COST-EFFECTIVENESS OF FAMILY-BASED SUBSTANCE ABUSE TREATMENT

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In order to compete in a financially sensitive health care system, family systems–based treatments must demonstrate effective clinical results as well as cost-effectiveness. Cost-effectiveness research can demonstrate to health care insurers and policy makers which treatments are viable options for implementation. The present literature review identified eight cost-effectiveness family-based substance abuse treatment studies. The results suggest that certain family-based treatments are cost-effective and warrant consideration for inclusion in health care delivery systems.

The prevalence of substance abuse in the United States is alarming. In 2004, 19.1 million Americans (7.9% of the population) reported current drug use, and almost half (50.3%) of Americans 12 years old and older reported current alcohol use. Of the alcohol users, 22.8% were binge drinkers (five or more drinks during one occasion in the past 30 days) and 6.9% were heavy drinkers (five or more drinks during five different occasions in the past 30 days). These numbers were similar to 2002 and 2003 findings. In 2004, a staggering 22.5 million Americans (9.4% of the population) aged 12 and older were classified with substance abuse or dependence disorders (Substance Abuse and Mental Health Services Administration, 2005). The financial impact of alcohol abuse on society includes increased health care, crime, and accident costs (Simon, Patel, & Sleed, 2005). These costs in the United States rose from $148 billion in 1992 (Simon et al., 2005) to $185 billion in 2000 (Office of National Drug Control Policy [ONDCP], 2004). In addition, the costs of drug abuse to society have risen annually 5.9% since 1992, and in 2002 reached an estimated $180.8 billion (ONDCP, 2004). Given these sobering statistics, it is no wonder that policy makers, researchers, and treatment providers have been searching for methods to diminish the negative impact of substance abuse on individuals, families, and society as a whole.

EFFECTIVENESS OF SUBSTANCE ABUSE TREATMENT

During the past two centuries, the treatment of substance abuse—namely alcohol abuse—has evolved from encouraging temperance to espousing abstinence (White, 1998). The abstinence-based approach has further led to the "harm reduction" emphasis, which influences treatment today by focusing on reducing negative consequences of substance use on society, individuals, and families. Morris (as cited in Inaba & Cohen, 2000) noted that managed care systems and health care insurers gained interest in this type of treatment because it is an economical way to treat substance abusers.

Family therapy impacts not only substance-abusing individuals, but health care insurers and families as well, because of its increased effectiveness over individual treatment, family psychoeducation, and peer group therapy (Stanton & Shadish, 1997). The inclusion of families in substance abuse treatment is crucial because of potential positive systemic effects. When a client's system (i.e., his or her family, siblings, spouse/partner, etc.) is treated, it becomes healthier, and the client then has a stronger support network to aid him or her in the recovery process.

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During the last decade, research on treatment effectiveness has often posed the simple question, “Does this treatment work?” A treatment’s effectiveness examines the achieved clinical outcomes in comparison with desired or possible clinical outcomes. Put simply, a treatment producing a client at a 1-year follow-up reporting less usage of illicit drugs or alcohol is considered effective, while a treatment producing a client who reports no change in use during that same year is not considered effective.

**Effectiveness of Family-Based Substance Abuse Treatments**

Stanton, Todd, and Associates (1982), in the first outcome study on family-based substance abuse treatments, found a decrease in heroin use for addicts who received 10 structural-strategic family therapy sessions. Since then, the effectiveness of family-based treatments has been and is continuing to be established (Stanton & Shadish, 1997). Edwards and Steinglass (1995) conducted a meta-review of family-based treatments and examined three stages of treatment: engagement into treatment, treatment, and aftercare. They concluded that family-based treatment was effective for motivating alcoholics to enter treatment and moderately more effective than an individual-based approach during treatment, and that family-based relapse prevention approaches were more effective than an individual-based approach.

Rowe and Liddle (2002), in a similar vein, reviewed the efficacy of both adolescent and adult drug abuse treatment. Intensive family-based treatments more effectively engaged and retained adolescents and their families compared with standard engagement/treatment procedures. They were also efficacious in reducing adolescent drug use at 1-year follow-ups. Adult studies have shown promise for engaging drug abusers into treatment. Specifically, behavioral couple’s therapy yielded positive effects on clients’ drug use, compliance with medication, relationship adjustment, and children’s functioning. In treating alcohol abuse, behavioral marital therapy demonstrated effectiveness (Finney & Monahan, 1996; Holder, Longabaugh, Miller, & Rubonis, 1991), as well as Multisystemic Therapy, Multidimensional Therapy, Brief Strategic Family Therapy, Functional Family Therapy, and Family Behavior Therapy for adolescents (Austin, Macgowan, & Wagner, 2005).

