

Cost effectiveness of psychological services:
a summary review of the literature

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Introduction

The following is a summary reporting of well designed studies in articles in peer reviewed journals (only one is a book chapter) which address the cost effectiveness of psychological interventions. Throughout the paper, we have kept in mind the proposed readership: intelligent readers who are probably not professional psychologists but who are interested in the relationship between psychological services, outcomes, and cost.

A range of methods and situations is discussed, such as hospital care, family practice, and outpatient psychotherapy. For the most part we have simply quoted the Abstracts, but we have done some minor editing for clarity and syntax as well. In some cases, we went back into the original articles, clarified for ourselves the point that we felt was unclear in the published Abstract, and then rewrote the point more clearly. On a few occasions we added something from the original paper that was not in the Abstract but which we thought was important information.

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We also sometimes deleted details in the Abstracts that seemed unnecessary for current purposes. It seems to us unnecessarily burdensome and obsessive to open and close quotations throughout this summary when almost all of what follows is quoted and the references are presented. We trust that the reader will not take this narrative streamlining as academic laziness. The conclusion is that there is a significant history and body of research supporting both the mental health and general health benefits and the cost effectiveness and cost offset of psychological services.

The studies are presented roughly in reverse historical order and from general studies to a few specific areas of focus.

The cost benefit studies

In their article, "[The medical offset effect: patterns in outpatient services reduction for high utilizers of health care](#)," Crane et al (2008) investigated the claim that psychosocial intervention is correlated with subsequent reductions in health care use. Studies generally measure this offset effect by combining medical use categories into one outcome variable, such as outpatient doctor visits. However, using a general outcome variable may obscure more specific patterns of reduction. In an effort to identify potential targets for mental health intervention, outpatient care for health screening, illness visits, laboratory/X-ray, and urgent care were considered by the authors. Health care use reductions were found to be most prominent for high utilizers and were found across a number of different types of outpatient care. With high utilizers, those who participated in therapeutic services showed significant reductions of 68% for health screening visits, 38% for illness visits, 56% for laboratory/X-ray visits, and 78% for urgent care visits.

In their article, "[The economics of behavioral health services in medical settings: a summary of the evidence](#)," Blount et al (2007) reviewed the evidence in support of the argument that many forms of behavioral health services, particularly when delivered as part of primary medical care, can be central to a large scale improvement of the health care system. They argue that the health care system in the United States, plagued by spiraling costs, unequal access, and uneven quality, can find its best chance of improving the health of the population through the improvement of behavioral health services. Blount et al argue that it is in this area that the largest

potential payoff in reduction of morbidity and mortality and increased cost-effectiveness of care can be found.

In Chiles et al's (2006) article, "[The Impact of Psychological Interventions on Medical Cost Offset: A Meta-analytic Review](#)," the impact of psychological interventions on the use of medical services was evaluated by examining the outcome of 91 studies published between 1967 and 1997 using meta-analytic techniques and percentage estimates. Psychological treatments included various forms of psychotherapy, behavioral medicine, and psychiatric consultation. Patients included those undergoing medical procedures such as surgery, patients with a history of over-utilization, and patients being treated only for psychological disorders including substance abuse. Results provided evidence for a medical cost-offset effect, specifically in the domain of behavioral medicine. Average savings resulting from implementing psychological interventions was estimated to be about 20%. About one third of the articles demonstrated that dollar savings continued to be substantial even when the cost of providing the psychological intervention was subtracted from the savings. The role of moderating variables such as patient age and type of problem was analyzed and discussed.

In the article "[Cost offset: past, present, and future](#)," Levant et al (2006) reviewed the literature on cost offset effects of psychotherapeutic services, discussed the policy implications, and considered its application to the public sector. They proposed the integration of psychological health care into the general health care system and suggested paying systematic attention to psychological factors in order to reduce overuse of medical services and thereby decrease costs. The authors provided and reviewed data demonstrating that, though the cost-offset hypothesis is quite robust, little has been done to implement integrated health care.

