



The cost of treating substance use disorders: individual versus family therapy

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This study examined the cost of substance use disorders treatment in a large healthcare organization. A survival analysis demonstrated that family therapy utilised the least number of sessions ($M = 2.41$) when treating substance use disorders followed by individual therapy ($M = 3.38$) and mixed therapy ($M = 6.40$). Family therapy was the least costly of the three types, at \$124.55 per episode of care for a client, with individual therapy costing \$170.22 and mixed therapy \$319.55. The ratio of family therapists utilising family therapy was more than three to one compared to other licensed professionals. The percentages of clients coming back for more than one episode of care are fewest for family therapy (8.9%) followed by mixed therapy (9.5%) and individual therapy (12.0%).

Keywords: substance misuse; alcohol misuse; evidence-based practice; medical family therapy; outcome research.

The prevalence of substance use disorders (SUD; for the purpose of this article defined as both substance abuse and dependence) in the USA is alarming. In 2004 22.5 million Americans (9.4% of the population) aged 12 and older were classified with a SUD (Substance Abuse and Mental Health Services Administration, 2005). The financial impact of alcohol abuse on society in the USA includes increased use of health care, crime and accident costs, which rose from \$148 billion in 1992 (Simon *et al.*, 2005) to \$185 billion in 2000 (Office of National Drug Control Policy, 2004). In addition, the costs of drug abuse to society have risen annually by 5.9 per cent since 1992, and in 2002

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reached an estimated \$180.8 billion (Office of National Drug Control Policy, 2004).

The prevalence of SUD and the rising cost associated with treatment pose some interesting challenges. Effective low-cost treatments are needed. Cost research on SUD treatment has focused on treatment in non-healthcare organizations (Morgan and Crane, 2010).

Four cost-related issues are examined in this article. Firstly, which types of treatments (for example, family therapy versus individual therapy) are the least costly in a healthcare organization context? For example, some have found that the inclusion of family members in a client's SUD treatment is essential for adequate care (Stanton and Shadish, 1997), and may lead to better outcomes and fewer sessions being utilised by clients. This could lead to fewer dollars spent on treatment by insurance companies. Secondly, the increase of treatment utilisation for clients with more than one diagnosis (Greenfield *et al.*, 2004) can have an impact on SUD treatment costs. Given the high co-morbidity of SUD and other mental health diagnoses (Dickey and Azeni, 1996) the most effective and the least costly treatments are needed. Thirdly, within any healthcare organization there are several providers that offer different types of therapy, of different degrees of effectiveness and a subsequent differing overall cost. Determining whether some provider types are generally less costly than others can be of value in determining how to implement the least expensive treatments. Finally, recidivism in SUD treatment is an issue (Thakur *et al.*, 1998) because it affects the cost of treatment and the overall quality of treatment. Determining what variables impact on recidivism can also help in the cost minimization processes.

Effectiveness of family-based SUD treatments

In the first known outcome study on family-based substance abuse treatments Stanton *et al.* (1982) found a decrease in heroin use for addicts who received 10 structural-strategic family therapy sessions. Since then the evidence of the effectiveness of family-based treatments for SUD has continued to mount (for example, Corless *et al.*, 2009; Stanton and Shadish, 1997; Steinglass, 2009). Edwards and Steinglass (1995) concluded that family-based treatment was effective in motivating alcoholics to enter treatment and was moderately more effective than an individual-based approach during treatment, and furthermore, that family-based relapse prevention approaches were more effective than individual-based approaches. In a more recent

review, Morgan and Crane (2010) identified eight different family-based treatments for substance abuse issues that are both effective and cost effective, suggesting that family involvement in care is helpful and appropriate.

Although a few studies show mixed results for the effects of family-based treatments on drug-abusing clients there is no question that SUD treatment can be effective (Carr, 2009, 2011; Stanton and Shadish, 1997) and that certain family-based treatments are effective (O'Farrell and Fals-Stewart, 2003). One recent study suggests that family-based treatments may be better at initially engaging runaway and substance-abusing youths (Slesnick *et al.*, 2011).

Cost of treatment

Treatment cost is important to consider in light of what is called the cost-ramping profile of addiction (Holder and Blose, 1986; Langenbucher, 1994a). This phenomenon accounts for the increasing cost of healthcare that accumulates over time as an individual continues to abuse substances.

Health care

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

Crane (1995) proposed that in order to effectively limit rising healthcare costs the focus should be on altering the causes behind the needs for services rendered. That is, a decrease in the severity and frequency of addictions will result in less healthcare utilisation by this group of patients. But, given the trends of limiting services to substance abusers instead of expanding them (Gardner, 1996), the most effective treatments in terms of outcome and cost are needed to ensure their timely and continual availability and delivery.