Although a small number of studies show mixed results for family-based treatment’s effects on drug-abusing clients (e.g., Friedman, 1989; Stanton, Steier, Cook, & Todd, 1984; Ziegler-Driscoll, 1977), there is no question that substance abuse treatment is effective (Hubbard & French, 1991; Rowe & Liddle, 2002; Stanton & Shadish, 1997) and that certain family-based treatments are effective (O’Farrell & Fals-Stewart, 2003). But are family-based treatments cost-effective? And how do these costs influence treatment dissemination in a health care system?

**COSTS OF TREATMENT**

**Health Care**

In 1992, health care costs were rising annually at about 11–12% (Weissenstien, 1993) and have recently been reported to be rising at the same rate (Hillin & Hillin, 2006). Medicaid, for example, reported an annual increase of 9.4% from 1991 to 2001 in spending on mental health services (Mark & Buck, 2005). With state revenues only increasing at an average annual rate of 4–5%, this poses a problem (Hillin & Hillin, 2006). Also, given the fact that the United States has the most expensive health care system per capita and ranks among the worst in health outcomes for industrial nations (Hillin & Hillin, 2006), reformations in approaches to health care are inevitable.

The total number of health care dollars spent on substance abuse treatment in the United States reached 18 billion in 2001, representing 1.3% of all health care spending (1,373 billion in 2001) and 17.6% of all mental health services spending (Mark et al., 2005). Crane (1995) proposed that in order to effectively limit rising health care costs, the focus should be on altering the causes behind the needs for services rendered. That is, a decrease in addictions severity and frequency will result in less health care utilization by this population. But given the recent trends of limiting services to substance abusers (Gardner, 1996), the most effective treatments in terms of outcome and cost are needed to ensure their timely and continual availability.
Cost-Effectiveness Solution

To compete in an increasingly financially sensitive health care system, successful clinical treatments must deliver the most clinical outcome per unit of cost. Whereas the costs of a treatment only take into account financial aspects, cost-effectiveness demonstrates the costs of a treatment given the effectiveness of its clinical outcomes. This type of analysis is a method for determining between alternative treatments producing a common effect (Mackinnon, 2005). For example, if treatment A costs $80/session and is twice as effective, or produces twice the clinical outcomes as treatment B, which costs $40/session, then they are equally cost-effective (see Table 1). Whether one treatment costs more than another does not necessarily reflect its cost-effectiveness. Therefore, to compete as a viable and insurable treatment, a more expensive treatment will have to be more effective than a less expensive one.

Certain issues potentially complicate cost-effectiveness computations, including adding multiple clinical outcomes (see Sindelar, Jofre-Bonet, French, & McLellan, 2004), including a variety of costs, and clients who do not achieve the measured outcome. The latter can significantly reduce cost-effectiveness because the total cost of treatment is divided only by the number of clients who achieve the clinical outcome. For example, if a given number of clients receive treatment A and only 10 achieve abstinence at the 1-year follow-up, the total cost for treating the given number of clients would be divided by 10, which yields a monetary cost-effectiveness number for producing one abstinent client. Table 2 illustrates an example. Treatment B, in this example, yields similar costs for the same number of clients but produces two more abstinent clients than treatment A, making treatment B the more cost-effective option. Cost-effectiveness improves with each additional abstinent client. (For a more in-depth explanation of cost-effectiveness analysis, see Fals-Stewart, Yates, & Klosterman, 2005; Mackinnon, 2005; Pike-Urlacher, Mackinnon, & Piercy, 1996; and Yates, 1994.)

Cost-Effectiveness Petition to Researchers

As researchers and clinicians strive to establish the effectiveness of family-based treatment, it is also imperative to examine which treatments are the most cost-effective. Recently there has

### Table 1

**Cost-Effectiveness Example**

<table>
<thead>
<tr>
<th># of sessions</th>
<th>Cost</th>
<th># of abstinent clients&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Cost per abstinent client&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 10</td>
<td>$80/session</td>
<td>2</td>
<td>$400</td>
</tr>
<tr>
<td>B 10</td>
<td>$40/session</td>
<td>1</td>
<td>$400</td>
</tr>
</tbody>
</table>

<sup>a</sup>Effectiveness. <sup>b</sup>Cost-effectiveness.

