

The Cost-Effectiveness of Psychotherapy for the Major Psychiatric Diagnoses

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Abstract: Psychotherapy is an effective and often highly cost-effective medical intervention for many serious psychiatric conditions. Psychotherapy can also lead to savings in other medical and societal costs. It is at times the first-line and most important treatment and at other times augments the efficacy of psychotropic medication. Many patients are in need of more prolonged and intensive psychotherapy, including those with personality disorders and those with chronic complex psychiatric conditions often with severe anxiety and depression. Many patients with serious and complex psychiatric illness have experienced severe early life trauma in an atmosphere in which family members or caretakers themselves have serious psychiatric disorders. Children and adolescents with learning disabilities and those with severe psychiatric disorders can also require more than brief treatment. Other diagnostic groups for whom psychotherapy is effective and cost-effective include patients with schizophrenia, anxiety disorders (including posttraumatic stress disorder), depression, and substance abuse. In addition, psychotherapy for the medically ill with concomitant psychiatric illness often lowers medical costs, improves recovery from medical illness, and at times even prolongs life compared to similar patients not given psychotherapy.

While “cost-effective” treatments can yield savings in healthcare costs, disability claims, and other societal costs, “cost-effective” by no means translates to “cheap” but instead describes treatments that are clinically effective and provided at a cost that is considered reasonable given the benefit they provide, even if the treatments increase direct expenses.

In the current insurance climate in which Mental Health Parity is the law, insurers nonetheless often use their own non-research and non-clinically based medical necessity guidelines to subvert it and limit access to appropriate psychotherapeutic treatments. Many patients, especially those who need extended and intensive psychotherapy, are at risk of receiving substandard care due to

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inadequate insurance reimbursement. These patients remain vulnerable to residual illness and the concomitant sequelae in lost productivity, dysfunctional interpersonal and family relationships, comorbidity including increased medical and surgical services, and increased mortality.

This article is a comprehensive review of the medical literature from 1984–2012 that is relevant to the cost-effectiveness of psychotherapy. With the passage of the Mental Health Parity and Addiction Equity Act (MHPAEA), insurance companies are required to provide coverage for psychiatric care at parity with other medical care. Many insurance companies unfortunately have found ways to evade the mandate, which is currently not being adequately enforced. In order to understand the basic issues in the struggle for coverage of appropriate treatment, some background information is necessary.

Clearly any statement claiming that a treatment should be covered under insurance must provide evidence for its effectiveness and ideally, its cost-effectiveness. “Cost-effectiveness” is not synonymous with “effectiveness” or “efficacy”—it refers to the financial cost of a treatment and relates it to specific outcome measures of effectiveness (Cellini & Kee, 2010). In essence, it signifies the impact per dollar spent. A systematic cost-effectiveness analysis, for example, can be calculated by comparing the incremental cost-effectiveness ratios—a ratio of incremental cost to incremental effect—of two different interventions. While many psychiatric patients improve with relatively brief courses of treatment, there are also important groups that are very costly to society if inadequately treated. Studies show that these patients often require more intensive and/or extended psychotherapy than most insurance companies are willing to support, despite the research that suggests the need for more care for these patients to achieve recovery as well as savings that often result from decreased medical expenses and improved productivity. However, insurance companies tend to focus on controlling short-term immediate costs and not long-term planning and thorough treatment that might lead to better health outcomes and savings in the budgets of other parties.

In fact, the increased medical expenses of the psychiatrically ill, compared to medical patients without a psychiatric illness, are a hidden multiplier of medical budgets. Melek and Norris (2008) found that when they studied an insured group, patients with psychological disorders had increased medical costs that represented 21.1% of total health-care costs of the whole group. In this same study, 40% or more of high utilizers of healthcare had depression, anxiety, or dysthymia, but only 20% of their increased medical costs were attributable to their psychiat-

ric care (Melek & Norris, 2008). Luber et al. (2000) reviewed the records of 15,186 outpatients at an internal medicine clinic at Weill Medical College of Cornell and found that patients diagnosed with depression had more primary care visits, higher total outpatient charges, greater resource utilization of all types, and longer hospital stays even after controlling for the higher burden of comorbid illness associated with their depression. In one study at a Veterans Administration facility, patients with posttraumatic stress disorder (PTSD), either alone or in combination with depression, also exhibited higher use and accrued higher costs of non-psychiatric medical care (Deykin et al., 2001). It was found that the higher use and costs were related significantly to the patient's increased number of medical conditions, highlighting for these authors the fundamental linkage between mental and physical health. A high percentage of the psychiatrically ill are never even diagnosed; for those who are, a majority receive inadequate treatment (Wang, 2005a, 2005b). Simply put, patients with chronic, complex, and/or recurrent psychiatric illness have more medical conditions and higher medical costs. These patients can often be treated with psychotherapy that yields better mental health and overall health outcomes. Yet these facts are unfortunately ignored by many insurance companies intent on minimizing reimbursement and evading the mandate for mental health parity.

Among other evidence-based psychiatric treatments, psychotherapy is a vital, cost-effective, and often cost saving component of care for certain patient populations (Lazar, 2010). Unfortunately, there is a serious lack of awareness of the research and clinical experience validating it—a deliberate and nuanced evasion of the MHPAEA of 2008 by insurers, and a refusal to reimburse appropriately for psychotherapy and other clinically indicated psychiatric services. Reimbursement denials are often based on the non-research and non-clinically established medical necessity guidelines of insurance companies, their behavioral managed care components, and independent review organizations (see Bendat, 2014, this issue).

