervention superior to usual care
Cavanagh et al. (2006)	Open trial in routine care settings	CBT intervention (Beating the Blues)	219 adult PC patients with anxiety and/or depression	CBT intervention resulted in significant improvement in depression and anxiety symptoms
Litz et al. (2007)	Pilot RCT	Internet-based CBT intervention for PTSD; internet-based supportive counseling control	45 adults with PTSD	Internet-based CBT intervention superior to Internet-based supportive counseling
Marks et al. (2003)	Open trial	Computerized self-help CBT treatments for depression/anxiety, phobia/panic, and obsessive-compulsive disorder	210 adults with anxiety and/or depressive symptoms	All patients experienced significant reduction in symptoms; effect sizes of .8 or greater for most programs

Table 1. (Continued)

Study	Type	Interventions	Population	Treatment effects
Kiropoulos et al. (2008)	Randomized study	Internet-based treatment for panic disorder and agoraphobia; face-to-face manualized CBT treatment	86 adults with panic disorder and agoraphobia	No significant difference between groups; both interventions produced significant improvement in symptoms
Orbach et al. (2007)	RCT	Internet-based CBT intervention for test anxiety; Internet-based placebo control	90 adults with test anxiety	Symptoms improved for both groups; improvement significantly greater for intervention group on most measures
Andersson et al. (2006)	RCT	Internet-based self-help CBT intervention for social phobia; wait-list control	64 adults with social phobia	Intervention group, but not control group, had clinically significant improvement in social phobia symptoms
Van Voorhees et al. (2008)	Randomized study	Internet-based PC intervention to prevent depression plus brief physician advice; same intervention plus brief motivational interviewing by physician	85 adolescents with risk factors for developing major depression	Supplementing Internet-based PC intervention with motivational interviewing superior to supplementing with brief advice in preventing depression
Spek, Nyklicek, et al. (2007)	RCT	Internet-based CBT intervention for subthreshold depression in older adults; traditional CBT; wait-list control	301 older adults with subthreshold depression	Treatment response for both treatment groups significantly better than control; no significant difference between treatment groups
<i>Text-messaging</i> Rodgers et al. (2005)	RCT	Text-message intervention for smoking cessation; generic text-message control	1,705 adult smokers	Significantly more participants in the intervention group quit smoking compared to the control group
Whittaker et al. (2008)	Pilot study	Mobile phone system to deliver video and text messages to support smoking cessation	15 young adults age 16 and over	Of 13 participants who completed the study, 9 quit smoking and reported that the intervention helped them quit
Weitzel et al. (2007)	RCT	Text-message intervention addressing consequences of alcohol use; control group	40 college students	Intervention group reported significantly less drinking than control group during study, but provided negative feedback about frequency and repetitiveness of messages
Patrick et al. (2009)	Pilot RCT	Text-message intervention for weight loss; control condition	75 overweight adults	Participants in intervention group lost significantly more weight than those in control group, but average weight loss was modest
Robinson et al. (2006)	Pilot study	Text-message intervention for preventing relapse in patients with bulimia	21 adults with bulimia	Intervention had low levels of patient use, high attrition, and relatively negative feedback

Notes: PC = primary care; PST-PC = Problem-Solving Treatment for Primary Care; CBT = cognitive behavioral therapy; CBT-GAD/PC = Cognitive-Behavior Therapy for Late-Life Generalized Anxiety Disorder in Primary Care; IPC = interpersonal counseling; RCT = randomized controlled trial; ERP = exposure and response prevention; PTSD = posttraumatic stress disorder. GP = general practitioner.

associated with greater symptom improvement than placebo. However, the symptoms of those treated with PST-PC improved more rapidly than those treated with placebo during the later weeks of the study, raising the possibility that long-term treatment effects may be more positive. The authors conclude that PST-PC cannot yet be recommended for the treatment of dysthymia or minor depression in older adults treated in primary care.

Hegel, Barrett, Cornell, and Oxman (2002) analyzed the combined data from the Barrett et al. (2001) and Williams et al. (2000) studies to identify predictors of response to PST-PC for dysthymia and minor depression. The three variables that most strongly predicted response were the patient's capacity to understand and apply the problem-solving techniques at the beginning stages of the treatment, having a CBT therapist provide the treatment, and, for participants with dysthymia, having lower initial depression severity levels. The finding that patients with CBT therapists were more responsive to treatment was surprising, given evidence from other studies that nurses and physicians could administer the treatment effectively.

Other Common Emotional Disorders. The results of studies that do not limit participants to those with symptoms of depression are also mixed. Catalan et al., (1991) conducted a randomized controlled trial comparing a four-session course of problem-solving therapy (which was very similar to PST-PC) to usual care using a sample of 47 primary care patients with symptoms of anxiety, tension, depressed mood, irritability, sleep disturbances, or somatic problems who were deemed to have a poor prognosis based on a psychiatric interview. After eight weeks, significantly greater symptom reduction had occurred in the problem-solving group, and the effects were maintained at a 28-week follow up. The treatment was well accepted by the patients.

On the contrary, a similar randomized controlled study by Mynors-Wallis, Davies, Gray, Barbour, and Gath (1997) found no differences in symptom reduction between patients who received PST-PC provided by community nurses and those who received usual care by a physician. The 70 participants in this study had less severe symptoms than those who participated

in the study conducted by Catalan et al. (1991), leading Mynors-Wallis (2005) to conclude that PST-PC should be used for patients with emotional disorders including minor depression only if their symptoms do not remit with usual care by a primary care provider. Kendrick et al. (2006) came to a similar conclusion after finding that referral to community mental health nurses for problem-solving treatment provided no clinical advantage and was significantly more expensive than usual care by general practitioners for primary care patients with common mental illnesses.

Other Conditions. Evidence is beginning to accumulate that PST-PC may be promising in other contexts and for other conditions. Mynors-Wallis (2005) cites studies in which PST-PC has shown benefit for patients after an episode of deliberate self-harm, patients with diabetes and comorbid psychological problems, and obese patients, and may also be useful in the context of cancer support, palliative care, and family therapy for families caring for a member with schizophrenia or with physical needs.

Evaluation and Compatibility With Primary Care Goals. PST-PC is consonant with many of the recommendations set forth by Robinson (2005) for adapting treatments for primary care. It permits treatment of patients with varying ethnic and demographic backgrounds, as well as comorbid medical and mental disorders, although its effectiveness for those with less severe symptomology appears to be no better than usual care. Treatment length and intensity approach the ideal four to six 30-min sessions. It includes a skills-training component, in which the patient is taught to use problem-solving techniques to solve problems. Although relapse prevention is not formally included, the final session includes discussion of potential future problems with implementing the newly learned problem-solving skills. The treatment is designed to be administered by physicians or nonphysicians with or without specialized mental health training, but specific training in PST-PC is required and the therapy is probably too time-consuming for most primary care physicians to provide (Mynors-Wallis et al., 2000).

However, it appears that not all patients benefit equally from PST-PC. Wolf and Hopko (2008)

categorize PST-PC as an efficacious intervention for major depression, and possibly efficacious for minor depression or dysthymia. Evidence to date suggests that PST-PC may be as effective as pharmacotherapy for treating major depression, better than placebo for dysthymia (but not for older adults), and not particularly useful for treating minor depression. Similarly, for other common emotional disorders, it appears to be useful for treating more severe symptomology, but its effectiveness for less severe symptoms is not established. Investigators have concluded that usual care should be the first-line treatment for minor depression and other less severe disorders and PST-PC used only if symptoms do not remit. Further investigation is needed to determine whether there is a severity level at which PST-PC is significantly less effective than longer-term or more intensive specialty mental health treatment for depression or other common disorders. Moreover, further research is warranted to determine whether the findings of Hegel et al. (2002)—that both the capacity of the patient to quickly grasp the treatment techniques and the expertise of the therapist are predictive of treatment response—extend beyond dysthymia and minor depression to other disorders.

CBT TAILORED FOR PRIMARY CARE

Many of the interventions being adapted for use in primary care settings include a significant CBT component. Citing a study by King et al. (2002) finding that a training program to teach CBT skills to primary care physicians in four half-day sessions had no effect on patient outcomes, Wolf and Hopko (2008) note that the training required to administer CBT may limit its feasibility in primary care. Nonetheless, a number of CBT adaptations have shown promise in clinical trials. Adaptations designed for the treatment of panic disorder, GAD, and depression are discussed below.

Panic Disorder. While the majority of studies investigating interventions for use in primary care are treatments for depression, Roy-Byrne et al. (2005) undertook one of the first translational studies to determine whether evidence-based treatments for an anxiety disorder could be adapted for use in primary care. In efficacy studies, CBT, pharmacotherapy, and their combination have been shown to be significantly more

efficacious than placebo for panic disorder (Barlow, Gorman, Shear, & Woods, 2000). To adapt the CBT intervention for primary care, the investigators reduced the number of sessions from 12 to 6 while expanding the original content (which targeted panic symptoms) to address medication adherence and coping strategies for phobic behavior, depression, and social anxiety that may accompany panic disorder (Roy-Byrne et al., 2003). In the treatment protocol, six CBT sessions were followed by up to six brief (15- to 30-min) telephone booster sessions (Roy-Byrne et al., 2005).