### Table 2

**Cost-Effectiveness With Clinical Outcome Considerations**

<table>
<thead>
<tr>
<th>Total cost of all clients</th>
<th># of abstinent clients</th>
<th>Cost per abstinent client</th>
</tr>
</thead>
<tbody>
<tr>
<td>A $5,000</td>
<td>10</td>
<td>$500.00</td>
</tr>
<tr>
<td>B $5,000</td>
<td>12</td>
<td>$416.66</td>
</tr>
</tbody>
</table>
been a push to conduct cost-effectiveness studies for substance abuse treatment (Liddle & Dakof, 1995).

A first (Holder et al., 1991) and second (Finney & Monahan, 1996) approximation have been conducted on the cost-effectiveness of alcoholism treatment for both non-family-based and family-based treatments. Treatment costs and effectiveness outcomes were compared. Both Holder et al. and Finney and Monahan concluded that more expensive treatments do not necessarily produce greater effectiveness outcomes. Both studies also concluded that marital therapies were among the least costly and most effective treatments available at the time of the reviews. The two studies were nonexperimental literature reviews categorizing treatments according to costs and effectiveness.

Several non-family-based cost-effectiveness studies have been conducted, which include inpatient versus outpatient treatment (Mojtabai & Zivin, 2003; Pettinati et al., 1999; Shepard, Larson, & Hoffmann, 1999; Sindelar et al., 2004), HIV clients (Barnett, Zaric, & Brandeau, 2001; Zarkin, Lindrooth, Demiralp, & Wechsberg, 2001), methadone maintenance (Jofre-Bonet et al., 2004; Masson et al., 2004), prison-based treatment (Daley et al., 2004; McCollister, French, Prendergast, Hall, & Sacks, 2004; McCollister et al., 2003), and hospital settings treatment (Alterman et al., 1994; Kunz, French, & Bazzargan-Hejazi, 2004; Schinka, Francis, Hughes, LaLone, & Flynn, 1998). These studies failed to address family treatment issues as the main focus nor did they gather economic data from a family or systemic perspective. It is essential to include family members in treatment not only because of its demonstrated effectiveness (Stanton & Shadish, 1997), but also because of reductions in health care utilization (Crane, Hillin, & Jakubowski, 2005). For example, conduct disorder cases, which have a high comorbidity with substance abuse diagnoses (Grella, Joshi, & Hser, 2004), when treated with in-office family therapy resulted in a 32% reduction of Medicaid health care utilization (Crane et al., 2005). Family-based substance abuse treatment may well have the same effect.

In a review of the literature from 1972 to 1993, Edwards and Steinglass (1995) found no family-based alcohol abuse treatment cost-effectiveness studies. Furthermore, prior to 1996 there were no cost-effectiveness studies for adolescent substance abuse treatment (Rowe & Liddle, 2002). Several researchers have called for economic evaluations of family-based treatments (Leitch, 1993; Pinsof & Wynne, 1995a, 1995b; Sprenkle & Bailey, 1995; Steinglass, 1996). In 1995, Liddle and Dakof issued a call to advance the family-based treatment literature database beyond showing “promising” treatments and outcomes (Liddle and Dakof, 1995, p. 526), specifically requesting cost-effectiveness studies. A number of researchers have answered this call.

**Family-Based Treatment Studies**

The eight family-based substance abuse treatment cost-effectiveness studies found to date are presented in Table 3, and corresponding acronyms to treatments in Table 4. These are the only known studies addressing family-based treatment directly. Other studies, not presented here, only included family therapy as an un-emphasized component of treatment, if at all.

First, Fals-Stewart, Klosterman, Yates, O’Farrell, and Birchler (2005) examined the cost-effectiveness of brief relationship therapy (BRT), a shortened version of standard behavioral couples therapy (S-BCT), and S-BCT itself at an outpatient treatment center. They hypothesize that given the restriction on the number of sessions, these relationship treatments could be more easily integrated into health care plans.

The study’s sample consisted of 100 couples married for at least 1 year or cohabiting in a stable relationship for at least 2 years, and was drawn from an outpatient clinic in which the male partner was entering alcohol treatment. A research assistant interviewed couples at baseline, completion of treatment, and every 3 months for 1 year posttreatment. During these interviews, couples completed the Timeline Followback Interview, in which the male reported how many “heavy” drinking days (six or more drinks in a day) he had since the last interview, and the couple completed the Dyadic Adjustment Scale (DAS), which measures global relationship satisfaction. Costs of treatment were computed following an outline given by Yates (1999). The study included four treatment types. First, BRT consisted of six behavioral conjoint sessions, where both the male and female were active participants, and 12 sessions of 12-step-oriented group counseling, which the male attended alone. Second, S-BCT consisted of 12 conjoint...
sessions in which both the male and female were active participants, and 12 sessions of 12-step-oriented group counseling attended by the male alone. Third, individual-based treatment (IBT) consisted of six individual and 12 group 12-step-oriented sessions. Fourth, psychoeducational attention control treatment (PACT) consisted of 12 group sessions using 12-step-oriented treatment and six lectures on alcoholism, held every other week and attended by both partners. Each treatment type consisted of 25 couples.