By short-changing those who need an appropriate course and type of psychotherapy, we ignore the fact that we are being “penny (and profit) wise” in the short run for an individual company and very much “pound foolish” in the long run for the broader community. Inadequate psychiatric care often yields increased medical costs, debility, and decreased worker productivity impacting businesses and the economy, all in addition to the disability, morbidity, and mortality suffered by patients and their families. Studies focusing on the patient groups who require an extended course of psychotherapy to improve and who are

most at risk for insufficient insurance reimbursement will be emphasized in this article and discussed first.*

PATIENTS WHO REQUIRE INTENSIVE AND EXTENDED PSYCHOTHERAPY: PERSONALITY DISORDERS, CHRONIC COMPLEX DISORDERS, CHRONIC UNIPOLAR DEPRESSION, COMORBID CHRONIC DEPRESSION, AND PERSONALITY DISORDERS

Patients who need intensive (more than once weekly) and extended (generally more than 20 sessions) psychotherapy treatment are those with chronic, debilitating personality disorders and those with chronic, complex disorders such as severe longstanding depression and anxiety, as well as patients with multiple chronic psychiatric disorders. These patients are among the most seriously ill and are frequently not adequately treated with psychotherapy, due to arbitrary limits on reimbursement for psychotherapy by insurance companies (Bendat, 2014, this issue).

Patients with *personality disorders* have deeply ingrained, maladaptive, and inflexible ways of thinking and behaving that generally lead to impaired relationships with others. Such patients are enormously costly to society, are among the most chronically impaired groups in psychiatric populations, are unemployed for longer periods, and have more drug problems, suicide attempts, interpersonal difficulties (Gabbard, 2000; Linehan & Heard, 1999; Pilkonis, Neighbors, & Corbit, 1999; Reich, Yates, & Nduaguba, 1989), criminal behavior, divorce, child abuse, and heavy use of mental and general health care (Skodol, Gunderson, et al., 2005). The lifetime prevalence of personality disorders is between 10% and 13.5% (Casey & Tyrer, 1986; Lenzenweger, 2008; Maier, Lichtermann, Klingler, Heun, & Hallmayer, 1992; Reich, Nduaguba, & Yates, 1988; Zimmerman & Coryell, 1990), affecting at least 30 million Americans of all social classes, races, and ethnicities.

Hadjipavlou and Ogrodniczuk (2010) reviewed a number of randomized clinical trials (RCTs) of different psychotherapy treatment ap-

*Much of the following material was also referenced in a systematically searched, comprehensive review of 23 years [1984–2007] of the medical literature relevant to the cost-effectiveness of all varieties of psychotherapy published in *Psychotherapy Is Worth It: A Comprehensive Review of Its Cost-Effectiveness* [Lazar, 2010]. In addition, more recent studies [2007–2012] have been included for this article using the search terms: cost + [specific diagnosis] + psychotherapy; cost-effectiveness + [specific diagnosis] + psychotherapy; long-term psychotherapy + cost; extended psychotherapy + cost.

proaches for personality disorders that demonstrated the effectiveness of both cognitive behavioral therapy (CBT) and psychodynamic specialized treatments. Effectiveness was measured by reduced symptomatology, improved social and interpersonal functioning, and decreased hospitalization. Equivalent effects among the interventions they compared were common. The authors referenced the British Health Service National Institute for Health and Care Excellence (NICE) clinical guideline (2009), which cautions against the use of brief psychological interventions especially for borderline personality disorder (BPD) stating, “. . . there is perhaps an even stronger signal that longer treatments with higher doses are of greater benefit. In several studies, significant improvement was only observed after 12 months of active treatment” (p. 207). In an editorial review of a number of studies, Anthony Bateman (2012) has also reiterated the point that a number of carefully designed psychotherapies for borderline personality disorder appear to be effective including transference-focused psychotherapy (TFP), dialectical behavior therapy (DBT), supportive psychotherapy, and structured clinical management (Bateman & Fonagy, 2009; Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; McMMain, Guimond, Streiner, Cardish, & Links, 2012).

Psychotherapy is also effective and cost-effective for patients with severe personality disorders including antisocial, narcissistic, and borderline personality disorders (Soeteman et al., 2010).

Patients with personality disorders or chronic, complex disorders (including serious longstanding anxiety and depression) tend to have disturbed interpersonal relationships. While psychotherapy of different approaches improves symptoms, a number of studies imply that psychodynamic treatments are significantly superior in improving maladaptive interpersonal relationships (Huber, Zimmerman, Henrich, & Klug, 2012; Leichsenring & Rabung, 2008; Levy et al., 2006; Shedler, 2010), a highly significant risk factor for increased mortality exceeding smoking, alcoholism, obesity, and hypertension (Holt-Lunstad, Smith, & Layton, 2010). For those who require an extended course of psychotherapy due to their mental illness, both longer duration and higher frequency of psychotherapy have independent positive effects. Together, these factors are associated with the most positive treatment outcomes (Grande et al., 2006; Rudolf, Manz, & Ori, 1994; Sandell et al., 2000). Leichsenring and Rabung (2008) found that long-term psychodynamic psychotherapy is significantly more effective and provides greater improvements in symptoms and personality functioning as compared to briefer treatments for such patients. In an update, Leichsenring and Rabung (2011) performed another meta-analysis of ten prospective studies. The authors examined controlled trials of long-term psycho-