Therapist licence type

The professional licence type may have less of an impact on treatment for clients than simply being in treatment. Specifically, marriage and family therapists have been found to be as influential in helping to reduce healthcare utilisation by their clients as any other type of licensed psychotherapist professional (Crane *et al.*, 2004) and they are more effective when providing family therapy (Moore *et al.*, 2011).

Dual diagnosis considerations

Dual diagnoses clients (client with two Diagnostic and Statistical Manual of Mental Disorders [DSM-IV-TR] diagnoses) have demonstrated an increase in treatment utilisation when compared to singly diagnosed clients (Dickey and Azeni, 1996). Treating a dually diagnosed SUD client cost twice as much as a singly diagnosed SUD client in a behavioural healthcare service sector in a large managed behavioural healthcare organization (Greenfield *et al.*, 2004).

Youths with a dual diagnosis were more likely to utilise individual counselling sessions ($M = 3.8$ individual sessions) than youths with a single diagnosis ($M = 2.9$), and they were more likely to utilise group counselling ($M = 31.2$ group sessions) than youths with a single diagnosis ($M = 25.1$; Grella *et al.*, 2004). Those with a primary SUD and a co-morbid psychiatric disorder were found to utilise healthcare more than those without co-morbid psychiatric disorders, tallying a greater cost at a 6-year follow up (Hoff and Rosenheck, 1999).

Treatment cost

The current literature lacks analyses of healthcare organizations' cost of SUD treatment in regards to which therapy types are the most cost effective. Treatments may be cost effective or not, but unless they are examined in a healthcare organization as well as in outpatient and in-patient settings a large number of utilisers of substances abuse treatment will not be statistically represented in the literature. The current literature heralds family-based treatments as effective while also acknowledging mixed results for cost-effectiveness (Morgan and Crane, 2010). Many substance abusers utilise healthcare organizations for treatment (Greenfield *et al.*, 2004). Without a focus on this treatment method, costs will continue to rise with healthcare organizations suffering and subsequently clients as well. Other scholars are completing cost studies on family versus individual treatments of depression

(Crane and Dobbs, in review) and anxiety (Scoville and Crane, in preparation), among others (Crane and Payne, 2011). Furthermore, Crane (2008) found that the addition of family therapy to healthcare programmes does not appear to increase the overall healthcare cost and may actually decrease healthcare utilisation.

Research questions

The present study examines some questions related to treatment costs for SUD in a healthcare organization. They are as follows:

1. What is the difference in the dollar amount that Cigna pays for treating SUD among individual, family and mixed therapies?
2. What is the difference in the dollar amount that Cigna pays for treating SUD among individual, family and mixed therapies for clients with multiple diagnoses?
3. Which Cigna providers (according to their licence types) are more likely to implement family therapy?
4. What is the difference in the dollar amount that Cigna pays for treating SUD for similar services given by different providers according to their licence types?
5. What is the difference in recidivism rates for clients among individual, family and mixed therapy treatments?

Methodology

Measurement

In order to specify what certain terms mean they are defined here:

Cost. The monetary amount that Cigna pays their providers (or the amount that the providers charge Cigna for their services).

Dollar amount. The total cost (not just per session, but rather for the whole treatment) Cigna pays in treating SUD utilising individual, family or mixed therapy for one client.

Episode of care (EoC). Length of treatment where the gap between sessions does not exceed 89 days. Any number of sessions can be a part of a treatment episode. The 90-day mark signifies a new treatment episode. This time frame is Cigna's operational definition of treatment period. When a claim record is received, its subsequent use is tracked

for as long as claims for the same diagnosis are received until a gap of 90 days exists. It is an administrative procedure probably designed to track client use of the medical system and to provide some reasonable end to such tracking if the patient is no longer actively receiving treatment for a specific problem.

Family therapy. Therapy performed by a provider on Cigna's provider list (for example, a psychologist or marriage and family therapists) on two or more family members at the same time, not in a group setting.

Individual therapy. Therapy performed by a provider on Cigna's provider list (for example, a psychologist or marriage and family therapist) with just one individual, not in a group setting.

Licence type. These types are marriage and family therapist, social worker, physician, nurse, counsellor, substance abuse professional or psychologist.

Mixed therapy. Therapy performed by a provider on Cigna's provider list in which the sessions (for an individual client) were not exclusively family or individual therapy during the course of treatment.

Multiple diagnoses. Includes up to three diagnoses for clients, including multiple SUD diagnoses and Axis II disorders.

Recidivism rates. Whether or not there was more than one EoC for a client.

SUD. For the purpose of this article SUD means both substance abuse and dependence.

Therapy type. The type of therapy utilised (for example, family therapy, mixed therapy or individual therapy).