In the article, "[Medical utilization and treatment outcome in mid- and long-term outpatient psychotherapy](#)," Kraft et al (2006) investigated changes in medical health care costs and hospital days in the course of mid- and long-term psychotherapy in relation to psychological and somatic outcomes of the psychotherapeutic treatment. In this prospective, naturalistic longitudinal study, medical costs and number of hospital days over a 4-year period were determined for 176 participants on the basis of insurance claims files. With regards to somatic

distress, psychotherapeutic treatment outcome had a significant impact on the reduction of medical costs beyond a strong influence of pre-treatment medical costs. Medical cost reduction was noted across the age range (17-71 years).

In Bower et al's (2003) article "[The clinical effectiveness of counseling in primary care: a systematic review and meta-analysis](#)," the authors assessed the current evidence-base for counseling services in the management of common mental disorders (such as anxiety and depression) in comparison with usual general practitioner care and antidepressant treatment. A systematic literature review located seven trials of relevance.... The main analyses showed significantly greater clinical effectiveness of counseling compared with usual general practitioner care, and sensitivity analyses were undertaken to test the robustness of the results. The authors conclude that counseling is associated with modest improvement in short-term outcome compared with usual general practitioner care, and thus may be a useful addition to mental health services in primary care.

In his article, "[Cost effectiveness and medical cost-offset considerations in psychological service provision](#)," Hunsley (2003) suggests that empirical evidence has demonstrated that psychological interventions can effectively treat a wide range of child and adult health problems. The focus of his review was on cost issues associated with psychological interventions, including cost-effectiveness and cost offset, which he defines as a reduction in health care costs attributable to effective intervention. Recent evidence has demonstrated that psychological interventions can be more cost-effective than optimal drug treatment. For example, although having comparable effectiveness, cognitive-behavioral treatments for panic disorder and for depression have been estimated to cost approximately one-third less than pharmacological treatment, without many of the deleterious side effects. Further, a recent meta-analysis of 91 research studies published between 1967 and 1997 found that average health care cost savings due to psychological intervention were in the range of 20-30% across studies, and 90% of the studies reported evidence of a medical cost offset. Hunsley concludes that the evidence indicates that psychological treatments can be cost-effective forms of treatment and have the potential to

reduce health care costs, as successfully treated patients typically reduce their utilization of other health care services.

In this Canadian study, “[Impact of psychotherapy: does it affect frequency of visits to family physicians?](#)” Golden (1997) sought to investigate whether a course of [short term] psychotherapy with a psychologist affected the frequency of patients’ visits to their family doctors. The study utilized retrospective analysis of 33 patients’ medical records to determine the frequency of visits to their family doctors in the 6 months before psychotherapy, during therapy, and in the 6 months after therapy at a teaching family medical centre in London, Ontario. The median length of psychotherapy was 12.5 1-hour sessions, and the therapeutic approach was eclectic and humanistic. The study found that the frequency of visits to family doctors decreased both during and after psychotherapy, with an especially apparent decrease from before therapy to after therapy, of 49%. The authors conclude that the findings support the pattern of the “offset effect,” a reduction in medical use following psychotherapy, which has been demonstrated in other medical settings, and more generally, that psychotherapy can be an effective and efficient part of total medical care for patients with complex psychological problems.

The studies and findings described above in fact have a distinguished history. For instance, nearly thirty years ago Yates (1984), in “[How psychology can improve effectiveness and reduce costs of health services,](#)” found that psychological services can be used to prevent heart disease, cancer, accidents and violence, and respiratory disease through programs such as those designed to eliminate smoking, control obesity, reduce stress, and intervene when multiple risk factors are present. Yates provided evidence that psychological techniques are useful and cost-saving companions to traditional medical treatments, which increase checkup visits and participation in health screening, improve adherence to medication schedules, aid recovery from surgery, and facilitate outpatient medical service delivery. Since an estimated 40–60% of physician visits are for non-medical reasons that are psychological and behavioral in nature, psychologists can reduce medical care over-utilization and unnecessary medical expenditures by offering less costly and more appropriate alternatives. Psychological interventions for health disorders include treatment for pain, asthma attacks not responsive to medical treatment, heart

rate variability, gastrointestinal problems, skin disorders, and self-destructive behaviors. Yates concluded that psychological procedures offer a means of reducing health care expenditures significantly and reliably.