dynamic psychotherapy (LTPP) that had patients in LTPP for at least a year or at least 50 sessions, and used reliable outcome measures, totaling 971 patients with chronic complex disorders. They found that LTPP was superior to less intensive forms of psychotherapy and that outcome and duration of psychotherapy were positively correlated. Shedler (2010) showed that when compared to patients treated with other psychotherapies, patients treated with psychodynamic psychotherapy better maintain therapeutic gains and continue to improve after treatment ends. The factors that contribute to the cost-effectiveness of extended intensive psychotherapy for these patients include savings from decreased sick leave, and decreased medical costs and decreased hospital costs (Bateman & Fonagy, 1999; Bateman & Fonagy, 2003; Bateman & Fonagy, 2008; Clarkin et al., 2001; Clarkin, Levy, Lenzenweger, & Kernberg, 2007; Dossmann, Kutter, Heinzl, & Wurmser, 1997; Duehrssen, 1962; Duehrssen & Jorswiek, 1965; Hall, Caleo, Stevenson, & Meares, 2001; Heinzl, Breyer, & Klein, 1996; Keller, Westhoff, Dilg, Rohner, & Studt, 1998; Levy et al., 2006; Meares, Stevenson, & Comerford, 1999; Stevenson & Meares, 1992; Stevenson & Meares, 1999; Teufel & Volk, 1988; van Asselt, Dirksen, Arntz et al., 2008).

With regard to BPD, Gregory, DeLucia-Deranja, and Mogle (2010), found that treating alcoholic BPD patients with a 12-month dynamic psychotherapy program resulted in a large, sustained improvement in core BPD symptoms and substance abuse symptoms, 18 months after treatment. In a study of 12 months of DBT (van den Bosch, Verheul, Schippers, & van den Brink, 2002), a similar improvement was achieved for borderline patients with substance abuse. These patients however, did not retain their improvement and returned to pre-treatment levels of heavy drinking and drug use at six-month follow-up. These authors state that there is no empirical support that the core pathology of patients with BPD (unstable relationships, primitive defenses, identity disorder, and boredom) is affected by one year of DBT. They also suggest that intrapsychic elements of this pathology may be more positively affected by psychodynamic psychotherapy. Levy et al. (2006) and Clarkin et al. (2007) also found that dynamic psychotherapy leads to broader personality changes than supportive or DBT for borderline personality disorder.

Many other studies indicate that borderline patients take significantly longer to improve than patients with less severe anxiety and depressive disorders and need longer-term treatment (Fonagy, 2002; Høglend, 1993; Howard, Kopta, Krause, & Orlinsky, 1986; Kopta, Howard, Lowry, & Beutler, 1994; Levy, Meehan, & Yeomans, 2010; Seligman, 1995). In the Borderline Personality Disorder Study of Cognitive Therapy (BOSCOT) trial, patients received either 30 sessions of individual CBT-

PD (CBT for personality disorders) over one year, or treatment as usual. Six years later the CBT-PD did provide therapeutic gains but was not more cost-effective and quality of life and affective regulation remained poor. Of note, these authors also referenced the NICE guidelines to the effect that twice-weekly psychotherapy sessions may be considered for these patients and brief psychotherapeutic interventions (of less than three months' duration) are not to be used (NICE, 2009; Palmer, Davidson, Tyrer et al., 2006).

In a prospective study of 100 patients with unipolar depression, Huber et al. (2012) investigated the effectiveness of long-term cognitive behavior, psychoanalytic and psychodynamic therapies, measuring outcomes pre-treatment, post-treatment, and at three-year follow-up. All three therapies yielded a similar improvement in patients' depressive symptoms immediately after treatment. The CBT and psychodynamic therapy groups were not significantly different in depressive symptoms at three-year follow-up, while the psychoanalytically treated group was significantly improved in depressive symptoms at the three-year point. Both the psychoanalytically treated and psychodynamic therapy groups had fewer interpersonal problems than the CBT group at both post-treatment measurement points. The improvement in interpersonal problems was the only detectable superiority of psychodynamic therapy over CBT, while the psychoanalytically treated group had significantly greater improvement in general distress and interpersonal problems immediately after treatment, and in depressive symptoms, general distress, interpersonal problems, and self-schema than the CBT group at three-year follow-up.

Blatt, Quinlan, Pilkonis, and Shea (1995) re-examined data from the National Institute of Mental Health Treatment of Depression Collaborative Research Program and found that perfectionistic patients did especially poorly in all brief treatments. An earlier publication (Blatt, 1992) indicated that perfectionistic patients fare better in more intensive, extended psychoanalytic treatment than in less intensive long-term therapy. Fava, Ruini, and Belaise (2007) reviewed the literature on the unsatisfactory degree of remission that current therapies yield for unipolar depression. They point out that seemingly successful treatment is often accompanied by residual symptoms which have a strong prognostic value that can progress to become prodromal symptoms of recurrence, and are likely the most consistent predictors of relapse. Dysfunctional social and interpersonal patterns are positively correlated with persistent depression and relapse and are correlated with poor long-term outcome. The authors conclude that the fact that a patient no longer meets syndromal criteria is insufficient to designate full recovery despite the fact that the number and quality of sub-syndromal

symptoms is often not specified in treatments judged to be successful. Accordingly, treatments are needed that address ongoing characterological traits that put patients at risk for recurring illness. A number of studies point to psychodynamic treatments as having greater efficacy with these traits (Clarkin et al., 2007; Huber et al., 2012; Leichsenrung & Rabung, 2008; Levy et al., 2006; Shedler, 2010). And demonstrating the impact of LTPP on the brain, Buchheim et al. (2012) published the first study documenting treatment-specific changes in the limbic system and regulatory regions in the prefrontal cortex associated with improvement in depression after LTPP.