Participants

The participants for this study were drawn from a large US healthcare insurer: Cigna. Cigna had about 66,000 mental health providers across the USA. The mental health providers met the minimum standards to practice in their respective states, including holding a licence and being in good standing with their different professional associations. The data received from Cigna contained all 5,315,827 mental

health outpatient services claims over 4 years of data (2001–2004). Every state was represented. This study was an archival longitudinal study, with each data point representing a claims line and each claims line recorded as one of two current procedural terminology (CPT) codes: individual therapy (90806) or family therapy (90847). With the substance abuser as the identified patient, clients in this data set received a CPT code of family therapy, individual therapy or a combination of both. The data set was not specific as to whether the therapy was conducted in an office, a hospital, at home or in other location. But they were clearly identified as outpatient claims.

An EoC comprised any period of time where the length of time between each session did not exceed 89 days according to Cigna. When duration between sessions was 90 days or more, this was considered a new EoC. Across all therapy types, clients who participated in only one EoC comprised 88.5 per cent of all EoCs ($n = 15,997$). The number of EoCs ranged from 1 to 7 ($M = 1.14$, $SD = .41$). Moreover, the second and subsequent EoCs must have been completed by the same licence type as the first EoC. The number of sessions for each client ranged from 1 to 97 ($M = 5.75$, $SD = 7.31$). For the first EoC the mean number of sessions was 4.81 ($SD = 5.83$).

Three groups of therapy types were identified. EoCs with unique clients who received only family therapy during treatment were included in the family therapy group ($n = 1664$), those who received only individual therapy were included in the individual therapy group ($n = 13,321$) and finally, those who received any combination of family and individual therapy were included in the mixed therapy group ($n = 1012$).

All individuals who received a primary DSM-IV-TR diagnosis of a SUD were included in this study (DSM-IV-TR codes: 291, 292, 303, 304, 305). The data provided by Cigna included up to three diagnoses; therefore multiple diagnosis clients were included with up to three diagnoses, including those in Axis II of the DSM-IV-TR. Of the total number of EoCs ($N = 15,997$), clients with a single diagnosis in an EoC ($n = 14,341$) totalled 89.7 per cent and multiple diagnoses clients in an EoC ($n = 1656$) totalled 10.3 per cent. Allowing for more generalization, any type of multiple diagnoses was included as long as the primary diagnosis was a SUD.

The age range of the participants was from 3-years old to 84-years old. However, those under the age of 12 were considered to be children and were excluded from the analysis. Only those aged 12 years and older were included in this analysis ($M = 35.9$, $SD = 13.4$).

Two age groups were created to examine the influence of adolescent and adults in treatment. The first group consisted of those aged 12 to 17 years ($M = 16$, $SD = 1.2$), and the second group consisted of those aged 18 years and more ($M = 38.9$, $SD = 11.6$). The gender division was 69 per cent male and 31 per cent female.

Sample

Data from the 4 years were combined using the client ID numbers assigned to each client ($n = 14,208$), creating a longitudinal database. This allowed for an analysis of the cost of therapy and recidivism rates. The resulting database reflected the total number of EoCs ($N = 15,997$) utilised by clients (every entry in the data representing one EoC, instead of representing one client) during a given year.

There were 72 unique therapist licence types reported in the data. In order to compare the different licence type groups the 72 licence types were aggregated into the seven most common mental health providers: counsellors, psychologists, social workers, physicians, marriage and family therapists (MFTs), nurses and substance abuse professionals (SAP). In order to compare the practices of different providers, EoCs consisting of more than one licence type were eliminated ($n = 647$) leaving 15,350 unique cases.

Results

Statistical analysis

Research question 1: what is the difference in the dollar amount that Cigna pays for treating SUD among individual, family and mixed therapy?

The product of the number of sessions and the average cost per session by therapy type yielded the final results for this question. A survival analysis (Luke, 1993); controlling for gender, age, number of diagnosis, licence type and region of services yielded results of an average of 3.38 sessions for individual therapy, 2.41 sessions for family therapy and 6.40 sessions for mixed therapy ($P < 0.001$). Moreover, statistically significant results for the survival analysis on the number of sessions show that the region of services, age, licence type and number of diagnosis were significant indicators at the $P < 0.0001$ level, and that gender was not significant.

An ANCOVA revealed individual therapy's average cost per session for therapy type (for example, individual therapy's average session

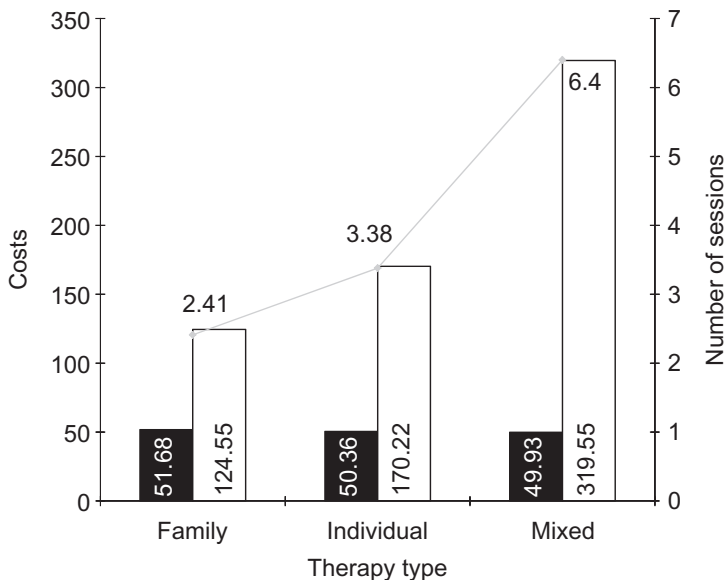


Figure 1. The (●) session cost, (□) total cost and (—) no. of sessions in substance disorder treatment by therapy type.