The least expensive treatment, per client, was IBT ($840.21), then PACT ($884.34), BRT ($896.71), and S-BCT ($1,294.24). Pairwise comparisons revealed that BRT was significantly

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Cost-Effectiveness of Family-Based Substance Abuse Treatment</th>
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<tbody>
<tr>
<td>Treatment</td>
<td>Outcome measured</td>
</tr>
<tr>
<td>Fals-Stewart, Klosterman, et al., 2005</td>
<td>BRT</td>
</tr>
<tr>
<td></td>
<td>S-BCT</td>
</tr>
<tr>
<td></td>
<td>IBT</td>
</tr>
<tr>
<td></td>
<td>PACT</td>
</tr>
<tr>
<td>Dennis et al., 2004</td>
<td>ACRA</td>
</tr>
<tr>
<td></td>
<td>MDFT</td>
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<td></td>
<td>FSN</td>
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<tr>
<td></td>
<td>MET/CBT5</td>
</tr>
<tr>
<td></td>
<td>MET/CBT12</td>
</tr>
<tr>
<td>Fals-Stewart et al., 1997</td>
<td>BCT</td>
</tr>
<tr>
<td></td>
<td>IBT</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>O’Farrell, Choquette, Cutter, Brown, et al., 1996</td>
<td>BMT/RP</td>
</tr>
<tr>
<td></td>
<td>BMT-A</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>O’Farrell, Choquette, Cutter, Floyd, et al., 1996</td>
<td>BMT-B</td>
</tr>
<tr>
<td></td>
<td>INT</td>
</tr>
<tr>
<td></td>
<td>IND</td>
</tr>
<tr>
<td>Schoenwald et al., 1996</td>
<td>MST</td>
</tr>
<tr>
<td></td>
<td>US</td>
</tr>
<tr>
<td>Holder et al., 1991</td>
<td>BMT-C</td>
</tr>
<tr>
<td></td>
<td>OMT</td>
</tr>
<tr>
<td>Finney &amp; Monahan, 1996</td>
<td>BMT-C</td>
</tr>
<tr>
<td></td>
<td>OMT</td>
</tr>
</tbody>
</table>

^aCost per indicated client in treatment, not the cost-effectiveness of the treatment.
less costly than S-BCT but not IBT and PACT. Cost-effectiveness was computed as a ratio of units of outcome per $100 of cost. After clients completed the baseline and 1-year follow-up evaluations, their percentage of days of heavy drinking were analyzed for change. Changes were divided by the costs of treatment and reported in $100 units. Higher ratios represent a greater change from baseline to the 1-year follow-up. The most cost-effective treatment was BRT (4.61 ratio), then IBT (3.68), PACT (3.48), and S-BCT (3.30). These results were based on the change in the percentage of days of heavy drinking only, not the DAS scores. Fals-Stewart, Klosterman, et al. (2005) credit the lower cost of BRT for a higher cost-effectiveness ratio because both BRT and S-BCT produced similar drinking outcomes.

Second, Dennis et al. (2004) examined the cost-effectiveness of five short-term outpatient substance abuse treatments examined in the Cannabis Youth Treatment (CYT) project (primarily located in Bloomington, Illinois, and created by the Center for Substance Abuse Treatment). Costs were reported in French et al. (2002) and used by Dennis et al. for cost-effectiveness analysis purposes. The purpose of the CYT was to develop short-term models of outpatient treatment and to execute field trials evaluating the cost, effectiveness, and cost-effectiveness of those treatments. Conducting two trial runs at four different sites, researchers randomly assigned 600 adolescents, mainly 15–16 years old, to one of three treatments at each site. Trial 1 included Motivational Enhancement Treatment/Cognitive Behavior Therapy 5 Sessions (MET/CBT5), Motivational Enhancement Treatment/Cognitive Behavior Therapy 12 Sessions (MET/CBT12), or Family Support Network (FSN). Trial 2 included MET/CBT5, Adolescent Community Reinforcement Approach (ACRA), or Multidimensional Family Therapy (MDFT). Among the family-based treatments were FSN, ACRA, and MDFT.