The investigators randomized 232 primary care patients with panic disorder to receive either usual care or a combination of CBT and pharmacotherapy. They found that the combination of medication and CBT resulted in significantly improved outcomes compared with usual care (typically pharmacotherapy), and the changes persisted over time (Roy-Byrne et al., 2005). A follow-up analysis indicated that CBT treatment intensity significantly predicted outcome at 12 months (Craske et al., 2006). The more CBT sessions attended, the lower the anxiety sensitivity at 12 months. An even stronger effect was found for the number of follow-up phone calls, which predicted lower anxiety sensitivity, depression, and phobic avoidance at 12 months. The study also demonstrated that the addition of CBT to medication resulted in statistically and clinically significant improvements in outcome compared with medication alone, results that were sustained at a 12-month follow-up (Craske et al., 2005).

Generalized Anxiety Disorder in Older Adults. CBT has demonstrated at least moderate promise as a treatment for GAD in older adults (Stanley et al., 2003; Wetherell, Gatz, & Craske, 2003). Cognitive-Behavior Therapy for Late-Life Generalized Anxiety Disorder in Primary Care (CBT-GAD/PC) is a version of CBT designed to treat older adults with GAD in primary care settings (Stanley et al., 2003). This eight-session course of psychotherapy includes psychoeducation, relaxation training, cognitive therapy techniques, problem solving, graduated exposure, and sleep management skills. In a small randomized trial for patients over age 60 with a diagnosis of GAD, all six patients who received CBT-GAD/PC, but only one of six patients assigned to usual care (comprising weekly

telephone calls to assess symptoms and identify need for immediate treatment), demonstrated significant improvement in measures of worry and anxiety (Stanley et al., 2003). Patients treated with CBT-GAD/PC had high levels of satisfaction, expectation for treatment success, and credibility of treatment ratings.

A larger randomized clinical trial compared a three-month course of CBT delivered in primary care with enhanced usual care (which included biweekly telephone calls) for 134 older adults (Stanley et al., 2009). The investigators found that CBT resulted in significant improvement compared with enhanced usual care on measures of worry severity, depressive symptoms, and general mental health, but found no difference in GAD severity between the groups. Thus, the treatment appears somewhat promising and awaits further investigation.

Depression. In their review of interventions for depression, Wolf and Hopko (2008) classify CBT in primary care as possibly efficacious for major depression, minor depression, and dysthymia; they also consider cognitive therapy without a behavioral component possibly efficacious for major depression. A variety of CBT adaptations are emerging to treat depression in primary care settings.

For example, Scott, Tacchi, Jones, and Scott (1997) investigated brief cognitive therapy (BCT), a version of cognitive therapy adapted to treat depression in primary care which consists of six weekly 30-min therapy sessions. In a randomized controlled trial in which 48 primary care patients with depression were randomly assigned to receive either BCT plus usual treatment by a primary care physician or usual treatment alone, Scott et al. found significantly greater improvement in symptoms after seven weeks for patients who received BCT plus usual treatment compared with patients who received usual treatment alone. The significant difference between the groups persisted after one year, when pre-existing neuroticism level was controlled. The authors suggest the results are encouraging but concede that their evidence is somewhat equivocal given the wide range of usual care treatments, including medication, received by the participants during the study. They also note that considerable expertise in core CBT techniques and in schema-based work was required to provide mean-

ingful therapy in such a short period and recommended against its delivery by novice therapists.

Miranda and Muñoz (1994) randomly assigned 150 primary care patients with minor depression to an intervention group that received an eight-week didactic course on CBT or a control condition. The CBT intervention resulted in greater improvement in depressive and somatic symptomology than the control condition. These improvements persisted at a one-year follow-up. The intervention consisted of eight two-hour sessions taught by doctoral-level psychologists in a small-group format.

Casmar and Lang (2005) designed a brief treatment approach for depression and anxiety in primary care that the authors describe as incorporating techniques from CBT as well as rational emotive behavior therapy, IPT, acceptance and commitment therapy, and solution-focused brief therapy. The intervention, called Play Your Cards Right, consists of four 30- to 60-min sessions in which patients use problem-solving strategies to address one of three areas of change (either people in their lives, their commitments, or their health). In a study in which 60 primary care patients with a range of mental health diagnoses were randomly assigned to receive either the Play Your Cards Right intervention or usual care, Lang, Norman, and Casmar (2006) found that patients in the intervention group showed significant reductions in depressive and anxiety symptoms compared with the usual treatment group, although many symptoms had returned at a six-month follow-up. The authors suggest that the durability of treatment gains may be enhanced if the intervention is modified to increase the number of sessions and conduct them over a longer period of time, and also suggest future inclusion of relapse prevention materials.

Evaluation and Compatibility with Primary Care Goals. As the studies discussed above illustrate, the CBT variants being developed for use in primary care contain many of the features extolled by Robinson (2005) for conforming with primary care goals. The CBT adaptations generally are appropriate for treatment of patients with varying ethnic and demographic backgrounds, as well as a variety of comorbid medical and mental disorders and a range of symptom levels. Treatment length

and intensity are reduced to levels manageable in a primary care setting, although it appears that length and intensity may be related to outcome gains. Many interventions include psychoeducation as well as skills-training or self-management components, and most include relapse prevention strategies. CBT lends itself to alternative delivery formats (as discussed in the context of psychotherapy delivery innovations, below). As Scott et al. (1997) found, however, a potentially significant obstacle to implementing some CBT adaptations for primary care may be the expertise required to provide abbreviated yet meaningful therapy. Predictors of response to these CBT adaptations should be studied to determine whether any patient characteristics can assist in the identification of those most likely to benefit from these interventions. It seems likely that the findings of Hegel et al. (2002) regarding the importance of therapist expertise and patient capacity to quickly grasp techniques are not limited to PST-PC. Another important area for investigation is the relationship between symptom severity and treatment outcome. Are these CBT adaptations like PST-PC in that they may be less effective for patients with less severe symptoms? Do they work for patients with the most severe symptoms or should these patients be referred to the specialty mental health sector? Is there an optimal level of treatment length and intensity for various disorders or the gradations of symptom severity or both? Cost-effectiveness research is needed to determine whether these CBT-based interventions in primary care are feasible given the preliminary evidence that substantial training is required to deliver them and that their effectiveness is related to treatment intensity. Given the findings that CBT requires a level of expertise unlikely to be regularly found in primary care settings, it may be useful to explore whether simpler, more easily administered versions of these interventions can be effective.

IPT Tailored for Primary Care

Wolf and Hopko (2008) categorize IPT in primary care as an efficacious intervention for major depression, and possibly efficacious for minor depression or dysthymia, but note that the duration of treatment and the expertise required to administer it limit its usefulness in primary care. Klerman et al. (1987), addressing this problem, developed an adaptation of IPT called Inter-

personal Counseling (IPC), a manualized intervention designed to be administered by nurse practitioners in primary care settings. IPC consists of six or fewer 30-min counseling sessions focused on current functioning with emphasis on recent life changes, sources of stress, and difficulties in interpersonal relationships. In a pilot study conducted using 128 participants with elevated scores on a questionnaire measuring symptoms related to anxiety, depression, and distress, Klerman et al. found that the symptoms of patients who received IPC improved significantly more than the symptoms of those who did not, and that the symptoms of some participants improved markedly after only one or two sessions. The investigators determined that this briefer treatment was feasible in the primary care environment because of its brevity and because it was easily learned by nurse practitioners who received 8 to 12 hours of training.

Mossey, Knott, Higgins, and Talerico (1996) further adapted IPC for the treatment of subdysthymic depression in medically ill older adults. They increased the number of sessions to 10, lengthened each session to one hour, and used flexible scheduling to accommodate patients' medical status. In a randomized clinical trial comparing this version of IPC to usual care, patients who received IPC showed greater improvement after three months in both depressive symptoms and self-rated health than those who received usual care. For the study, 89 hospitalized patients aged 60 or older with subthreshold symptoms of dysthymia or major depression were randomly assigned to IPC or usual care; 13 were excluded from the analysis because they did not complete follow-up assessments. IPC was provided by psychiatric nurses following hospital discharge.

Evaluation and Compatibility With Primary Care Goals.