cost being \$50.36, family therapy at \$51.68, and mixed therapy at \$49.93) differed despite the fact that Cigna sets different rates at which the providers will be paid. The cost of therapy differed by the region of service and licence type across the USA. These numbers differed due to the various numbers of providers utilising more or less family, individual or mixed therapy in different amounts across the country. The survival analysis confirmed this by finding that the region of services was a significant indicator of cost per therapy type and per licence type. However, controlling for this variable only gives us an idea of its statistical significance, rather than completely removing the effects it has on the results (Ramsey, and Schafer, 2002). The product of average number of sessions and average cost per session of each therapy type showed that Cigna paid an average of \$124.55 in the first EoC for clients participating exclusively in family therapy, \$170.22 for clients participating exclusively in individual therapy and \$319.55 for clients participating in mixed therapy (see Figure 1).

Research question 2: what is the difference in the dollar amount that Cigna pays for treating SUD among individual, family and mixed therapy for clients with multiple diagnoses?

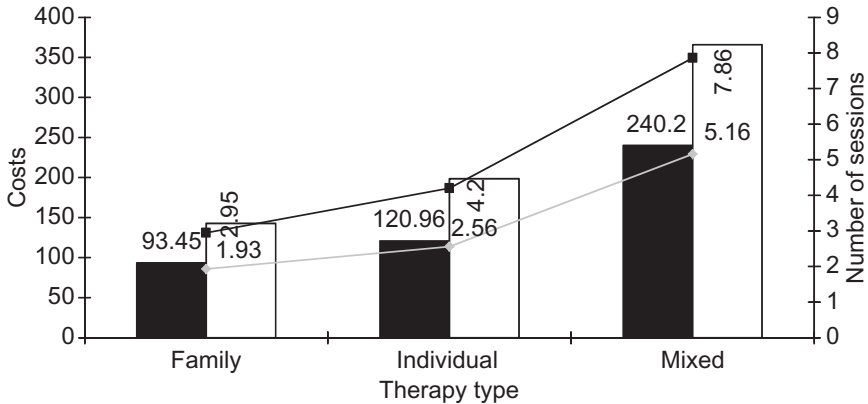


Figure 2. The total cost of (■) 1 diagnosis and (□) >1 diagnoses per (---) 1-diagnosis sessions and (—) > 1-diagnoses sessions in treatment of substance use disorder

Controlling for gender, age, licence type and region of services, a survival analysis revealed that family therapy utilised the fewest average number of sessions for a client's EoC with a single diagnosis (1.93), with individual therapy (2.56) and mixed therapy (5.16) following (see Figure 2). The differences between the number of sessions for single diagnoses and multiple diagnoses were statistically significant. For multiple diagnoses, family therapy again utilised the fewest average number of sessions (2.95), with individual therapy (4.20) and mixed therapy (7.86) following.

Utilising the average cost of therapy types per session, family therapy (\$93.45) was the least expensive for a client's EoC presenting with a single diagnosis, with individual therapy (\$120.96) and mixed therapy (\$240.20) following. Family therapy (\$142.84) was also the least expensive for clients presenting with a multiple diagnosis, with individual therapy (\$198.45) and mixed therapy (\$365.88) following.

Research question 3: which Cigna providers (according to their licence types) are more likely to implement family therapy?

Licence provider types that utilised the highest percentage of their sessions for each therapy type were MFTs for family therapy (25.5%), SAPs for individual therapy (89.1%), and nurses for mixed therapy (12.7%; see Table 1).

Licence types that utilised the statistically significant smallest percentage of their sessions for each therapy type were physicians for

TABLE 1 Percentage of therapy type implemented by licence type

Licence type	Mixed therapy	Family therapy*	Individual therapy*	N
Social workers	6.0	8.2	85.8	5,945
Counsellors	7.6	13.7	78.7	4,568
Physicians	2.4	9.3	88.3	451
MFTs	7.1	25.5	67.4	644
Nurses	12.7	9.9	77.4	71
Psychologists	6.4	8.7	84.9	2,597
Substance abuse professionals	4.4	6.5	89.1	1,721
Total	6.3	10.4	83.3	15,997

* $P < 0.0001$. MFT, marriage and family therapists.

mixed therapy (2.4%), SAPs for family therapy (6.5%) and MFTs for individual therapy (67.4%). The odds ratio from the logistic regression revealed that for every client for whom an MFT utilised family therapy with there were 0.36 fewer clients for whom counsellors utilised family therapy, 0.37 fewer clients for physicians, 0.33 fewer for nurses, 0.28 fewer for psychologists, 0.25 fewer for SAPs and 0.28 fewer for social workers.