The FSN treatment added to MET/CBT12 six parental education groups, aimed at improving knowledge and skills applicable to adolescent and family problems. The ACRA treatment included 10 adolescent individual sessions: four sessions with caregivers (the whole family attending two sessions) and 12–14 weeks of case management. The MDFT treatment included 12–15 sessions, three of which were with the parents, six with the whole family, and 12–14 weeks of case management.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Acronyms of Treatments</th>
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<tbody>
<tr>
<td>BRT – brief relationship therapy</td>
<td>S-BCT – standard behavioral couples therapy</td>
</tr>
<tr>
<td>IBT – individual-based therapy</td>
<td>PACT – Psychoeducational Attention Control Treatment</td>
</tr>
<tr>
<td>ACRA – Adolescent Community Reinforcement Approach</td>
<td>MDFT – Multidimensional Family Therapy</td>
</tr>
<tr>
<td>FSN – Family Support Network</td>
<td>MET/CBT5 – Motivational Enhancement Treatment/Cognitive Behavior Therapy 5 Sessions</td>
</tr>
<tr>
<td>MET/CBT12 – Motivational Enhancement Treatment/Cognitive Behavior Therapy 12 Sessions</td>
<td>BCT – behavioral couples therapy</td>
</tr>
<tr>
<td>BMT/RP – behavioral marital therapy-relapse prevention</td>
<td>BMT-A – behavioral marital therapy</td>
</tr>
<tr>
<td>BMT-B – behavioral marital therapy</td>
<td>INT – interactional group</td>
</tr>
<tr>
<td>IND – individual-based therapy</td>
<td>MDFT – Multidimensional Family Therapy</td>
</tr>
<tr>
<td>US – usual services</td>
<td>OMT – other marital therapy</td>
</tr>
<tr>
<td>FSN – Family Support Network</td>
<td>ACRA – Adolescent Community Reinforcement Approach</td>
</tr>
<tr>
<td>BMT-C – behavioral marital therapy</td>
<td>MDFT – Multidimensional Family Therapy</td>
</tr>
<tr>
<td>OMT – other marital therapy</td>
<td>BMT-C – behavioral marital therapy</td>
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</tbody>
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The Drug Abuse Treatment Cost Analysis Program (DATCAP; French, Dunlap, Zarkin, McGeeary, & McLellan, 1997) was the primary tool used to create cost estimates. DATCAP measures both accounting (i.e., direct costs of treatment, overhead) and opportunity costs (i.e., time and money lost because of a substance abuse–related work absence) associated with substance abuse treatment programs, and was used for the first time with adolescents in this study. The DATCAP is also used to collect and report costs from resources utilized in treatment delivery (French et al., 2002). Specifically, this measure accounts for program supplies and materials, personnel, contracted services, and equipment.

The two clinical outcomes in this study were (a) days of abstinence from the initial intake to the 12-month follow-up and (b) whether or not the adolescent was in recovery at the 12-month follow-up. Dennis et al. (2004) examined both the cost per day of abstinence during the 12-month follow-up period and the cost per person in recovery at the end of the follow-up period.

All five treatments showed significant improvements in clinical outcomes at the 12-month follow-up, but cost-effectiveness varied. Trial 1 MET/CTB5 ($4.91/day of abstinence) was more cost-effective than both MET/CTB12 ($6.15) and FSN ($15.13). In Trial 2, ACRA ($6.62/day of abstinence) was more cost-effective than both MET/CTB5 ($9.00) and MDFT ($10.38). Overall, MET/CTB5 was the most cost-effective treatment, with ACRA being the most cost-effective family-based treatment; however, researchers credit, in part, large discrepancies in site costs (the trials ran at four different sites) for the resulting cost-effectiveness differences between trials, for example, the higher cost-effectiveness of MET/CTB5 in Trial 2.

Third, Fals-Stewart, O'Farrell, and Birchler (1997) examined the cost-effectiveness of behavioral couple therapy (BCT) and individual-based treatment (IBT) of male substance abusers in an outpatient clinic. The 80 couples, randomly assigned to either BCT or IBT, included a male partner enrolled in a substance abuse treatment program, with a primary drug of choice other than alcohol. In the IBT treatment (N = 40) only the husband received two 60-min individual sessions and one 90-min group therapy session per week. Therapists used cognitive-behavioral therapy focusing on coping skills for abstinence. In the BCT treatment (N = 40) both husband and wife were involved. Every week for 12 weeks, husbands attended one 60-min individual session, one 90-min group therapy session, and one 60-min BCT session with their wives. The focus of BCT sessions was threefold: (a) reinforce the husband’s abstinence through increased communication and verbal contracts, (b) teach both husband and wife communication skills such as active listening and expressing feelings directly, and (c) increase positive behavior exchanges.