IPC reflects many of the goals of primary care identified by Robinson (2005). Treatment length and intensity are consistent with the constraints of primary care and with the philosophy of accessibility of care. The flexibility of treatment would accommodate patients with varying symptom levels, although studies to date have not included patients with severe symptomology. IPC would be accessible to patients with diverse ethnic and demographic backgrounds and those with

comorbid medical disorders. IPC may be delivered by various members of a health care team in a variety of formats. Indeed, there is preliminary evidence that IPC may be administered effectively by telephone. In a small pilot study, Neugebauer et al. (2007) found that depression levels in women who miscarried were reduced after receiving up to six weekly IPC sessions by telephone. However, the authors acknowledge that a randomized controlled trial will be necessary to determine whether the improvement exceeds that which would be expected in the absence of treatment. IPC does not contain an explicit relapse prevention component, but it actively encourages self-reliance and discourages dependence on the treatment. However, evidence supporting the use of IPC in primary care is currently scant and preliminary. Its effectiveness for the treatment of patients with various disorders and levels of symptomology remains to be investigated. Also remaining to be investigated are predictors of treatment response and cost-effectiveness.

Psychotherapy Delivery Innovations

Psychotherapy delivery innovations utilizing telephone, computer, Internet, and text-messaging technologies are increasingly being investigated as treatments that may overcome some of the economic and logistical barriers to mental health treatment. These interventions represent further iterations of treatments adapted for primary care, and typically involve variants of CBT.

Telephone Interventions. In a recent meta-analysis of 12 studies investigating telephone-administered psychotherapy, Mohr, Vella, Hart, Heckman, and Simon (2008) found that psychotherapy provided by telephone was associated with a significant decrease in symptoms of depression compared with control conditions and compared with pretreatment symptom levels. The duration of treatment in the studies ranged from 5 to 16 weekly sessions. Of the 12 studies, 8 utilized some form of CBT, and the authors found a trend suggesting that CBT was more effective than other treatment orientations, such as IPT, supportive emotion-focused therapy, and emotional expression therapy. They also found that the attrition rate across the studies (7.6%) was lower than the attrition rate reported by

Wierzbicki and Pekarik (1993) in a meta-analysis of 125 studies of face-to-face psychotherapy interventions (46.9%). However, in light of significant heterogeneity in outcome among the studies, the authors caution that conclusions about whether telephone interventions are comparable to face-to-face psychotherapy in reducing depressive symptoms (and, if so, for which populations) must await randomized trials directly comparing the two forms of treatment.

Bee et al. (2008) conducted a similar meta-analysis of randomized trials of psychotherapy provided by remote communication. Of the 13 studies included in the meta-analysis, 10 utilized telephone interventions, two utilized Internet technology, and one utilized videoconferencing. The authors found a pooled effect size of .44 for remote therapies for depression compared with control conditions, and a pooled effect size of 1.15 for remote therapies treating anxiety-related disorders. Because only two of the studies directly compared remote therapies with equivalent face-to-face psychotherapy, no definitive conclusions regarding the comparison could be drawn. The authors found attrition rates ranging from 9% to 73%. Like Mohr et al. (2008), they concluded that telephone and other remote technologies are promising for overcoming the barriers associated with traditional face-to-face psychotherapy, and that a priority for future research should be the comparison of remote interventions to face-to-face psychotherapy in large-scale trials.

Computerized and Internet-Based Interventions. Computerized and Internet-based psychotherapeutic treatments have perhaps even more potential than telephone-based interventions to sidestep many of the barriers to disseminating psychotherapeutic interventions in primary care, such as limited supply of clinicians, cost, transportation difficulties, and the stigma associated with mental health treatment. Outcome studies for a range of mental disorders have been generally positive (Kaltenthaler et al., 2006; Titov, 2007), but often plagued by methodological weaknesses that prevent drawing conclusions regarding efficacy or effectiveness (Kaltenthaler, Parry, & Beverley, 2004).

In a meta-analysis of 19 randomized controlled studies examining the effects of Internet-based and computer-based CBT interventions for anxiety, Reger

and Gahm (2009) found that the interventions were superior to wait-list or placebo conditions across anxiety disorders and, contrary to expectations, equivalent or superior to CBT delivered by therapists. However, the authors noted that the therapists in most studies did not use empirically supported manualized treatments. The analysis revealed no difference in outcome between patients who received face-to-face contact with a therapist or other provider and those who received no contact. The authors found that effect sizes were similar for patients with anxiety disorders and those with subclinical symptoms. However, they noted that the limited number of studies and methodological weaknesses such as small sample sizes, high dropout rates, and unblinded experimental designs limit the generalizability of some of the findings.

In another recent meta-analysis of Internet-based CBT interventions, Spek, Cuijpers, et al. (2007) found that effect sizes of interventions for anxiety symptoms were higher than effect sizes for depressive symptoms, but the data indicated that the difference may have been related to the presence or absence of clinician support. Interventions in which a therapist provided limited supportive or facilitative contact with participants had higher mean effect sizes than interventions that did not include such support. The analysis excluded studies in which therapists served a traditional therapeutic role.

Whether computerized interventions are acceptable to patients is an important and often neglected question in the literature. Kaltenthaler et al. (2008) conducted a review of 16 studies of computerized CBT for depression to assess patient acceptability using factors such as the percentage of patients offered treatment who agreed to take part in the studies (uptake rates), the dropout rates, and any information collected about patient preferences, satisfaction, or acceptability. They found that the dropout rates ranged from 0% to 75% with a mean of 31.75%, a rate the authors note is comparable with dropout rates for other types of therapy. None of the studies surveyed patient satisfaction among dropouts. Only three studies reported uptake rates; these ranged from 2.4% to 25%. Among patients who completed treatment, most rated the treatment favorably, but the data were too sparse to permit any substantive conclusions.

The development of specialized interventions for specific disorders is proceeding at a rapid pace. For example, a computerized CBT self-help intervention incorporating exposure and response prevention (ERP) techniques has shown promise for obsessive-compulsive disorder (Tumur, Kaltenthaler, Ferriter, Beverley, & Parry, 2007). The computerized intervention, which is delivered via an interactive voice response system accessed by telephone or computer, was more effective at reducing symptoms than a systematic relaxation treatment, but less effective than therapist-guided ERP in a randomized study with a sample of 218 patients conducted by Greist et al. (2002). A randomized study conducted by Kenwright, Marks, Graham, Franses, and Mataix-Cols (2005) demonstrated that treatment compliance and symptom improvement were greater for patients receiving scheduled brief telephone support from a therapist (in which the mean total duration of the support calls was 76 min over the course of the 17-week study) compared with patients who received such telephone support only when they initiated the calls (in this group, the mean total duration of the calls was 16 min over 17 weeks). Of 44 patients randomized to these two conditions, two in the scheduled support group and six in the patient-initiated support group dropped out before they reached the self-treatment modules of the program.

Two randomized controlled trials (with sample sizes of 167 and 274 primary care patients) found that a computerized CBT intervention called *Beating the Blues* led to significant improvement in symptoms of anxiety and depression and was superior to usual treatment by a physician for primary care patients with a variety of anxiety and depression profiles (Proudfoot et al., 2003; Proudfoot et al., 2004). The intervention consisted of a brief introductory video followed by eight interactive computerized 50-min therapy sessions. The therapy included cognitive components such as addressing automatic thoughts as well as behavioral components such as activity scheduling and graded exposure. Cavanagh et al. (2006) investigated the generalizability of these findings to routine care settings in an effectiveness study consisting of an open trial of the *Beating the Blues* program in four rural general practices, four urban general practices, two community mental health teams, and one primary care clinical

psychology service. They found that the program resulted in significant improvement in depression and anxiety symptoms for patients completing the program. The authors suggest that the program may be a useful initial tool in a stepped care system for treating common mental illnesses. Moreover, an economic analysis suggested a high probability that the intervention is cost-effective (McCrone et al., 2004), but further research is needed to compare the cost-effectiveness of such interventions to more traditional face-to-face therapies for various disorders and severity levels. This intervention is now recommended by the National Institute for Clinical Excellence (NICE) in the United Kingdom for the treatment of mild or moderate depression (National Institute for Health and Clinical Excellence, 2006).

In a randomized controlled pilot study with 45 participants, Litz, Engel, Bryant, and Papa (2007) found that an Internet-based CBT intervention for posttraumatic stress disorder (PTSD) was superior to an Internet-based supportive counseling control. Both the treatment and control websites provided access to educational information about PTSD and commonly co-occurring symptoms as well as anger management and sleep strategies. The CBT intervention prompted participants to engage in affect management strategies, including identification of situations that triggered trauma-related distress, the hierarchical organization of these triggers, self-guided in vivo exposure to the items in the hierarchy, and narrative writing about the trauma. The supportive counseling website prompted participants to monitor and write online about nontrauma-related daily concerns. Participants in both groups received an initial two-hour session with a therapist who performed a baseline assessment, provided psychoeducation about PTSD and stress management, and demonstrated use of the assigned website. Both groups had periodic e-mail and telephone contact with the therapist throughout the eight-week study. Fewer people completed the CBT treatment than the supportive counseling treatment, and the authors suggest that future research investigate factors that would increase usage.