Additional studies specifically link personality disorders with treatment resistant, persistent, and recurrent depression. Skodol, Grilo, et al. (2005) concluded that patients with major depressive disorder and co-occurring personality disorder had significantly more role limitations due to emotional problems, impaired social functioning, and general health perceptions than patients with major depressive disorder alone. Markowitz et al. (2007) found that poor psychosocial functioning can compound the impairments of major depressive disorder, and affect the course of the illness. Furthermore, subjects whose personality disorders remitted showed improvement in social functioning and were more likely to achieve remittance of their depression than those with major depression and persisting personality disorders—the group that functioned poorest. These authors concluded that both personality and mood disorders need to be treated in comorbid patients, since the course of personality psychopathology influences depressive outcome as well as psychosocial functioning.

Grilo et al. (2010) also found that patients with major depressive disorder (MDD) and personality disorders at baseline had significantly longer time to remission than patients with major depression without personality disorders. In particular, they found borderline and obsessive-compulsive personality disorders at baseline to be robust predictors of accelerated relapse after remission from an episode of major depressive disorder, even when controlling for other negative prognostic predictors. Similarly, in a study of a nationally representative sample of adults, Skodol et al. (2011) found personality disorders to be negative prognostic indicators for the course of major depressive disorder. Borderline personality disorder emerged as a particularly robust independent predictor of chronicity (accounting for approximately 57% of persistent cases) and also as the strongest predictor of persistence of major depressive disorder, followed by schizoid and schizotypal personality disorder, any anxiety disorder (the strongest Axis I predictor) and dysthymic disorder. Taking the long view from a cost-effective perspective, it would seem clear that patients with major depression and

a comorbid personality disorder need both illnesses treated to avoid recurrent and persistent depressive illness even when the treatment of the personality disorder may require a longer and more intensive treatment.

In a study of outpatients with a mixture of diagnoses, De Maat, Philipszoon, Schoevers, Dekker, and De Jonghe (2007) examined a total of 861 patients who were either in LTPP, receiving an average of 139 sessions, or in psychoanalytic treatment, receiving an average of 413 sessions. The patients had common Axis I and II disorders, excluding those with disorders generally treated in institutions. Patients treated with LTPP had substantially reduced healthcare use and sick leave. The effects endured after termination and counterbalanced the cost of treatment in about three years after treatment. In a subsequent publication, De Maat, de Jonghe, Schoevers, and Dekker (2009) reviewed 27 studies ($n = 5063$) to examine the overall effectiveness of long-term psychoanalytic therapy and psychoanalysis and their impact on symptom reduction and personality change at treatment termination and at follow-up. Both long-term psychotherapy and psychoanalysis yielded large effect sizes for improvements in moderate and severe pathology at termination and follow-up. Costs and efficacy of psychoanalysis versus psychoanalytic therapy are reported by Berghout, Zevalink, and Hakkaart-van Roijen (2010a, 2010b) in two publications. Berghout and colleagues report that psychoanalysis, with its greater frequency, is more costly but more effective from a health-related quality perspective, and that long-term psychoanalytic treatment leads to decreased consumption of medical care, higher work productivity, and economic benefits in the long run (Berghout et al., 2010a, 2010b). Beutel, Rasting, Stuhr, Ruger, and Leuzinger-Bohleber (2004) also reported significantly reduced work absenteeism and lowered hospitalization in a seven-year follow-up after psychoanalysis and long-term psychoanalytic therapies.

In addition, studies indicate that intensive psychotherapy is effective for cocaine dependency (Crits-Christoph et al., 1999; Crits-Christoph et al., 2001) and that extended psychotherapy is an effective treatment for eating disorders (Bachar, Latzer, Kreitler, & Berry, 1999) and pain disorders (Monsen & Monsen, 2000).

ANXIETY DISORDERS

Anxiety disorders are the most common American mental health problem affecting 18.1% of adults yearly (Kessler, Chiu, Demler, & Walters, 2005) and in 1990, accounted for an annual cost of \$42.3 billion in medical, psychiatric, medication, mortality, and lost productivity costs

(Greenberg et al., 1999). In a review of economic evaluations and quality of life in patients with generalized anxiety disorder (GAD), Bereza, Machado, and Einarson (2009) concluded that GAD leads to substantial economic cost and morbidity. Patients with GAD are higher users of primary care services than patients with any other psychiatric disorder (Marciniak et al., 2005). GAD is as disabling as mood disorders and more disabling than other anxiety or personality disorders (Kessler, DuPont, Berglund, & Wittchen, 1999).