Fals-Stewart et al. (1997) measured effectiveness in units of the client’s primary substance use, the seven areas of functioning in the Addictions Severity Index (ASI), and a Time-Line-Follow-Back Interview. Within these parameters, they found BCT more cost-effective than IBT in (a) both increasing the number of days abstinent, and longer periods of continuous abstinence during 12-month follow-up, and (b) decreasing the severity of problems in legal, family, and social functioning areas. The mean percentage of days abstinent per $100 spent on treatment yielded a significant result for BCT (3.54) over IBT (2.88). Also, six out of the seven areas in the ASI favored BCT over IBT for cost-effectiveness. Furthermore, husbands in IBT incurred 2.5 times more substance abuse–related health care costs, 2.5 times more costs utilizing the criminal justice system, and 1.5 times more in illegal income and public assistance than BCT husbands.

Fourth, O’Farrell, Choquette, Cutter, Brown, et al. (1996) conducted a cost-effectiveness analysis of 59 couples with the husband enrolled in Counseling for Alcoholics’ Marriages in Massachusetts in an outpatient setting. After each couple completed weekly behavioral marital therapy (BMT-A) sessions for 5–6 months, they were randomly assigned to either participate in couples relapse prevention (BMT/RP) sessions for the next 12 months or not. Outcomes measured included the couples’ health, legal, and treatment costs; marital adjustment scores; and reductions in the husband’s alcohol consumption.

The total treatment cost per abstinent husband was $2,279 for BMT-A and $3,280 for BMT/RP, demonstrating BMT-A as more cost-effective. Even though BMT/RP was more effective in producing abstinent days at the 1-year follow-up, the lower cost of BMT-A produced its greater cost-effectiveness. When considering marital adjustment scores as the outcome measure of cost-effectiveness, both did equally well.
Fifth, O’Farrell, Choquette, Cutter, Floyd, et al. (1996) studied the cost-effectiveness of behavioral marital therapy (BMT) in addition to standard outpatient alcoholism treatment at a Veterans Affairs Medical Center. They examined three types of treatment: (a) 10-week BMT + individual counseling (BMT-B), (b) 10-week interactional couples group therapy + individual counseling (INT), and (c) individual alcohol counseling (IND) alone. Marital and drinking adjustment data were collected pre- and posttreatment and at 2-, 6-, 12-, 18-, and 24-month follow-ups.

Cost-effectiveness varied according to outcomes analyzed. When marital adjustment was the outcome measured, all three conditions were equally cost-effective. When abstinence was the outcome measured, IND ($1,350/abstinent client) was more cost-effective than BMT-B ($2,143), which was more cost-effective than INT ($3,580). However, results reported elsewhere (e.g., O’Farrell, Cutter, Choquette, Floyd, & Bayog, 1992; O’Farrell, Cutter, & Floyd, 1985) show that IND and BMT-B produce similar results when using abstinence as the outcome at a 2-year follow-up. Therefore, O’Farrell, Choquette, Cutter, Floyd, et al. (1996) argue that it is the lower cost of IND that produces its better cost-effectiveness, rather than its clinical effectiveness. Furthermore, because all three conditions were roughly equal in cost-effectiveness when considering marital adjustment, it was the lower cost of IND again that gave it these results (O’Farrell et al., 1985, 1992).

Sixth, Schoenwald, Ward, Henggeler, Pickrel, and Patel (1996) examined 118 juvenile offending youth who met diagnostic criteria for either substance dependence or alcohol abuse. Fifty-nine youth and their families participated in Multisystemic Therapy (MST) and 59 youth participated in usual services (US). Whereas MST included meeting with the youth, their families, and other participants in their homes, schools, or neighborhood settings, US included outpatient adolescent group meetings using the traditional 12-step program. The average treatment length was 130 days, and data were collected at an 11-month postreferral follow-up.

At the follow-up, participants in MST had incurred a cumulative cost of $298,724 ($5,063/youth), while US cost $198,729 ($3,368/youth). This makes the incremental cost (the cost difference between the original treatment and the treatment studied) of MST $99,995—a 50% increase in cost from US. Youth receiving MST experienced 46% fewer days of incarceration and 64% fewer days utilizing other mental health services such as psychiatric and residential services than those in the US group. These reductions brought the incremental costs of MST down from $1,695 to $877/youth. The authors do not say whether MST is more cost-effective than US but do suggest that the incremental costs of MST are nearly offset over time through money saved in reduction of days in out-of-home placements by its participants.