Marks et al. (2003) set up a self-help clinic offering free computerized CBT treatments for depression/anxiety, phobia/panic, and obsessive-compulsive disorder. After an initial screening interview, patients

were directed to the most suitable of four programs (one was for phobia/panic symptoms, one for obsessive-compulsive disorder, and two for depression/anxiety) for their presenting problems and instructed on its use. They were also provided with three to six brief therapist contacts either by phone or face-to-face during the treatment period. Two of the programs were typically accessed on a computer in the clinic (and later on the Internet) and two were accessed by telephone. Outcome data indicated that all patients experienced significant improvement in symptoms, with clinically meaningful effect sizes of 0.8 or greater attained by participants using three of the four programs. The only program not associated with clinically meaningful effect sizes was a depression/anxiety intervention that was more basic and of shorter duration than the other programs. Participants were generally satisfied with the interventions, although they indicated a slight preference for therapist-guided treatment. The investigators also assessed cost-effectiveness, finding that the per-patient cost advantage of computerized CBT compared with face-to-face CBT rose with the number of patients treated. The advantage was estimated at 15% for 350 patients per year and 41% for 1,350 patients per year. The authors note that computerized CBT systems cannot entirely replace clinicians because patients require, at a minimum, appropriate screening and brief advice. They suggest computerized self-help interventions as a first level of care in a stepped care model for most patients with depression or anxiety. They note that a significant obstacle to dissemination of these treatments in the United Kingdom is lack of funding; the clinic set up for the study lost its funding at the end of the study period.

Building on studies demonstrating the superiority of an Internet-based treatment for panic disorder and agoraphobia to control conditions, Kiropoulos et al. (2008) compared the intervention (Panic Online) with the best evidence-based treatment, which at present is 12–15 sessions of face-to-face manualized CBT treatment. Participants assigned to the Internet intervention were supported via email by a psychologist. The investigators randomly assigned 86 adults to the treatment groups and found that both interventions produced significant improvement in symptom severity and frequency on a variety of outcome measures, with no

significant differences between the groups. An exploratory economic analysis conducted in Australia suggested that Panic Online would be cost-effective whether the support component is offered by psychologists or general practitioners (Mihalopoulos et al., 2005).

An Internet-based CBT intervention for the treatment of test anxiety was superior to a credible Internet-based placebo control program in a 90-participant randomized controlled trial conducted by Orbach, Lindsay, and Grey (2007). Both the treatment and the control group showed clinically significant improvement, but improvement was significantly greater for the intervention group on most measures. A nine-week Internet-based self-help CBT intervention for social phobia resulted in clinically significant improvement in symptoms in a randomized controlled trial with 64 participants conducted by Andersson et al. (2006), and the benefits of treatment remained at a one-year follow-up. The intervention included minimal contact with a therapist via email and two group exposure sessions.

Interventions that target particular age groups are also in development. An Internet-based primary care intervention incorporating CBT and IPT techniques to reduce behaviors that increase vulnerability for depression and increase protective behaviors has shown promise for the prevention of depression in young adults (Van Voorhees, Ellis, Stuart, Fogel, & Ford, 2005; Van Voorhees et al., 2007, 2008). A small pilot study indicated favorable trends for reducing depressive symptoms, reducing risk factors such as dysfunctional thinking, and increasing social support (Van Voorhees et al., 2005), and a small preliminary process evaluation study indicated that the intervention was potentially feasible, acceptable to patients, and effective for preventing depression (Van Voorhees et al., 2007). Van Voorhees et al. (2008) randomized 84 adolescents with risk factors for developing major depression to receive the Internet intervention combined with either brief advice (a 2- to 3-min discussion in which a physician advises the adolescent that he or she is experiencing a depressed mood and should complete the Internet intervention) or motivational interviewing (a 5- to 15-min interview in which a physician facilitates a favorable attitude regarding participation and completion of the Internet intervention, plus three motiva-

tional phone calls from a case manager). At a 12-week follow-up, the percentage of participants with depressive symptoms had declined from baseline in both groups; depressive episodes were significantly less likely in the motivational interviewing group than in the brief advice group (Van Voorhees et al., 2009).

An eight-week Internet-based CBT intervention for subthreshold depression in adults over age 50 was investigated by Spek, Nyklíček, et al. (2007). They randomly assigned 301 participants over age 50 who had both symptoms of subthreshold depression and Internet access to an Internet intervention group, a traditional CBT group, or a wait-list control group. Treatment response was significantly better for participants in both treatment groups than for those in the control group, and no significant difference between treatment groups was found. In this study, the Internet-based intervention consisted of eight self-help modules covering the same subjects as the group intervention. Participants accessed the program from their homes via the Internet and received no professional support. At a one-year follow-up, treatment response remained significantly better for the Internet-based treatment group than for the control group, and there was a nonsignificant trend toward better results for the Internet-based treatment than for the group CBT treatment (Spek et al., 2008). The authors noted that because Internet access was required for inclusion in the study, many participants expected to participate in an Internet-based treatment and some were disappointed to be assigned to the group CBT condition.

Text Messaging. Mobile phone technology, including text messaging, is increasingly used in medical contexts to, for example, improve attendance in primary care by sending appointment reminders (Leong et al., 2006), provide results of testing for sexually transmitted diseases to decrease the time to treatment (Menon-Johansson, McNaught, Mandalia, & Sullivan, 2006), and monitor diabetes symptoms (Logan et al., 2007), asthma symptoms (Cleland, Caldwell, & Ryan, 2007), and side effects of chemotherapy (Weaver et al., 2007). This delivery innovation has become the newest frontier for mental health treatment and is inspiring the development of very brief psychoeducational and supportive interventions. This is an area in which the literature is just

beginning to develop, but some of the interventions have already been subject to study.

For example, Rodgers et al. (2005) found that an intervention for smoking cessation delivered by text messaging was superior to a control condition in a randomized controlled study of 1,705 smokers in New Zealand. The intervention group was sent regular personalized text messages that provided information related to quitting, advice for avoiding triggers and coping with craving, motivational support including success stories and benefits of quitting, and distraction. The messages were personalized from a database of more than 1,000 messages based on individual participant characteristics. The control group received biweekly generic text messages thanking them for participating in the study and providing information about the study. Another text messaging intervention for smoking cessation has shown promise in reducing smoking rates among college students, but has not been subject to randomized controlled studies (Obermayer, Riley, Asif, & Jean-Mary, 2004; Riley, Obermayer, & Jean-Mary, 2008).

Whittaker et al. (2008) are taking mobile phone-based smoking interventions to the next level. After convening an advisory group to provide expert advice on a range of topics including smoking cessation, youth health, public health, and psychology; consulting with student focus groups to gather information about current and potential uses of mobile phones; and pretesting a range of video material, they designed a mobile phone-based system to deliver video and text messages to support smoking cessation efforts. Messages included a series of 30-second videos in which a role model discusses her quitting experiences and antitobacco video clips in which students talk about the tobacco industry and the effects of smoking. In a small pilot study, the intervention was well received, and of 13 participants who completed the study and were available for follow up, 9 quit smoking during the five-week study period and all 9 said that the intervention helped them quit. The investigators are now evaluating the effectiveness of a six-month version of the intervention designed based on the findings of the pilot study.

Tailored text messaging has also been used to reduce negative consequences of alcohol use among college students. Weitzel, Bernhardt, Usdan, Mays, and Glanz (2007) developed and tested an intervention

consisting of individually tailored text messages that addressed the consequences of alcohol use and that were tailored based on individual participants' reported drinking behavior as well as an initial assessment. Forty participants were provided a handheld computer and instructed to record their alcohol consumption on a daily basis. Half were randomly assigned to receive the text messages; the other half served as a control group. Participants in the intervention group reported significantly less drinking than participants in the control group over the course of the two-week study. However, participants provided negative feedback about the frequency and repetitiveness of the messages.

Patrick et al. (2009) conducted a randomized controlled pilot study comparing a text message intervention for weight loss, which included two to five daily personalized text messages, printed materials about weight control, and brief monthly phone calls from a counselor, to a control condition in which participants received written materials on nutrition and weight loss. Over a four-month intervention period, the participants in the intervention group lost significantly more weight than those in the control group, but the average weight loss was relatively modest at 2.88 kg (approximately 6 pounds).

Text messaging interventions are also being explored for the purpose of providing aftercare and prevention relapse in patients who have received treatment for bulimia nervosa (Bauer, Percevic, Okon, Meermann, & Kordy, 2003; Robinson et al., 2006). However, in a feasibility pilot study, an intervention in which patients send weekly text messages regarding symptomology and mood states and receive computer-generated tailored feedback messages (which were checked for plausibility before being sent) was found to have low levels of patient use, high levels of attrition, and relatively negative feedback, suggesting limited acceptability to patients (Robinson et al., 2006). It remains to be determined whether text messaging interventions in general are ill-suited for bulimia aftercare and relapse prevention.

