

Patient Engagement and Duration of Treatment

D. Dwayne Simpson

*Director and S.B. Sells Professor of Psychology
Institute of Behavioral Research
Texas Christian University*

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Introduction

Legislative amendments to the 1963 Community Mental Health Center Act were passed in 1970, initiating funding for large-scale implementation of community-based drug abuse treatment in the U.S. (see Platt, 1988, and Simpson, 1993). Since that time, basic and applied research in this new arena has been conducted and published at an unprecedented rate. Because it represented a radical shift in our national policy for health-related services, systematic efforts were begun immediately by federal agencies to evaluate the effectiveness of this new drug abuse treatment system (Simpson, Chatham, & Brown, 1995). Almost 44,000 admissions to treatment during the early 1970s were the focus of the first national evaluation funded by NIDA (Simpson, 1993; Simpson & Sells, 1982, 1990). Similar studies followed in each of the next two decades, based on roughly 10,000 treatment admissions in the 1980s (Hubbard et al., 1989) as well as in the 1990s (Fletcher, Tims, & Brown, in press; Simpson & Curry, in press). All three used a multimodality and multisite sampling plan to study treatment in its natural settings.

These national projects comprise only part of the large body of evidence accumulated in the past 30 years that support the general effectiveness of treatment (Egertson, Fox, & Leshner, 1997; Gerstein & Harwood, 1990; Institute of Medicine, 1996). However, the widely held conclusions from this work have not found universal acceptance, particularly among policy makers, due in part to the scientific designs that were required. It has long been recognized that “classical experimental designs are rarely feasible in field research in the real world, and treatment evaluation is a classic example” (Sells, Demaree, Simpson, Joe, & Gorsuch, 1977, p. 620). Except under limited circumstances, in other words, the use of randomized assignments of patients into diverse treatment conditions has failed pragmatically as a scientific method in natural settings because individuals always have the right to walk away (representing a form of selection bias). Studies that impose rigid conditions on the sample selection process in order to overcome such limitations, however, risk generalizability of their findings. The research alternatives include quasi-experimental designs and multivariate analyses, even though they lack the scientific authority commonly attributed to traditional experimental models.

The program of research summarized below is based on outpatient methadone maintenance (MM) treatment for opioid addiction delivered in natural settings. It was conducted in collaboration with colleagues and students at Texas Christian University since 1970. First, treatment outcomes for patients who were studied longitudinally for up to 12 years after admission are summarized. Replicated analyses across successive admission cohorts showed that significant behavioral improvements occurred over time and that these changes were related primarily to length of stay in treatment. Next, our program of work proceeded toward studies focused on treatment process components and their interrelations with outcomes as well as with various intervention strategies. This latter phase of our research will be given major emphasis, concluding with a general integrative model representing treatment process components and how they contribute to treatment effectiveness.

Treatment Retention and Long-Term Outcomes

Duration of drug abuse treatment has been one of the most consistent predictors of follow-up outcomes. Findings based on the Drug Abuse Reporting Program (DARP, Sells & Simpson, 1976), the first national treatment evaluation study in the U.S., indicated that stable therapeutic effects for the average patient addicted to opioid drugs emerge only after treatment retention periods of about 90 days in drug-free residential or outpatient programs and almost a year in MM (Simpson, 1979, 1981). These results were replicated across independent samples in successive admission cohorts. Longer-retention subsamples in these three modalities had comparable drug use and related outcomes, and all three improved significantly more than shorter-term comparison subsamples within each modality as well as comparison groups of intake-only and detoxification-only patients (Simpson & Sells, 1982). Longitudinal studies indicated that 61% of a sample from all daily opioid users admitted in DARP (n=990) were able to quit using opioids by the fourth year after discharge, three-fourths of whom credited a treatment program as the major reason (Simpson, Joe, & Bracy, 1982). By year 12, only one-fourth was still addicted to opioids (Simpson & Sells, 1990).

The positive relationships between treatment retention and outcomes in DARP have been replicated in the second and third national evaluations funded by NIDA (Hubbard et al., 1989; Hubbard, Craddock, Flynn, Anderson, & Etheridge, in press; Simpson & Curry, in press; Simpson, Joe, & Brown, in press). Although length of stay is a useful predictor of treatment effectiveness, it is a complex indicator involving several interrelated patient, therapeutic, and environmental factors. Even in our first national study of treatment outcomes, retention effects were attributed to “interactions among individual needs, motivation factors, family or social influences, and treatment (and counselor) assignments” (Simpson, 1981, p.879), and the need for further examination of these factors was emphasized. Major efforts were focused on the study of patient background and functioning (Joe & Simpson, 1975) as well as program differences in treatment philosophy and services (Cole & James, 1975; Sells & Simpson, 1976), and there have been continued improvements over time in assessing patients and treatment process in relation to outcomes. Particularly noteworthy are studies that link MM program attributes – accessibility, policy and practices, organizational and clinical expertise, and level of services – with patient retention and outcomes (Ball & Ross, 1991; Joe, Simpson, & Hubbard, 1991; Joe, Simpson, & Sells, 1994; McLellan, Arndt, Woody, & Metzger, 1993; McLellan, Woody et al., 1997; Simpson, 1997).