Seventh, Holder et al. (1991) conducted a first approximation on the cost-effectiveness of alcoholism treatment. Holder et al. reviewed data from three sources, two of which came from existing literature and the third from interviewing research experts in the field. The authors categorized 33 types of treatments according to costs and clinical effectiveness. Behavioral marital therapy (BMT-C) consisted of improving communication skills and problem-solving skills and increasing positive reinforcement between couples. BMT-C was categorized in the Medium-low Cost group ($200–599), the third of five in cost of treatment rankings, and in the Good Evidence of Effectiveness group, first of five in effectiveness rankings. Other marital therapy (OMT), which included sessions with both the problem drinker and the spouse either in individual dyads or groups of couples, was categorized in the Medium-low Cost and Indeterminate Evidence of Effectiveness rankings. The study did not provide the number of sessions utilized, and, although the authors report several treatment venues as options, they were not specific as to which treatment was conducted at which venue (i.e., outpatient, inpatient, etc.).

Eighth, in a second approximation on the cost-effectiveness of alcoholism treatment, Finney and Monahan (1996) built upon Holder and colleagues’ (1991) study. Finney and Monahan found the range of modality effectiveness to be smaller than originally reported by Holder et al., the major difference being the computational method for clinical effectiveness. Holder et al. used the Weighted Evidence Index (WEIn), computed from subtracting the number of negative studies from the number of positive ones and adding an extra point to studies with more than two positive clinical outcomes, Finney and Monahan, instead, used the Adjusted Effectiveness Index (AEIn), computed from the difference between the predicted and observed scores of clinical outcomes. A comparison between the 24 treatment modalities in this
study, which only included treatments yielding three or more studies, moved BMT-C from 4th to 3rd place and OMT from 11th to 5th place in clinical effectiveness among treatments when compared to Holder and colleagues’ review. Similar to Holder et al., Finney and Monahan found both BMT-C and OMT to be in the Medium-low Cost group.

DISCUSSION

Although few researchers have responded to Liddle and Dakof’s (1995) call to conduct cost-effectiveness studies on family-based substance abuse treatment, research completed thus far demonstrates how certain family-based treatments are cost-effective.

Family-Based Treatments

The eight studies conducted to date on the cost-effectiveness of family-based substance abuse treatment demonstrate that certain treatments are not only efficacious, but cost-effective as well. Family-based treatments explored in this review include brief relationship therapy (BRT), standard behavioral couple’s therapy (S-BCT), Multisystemic Therapy (MST), Multidimensional Family Therapy (MDFT), Family Support Network (FSN), Adolescent Community Reinforcement Approach (ACRA), interactional couples group therapy (INT), and behavioral couple/marital therapy (BCT and BMT). The most cost-effective of all treatments reviewed are BRT, Motivational Enhancement Treatment/Cognitive Behavior Therapy 5 Sessions (MET/CTB5), BCT, BMT-A, and individual-based therapy (IND). MST was not specified to be more cost-effective than US, but the authors suggest that the incremental costs are nearly offset. Also, BMT-C and other marital therapy (OMT) were equally cost-effective given the categories they were assigned to.

The results of the eight studies reviewed here show that although family therapy is an effective form of treatment, there remains additional work to make it more cost-effective. Three of five of the studies reviewed here show family-based treatments being more cost-effective than other individual treatments. This excludes Schoenwald and colleagues’ (1996) study because of the fact that it is unclear as to whether US is more cost-effective than MST. Furthermore, the O’Farrell, Choquette, Cutter, Brown, et al. (1996) study does not include an individual-based treatment in its comparison of two family-based treatments. Also, O’Farrell, Choquette, Cutter, Brown, et al. (1996) and O’Farrell, Choquette, Cutter, Floyd, et al. (1996) argue that the costs, not the effectiveness, of both behavioral marital therapy-relapse prevention (BMT/RP) and BMT-B (10-week BMT + individual counseling) determine that they are not the most cost-effective treatments in their respective studies.

Health Care Considerations

Health care insurers demand treatments that are both effective and cost-effective. Thus, cost-effectiveness research provides health care companies, policy makers, and clinicians with data to support their decisions in implementing or referring to specified treatments. These decisions are more easily made and justified when cost-effectiveness outcomes are provided. As an emphasis on cost-effectiveness continues in insurance companies, as well as competition for insurance claim money, treatments will compete with each other to produce the most desirable results. This competition will create a refining process that will demand a fine-tuning of available treatments.

This phenomenon is illustrated in the Fals-Stewart, Klosterman, et al. (2005) study of brief relationship therapy for alcohol-dependent males. Altering S-BCT into a shorter treatment, or BRT, did not compromise its efficacy when considering drinking outcomes, but did lower its cost. Thus, a more cost-effective form of treatment has emerged, and health care insurers might make it more available because of the refining process of finding the most cost-effective treatments. To a certain degree, this process of fine-tuning treatments into their most cost-effective form will assuage the economic burden placed upon society, health care insurers, families, and individuals.