Evaluation and Compatibility With Primary Care Goals. Psychotherapy delivery innovations such as telephone, computerized, Internet-based, and text messaging interventions seem particularly well suited to overcome

some of the more significant constraints of primary care and seem consistent with the primary care philosophy of widely accessible population-based care as well as the other goals enumerated by Robinson (2005). Such interventions embody the goal of flexible delivery of services. A range of interventions for patients of varying symptom levels, various ethnic and demographic backgrounds, and various mental health and medical profiles is possible. Treatment adherence is likely to be enhanced by the convenience of the treatments. Psychoeducation, self-management, and relapse-prevention components may be easily incorporated. These interventions may offer a plausible solution to the most prominent obstacle to adapting CBT to primary care—the expertise required to administer it in person. They may be particularly useful in rural areas where mental health services are relatively scarce and a culture of self-reliance and stigma associated with mental illness may discourage the seeking of treatment (Griffiths & Christensen, 2007). These interventions may also be incorporated into stepped care models in which treatment approaches are tailored for different patient groups, as they may be delivered as stand-alone self-help approaches, integrated with minimal contact from a therapist or other provider, or included as an adjunct to traditional face-to-face therapy. Additional research is needed to determine how to integrate face-to-face clinician time with the interventions to optimize not only resource efficiency but also patient acceptability. Acceptability data have been mixed, and most patients tend to favor therapist-provided interventions.

Further, these technologies introduce obstacles of their own. While they have the potential to substantially increase the availability of mental health care to previously underserved segments of the population, those without access to the relevant technologies will be left out, as will many with potential access who lack the ability or motivation to become literate with the technologies. Further research on the relevance of age, education, and economic status will be relevant in assessing the limitations of these innovations.

BARRIERS PREVENTING WIDESPREAD IMPLEMENTATION OF INTEGRATED CARE

Despite the impetus toward integrated care, its generally successful implementation in various practice set-

tings (Druss, Rohrbaugh, Levinson, & Rosenheck, 2001; Felker et al., 2004, 2006; Hedrick et al., 2003), and evidence that providers tend to prefer integrated care once they have been exposed to it (Gallo et al., 2004), the segregation of general medical care and mental health care remains the norm in the United States (Gray et al., 2005). As with any significant paradigm shift, substantial barriers must be overcome before widespread integration of mental health services in primary care is achieved.

Financial considerations pose one such barrier. Insurance companies and government programs such as Medicare and Medicaid that provide reimbursement for mental health care impose varying restrictions on coverage and tend to be slow to adapt to service delivery innovations. The development of cost-effectiveness data to identify the most efficient treatment and delivery methods will be an important step in increasing the availability of reimbursement for such services.

The literature supporting the feasibility and effectiveness of mental health interventions in primary care is growing, but gaps remain and, as with most rapidly developing bodies of research, inconsistent results and differences in methodological rigor and design quality can complicate implementation decisions (Drake et al., 2001). Moreover, even interventions with strong empirical support can take years or even decades to be incorporated into routine patient care (Institute of Medicine Committee on Quality of Health Care in America, 2001).

Primary care providers' perceptions of the compatibility of these interventions with primary care constraints may be vastly different from the perceptions of those who are adapting the interventions for primary care use and those conducting the research to assess their feasibility. Moreover, lack of familiarity with the technology involved may impede the adoption of some of the more recent delivery innovations by providers as well as by patients.

Some of the treatment delivery innovations raise ethical and legal questions that may make providers reluctant to embrace them. For example, computerized and Internet-based interventions raise a host of privacy and confidentiality issues as well as liability questions. Whitfield and Williams (2004) investigated the reasons for the limited availability of computerized CBT

interventions in a survey of CBT practitioners in the United Kingdom. In addition to a perceived lack of evidence for their effectiveness or acceptability to patients, the providers expressed concern about taking clinical responsibility for patients interacting only with a computer. Although delivery innovations have the potential to make mental health care available to large segments of the population, questions about who, if anyone, would be clinically and legally responsible for the care of patients using these systems must be addressed.

FUTURE DIRECTIONS

DeGruy (2006) notes approvingly that mental health researchers, rather than deluging primary care providers with treatment guidelines that are not feasible in primary care, or insisting that all patients needing mental health care be referred to mental health specialists, have instead worked with the primary care sector to develop innovative collaborative treatment models and research designs that are tailored to the primary care setting. Yet much remains to be done.

Many of the studies examining interventions that are compatible with the constraints of primary care are preliminary, meant to set the stage for larger, more rigorous investigations. Long-term outcomes and cost-effectiveness remain to be assessed. Additional effectiveness studies that include patients with complicated presentations and comorbid psychological and medical disorders are needed to determine how useful the interventions are in real-world practice. Many of the studies to date have compared these interventions with usual care by a primary care provider; it is also important to compare their effectiveness and cost to traditional therapies provided in specialty mental health settings in order to inform referral decisions where access to specialty care is available. Because such access is often limited, additional studies assessing the effectiveness and cost of these interventions as adjuncts to usual care are also needed. Evidence that such interventions enhance the effectiveness of usual care (such as antidepressant medication) in a cost-effective manner would provide a powerful incentive for their adoption in primary care settings. Also critical is the identification of characteristics of patients most likely to benefit from each treatment modality, including care in specialized mental health settings. Such research will

inform stepped care models designed to provide the most efficient care for each patient. The optimal level of therapist involvement for the telephone, computerized, Internet-based, and text messaging interventions remains largely uninvestigated.

Further research in these areas might shed light on what, if anything, is being lost as traditional forms of therapy are reconstructed into briefer, simpler versions for primary care. Although anecdotal evidence suggests that these interventions have generally been well tolerated by primary care practices, as noted above there is little evidence of their widespread adoption, even among practices that had participated in the studies. More knowledge about the attitudes of primary care providers toward these interventions and the practical obstacles to wider dissemination is needed.

More broadly, the clinical psychology field has an important role to play as reform of the health care system reaches the top of the national agenda. Ideally, this role would include participation in a large-scale, coordinated, multidisciplinary research effort to determine how best to provide integrated mental health and medical services in primary care. Because simply patching traditional mental health services onto the fabric of primary care is problematic for the reasons discussed above, emphasis must be on the development of innovative interventions and service delivery models. Moreover, like the clinical interventions and delivery models being studied, the research effort itself must be integrated so that both mental and physical health, as well as their interaction, are investigated. The computerization of medical records will facilitate such research, making available sufficient data not only to study such interactions but also to assess and monitor long-term treatment outcomes.

The identification and, where necessary, development of valid measures is a key component of such an ambitious research agenda. A consensus regarding a standard, valid, and reliable battery to measure mental health and medical outcomes across studies is critical. Equally important will be the investigation and, ultimately, the identification of potentially relevant independent variables that comprise treatment interventions as well as variables such as diagnosis, patient characteristics, and provider characteristics that may mediate or moderate their effects. Valid and reliable measures for

these variables must be identified or developed. Of course, the utility of such instruments is not limited to the research realm, but would also be invaluable in the ongoing monitoring of mental health services. An ambitious research agenda such as this would have the added benefit of expanding the knowledge base of clinical psychology by studying populations (such as primary care patients) that have heretofore been outside the field's reach, and ultimately extending needed services to those populations.

The trend toward integrating mental health care and primary care has begun to transform the mental health treatment landscape and will continue to do so for the foreseeable future. Primary care providers and mental health professionals—and the programs that train them—will ignore this trend at their peril. The innovations that are emerging offer the promise of extending the reach of mental health care to those who lack access to adequate treatment for reasons that may include economics, geography, and sensitivity to stigma, a promise that, if realized, will have salutary implications across the globe.