The following articles discuss studies with a narrower focus, such as specific populations or contexts.

In “[Cost-effectiveness of preventing depression in primary care patients](#),” Smit et al (2006) studied the cost-effectiveness of medical care as usual plus psychotherapy relative to usual medical care alone in preventing depressive disorder. An economic evaluation was conducted alongside a randomized clinical trial in which primary care patients with sub-threshold depression were assigned to psychotherapy plus usual care (n=107) or to usual care alone (n=109). Primary care patients with sub-threshold depression benefited from psychotherapy, as it reduced the risk of developing a full-blown depressive disorder by 33%. In addition, this intervention had a 70% probability of being more cost-effective than usual care alone. A sensitivity analysis indicated the robustness of these results. The authors concluded that over one year, adjunctive psychotherapy improved outcomes and generated lower costs, and that this intervention is therefore superior to usual care alone in terms of cost-effectiveness.

People with personality disorders are notoriously difficult to treat, so there are sometimes pressures to regard them as untreatable and to refuse payments for treatment. This is despite the fact that most people with personality disorders have high comorbidity rates with Axis 1 mental disorders, such as anxiety, depression, psychosomatic symptoms, addictions, and other behavioral disorders. Hence this article is of special interest. Chiesa et al (2002), in their article “[Health service use costs by personality disorder following specialist and non-specialist treatment](#),” compared patterns of health service costs by three groups of people with personality disorder treated in a hospital-based program (IPP), a step down program (SDP), and a general psychiatric program (GPP). Total service use costs at follow up, compared with intake costs, showed that significantly higher savings were achieved by SDP and IIP compared with GPP. Cost reductions in SDP were significantly greater than in IPP. Significant cost reductions were found between treatment programs in social worker and community psychiatric nursing and

psychotherapy. The cost-effectiveness of the two specialist treatment programs was indicated by the significant association between total cost reduction and clinical outcome in GPP and IPP, but not in GPP. The effect of Major Depression and Borderline Personality Disorder on health service use alone and in combination was also investigated. The authors concluded that treatment of personality disorders by behavioral health specialists contributes to reduction in overall healthcare costs.

In Gabbard et al's 1997 article "[The economic impact of psychotherapy: a review](#)," the authors reviewed the MEDLINE database limited to peer reviewed articles from 1984 through 1994, covering 35 studies. The interventions were psychotherapeutic and outcome measures included implications for cost. Two reviewers independently read each study to identify the following characteristics: inclusion criteria, exclusion criteria, types of interventions, main outcome variables, sample size, and statistical tests for significant differences between treatments. Outcomes had to include actual cost accounting or data on medical care utilization or work functioning. The findings of the studies suggest that psychotherapy reduces total costs. Psychotherapy appears to have a beneficial impact on a variety of costs when used in the treatment of the most severe psychiatric disorders, including schizophrenia, bipolar affective disorder, and borderline personality disorder. Much of that impact accrues from reductions in inpatient treatment and decreases in work impairment.

In Bares et al's (2002) article "[An exercise in cost-effectiveness analysis: Treating emotional distress in melanoma patients](#)," the authors examined a psychological intervention for its potential cost-effectiveness when implemented into standard medical care. They discussed the cost of instituting a psychological intervention for distressed melanoma patients, the effectiveness of that intervention for reducing distress when compared with a standard care group, and the costs of providing the treatment as compared to costs of physician time to answer distress-driven questions as part of standard care. Although the per-minute cost of providing the psychological intervention was marginally greater than standard care, providing the intervention was significantly more effective in terms of distress reduction. Inclusion of 60% payer reimbursement rates for the intervention further suggested that incorporating a psychological

intervention into standard medical care for melanoma patients would potentially generate revenue, offsetting the costs of providing more effective services.