Each licence type's outcome was significantly different ($P < 0.05$), with all licence types having a lower utilisation of family therapy than the MFT licence, but they were not significantly different from each other. Gender, age, number of diagnoses and region of services were controlled in the logistic regression. Region of services and the age category were statistically significant control variables in this model ($P < 0.001$).

Research question 4: what is the difference in the dollar amount that Cigna pays for treating SUD for similar services given by different providers according to their licence types?

A survival analysis was utilised to calculate the average number of sessions for each licence type by therapy type (see Figures 3, 4, and 5). There was no significant difference between the number of sessions utilised between the modality type or discipline. An ANCOVA, controlling for gender, age, number of diagnosis and region of services, was utilised to find the average cost of care provided by each licence type. The product of the survival analysis and the ANCOVA results revealed that the least costly licence type for individual therapy was physicians, at an average cost of \$124.49, with psychologists (\$203.18) being the most costly (see Figure 3). The least costly licence type for

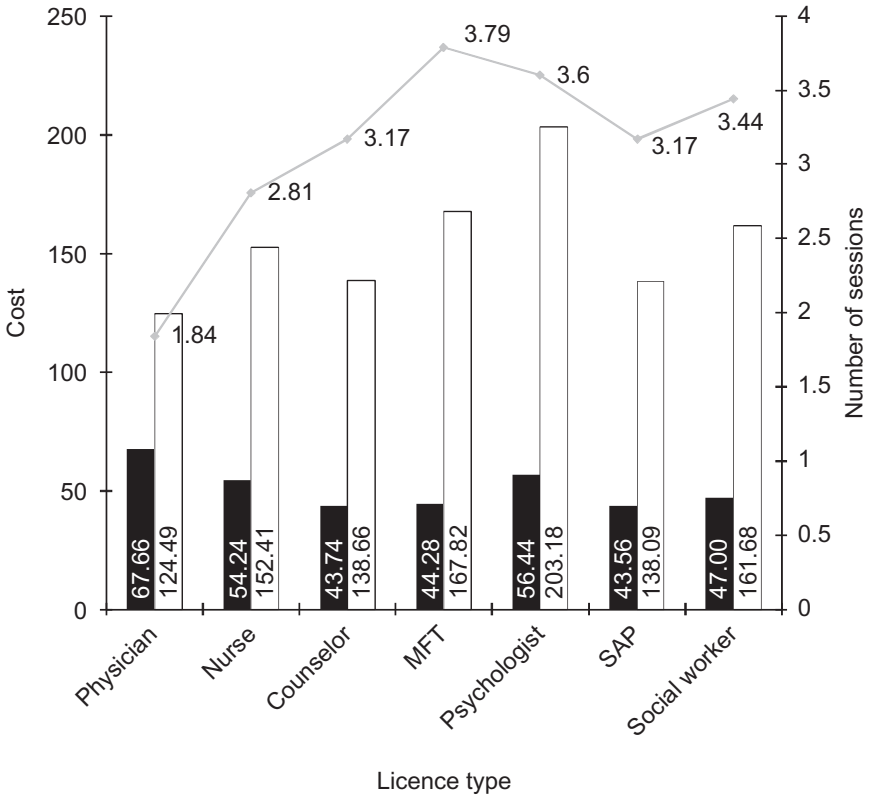


Figure 3. The (■) session cost and (□) total cost of (—) sessions of individual therapy substance use disorder treatment by licence type for first episode of care. MFT, marriage and family therapists; SAP, substance abuse professional.

family therapy was nurses, at an average cost of \$67.26, with MFTs (\$134.17) being the most costly (see Figure 4). The least costly licence type for mixed therapy was also nurses, at an average cost of \$210.45, with psychologists (\$355.57) being the most costly (see Figure 5). Statistically significant results from the survival analysis show that the number of diagnoses, region and age category were significant indicators at the $P < 0.0001$ level, and that gender was not significant when analysing the number of sessions utilised by different licence types.

Research question 5: what is the difference in recidivism rates for clients among individual, family and mixed therapy?