REFERENCES

- American Psychiatric Association. (2000). Practice guideline for the treatment of patients with major depressive disorder. *American Journal of Psychiatry*, 157(4 Suppl.), 1–26.
- Andersson, G., Carlbring, P., Holmstrom, A., Sparthar, E., Furmark, T., Nilsson-Ihrfelt, E., et al. (2006). Internet-based self-help with therapist feedback and in vivo group exposure for social phobia: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 74, 677–686.
- Barlow, D. H., Gorman, J. M., Shear, M. K., & Woods, S. W. (2000). Cognitive-behavioral therapy, imipramine, or their combination for panic disorder: A randomized controlled trial. *Journal of the American Medical Association*, 283, 2529–2536.
- Barrett, J. E., Williams, J. W., Jr., Oxman, T. E., Frank, E., Katon, W., Sullivan, M., et al. (2001). Treatment of dysthymia and minor depression in primary care: A randomized trial in patients aged 18 to 59 years. *Journal of Family Practice*, 50, 405–412.
- Bauer, S., Percevic, R., Okon, E., Meermann, R., & Kordy, H. (2003). Use of text messaging in the aftercare of patients with bulimia nervosa. *European Eating Disorders Review*, 11, 279–290.
- Bee, P. E., Bower, P., Lovell, K., Gilbody, S., Richards, D., Gask, L., et al. (2008). Psychotherapy mediated by remote communication technologies: A meta-analytic review. *BMC Psychiatry*, 8, Article 60. Retrieved September 30, 2008, from <http://www.biomedcentral.com/1471-2244X/2008/2060>
- Beitman, B. D., & Saveanu, R. V. (2005). Integrating pharmacotherapy and psychotherapy. In J. C. Norcross & M. R. Goldfried (Eds.), *Handbook of psychotherapy integration* (2nd ed., pp. 417–436). New York: Oxford University Press.
- Blount, A. (1998). Introduction to integrated primary care. In A. Blount (Ed.), *Integrated primary care: The future of medical and mental health collaboration* (pp. 1–43). New York: W. W. Norton.
- Brody, D. S., Khaliq, A. A., & Thompson, T. L. 2nd. (1997). Patients' perspectives on the management of emotional distress in primary care settings. *Journal of General Internal Medicine*, 12, 403–406.
- Cabassa, L. J., & Hansen, M. C. (2007). A systematic review of depression treatments in primary care for Latino adults. *Research on Social Work Practice*, 17, 494–503.
- Casmar, P. V., & Lang, A. J. (2005). Meeting the mental health needs of primary care patients: The “Play Your Cards Right” intervention. In M. E. Abelian (Ed.), *Focus on psychotherapy research* (pp. 241–254). Hauppauge, NY: Nova Science.
- Catalan, J., Gath, D. H., Anastasiades, P., Bond, S. A., Day, A., & Hall, L. (1991). Evaluation of a brief psychological treatment for emotional disorders in primary care. *Psychological Medicine*, 21, 1013–1018.
- Cavanagh, K., Shapiro, D. A., Van Den Berg, S., Swain, S., Barkham, M., & Proudfoot, J. (2006). The effectiveness of computerized cognitive behavioural therapy in routine care. *British Journal of Clinical Psychology*, 45, 499–514.
- Churchill, R., Khaira, M., Gretton, V., Chilvers, C., Dewey, M., Duggan, C., et al. (2000). Treating depression in general practice: Factors affecting patients' treatment preferences. *British Journal of General Practice*, 50, 905–906.
- Cleland, J., Caldow, J., & Ryan, D. (2007). A qualitative study of the attitudes of patients and staff to the use of mobile phone technology for recording and gathering asthma data. *Journal of Telemedicine and Telecare*, 13, 85–89.
- Coyne, J. C., & Thompson, R. (2003). Psychologists entering primary care: Manhattan cannot be bought for \$24 worth of beads. *Clinical Psychology: Science and Practice*, 10, 102–108.
- Coyne, J. C., Thompson, R., Klinkman, M. S., & Nease, D. E., Jr. (2002). Emotional disorders in primary care. *Journal of Consulting and Clinical Psychology*, 70, 798–809.

- Craske, M. G., Golinelli, D., Stein, M. B., Roy-Byrne, P., Bystritsky, A., & Sherbourne, C. (2005). Does the addition of cognitive behavioral therapy improve panic disorder treatment outcome relative to medication alone in the primary-care setting? *Psychological Medicine*, *35*, 1645–1654.
- Craske, M. G., Roy-Byrne, P., Stein, M. B., Sullivan, G., Hazlett-Stevens, H., Bystritsky, A., et al. (2006). CBT intensity and outcome for panic disorder in a primary care setting. *Behavior Therapy*, *37*, 112–119.
- Drake, R. E., Goldman, H. H., Leff, H. S., Lehman, A. F., Dixon, L., Mueser, K. T., et al. (2001). Implementing evidence-based practices in routine mental health service settings. *Psychiatric Services*, *52*, 179–182.
- Druss, B. G., Rohrbaugh, R. M., Levinson, C. M., & Rosenheck, R. A. (2001). Integrated medical care for patients with serious psychiatric illness: A randomized trial. *Archives of General Psychiatry*, *58*, 861–868.
- Dwight-Johnson, M., Unützer, J., Sherbourne, C., Tang, L., & Wells, K. B. (2001). Can quality improvement programs for depression in primary care address patient preferences for treatment? *Medical Care*, *39*, 934–944.
- Felker, B. L., Barnes, R. F., Greenberg, D. M., Chancy, E. F., Shores, M. M., Gillespie-Gateley, L., et al. (2004). Preliminary outcomes from an integrated mental health primary care team. *Psychiatric Services*, *55*, 442–444.
- Felker, B. L., Chaney, E., Rubenstein, L. V., Bonner, L. M., Yano, E. M., Parker, L. E., et al. (2006). Developing effective collaboration between primary care and mental health providers. *Primary Care Companion Journal of Clinical Psychiatry*, *8*, 12–16.
- Gallo, J. J., & Coyne, J. C. (2000). The challenge of depression in late life: Bridging science and service in primary care. *Journal of the American Medical Association*, *284*, 1570–1572.
- Gallo, J. J., Zubritsky, C., Maxwell, J., Nazar, M., Bogner, H. R., Quijano, L. M., et al. (2004). Primary care clinicians evaluate integrated and referral models of behavioral health care for older adults: Results from a multisite effectiveness trial (PRISM-e). *Annals of Family Medicine*, *2*, 305–309.
- Gilbody, S., Bower, P., Fletcher, J., Richards, D., & Sutton, A. J. (2006). Collaborative care for depression: A cumulative meta-analysis and review of longer-term outcomes. *Archives of Internal Medicine*, *166*, 2314–2321.
- Gray, G. V., Brody, D. S., & Johnson, D. (2005). The evolution of behavioral primary care. *Professional Psychology: Research and Practice*, *36*, 123–129.
- Greist, J. H., Marks, I. M., Baer, L., Kobak, K. A., Wenzel, K. W., Hirsch, M. J., et al. (2002). Behavior therapy for obsessive-compulsive disorder guided by a computer or by a clinician compared with relaxation as a control. *Journal of Clinical Psychiatry*, *63*, 138–145.
- Griffiths, K. M., & Christensen, H. (2007). Internet-based mental health programs: A powerful tool in the rural medical kit. *Australian Journal of Rural Health*, *15*, 81–87.
- deGruy, F. V., III, (2006). A note on the partnership between psychiatry and primary care. *American Journal of Psychiatry*, *163*, 1487–1489.
- Hedrick, S. C., Chaney, E. F., Felker, B., Liu, C. F., Hasenberg, N., Heagerty, P., et al. (2003). Effectiveness of collaborative care depression treatment in Veterans' Affairs primary care. *Journal of General Internal Medicine*, *18*, 9–16.
- Hegel, M. T., Barrett, J. E., Cornell, J. E., & Oxman, T. E. (2002). Predictors of response to problem-solving treatment of depression in primary care. *Behavior Therapy*, *33*, 511–527.
- Hemmings, A. (2000). A systematic review of the effectiveness of brief psychological therapies in primary health care. *Families, Systems & Health*, *18*, 279–313.
- Institute of Medicine Committee on Quality of Health Care in America. (2001). *Crossing the quality chasm: A new health system for the 21st century*. Washington, DC: National Academy Press.
- Jaycox, L. H., Miranda, J., Meredith, L. S., Duan, N., Benjamin, B., & Wells, K. (2003). Impact of a primary care quality improvement intervention on use of psychotherapy for depression. *Mental Health Services Research*, *5*, 109–120.
- Kalenthaler, E., Brazier, J., De Nigris, E., Tumor, I., Ferriter, M., Beverley, C., et al. (2006). Computerised cognitive behaviour therapy for depression and anxiety update: A systematic review and economic evaluation. *Health Technology Assessment*, *10*(33), 1–186.
- Kalenthaler, E., Parry, G., & Beverley, C. (2004). Computerized cognitive behaviour therapy: A systematic review. *Behavioural and Cognitive Psychotherapy*, *32*, 31–55.
- Kalenthaler, E., Sutcliffe, P., Parry, G., Beverley, C., Rees, A., & Ferriter, M. (2008). The acceptability to patients of computerized cognitive behaviour therapy for depression: A systematic review. *Psychological Medicine*, *38*, 1521–1530.
- Kendrick, T., Simons, L., Mynors-Wallis, L., Gray, A., Lathlean, J., Pickering, R., et al. (2006). Cost-effectiveness of referral for generic care or problem-solving treatment from community mental health nurses, compared with usual general practitioner care for common mental disorders: Randomised controlled trial. *British Journal of Psychiatry*, *189*, 50–59.