Indirect benefits

In addition to these direct cost-offset effects, a sizable body of evidence supports the view that the benefits of psychological interventions extend beyond the individual recipient of those services, positively impacting the functioning of other family members--most significantly their children and spouses--and lowering their overall healthcare costs as well. Four such studies will be summarized below.

Byrne et al's (2006) study [Changes in Children's Behavior and Costs for Service Use Associated With Parents' Response to Treatment for Dysthymia](#) examined differences in children's behavior and expenditures for health and social services used when their parents with dysthymia (a mild, long-standing depression) did or did not respond to medical antidepressant treatment. Children aged 4 to 16 years whose dysthymic parents did and did not respond to treatment were compared at baseline and 24 months. The responder was a parent with at least a 40% reduction in his or her baseline depressive symptoms using the Montgomery Asberg Depression Rating Scale. Children's behavior was measured using the Child Behavior Checklist, and expenditures for health and social services use was measured. Children of parents with dysthymia who responded to treatment had significantly greater reductions in emotional symptoms at 2-year follow-up than children of non-responders, along with an economically important reduction in expenditures for health and social services use. The authors conclude that reductions in parental symptoms of dysthymia are likely associated with reductions in childhood behavioral problems and in expenditures for the child's use of services. We would add that the point of this study is that even a moderately successful treatment for dysthymia, whether with antidepressants or psychological treatments, would have such ripple effects.

Gunlicks et al (2008), in their paper, [Change in Child Psychopathology With Improvement in Parental Depression: A Systematic Review](#), systematically reviewed current research evidence of associations between improvement in parents' depression and their children's psychopathology. They found that studies varied considerably in sample, treatment,

assessment, and analysis. They conclude that there is “some evidence” of associations between successful treatment of parents’ depression and improvement in children’s symptoms and functioning.

In their article [Therapeutic Changes in Children, Parents, and Families Resulting From Treatment of Children With Conduct Problems](#), Kazdin et al (2002) examined changes in child, parent, and family functioning over the course of child therapy among children who completed outpatient treatment. 250 children, aged 2-14 years and referred for oppositional, aggressive, and antisocial behavior received variations of cognitive-behavioral treatments. The outcomes were evaluated by changes in the children (multiple symptom domains), parents (symptoms, stress), and family (relationships, family functioning, support, marital satisfaction). Over the course of therapy, child, parent, and family functioning improved significantly. The magnitude of these changes indicated large improvements for child outcome measures and smaller but significant improvements for parent and family outcome measures. Improvements in children, parents, and family measures were significantly and moderately correlated. The authors conclude that the benefits of child therapy extended to parent and family functioning, even though these were not focused on directly in the children’s treatment. The broad changes have significant implications for evaluating the effectiveness of treatment and the benefits and costs of delivering services to children.

The systemic nature of psychological distress and the mental health impact of treatment is clearly demonstrated in this study. In [Remission of Depression in Parents: Links to Healthy Functioning in Their Children](#), Garber et al (2002) examined whether improvement in parents’ depression was linked with changes in their children’s depressive symptoms and functioning. Participants were 223 parents and children ranging in age from 7 to 17 years old; 126 parents were in treatment for depression and 97 parents were non-depressed. Children were evaluated 6 times over 2 years. Changes in parents’ depressive symptoms predicted changes in children’s depressive symptoms over and above the effect of time; children’s symptoms significantly predicted parents’ symptoms. Trajectories of children’s depressive symptoms differed significantly for children of remitted versus non-remitted depressed parents, and these differences were significantly predicted by their parents’ level of depression.