Posttraumatic Stress Disorder is a debilitating and very costly illness that occurs in at least 14% of Iraq and Afghanistan war veterans (Tanielian & Jaycox, 2008) and in up to 31% of Vietnam War veterans. Veteran with PTSD are five times as likely to be unemployed, two to six times more likely to be substance abusers, and four times more likely to have chronic medical conditions (Kulka et al., 1990). Other patients with PTSD, which has a lifetime prevalence in the U.S. of 6.8% (Kessler, Berglund, et al., 2005), occurs in 23% of those exposed to trauma (Breslau, Davis, Andreski, & Peterson, 1991), leading to high rates of substance abuse and disability. Psychotherapy for PTSD includes a number of effective specialized approaches including psychodynamic, cognitive, and desensitization treatments (Brom, Kleber, & Defares, 1989; Foa, 1997; Foa, Rothbaum, Riggs, & Murdock, 1991; Frueh, Turner, Beidel, Mirabella, & Jones, 1996; Goenjian et al., 1997; Lubin, Loris, Burt, & Johnson, 1998; March, Amaya-Jackson, Murray, & Schulte, 1998). These can lead to significant savings in subsequent medical costs (Dunn et al., 2007).

Other anxiety disorders, including panic, phobic, obsessive-compulsive, and generalized anxiety disorders, can be effectively treated with cognitive-behavioral, supportive, and psychodynamic psychotherapies (Butler, Cullington, Hibbert, Klimes, & Gelder, 1987; Gava et al., 2007; Gilliam, Diefenbach, Whiting, & Tolin, 2010; Joesch et al., 2012; Landon & Barlow, 2004; Marchand, Roberge, Primiano, & Germain, 2009; McHugh, Smits, & Otto, 2009; Milrod et al., 2007; Roberge, Marchand, Reinhartz, & Savard, 2008; Tolin, Diefenbach, & Gilliam, 2011; Wiborg & Dahl, 1996). Psychotherapy also enhances the cost-effectiveness of anxiolytic medication (Jenike, 1993). While any effective treatment for this costly illness can be assumed to be cost saving, certain studies have specifically documented these savings (Katon, Roy-Byrne, Russo, & Cowley, 2002; Katon et al., 2006; Salvador-Carulla, Segui, Fernández-Cano, & Canet, 1995). In a review of over 300 randomized controlled trials of CBT for panic disorder, both CBT and pharmacotherapy were found to be effective, individually and in combination. Pharmacotherapy alone proved to be more cost-effective at the end of treatment

while CBT proved to be more cost-effective at the long-term follow-up (Freedman & Adessky, 2009).

DEPRESSION

Depression has a lifetime prevalence in the U.S. of 19.3% with major depression being a common diagnosis affecting 16.6% of adults (Kessler, Berglund et al., 2005). Major Depression occurs in one of every 10 to 20 primary care patients (Halaris, 2011), and in 2001 cost the U.S. \$83.1 billion in medical costs and mortality costs from suicide and lost productivity (Greenberg et al., 2003). Suicide accounts for 1,000 deaths a day worldwide representing 0.9% of all deaths. Two thirds of these suicides are committed by people with depressive disorders (Sartorius, 2001). Psychotherapy has been shown to be both effective and cost-effective for depression by decreasing disability (Kamlet, Wade, Kupfer, & Frank, 1992; Mynors-Wallis, 1996; Rost, Smith, & Dickinson, 2004; Schoenbaum, Sherbourne, & Wells, 2005; Smit et al., 2006), decreasing days in the hospital (Huxley, Parikh, & Baldessarini, 2000; Retzer, Simon, Weber, Stierlin, & Schmidt, 1991; Rosset & Andreoli, 1995; Verbosky, Franco, & Zrull, 1993), and in some studies leading to reductions in total healthcare costs (Browne et al., 2002; Dunn et al., 2007; Edgell, Hylan, Draugalis, & Coons, 2000; Hengeveld, Ancion, & Rooijmans, 1988).

For the treatment of major depressive disorder, behavioral activation and cognitive therapy are more expensive than medication but lead to better recovery with fewer relapses (Dobson et al., 2008). A study by Sava, Yates, Lupu, Szentagotai, and David (2009) showed CBT to be more cost-effective than medication (fluoxetine) alone. In another study (Prukkanone, Vos, Bertram, & Lim, 2012), maintenance CBT yielded the highest cost-effectiveness of all treatments and the lowest cost—amounting to one-third of the cost of maintenance antidepressant medication for major depressive disorder. However, in the six-year Sequenced Treatment Alternatives to Relieve Depression (Star*D), the largest trial of treatment for major depressive disorder, there was no difference in effectiveness between pharmacotherapy and cognitive therapy at any treatment level (Sinyor, Schaffer, & Levitt, 2010).

In a striking study, Nemeroff et al. (2003) found that for patients with major depression and childhood trauma (in contrast to patients with major depression without childhood trauma), the combination of psychotherapy and medication was only marginally superior to psychotherapy alone. For these patients, psychotherapy alone is superior to

antidepressant treatment alone and psychotherapy appears to be an essential element in their treatment. The psychotherapy used in this research was a structured, time-limited treatment with a combination of elements from traditional cognitive-behavioral and interpersonal therapies.

For moderate to severely depressed patients, CBT in combination with pharmacotherapy is more costly but also more cost-effective if the patients' increased work productivity is factored in (Sado et al., 2009). For women patients, brief problem-focused couple's therapy is effective and cost-effective (Cohen, O'Leary, & Foran, 2010), as is psychotherapy for postnatal depression (Morrell et al., 2009).