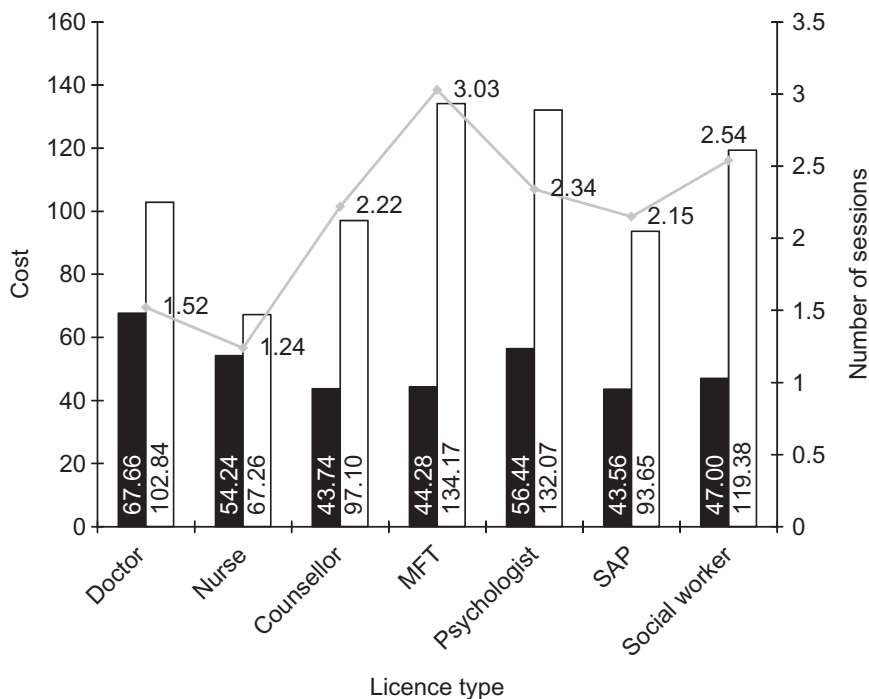


Figure 4. The (■) session cost and (□) total cost of (—) nos. sessions of family therapy treatment for substance use disorder by licence type for first episode of care. SAP, substance abuse professionals; MFT, marriage and family therapists.

Recidivism rates were measured according to whether or not there was more than one EoC. More than one EoC suggests that participants did not complete treatment in the first EoC; rather, they needed to return to therapy for additional treatment. A logistic regression, controlling for gender, age, number of diagnoses and region of services, revealed that for every client who received more than one EoC when treated with individual therapy, there were 0.77 or 77 per cent fewer clients treated with mixed therapy who received more than one EoC and 0.78 clients treated with family therapy who received more than one EoC. The outcome of individual therapy was significantly different ($P < 0.05$) compared to both family and mixed therapy, with recidivism being lower when using individual therapy alone. Region of services and age were statistically significant indicators in this model. Family therapy

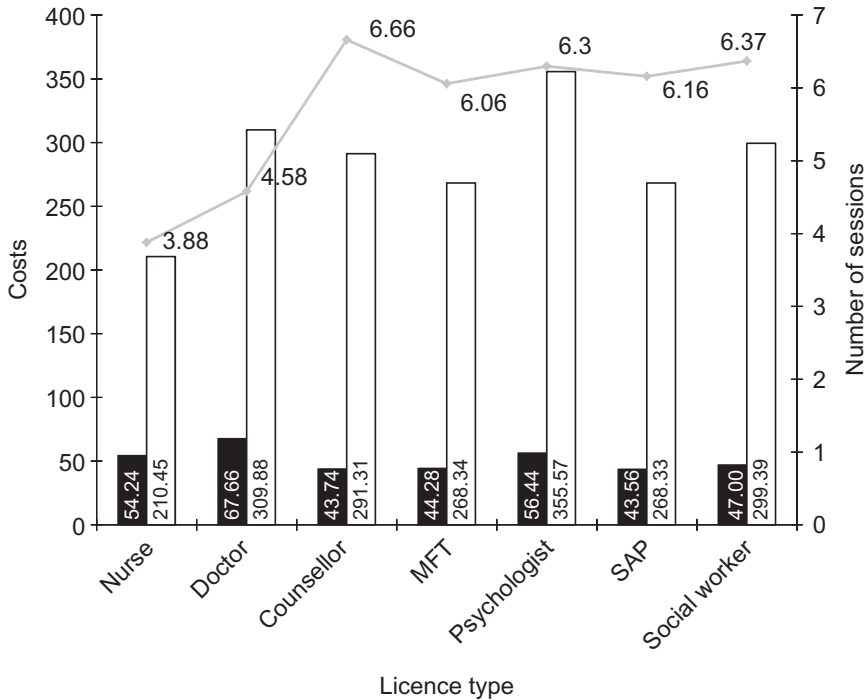


Figure 5. The (■) session cost and (□) total of (—) sessions of mixed therapy substance use disorder treatment by license type for one episode of care MFT, marriage and family therapists; SAP, substance abuse professionals.

had the lowest percentage (8.9%) of more than one EoC, with mixed therapy (9.5%) and individual therapy (12%) following.