Treatment Engagement and Compliance

The “holy grail” of drug abuse treatment has been matching patients to services. Although frequently overstated, there is evidence that matching is feasible within certain limits of patient needs, assessment procedures, and availability of services (see McLellan & Gastfriend, 1997, McLellan, Grissom et al., 1997, and Simpson, 1997). At issue is a widely shared interest in improving the overall effectiveness and efficiency of treatment, preferably in shorter time. Studies of treatment process and therapeutic components of the engagement sequence are fundamental to reaching these goals.

In order to identify particular ingredients underlying treatment retention effects, further improvements in assessment and process models are required. By conceptualizing treatment in

discrete phases – spanning induction, treatment, and aftercare activities (Hoffman & Moolchan, 1994; Price, 1997; Simpson, 1997) – evaluation objectives and measurement strategies come into sharper focus. Outreach to out-of-treatment drug users as well as continuing care following discharge from treatment for HIV/AIDS risk reduction are part of this general model (Brown & Beschner, 1989; Brown & Beschner, 1993), but the primary emphasis of the current presentation is on the treatment engagement process.

Patient sociodemographic and other pretreatment characteristics typically have not been prominent predictors of outcomes (Anglin & Hser, 1990), although improved assessments of patient functioning and analytic techniques in recent years are modifying this view. Psychiatric symptoms (Broome, Flynn, & Simpson, 1997; McLellan, Luborsky, Woody, O'Brien, & Druley, 1983), social dysfunction (Havassy, Wasserman, & Hall, 1995; Knight, Broome, Cross, & Simpson, in press; Knight, Cross, Giles-Sims, & Simpson, 1995), criminal history status (Anglin & Hser, 1990; Hiller, Knight, Broome, & Simpson, 1997), addiction severity and history (Anglin, Hser, & Grella, in press), gender-related AIDS risks (Camacho, Bartholomew, Joe, Cloud, & Simpson, 1996), heavy alcohol use (Chatham, Rowan-Szal, Joe, Brown, & Simpson, 1995; Chatham, Rowan-Szal, Joe, & Simpson, 1997), and cocaine usage (Camacho, Bartholomew, Joe, & Simpson, 1997; Kolar, Brown, Weddington, & Ball, 1990; Magura et al., 1994) at the time of treatment intake influence engagement and retention indicators (Stark, 1992).

As summarized by Prochaska, DiClemente, and Norcross (1992) and De Leon (1996), several stages of cognitive and behavioral change are involved in the recovery process. Of particular importance is the patient's cognitive readiness for treatment and recovery. We have developed brief scales for three sequential cognitive stages – problem recognition, desire for help, and treatment readiness – which have favorable theoretical and psychometric integrity (Simpson & Joe, 1993). They are part of a comprehensive set of data collection instruments that assess patient background and functioning, service delivery, and treatment interactions from intake to follow-up (Simpson & Chatham, 1995). With respect to treatment readiness measures,

the first stage involves recognition and acknowledgment by individuals that they are having significant problems caused by drug use, particularly in terms of their legal, health, and psychosocial functioning. The second stage reflects an expressed need for, and interest in, obtaining help, and the third addresses specific commitments to drug treatment services.

Several studies have validated the role of these motivational constructs for treatment engagement and subsequent outcomes. First, we have shown that self-perceived severity of problems related to psychological functioning and alcohol dependency predicts treatment engagement. For instance, patients with more psychological problems – defined using depression, anxiety, and suicidal ideation indicators – were twice as likely as a low-problem group to attend the recommended number of individual counseling sessions (Joe, Brown, & Simpson, 1995). Counselors responded to these patient needs as suggested by the fact that program records showed psychological issues were addressed in these sessions in direct proportion to their level of severity at intake, leading to significant reductions in symptoms over the first 3 months of treatment. Likewise, patients meeting DSM-III-R criteria for alcohol dependency remained in treatment longer than non-dependent drinkers (Chatham et al., 1995) and also benefited more from treatment when judged on the basis of posttreatment outcomes (Chatham et al., 1997). Related studies indicate that higher motivation scores at intake, particularly on the desire-for-help scale, predict lower dropout rates in the first 60 days after admission (Simpson & Joe, 1993) and more frequent session attendance during the first 3 months of treatment (Simpson et al., 1995). Thus, patients who perceive themselves as having significant problems resulting from their drug use and have made personal commitments to treatment are most likely to engage and benefit from it.