For bipolar patients, a number of different psychotherapies enhance the effectiveness of medication (Scott & Etain, 2011; Soares-Weiser et al., 2007), increase compliance with medication, and are cost-effective by decreasing relapse and hospitalization (Sachs, 2008; Scott et al., 2009). In inpatient settings, CBT has been shown to decrease readmissions for schizophrenic and bipolar patients but not for major depressive or personality disordered patients (Veltro et al., 2008).

In a brief four-month follow-up of the British Adolescent Depression Antidepressant and Psychotherapy Trial (ADAPT), the addition of CBT to fluoxetine was not cost-effective (Goodyer et al., 2008), and in the Treatment for Adolescent Depression Study (TADS), CBT was not more cost effective than fluoxetine at 12 weeks, but was equally cost-effective by 36 weeks (Domino et al., 2008). In a later publication, Domino et al. (2009) concluded that the combination of fluoxetine and CBT was more cost-effective than fluoxetine alone. This is one of a number of studies that show psychotherapies to be more cost-effective if examined with a longer follow-up period. In another study of depressed adolescents (Weisz et al., 2009), the comparison of CBT versus the usual care of other psychotherapies showed that all led to similarly effective outcomes, but CBT was briefer, cheaper, and more cost-effective in lower-utilizing patients.

The authors of a review of the cost-effectiveness of psychotherapy (Bosmans et al., 2008) were unable to make a firm conclusion on the cost-effectiveness of psychotherapy. The literature review by Wolf and Hopko (2008), found two dynamic psychotherapies and antidepressant medication for primary care patients with major depression to be equally efficacious and cognitive-behavioral and cognitive therapy to be possibly efficacious. Holman, Serfaty, Leurent, and King (2011) found that 12 sessions of CBT for depressed elders in primary care was a more effective treatment than the treatment as usual, but added additional costs. Asarnow et al. (2009) found that very brief CBT for depressed teenagers in primary care decreased the likelihood of the development

of severe depression at six months and had a favorable impact on the course of illness at 18 months.

SCHIZOPHRENIA

According to a study by Saha, Chant, Welham, and McGrath, (2005), schizophrenia has a worldwide prevalence of 4 per 1,000 people, as opposed to the more commonly cited 1% of the entire population (Regier et al., 1993). It is an extremely costly illness due to its severity, chronicity, and associated healthcare and rehabilitation costs for patients, as well as resulting in high losses of productivity for both patients and their caregivers. In 2002 the total U.S. excess societal cost associated with schizophrenia was \$62.7 billion including \$22.7 billion in excess direct healthcare costs (McEvoy, 2007; Wyatt, Henter, Leary, & Taylor, 1995).

For the treatment of schizophrenia, several forms of psychotherapy, including family psychotherapy, social skills training, psychoeducation, personal psychotherapy, and CBT, have been demonstrated to be both effective and cost-effective by restoring functioning and decreasing relapse and medical costs (Bertelson et al., 2008; Dickerson & Lehman, 2006; Falloon, McGill, Boyd, & Pederson, 1987; Girón et al., 2010; Glick, Clarkin, Haas, & Spencer, 1993; Glick et al., 1990; Haas et al., 1988; Heinssen, Liberman, & Kopelowicz, 2000; Hogarty et al., 1986; Hogarty et al., 1991; Karow et al., 2012; Leff et al., 1989; Leff et al., 1990; Lewis et al., 2002; Liberman, Cardin, McGill, & Falloon, 1987; Liberman, Mueser, & Wallace, 1986; Mausbach, Cardenas, McKibbin, Jeste, & Patterson, 2008; Montero et al., 2001; Patel et al., 2010; Rummel-Kluge & Kissling, 2008; Rund et al., 1994; Schmidt-Kraepelin, Janssen, & Gaebel, 2009; Spiegel & Wissler, 1987; Tarrier, Barrowclough, Porceddu, & Fitzpatrick, 1994; Turkington et al., 2008; van der Gaag, Stant, Wolters, Buskens, & Wiersma, 2011; Zhang, Wang, Li, & Phillips, 1994). Adding psychotherapy to psychotropic medication yields significant health gains and is more cost-effective than medication alone (Chisholm, 2005; Chisholm et al., 2008; Gutierrez-Recacha, Chisholm, Haro, Salvador-Carulla, & Ayuso-Mateos, 2006).

SUBSTANCE ABUSE

The U.S. has the highest incidence of substance abuse among the Western democracies (Anthony, Warner, & Kessler, 1994) with astro-

nomical associated costs. From 2000–2004, deaths from tobacco use totaled 443,000 per year while annual losses in productivity amounted to \$96.8 billion (Centers for Disease Control and Prevention [CDC], 2009) and from 1995 to 1999 accounted for \$157 billion annually in health-related costs (Office of National Drug Control Policy, June 2011). In 1987, the prevalence of alcohol abuse was 8.6% to 11.9% of the population (Anthony, Warner, & Kessler, 1994) at a cost of \$99 billion (Rice, Kelman, Miller, & Dunmeyer, 1990). In 2010 half of Americans aged 12 or older used alcohol, amounting to 131.3 million people (Substance Abuse and Mental Health Services Administration, 2011). The medical and indirect costs of street drugs were \$67 billion 20 years ago even before the HIV and crack epidemics (Regier et al., 1993) and cost the U.S. economy more than \$193 billion in 2007, according to a new study by the National Drug Intelligence Center (NDIC, 2011).