- Kenwright, M., Marks, I., Graham, C., Franes, A., & Mataix-Cols, D. (2005). Brief scheduled phone support from a clinician to enhance computer-aided self-help for obsessive-compulsive disorder: Randomized controlled trial. *Journal of Clinical Psychology, 61*, 1499–1508.
- Kessler, R. C., Demler, O., Frank, R. G., Olfson, M., Pincus, H. A., Walters, E. E., et al. (2005). Prevalence and treatment of mental disorders, 1990 to 2003. *New England Journal of Medicine, 352*, 2515–2523.
- King, M., Davidson, O., Taylor, F., Haines, A., Sharp, D., & Turner, R. (2002). Effectiveness of teaching general practitioners skills in brief cognitive behaviour therapy to treat patients with depression: Randomised controlled trial. *British Medical Journal, 324*, 947–950.
- Kiropoulos, L. A., Klein, B., Austin, D. W., Gilson, K., Pier, C., Mitchell, J., et al. (2008). Is Internet-based CBT for panic disorder and agoraphobia as effective as face-to-face CBT? *Journal of Anxiety Disorders, 22*, 1273–1284.
- Klerman, G. L., Budman, S., Berwick, D., Weismann, M. M., Damico-White, J., Demby, A., et al. (1987). Efficacy of a brief psychosocial intervention for symptoms of stress and distress among patients in primary care. *Medical Care, 25*, 1078–1088.
- Lang, A. J., Norman, G. J., & Casmar, P. V. (2006). A randomized trial of a brief mental health intervention for primary care patients. *Journal of Consulting and Clinical Psychology, 74*, 1173–1179.
- Leong, K. C., Chen, W. S., Leong, K. W., Mastura, I., Mimi, O., Sheikh, M. A., et al. (2006). The use of text messaging to improve attendance in primary care: A randomized controlled trial. *Family Practice, 23*, 699–705.
- Litz, B. T., Engel, C. C., Bryant, R. A., & Papa, A. (2007). A randomized, controlled proof-of-concept trial of an Internet-based, therapist-assisted self-management treatment for posttraumatic stress disorder. *American Journal of Psychiatry, 164*, 1676–1683.
- Logan, A. G., McIsaac, W. J., Tisler, A., Irvine, M. J., Saunders, A., Dunai, A., et al. (2007). Mobile phone-based remote patient monitoring system for management of hypertension in diabetic patients. *American Journal of Hypertension, 20*, 942–948.
- Marks, I. M., Mataix-Cols, D., Kenwright, M., Cameron, R., Hirsch, S., & Gega, L. (2003). Pragmatic evaluation of computer-aided self-help for anxiety and depression. *British Journal of Psychiatry, 183*, 57–65.
- McCrone, P., Knapp, M., Proudfoot, J., Ryden, C., Cavanagh, K., Shapiro, D. A., et al. (2004). Cost-effectiveness of computerised cognitive-behavioural therapy for anxiety and depression in primary care: Randomised controlled trial. *British Journal of Psychiatry, 185*, 55–62.
- Menon-Johansson, A. S., McNaught, F., Mandalia, S., & Sullivan, A. K. (2006). Texting decreases the time to treatment for genital chlamydia trachomatis infection. *Sexually Transmitted Infections, 82*, 49–51.
- Mihalopoulos, C., Kiropoulos, L., Shih, S. T. F., Gunn, J., Blashki, G., & Meadows, G. (2005). Exploratory economic analyses of two primary care mental health projects: Implications for sustainability. *Medical Journal of Australia, 183*, S73–S76.
- Miranda, J., & Muñoz, R. (1994). Intervention for minor depression in primary care patients. *Psychosomatic Medicine, 56*, 136–141.
- Mohr, D. C., Vella, L., Hart, S., Heckman, T., & Simon, G. (2008). The effect of telephone-administered psychotherapy on symptoms of depression and attrition: A meta-analysis. *Clinical Psychology: Science and Practice, 15*, 243–253.
- Mossey, J. M., Knott, K. A., Higgins, M., & Talerico, K. (1996). Effectiveness of a psychosocial intervention, interpersonal counseling, for subdysthymic depression in medically ill elderly. *Journal of Gerontology, 51*, M172–M178.
- Mynors-Wallis, L. (2005). *Problem-solving treatment for anxiety and depression: A practical guide*. New York: Oxford University Press.
- Mynors-Wallis, L., Davies, I., Gray, A., Barbour, F., & Gath, D. (1997). A randomised controlled trial and cost analysis of problem-solving treatment for emotional disorders given by community nurses in primary care. *British Journal of Psychiatry, 170*, 113–119.
- Mynors-Wallis, L., Gath, D., Day, A., & Baker, F. (2000). Randomised controlled trial of problem solving treatment, antidepressant medication, and combined treatment for major depression in primary care. *British Medical Journal, 320*, 26–30.
- Mynors-Wallis, L., Gath, D., Lloyd-Thomas, A., & Tomlinson, D. (1995). Randomised controlled trial comparing problem solving treatment with amitriptyline and placebo for major depression in primary care. *British Medical Journal, 310*, 441–445.
- National Institute for Health and Clinical Excellence. (2006). *Computerised cognitive behaviour therapy for depression and anxiety: Review of Technology Appraisal 51*. London: Author.
- Neugebauer, R., Kline, J., Bleiberg, K., Baxi, L., Markowitz, J. C., Rosing, M., et al. (2007). Preliminary open trial of interpersonal counseling for subsyndromal depression following miscarriage. *Depression and Anxiety, 24*, 219–222.
- New Freedom Commission on Mental Health. (2003). *Achieving the promise: Transforming mental health care in*

- America. Final report. (No. SMA-03-3832). Rockville, MD: U.S. Department of Health and Human Services.
- Norquist, G. S., & Regier, D. A. (1996). The epidemiology of psychiatric disorders and the de facto mental health care system. *Annual Review of Medicine*, *47*, 473–479.
- Obermayer, J. L., Riley, W. T., Asif, O., & Jean-Mary, J. (2004). College smoking-cessation using cell phone text messaging. *Journal of American College Health*, *53*, 71–78.
- Olfson, M., Marcus, S. C., Druss, B., Elinson, L., Tanielian, T., & Pincus, H. A. (2002). National trends in the outpatient treatment of depression. *Journal of the American Medical Association*, *287*, 203–209.
- Orbach, G., Lindsay, S., & Grey, S. (2007). A randomised placebo-controlled trial of a self-help Internet-based intervention for test anxiety. *Behaviour Research and Therapy*, *45*, 483–496.
- Oxman, T. E., Dietrich, A. J., & Schulberg, H. C. (2005). Evidence-based models of integrated management of depression in primary care. *Psychiatric Clinics of North America*, *28*, 1061–1077.
- Patrick, K., Raab, F., Adams, M., Dillon, L., Zabinski, M., Rock, C. L., et al. (2009). A text message-based intervention for weight loss: Randomized controlled trial. *Journal of Medical Internet Research*, *11*(1), e1.
- Proudfoot, J., Goldberg, D., Mann, A., Everitt, B., Marks, I., & Gray, J. A. (2003). Computerized, interactive, multimedia cognitive-behavioural program for anxiety and depression in general practice. *Psychological Medicine*, *33*, 217–227.
- Proudfoot, J., Ryden, C., Everitt, B., Shapiro, D. A., Goldberg, D., Mann, A., et al. (2004). Clinical efficacy of computerised cognitive-behavioural therapy for anxiety and depression in primary care: Randomised controlled trial. *British Journal of Psychiatry*, *185*, 46–54.
- Raue, P., & Schulberg, H. C. (2005). Psychotherapy and patient preferences for the treatment of major depression in primary care. In M. E. Abelian (Ed.), *Focus on psychotherapy research* (pp. 139–158). Hauppauge, NY: Nova Science.
- Reger, M. A., & Gahm, G. A. (2009). A meta-analysis of the effects of Internet and computer-based cognitive-behavioral treatments for anxiety. *Journal of Clinical Psychology*, *65*, 53–75.
- Riley, W., Obermayer, J., & Jean-Mary, J. (2008). Internet and mobile phone text messaging intervention for college smokers. *Journal of American College Health*, *57*, 245–248.
- Robinson, P. (2005). Adapting empirically supported treatments to the primary care setting: A template for success. In W. T. O'Donohue, M. R. Byrd, N. A. Cummings, & D. A. Henderson (Eds.), *Behavioral integrative care: Treatments that work in the primary care setting* (pp. 53–71). New York: Brunner-Routledge.
- Robinson, P., & Reiter, J. T. (2007). *Behavioral consultation and primary care: A guide to integrating services*. New York: Springer.
- Robinson, S., Perkins, S., Bauer, S., Hammond, N., Treasure, J., & Schmidt, U. (2006). Aftercare intervention through text messaging in the treatment of bulimia nervosa: Feasibility pilot. *International Journal of Eating Disorders*, *39*, 633–638.
- Rodgers, A., Corbett, T., Bramley, D., Riddell, T., Wills, M., Lin, R. B., et al. (2005). Do u smoke after txt? Results of a randomised trial of smoking cessation using mobile phone text messaging *British Medical Journal*, *14*, 255–261.
- Roth, A., & Fonagy, P. (2005). *What works for whom? A critical review of psychotherapy research* (2nd ed.). New York: Guilford.
- Roy-Byrne, P. P., Craske, M. G., Stein, M. B., Sullivan, G., Bystritsky, A., Katon, W., et al. (2005). A randomized effectiveness trial of cognitive-behavioral therapy and medication for primary care panic disorder. *Archives of General Psychiatry*, *62*, 290–298.
- Roy-Byrne, P. P., Sherbourne, C. D., Craske, M. G., Stein, M. B., Katon, W., Sullivan, G., et al. (2003). Moving treatment research from clinical trials to the real world. *Psychiatric Services*, *54*, 327–332.
- Saxena, S., Thornicroft, G., Knapp, M., & Whiteford, H. (2007). Resources for mental health: Scarcity, inequity, and inefficiency. *Lancet*, *370*, 878–889.
- Scott, C., Tacchi, M. J., Jones, R., & Scott, J. (1997). Acute and one-year outcome of a randomised controlled trial of brief cognitive therapy for major depressive disorder in primary care. *British Journal of Psychiatry*, *171*, 131–134.
- Simon, G. E., Katon, W. J., VonKorff, M., Unützer, J., Lin, E. H., Walker, E. A., et al. (2001). Cost-effectiveness of a collaborative care program for primary care patients with persistent depression. *American Journal of Psychiatry*, *158*, 1638–1644.
- Skultety, K. M., & Zeiss, A. (2006). The treatment of depression in older adults in the primary care setting: An evidence-based review. *Health Psychology*, *25*, 665–674.
- Spek, V., Cuijpers, P., Nyklíček, I., Riper, H., Keyzer, J., & Pop, V. (2007). Internet-based cognitive behaviour therapy for symptoms of depression and anxiety: A meta-analysis. *Psychological Medicine*, *37*, 319–328.
- Spek, V., Cuijpers, P., Nyklíček, I., Smits, N., Riper, H., Keyzer, J., et al. (2008). One-year follow-up results of a