Discussion

The first research question examined the difference between the costs of therapy types. With a significant difference between the numbers of sessions these types of therapy required, family therapy per EoC was the least costly at \$124.55, with individual therapy (\$170.22) and mixed therapy (\$319.55) following. Previous findings on family-based treatment for substance abuse demonstrated mixed results, with family therapy being both more and less costly or cost effective

(Morgan and Crane, 2010). However, past studies have not examined treatment as it occurs in the real world or in such a large number of clients in this manner.

These findings suggest that, when appropriate, family therapy is a viable treatment option given that it is associated with lower cost than other therapy types and, given its increased effectiveness over individual therapy for SUD (Stanton and Shadish, 1997), it is a very attractive option for those seeking cost effective SUD treatments. O'Farrell *et al.* (1996) argue that in some cases it is not the clinical effectiveness of a therapy type that makes it less cost effective, but rather, its cost of delivery. Given this finding, the fact that family therapy was the least costly and had the fewest number of sessions makes a compelling argument for its utilisation. These findings support Crane's (2008) findings that the inclusion of family therapy in healthcare programmes is associated with decreased utilisation, given that family therapy utilised the fewest number of sessions compared to individual and mixed therapy. However, it is also possible that the lower cost of family therapy could be due to other factors. For example, it may be the individuals with fewer substance abuse problems or greater social support self-select into the family therapy modality. It is also possible that, at the administrative level, patients with less severe problems are selected for family therapy rather than individual therapy. This information was not available in the data.

The cost of family therapy in this study supports previous findings (Morgan and Crane, 2010) that family therapy has a better or comparable cost to individual and other types of treatments. Also, with the lowest number of sessions per EoC, family therapy demonstrates findings similar to previous studies (Morgan and Crane, 2010) that have found family-based treatments to be just as or more effective than comparison groups.

The second research question dealt with the difference in therapy type cost for clients with multiple diagnoses. Family therapy utilised the fewest average number of sessions for both single diagnosis (1.93) and multiple diagnoses (2.95) clients. Therefore, it would follow that family therapy (\$93.45) cost the least for both types of clients (\$142.84). Mixed therapy cost the most for both single diagnosis (\$240.20) and multiple diagnoses clients (\$365.88). The higher cost of mixed therapy might be driven by more severe cases and an attempt to include more people in the treatment so as to make it possible for better outcomes. It is, however, impossible from this study to determine whether or not those who received mixed therapy were more

severely affected than those who received family or individual therapy. It is no surprise that the treatment of clients with multiple diagnoses cost more, given the literature on the increased utilisation of both the number of sessions (Grella *et al.*, 2004) and treatments (Dickey and Azeni, 1996). It is interesting, though, that family therapy cost the least compared to both individual and mixed therapy in both categories. Given that we know clients with multiple diagnoses cost more to treat than those with a single diagnosis, it is important to better understand how to alleviate these costs. Knowing that family therapy costs less in delivering treatment to substance abusers will help to assuage overall costs.

Question three looked at which licence types were more likely to implement family therapy. The percentage of family therapy sessions implemented by each licence type compared to the total number of sessions they utilised showed MFTs as the highest at 25.5 per cent. They were more likely to implement family therapy than other licence types by a ratio of almost 3 to 1. This might be attributed to the MFT's training and the importance they place on treating the clients' system, instead of isolating them in individual therapy. This is an important finding, given the lack of research in the area of who is providing which types of therapy in healthcare settings. It is difficult, however, to understand why this number is not higher given their licence type as MFT. Further research is required to understand this.

The fourth research question dealt with the cost differences in providing treatment by different licence types using the same therapy type. When implementing individual therapy, physicians cost the most (\$124.49) and nurses cost the least for both family therapy (\$67.26) and mixed therapy (\$210.45). MFTs cost the most for implementing family therapy (\$134.17). This may be due to the ability of marriage and family therapists to retain family therapy clients longer than other professions can (Hamilton *et al.*, 2011). This might also be due to the fact that MFTs stress the importance of family therapy and are more likely (see question 3 results) than the other providers to implement this approach. Given that MFTs utilise family therapy more often than other provider types (25.5% of their sessions and an average 3.03 sessions per EoC), a higher cost is understandable. The explanation for nurses utilising the fewest number of sessions for family therapy might be that their treatment approach might not emphasize long-term care. Moreover, it is difficult to compare talk therapy with therapists who conduct different types of services, such as offering medical procedures. The difference

between MFTs and nurses here might be a result of the different types of procedure used. It is also inappropriate to conclude that because nurses cost less to implement family therapy they should be the provider to deliver it in most cases. There are simply not enough of these types of provider to meet the demand. MFT and nurses obviously have different training. In addition, the main driver for the higher cost of MFTs in providing family therapy is their patients' overall lower drop-out rate. In other words, MFTs are more costly since fewer of their clients end care after one and only one session (Hamilton *et al.*, 2011).