On psychodynamic psychological treatments

We are aware that psychoanalytic (also known as psychodynamic) therapy has been disparaged in the popular press and culture as being “Freudian,” too long term, of doubtful empirical support, and expensive. This is despite the fact that 1) psychodynamic treatment bears little resemblance to popular fantasy, 2) that many psychotherapists in the field (rather than in University research settings) practice in that tradition or draw significantly from it even when practicing within a different model of psychological care, and 3) that psychotherapists of all persuasions tend to go to psychodynamic practitioners when they themselves are in distress (Norcross, 2005: 855). We think it appropriate to draw attention to the following studies as well.

In Berghout et al’s (2010) article “[The effects of long-term psychoanalytic treatment on healthcare utilization and work impairment and their associated costs](#),” the authors argue that, despite the common perception that long-term psychoanalytic treatment is an expensive treatment for mental illnesses, there are indications that psychoanalytic treatment can result in cost savings in the long term. In this study, Berghout et al investigated the effects of long-term psychoanalytic treatment on healthcare utilization and work impairment and calculated the associated societal costs. Healthcare utilization and work impairment of patients were examined before, during, and after long-term psychoanalytic treatment out of a sample of 231 patients, with results showing that the difference in total costs associated with healthcare utilization and work impairment between pre- and post-treatment was \$3,070 per person per year. Two years after treatment termination, these cost savings had increased to \$4,563 per person per year. This indicates that decreased consumption of medical care and higher work productivity can be expected right after psychoanalytic treatment, but also that long-term psychoanalytic treatment can generate economical benefits in the long run.

Jonathan Shedler’s (2010) review of the literature found that effect sizes for psychodynamic psychotherapy are as large as those reported for other therapies that have been actively promoted as “empirically supported” and “evidence based.” The perception that psychodynamic approaches lack empirical support does not accord with available scientific evidence. Patients who receive psychodynamic therapy maintain therapeutic gains and appear to

continue to improve after treatment ends. Finally, Shedler discusses studies (eg., Ablon & Jones, 1998) which suggest that non-psychodynamic therapies may be effective in part because the more skilled practitioners utilize techniques that have long been central to psychodynamic theory and practice.

In a major retrospective long term (7-year) follow-up study out of Germany, "[Assessing the impact of psychoanalyses and long-term psychoanalytic therapies on health care utilization and costs](#)," Beutel et al (2004) assessed work loss and hospitalization days before, during, and after psychoanalytic treatments based on 255 patients' self-reports and 71 health insurance records. (47 cases covered the entire timespan.) They also determined the correlation between patients' ratings and health insurance data. Health insurance records showed evidence of a lasting and remarkably stable reduction in work absenteeism and a low level of inpatient treatments. These reductions were relative not only to the relevant psychiatric and psychological populations but were significant relative to the average population as well. These trends contrasted favorably with the age-related increase in sick leave among the general population. Patients' self-reports reflected the general trend of the health insurance data, and based on health insurance records, even disregarding other illness-related costs, considerable savings accrued over the 7-year follow-up period in terms of reduced absenteeism from work.

A final study, which appeared in a book rather than a journal, is also noteworthy here as support for the previous study cited. This study (Keller et al, 2002), also out of Germany, did a six year followup of 111 patients who had had three years of analytic treatment, found that over 70% reported and measured good to very good improvements in physical or psychological distress, general well being, and job performance, among other measures. Interestingly, they also had fewer days of sick leave, fewer hospital visits and lower medication costs than the general population as recorded by the insurance industry.

Conclusion

The above sample of a large body of research shows the benefits of psychological services across a variety of settings, from hospital to family practice to outpatient practice, and across a wide range of psychological and psychiatric difficulties, including severe mental illness,

depression, anxiety, and the difficult-to-treat personality disorders. The benefits are not only to the individuals directly concerned and to those who care for them or depend on them. The benefits are also evident in significant cost reductions and savings with regard to hospitalizations, usual treatment through family practice, medication expenditures, medication compliance, and work absenteeism. In sum, those beneficiaries who use psychological services, as well as their non-treated family members, tend to cost significantly less to the system than those who do not. They also feel and function a lot better.

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