- randomized controlled clinical trial on Internet-based cognitive behavioural therapy for subthreshold depression in people over 50 years. *Psychological Medicine*, 38, 635–639.
- Spek, V., Nyklíček, I., Smits, N., Cuijpers, P., Riper, H., Keyzer, J., et al. (2007). Internet-based cognitive behavioural therapy for subthreshold depression in people over 50 years old: A randomized controlled clinical trial. *Psychological Medicine*, 37, 1797–1806.
- Stanley, M. A., Hopko, D. R., Diefenbach, G. J., Bourland, S. L., Rodriguez, H., & Wagener, P. (2003). Cognitive-behavior therapy for late-life generalized anxiety disorder in primary care: Preliminary findings. *American Journal of Geriatric Psychiatry*, 11, 92–96.
- Stanley, M. A., Wilson, N. L., Novy, D. M., Rhoades, H. M., Wagener, P. D., Greisinger, A. J., et al. (2009). Cognitive behavior therapy for generalized anxiety disorder among older adults in primary care: A randomized clinical trial. *Journal of the American Medical Association*, 301, 1460–1467.
- Strosahl, K. (1996). Confessions of a behavior therapist in primary care: The odyssey and the ecstasy. *Cognitive and Behavioral Practice*, 3, 1–28.
- Strosahl, K. (1997). Building primary care behavioral health systems that work: A compass and a horizon. In N. A. Cummings, J. L. Cummings, & J. N. Johnson (Eds.), *Behavioral health in primary care: A guide for clinical integration* (pp. 37–68). Madison, CT: Psychosocial Press.
- Strosahl, K. (1998). Integrating behavioral health and primary care. In A. Blount (Ed.), *Integrated primary care: The future of medical and mental health collaboration* (pp. 139–166). New York: W. W. Norton.
- Strosahl, K. (2000). The psychologist in primary health care. In A. J. Kent, & M. Hersen (Eds.), *A psychologist's proactive guide to managed mental health care* (pp. 87–112). Mahwah, NJ: Lawrence Erlbaum.
- Titov, N. (2007). Status of computerized cognitive behavioural therapy for adults. *Australian and New Zealand Journal of Psychiatry*, 41, 95–114.
- Tumur, I., Kaltenthaler, E., Ferriter, M., Beverley, C., & Parry, G. (2007). Computerised cognitive behaviour therapy for obsessive-compulsive disorder: A systematic review. *Psychotherapy and Psychosomatics*, 76, 196–202.
- Unützer, J., Katon, W., Callahan, C. M., Williams, J. W., Jr., Hunkeler, E., Harpole, L., et al. (2003). Depression treatment in a sample of 1,801 depressed older adults in primary care. *Journal of the American Geriatrics Society*, 51, 505–514.
- Unützer, J., Schoenbaum, M., Druss, B. G., & Katon, W. J. (2006). Transforming mental health care at the interface with general medicine: Report for the President's Commission. *Psychiatric Services*, 57, 37–47.
- Van Voorhees, B. W., Ellis, J., Stuart, S., Fogel, J., & Ford, D. E. (2005). Pilot study of a primary care Internet-based depression prevention intervention for late adolescents. *Canadian Child and Adolescent Psychiatry Review*, 14, 40–43.
- Van Voorhees, B. W., Ellis, J. M., Gollan, J. K., Bell, C. C., Stuart, S. S., Fogel, J., et al. (2007). Development and process evaluation of a primary care Internet-based intervention to prevent depression in emerging adults. *Primary Care Companion Journal of Clinical Psychiatry*, 9, 346–355.
- Van Voorhees, B. W., Fogel, J., Reinecke, M. A., Gladstone, T., Stuart, S., Gollan, J., et al. (2009). Randomized clinical trial of an Internet-based depression prevention program for adolescents (Project CATCH-IT) in primary care: 12-week outcomes. *Journal of Developmental and Behavioral Pediatrics*, 30, 23–37.
- Van Voorhees, B. W., Vanderplough-Booth, K., Fogel, J., Gladstone, T., Bell, C., Stuart, S., et al. (2008). Integrative Internet-based depression prevention for adolescents: A randomized clinical trial in primary care for vulnerability and protective factors. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 17, 184–196.
- Wang, P. S., Aguilar-Gaxiola, S., Alonso, J., Angermeyer, M. C., Borges, G., Bromet, E. J., et al. (2007). Use of mental health services for anxiety, mood, and substance disorders in 17 countries in the WHO world mental health surveys. *Lancet*, 370, 841–850.
- Wang, P. S., Berglund, P., & Kessler, R. C. (2000). Recent care of common mental disorders in the United States: Prevalence and conformance with evidence-based recommendations. *Journal of General Internal Medicine*, 15, 284–292.
- Wang, P. S., Demler, O., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2006). Changing profiles of service sectors used for mental health care in the United States. *American Journal of Psychiatry*, 163, 1187–1198.
- Wang, P. S., Lane, M., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Twelve-month use of mental health services in the United States: Results from the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 629–640.
- Weaver, A., Young, A. M., Rowntree, J., Townsend, N., Pearson, S., Smith, J., et al. (2007). Application of mobile phone technology for managing chemotherapy-associated side-effects. *Annals of Oncology*, 18, 1887–1892.

- Weitzel, J. A., Bernhardt, J. M., Usdan, S., Mays, D., & Glanz, K. (2007). Using wireless handheld computers and tailored text messaging to reduce negative consequences of drinking alcohol. *Journal of Studies on Alcohol and Drugs*, *68*, 534–537.
- Wetherell, J. L., Gatz, M., & Craske, M. G. (2003). Treatment of generalized anxiety disorder in older adults. *Journal of Consulting and Clinical Psychology*, *71*, 31–40.
- Whitfield, G., & Williams, C. (2004). If the evidence is so good—why doesn't anyone use them? A national survey of the use of computerized cognitive behaviour therapy. *Behavioural and Cognitive Psychotherapy*, *32*, 57–65.
- Whittaker, R., Maddison, R., McRobbie, H., Bullen, C., Denny, S., Dorey, E., et al. (2008). A multimedia mobile phone-based youth smoking cessation intervention: Findings from content development and piloting studies. *Journal of Medical Internet Research*, *10*(5), e49.
- Wierzbicki, M., & Pekarik, G. (1993). A meta-analysis of psychotherapy dropout. *Professional Psychology: Research and Practice*, *24*, 190–195.
- Williams, J. W., Jr, Barrett, J., Oxman, T., Frank, E., Katon, W., Sullivan, M., et al. (2000). Treatment of dysthymia and minor depression in primary care: A randomized controlled trial in older adults. *Journal of the American Medical Association*, *284*, 1519–1526.
- Wolf, N. J., & Hopko, D. R. (2008). Psychosocial and pharmacological interventions for depressed adults in primary care: A critical review. *Clinical Psychology Review*, *28*, 131–161.
- World Health Organization and World Organization of Family Doctors. (2008). *Integrating mental health into primary care: A global perspective*. Geneva: World Health Organization.
- Young, A. S., Klap, R., Sherbourne, C. D., & Wells, K. B. (2001). The quality of care for depressive and anxiety disorders in the United States. *Archives of General Psychiatry*, *58*, 55–61.

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