The fifth research question examined recidivism rates by therapy type. For recidivism rates individual therapy (12%) fared the worst, followed by mixed therapy (9.5%) and then family therapy (8.9%). The fact that individual therapy had the worst recidivism rates could indicate that there is something missing in this approach to treatment. Furthermore, given that both family and mixed therapy treatment includes a possible support system for clients, treating them in this manner might be advantageous in lowering relapse rates. These findings support previous findings that family-based therapy decreases the likelihood that substance users will return to using substances and need therapy for it (Litt and Mallon, 2003).

The findings of this study are congruent with the effectiveness findings of others that family therapy is as, or more, clinically effective than individual SUD treatment (Stanton and Shadish, 1997), specifically for relapse prevention (Edwards and Steinglass, 1995). Treating the family strengthens clients in that their support for recovery is strengthened and their chances for recovery increased (Litt and Mallon, 2003). However, a causal relationship could not be determined in this study and this area needs further research. Although the Cigna data track patients over time in recording their total number of therapy sessions and EoCs, there are no regular evaluative data over time to determine trends in therapy or provider types and in progress towards treatment success. This omission is a feature of administrative data such as these. To determine cause and effect, a true longitudinal design with specific outcome measures would have to be employed.

Future research

Future research should focus on the fact that MFTs implement family therapy more often than other providers and on what that means for

clients and healthcare insurance companies. Moreover, family therapy and mixed therapy's recidivism rates were lower than with individual therapy. More research is needed on the reasons why this is the case. What are the mechanisms of change that influence better recidivism rates for family therapy either alone or mixed with individual therapy? Lastly, the fact that MFTs cost the most when implementing family therapy is overshadowed by the fact that they implement it at a higher rate than the other licence type providers. They might incur a higher cost to implement this therapy type, but what is the cost-benefit or cost effectiveness of MFTs utilising this approach?

Policy implications

The results of this study provide important evidence that family therapy is a viable treatment option when considering the cost and recidivism rates of SUD treatment. It costs less than both individual and mixed therapy. Furthermore, family therapy is an impressive option for clients with both single and multiple diagnoses. Utilising family therapy was associated with the least cost for treating any number of diagnoses. And, given that MFTs utilise more family therapy, and are more likely to implement family therapy, including MFTs as providers in insurance companies will most likely not cost any more money and will ultimately save these companies money. Lastly, family therapy had the best recidivism rates, which could imply that including family therapy as a treatment option might decrease the number of sessions a client utilises and, therefore, the amount of money a client spends.

Implications for marriage and family therapy clients

Clients who utilise MFTs as their providers in Cigna experienced a higher family therapy participation rate than other providers. The overall treatment cost of family therapy was the lowest for one EoC and for single and multiple diagnoses, and family therapy had lower recidivism rates than individual therapy. This suggests that such clients had more successful EoCs in terms of recidivism and treatment cost to Cigna. Given that family therapy is heralded as the most clinically effective form of treatment for SUDs (Stanton and Shadish, 1997), it makes sense that recidivism rates and treatment cost, which is a reflection of the number of sessions utilised, are lower than for other providers with different licence types.

Limitations

Several limitations exist for this study. Firstly, it was impossible to determine whether the therapy type implementation practices of all licence types were distributed equally due to a lack of unique identification numbers for each provider. Secondly, the minimum number of sessions in an EoC was set at one. Clients who returned for treatment after a low number of sessions for a second EoC could be different in nature from clients who continued treatment over the same period of time, utilising a higher number of continuous sessions. Thirdly, it was impossible to determine whether or not the clients completely stopped any type of treatment during the time they did not come in for sessions. Fourthly, it is impossible to ascertain the quality of the family therapy offered or the adherence to family therapy principles when there is more than one person in therapy (as defined by family therapy). The presence of two or more people in the therapy session does not necessarily mean that family therapy guidelines were implemented or that any model of family therapy was used. The data we received did not include any such measure. Fifthly, there might be a possibility of selection bias, given that more clinically sophisticated, well-insured or financially well-off clients might enter into in-patient treatment instead of utilising outpatient treatment. Lastly, there is an issue of the different types of providers by licence type. There are providers who primarily utilise talk therapy (MFTs, psychologists, SAPs, counsellors and social workers) and those who primarily utilise medical procedures (nurses and physicians). It is difficult to compare the two, given that they utilise different types of services.

Summary and conclusion

In an economy largely driven by healthcare costs it is important to examine solutions to presenting problems. Clients utilising healthcare for SUD treatment is an economic burden. These findings illustrate that family therapy is a favourable treatment option, given its low cost to healthcare insurance companies. Family therapy, when compared to individual therapy and mixed therapy had a lower average cost per EoC and cost the least for single diagnosis and multiple diagnoses clients. MFTs were more than three times more likely to utilise family therapy. These findings warrant attention by insurance companies

and clinicians. Family therapy also had better recidivism rates than mixed therapy and rates similar to individual therapy.

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