Refining Treatment Research

Although the recent emergence of positive results for the cost-effectiveness of family-based substance abuse treatment has moved the field beyond “promising” (Liddle & Dakof, 1995,
in treating substance abuse efficaciously and cost-effectively, there is still a need for refining family-based substance abuse treatment research. First, studies on the effectiveness of substance abuse treatment often neglect cost implications of the treatments considered. When cost-effectiveness outcomes are made available in research studies, clinicians, health care insurers, and policy makers are given the tools to make more informed choices. Illuminating a solution to this problem, Fals-Stewart, Yates, et al. (2005) have outlined a simple method to include cost evaluations of treatments in research studies. They assert that the question posed toward treatment research has moved from “Does this treatment work?” to “How much does this treatment cost to deliver, and is it really worth it?” (p. 28). It is not enough to report treatment effectiveness without subsequent cost analyses.

Second, because of the aggregate nature of cost-effectiveness studies it is easy to misinterpret a treatment’s effectiveness or costs. For example, certain treatments demonstrate better cost-effectiveness than others, but only because of lower costs, not because of better effectiveness. This should be taken into consideration when refining treatments. If a treatment has proven itself empirically as effective, then it makes sense to focus on decreasing its costs when attempting to create a more cost-effective treatment, instead of increasing its effectiveness.

Third, different outcomes measured contribute to a disjointed literature base (e.g., Sindelar et al., 2004). For example, one study’s cost-effectiveness might be contingent upon outcome measures of abstinence, or others might use the ASI, or even the average number of drinks in a week. If more similar outcome measures and follow-up periods were utilized, the research would be better suited and comparable outside of the original study. This would allow for clinicians, policy makers, and insurers to compare for themselves the cost-effectiveness differences between studies and treatments. However, there is a case for clientele’s needs and areas of concern determining which outcome measures to implement (e.g., an adolescent substance abuser in trouble with the court system vs. a married adult alcohol abuser with poor communication skills).

Fourth, treatment cost computations often come from different measuring methods. There has been a push to unify the field in this area by French et al. (1997), who created DATCAP. As previously mentioned, DATCAP measures both the accounting and opportunity costs of treatment and can be accessed online (http://www.DATCAP.com) for use. Others (Fals-Stewart, Yates, et al., 2005; Yates, 1999) have also offered methods of computing costs. This includes measuring the amount of each resource (e.g., 1 hr of therapy) and cost of each resource (e.g., $50/session), multiplying each resource utilized by its cost (e.g., 5 sessions × $50 = $250 for sessions), and finally summing the total cost of each resource utilized (e.g., therapy sessions, overhead costs, or office rental costs). A more unified method of computing costs will increase the possibility that treatments can be compared outside their original study.

Fifth, the studies reviewed here fail to emphasize systemic costs and benefits. It is imperative for marriage and family therapist (MFT) researchers to include systemic considerations for effectiveness as well as costs of treatments. As MFTs it is important to include systemic effects of a treatment given that MFTs treat relationships and not just individuals.

Sixth, most of the studies examined implemented outpatient therapy. It would be useful to include other types of treatment in cost-effectiveness outcomes studies, such as residential, inpatient, medical, and community-based. Including these types of treatments in cost-effectiveness analysis will broaden the range of available cost-effective treatments. Furthermore, future studies would do well to include a no-treatment group, perhaps drawn from clients on a waitlist to enter treatment. If done ethically, comparisons for cost-effectiveness between a no-treatment group and a treatment group would yield interesting results. Would there be improvement in drug use reduction by those anticipating or planning for treatment? And how would the low to no cost of a waitlist group influence its cost-effectiveness? These and similar questions would be appropriate to investigate.

FUTURE IMPLICATIONS

Substance abuse treatment research should not only report treatment effectiveness but cost-effectiveness as well. The next step in the study of cost-effectiveness for family-based
treatment is a meta-analysis. The eight studies reviewed in this article mark the beginning point in producing an effect size for family-based treatments. Hopefully when this research is conducted, additional family-based cost-effectiveness studies will be available for analysis.

CONCLUSION

Conducting cost-effectiveness studies on family-based substance abuse treatment will not only demonstrate effective family-based treatments but also those that are competitive in terms of costs. Given the financial impact of substance abuse on society, individuals, and the health care system, and with health care companies dictating which treatments are on their preferred provider lists, it is imperative to produce cost-effective treatments. By doing so, substance abusers and their families will receive the most effective treatments, and health care insurers will receive an effective treatment at a competitive cost.

REFERENCES


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