Group therapy has some beneficial effects on smoking cessation (Stead & Lancaster, 2005). In one review of behavioral interventions, ranging from minimal to intensive, Murthy and Subodh (2010) found that most of the reviewed studies showed moderate success in smoking cessation in participants at six months. Similarly, Mottillo and colleagues (2009) performed a meta-analysis of 50 RCTs that examined the efficacy of behavioral interventions on smoking cessation. The authors concluded that intensive interventions resulted in substantial increases in smoking abstinence as compared to controls.

For the treatment of alcohol abuse, brief psychological interventions, family therapy, and group therapy are cost-effective, yielding lower alcohol use, decreased emergency room visits, and hospitalizations (Babor et al., 2007; French et al., 2008).

Methadone treatment for opiate users is more effective in combination with more intensive (compared to minimal) psychotherapy (Kraft, Rothbard, Hadley, McLellan, & Asch, 1997).

Cannabis is the most commonly used illicit substance worldwide (United Nations Office on Drug and Crime, 2011). Specialized psychotherapies, such as motivational enhancement, cognitive behavioral, contingency management, and family therapy, are effective and cost-effective interventions for marijuana abusers (Danovitch & Gorelick, 2012; Dennis et al., 2004; Olmstead, Sindelar, Easton, & Carroll, 2007).

In a study of 887 drug and alcohol abusing male veterans (Humphreys & Moos, 2007), 12-step-based self-help groups were more effective and cost-effective than CBT programs at two-year follow-up. In a meta-analysis of 34 well-controlled studies of psychosocial interventions for substance use disorders, effect sizes for the interventions ranged from low to medium for polysubstance use, small to medium for opiate use, medium to large for cocaine use, and moderate to high

for cannabis use (Dutra et al., 2008). Treatment approaches included combined CBT and contingency management, which had the highest effect sizes, and contingency management alone, which had the second highest effect size. CBT alone and relapse prevention alone were among the treatment approaches that lead to low to moderate effect sizes.

THE MEDICALLY ILL WITH COMORBID PSYCHIATRIC ILLNESS

In investigating the costs of comorbid psychiatric illness in medical patients, Levenson, Hamer, and Rossiter (1990) found that 28% of 455 medical inpatients were “very depressed” and another 28% (very anxious) and that those with significant psychopathology had a 40% longer median length of hospital stay, 35% greater mean hospital costs, and more procedures performed than inpatients without psychopathology. Verbosky et al. (1993) found that depressed medical/surgical inpatients had twice as long a hospital stay as those who were not depressed. Browne, Arpin, Corey, Fitch, and Gafni (1990) found that poorly adjusted, chronically ill medical patients had overall medical expenses that were two and a half times greater than those of chronically ill patients who were more well adjusted. Druss, Rosenheck, and Sledge (2000) also found higher rates of work absenteeism and higher medical costs in patients with ongoing mental disorders. In another study, a CBT-based intervention successfully lead to reduced work absenteeism caused by pain-related illness (Ektor-Ankersen, Ingvarsson, Kullendorff, & Ørbæk, 2008).

Psychotherapy for medical patients with cardiovascular disease, diabetes, severe irritable bowel syndrome, rheumatoid arthritis, and for elderly patients with hip fractures is both effective and cost-effective in savings in total healthcare costs (Creed et al., 2008; Davidson, Gidron, Mostofsky, & Trudeau, 2007; Hay, Katon, Ell, Lee, & Guterman, 2012; Katon et al., 2008; Kenardy, Mensch, Bowen, Green, & Walton, 2002; Sharpe, Allard, & Sensky, 2008; Simon et al., 2007; Snoek et al., 2008; Strain et al., 1991). Psychotherapy for cardiac surgery patients can lead to improved mental health and briefer hospital stays (Furze et al., 2009; Lewin, Coulton, Frizelle, Kaye, & Cox, 2009; Dao et al., 2011). Group psychotherapy for patients with hypochondriasis can yield a reduction in medical expenses and overall clinical improvements (Hedman et al., 2010). Proactive psychiatric consultation for medical patients greatly reduces inpatient hospital days and costs (Desan, Zimborean, Weinstein, Bozzo, & Sledge, 2011). Luborsky et al. (2004) also found that patients

have improved general health and lower health care costs after a period of psychotherapy.

With respect to mind-body interactions, psychotherapy has an impact on the brain and has been shown to create similar changes in metabolism as psychotropic medication (Baxter et al., 1992), at times unique positive changes (Karlsson, 2011), and normalizing neurotransmitter metabolism changes (Viinamäki, Kuikka, Tiihonen, & Lehtonen, 1998). Buchheim et al. (2012) published the first study documenting treatment-specific changes in the limbic system and regulatory regions in the prefrontal cortex associated with improvement in depression after long-term psychodynamic psychotherapy.

Psychotherapy has been shown to improve quality of life and at times survival in patients with breast cancer, and malignant melanoma (Caplette-Gingras & Savard, 2008; Fawzy et al., 1990; Fawzy et al., 1993; Spiegel, Kraemer, Bloom, & Gottheil, 1989). Kuchler, Bestmann, Rappat, Henne-Bruns, and Wood-Dauphinee (2007) found better survival rates in patients with gastrointestinal cancers that were given an average of six sessions of mostly supportive psychotherapy. Of those with localized disease, 57% of those who received psychotherapy were alive ten years later compared to 21% not treated. For those with regional involvement, 13% of those given psychotherapy survived compared to 2% of those who did not. Receiving psychotherapeutic support was an independent prognostic factor for survival at ten years.

PSYCHOTHERAPY FOR CHILD AND ADOLESCENT PATIENTS

Since children are not wage earners, data for this population demonstrating savings from lowered disability subsequent to psychotherapy are unattainable. One can, however, arrive at the conclusion, from data that we do have, that efficacious psychotherapy for children and adolescents leads to both reduced medical visits (Finney, Riley, & Cataldo, 1991), better control of chronic illness (Moran, Fonagy, Kurtz, Bolton, & Brook, 1991), and reductions in arrests, institutionalizations, and social service support for patients with ADHD—all of which incur significant societal costs (Satterfield, Satterfield, & Schell, 1987; Weiss & Hechtman, 1986). Four meta-analyses of more than 200 separate studies of psychotherapy for children and adolescents demonstrate the effectiveness of a variety of psychotherapeutic interventions in which the treated patients improved more than three-fourths of the untreated group (Casey & Berman, 1985; Kazdin, Bass, Ayers, & Rodgers, 1990; Weisz & Weiss, 1993; Weisz, Weiss, Alicke, & Klotz, 1987).

Psychotherapy increases the effectiveness of psychotropic medication for children with ADHD (Jensen et al., 2005) and for adolescents with depression (March et al., 2007). Heinicke and Ramsey-Klee (1986) found that for 7- to 10-year-old children with learning disorders, greater improvement was provided by four times per week psychodynamic psychotherapy than one time per week, and furthermore, that the improvement was sustained at one-year follow-up. Intensive psychoanalytic psychotherapy is also helpful for children and adolescents in regulating brittle diabetes (Moran et al., 1991).

In a large study at the Anna Freud Center in London (Fonagy & Target, 1994; Target & Fonagy, 1994a, 1994b) the charts of 763 children were reviewed to investigate the impact of intensive versus non-intensive psychotherapy for children with different disorders, including children with disruptive disorders. Severely impaired children did better with intensive treatment (three to five sessions per week) and did not respond well to less frequent psychotherapy. Increased intensity of treatment was significantly related to improvement in children under age 12, and while those older than 12 did equally well with intensive or non-intensive treatment, a longer duration of treatment was positively related to better outcome for this age group.

CONCLUSION

In summary, while the efficacy of psychotherapy has been amply demonstrated by many research publications (Levy, Ehrenthan, Yeomans, & Caligor, 2014, this issue) cost considerations are increasingly dominant in all areas of medical care. Policy is increasingly driven by financial considerations including measures of cost-effectiveness and cost-offset, possibly in no area of medicine more than in the provision of treatment for psychiatric patients. Cost-effectiveness signifies the value society is willing to place on a treatment proven to be effective. The costs and effects of an intervention can be expressed as a ratio of its incremental cost to its incremental effect for comparison with the incremental cost/effectiveness ratios of other interventions. Many of the studies summarized here demonstrate cost-effectiveness for the conditions studied. Cost-offset, signifying savings in other medical costs and other budgets, as a result of an effective treatment, can often also be demonstrated by the provision of psychotherapy for a number of conditions. However, the standard of cost-offset as a requirement for provision of an effective and cost-effective treatment is clearly a double standard not employed in the rest of medical care. In other words, one can hardly imagine withholding other effective and urgently required

medical or surgical care only if savings can be demonstrated in overall healthcare or other budgets by virtue of providing it.

Despite passage of the MHPAEA, insurers have continued to apply discriminatory protocols to avoid reimbursement at parity for mental health care. These practices include the use of their own substandard, overly restrictive medical necessity guidelines not recognized by mental health providers or their specialty organizations while otherwise adhering to accepted medical guidelines for other health care services. In addition, insurers of mental health benefits often demand “fail-first” protocols requiring attempts at lower levels of care than clinical situations demand, proof of treatment failures with lower levels of care, and frequent, ongoing evidence of imminent danger of serious regression and threat to life as requirements for continuing insurance coverage. In addition, insurers frequently employ algorithms that illegally impose quantitative limits on mental health services in a manner not employed with other health services. It is hard to imagine how such inhumane protocols are consistent with the ACA’s “essential” benefit mandate which requires the provision of mental health services or would be comparably applied and tolerated in the context of other medical care. While these discriminatory protocols apply throughout the continuum of mental health services, they most consistently target psychotherapy and residential treatment—modalities that are often long term and intensive in the care of complex or chronic psychopathology (Bendat, 2014, this issue).

This review of the psychotherapy research literature yields support for many different kinds of psychotherapy of varying lengths and intensity for the major psychiatric diagnoses. For those who need more to achieve recovery, research indicates that a policy of arbitrarily limiting psychotherapeutic services results in increased costs in medical services, disability, morbidity, and mortality. Nonetheless, the current insurance establishment has reacted with disregard for the cost-effectiveness of providing greater access to and reimbursement for psychotherapy, particularly for psychiatric patients with chronic and complex illnesses who often need a more intensive and extended benefit than insurers are willing to support. In addition to patients with chronic and severe anxiety, depression, and comorbid conditions with more than one chronic mental condition, this group of patients includes those with personality disorders, constituting 10% of the population, or 30 million Americans.

We face the serious danger, now often a reality, of underserving the population most in need because of the influence of economic special interests in shaping policies.

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