In an effort to place these findings in a more comprehensive framework, we have used several multivariate analytic approaches to sort out relationships between patient attributes, treatment process and retention, and follow-up outcomes. One study employed a series of multiple logistic regression analyses to identify factors associated with the dramatic decline in drug use and criminality among daily opioid users during the first year after discharge from MM

treatment (Simpson, Joe, & Rowan-Szal, in press). Urinalyses established that only 48% of this sample had used opioids prior to the follow-up interview (n=435), and the average number of days illegal activities were committed fell from 11 per month before treatment to 4 at follow-up. A profile of several basic patient characteristics was examined first as a predictor of these outcomes. Each predictor was statistically significant. That is, being over 35, being white, having less severe drug injection habits, and giving high treatment motivation ratings at intake roughly doubled the likelihood of having better posttreatment outcomes. After simultaneous adjustments for all the other predictors, however, the results showed patients who spent a year or longer in methadone treatment were five times more likely than those with shorter tenure to have better behavioral outcomes at follow-up.

Having reaffirmed the overriding importance of program retention, the second analytic phase of this study turned to general indicators of the treatment engagement process expected to be associated with retention. We found that higher scores on patient self-ratings of motivation at intake, frequency of session attendance during early treatment, and counselor perceptions of patient involvement during early treatment each more than doubled the likelihood that a patient would remain in treatment for a year or longer. Building on these findings, a more complex study was carried out using structural equations with path modeling to examine directional interrelationships involving an expanded set of predictors of during-treatment performance and treatment retention by patients (Simpson, Joe, Rowan-Szal, & Greener, in press). The results supported our hypothesized model of treatment process. More specifically, better therapeutic relationships (based on patient self-ratings) predicted lower levels of during-treatment drug use, which in turn led to longer retention in treatment. A reciprocal relationship between therapeutic interactions and session attendance in the first 2 months of treatment indicated that increasing one had the effect of increasing the other as well. Pretreatment motivation also was a significant predictor of session attendance during early treatment.

Although our basic theoretical model was affirmed, there was not a large percentage of variance accounted for in the criterion representing length of time in treatment. Distributions of

some measures were highly skewed, which limits sensitivity and predictability due to restricted variances. We have therefore applied a variety of other analytic methods to these data in related studies, and collectively our findings have been consistent and represent meaningful effect sizes. They are summarized in Figure 1, representing our conceptual model of treatment process. Nevertheless, additional measures still need to be considered along with further improvements in assessment strategies. The objective is to establish key treatment process components with clear operational definitions to serve as during-treatment criteria that can be used to guide therapeutic improvements and lead to better patient retention and outcomes. This will mean a conceptual shift from past emphasis on patient characteristics as primary predictors to the expanded study of both counselor and patient characteristics in the context of the dynamic process of treatment, including the counseling relationships that evolve. Although the measurement and analytic models become much more complicated because of the interactive processes involved, the field of treatment evaluation research has much to gain from advancements in these areas.

Cognitive and Behavioral Interventions

The identification of treatment process components that have direct linkages to retention and better follow-up outcomes carries important clinical significance. In particular, the implication is that intervention strategies that improve one or more of these elements represent enhancements to treatment effectiveness. Performance monitoring for patients as well as program evaluation also can become more expedient by using these “interim” measures as criteria. We have examined a variety of cognitive and behavioral interventions, as illustrated in Figure 1, that impact these early treatment engagement and recovery indicators for MM patients (Simpson, Joe, Dansereau, & Chatham, 1997).

Enhanced counseling. Node-link mapping is a cognitive strategy originally developed for educational applications, which we modified and adapted for use in individual and group counseling (Dansereau, Joe, & Simpson, 1993; Dees, Dansereau, & Simpson, 1994). In a typical mapping session, the counselor constructs a map – much like a flowchart – in close collaboration with the patient to record important issues, problems, and potential solutions as they are

discussed. Ideas, facts, and feelings are placed in nodes (boxes) and connected to one another via named links (lines). Because it is a simple visual representation with minimal verbiage, mapping appears to improve patient-counselor communication, increase attentional focus, and raise the efficiency and effectiveness of both individual and group sessions (Dees, Dansereau, & Simpson, 1997; Joe, Dansereau, Pitre, & Simpson, 1997). Using an experimental design with randomized assignments of patients to counseling conditions, our studies suggest that mapping strengthens therapeutic relationships between counselor and patient (Dansereau et al., 1993; Simpson, Joe, Rowan-Szal, & Greener, in press).

Contingent rewards. In an effort to address problems associated with early dropout and low counseling session attendance during early treatment, we used behavioral management procedures with low-cost rewards to improve therapeutic engagement. In our first study, patients were given stars (on a poster board) as rewards for attending sessions and having drug-free urines (Rowan-Szal, Joe, Chatham, & Simpson, 1994). These stars were later redeemed for rewards (e.g., food or gas coupons, bus tokens), some of which were donated by local businesses. Through randomized assignments of patients to reward conditions, session attendance and clean urines were shown to increase as a function of their reinforcement. A second study followed in which similar procedures were implemented in the first 3 months after treatment admission (Rowan-Szal, Joe, Hiller, & Simpson, 1997). As hypothesized, the group given contingent rewards attended individual sessions more frequently, and in the subsequent 3 months they had higher rates of clean urines. Based on counselor ratings at the end of 6 months in treatment, rewarded patients also were judged to be functioning better in terms of self-confidence, motivation, and rapport. This provided tangible and systematic recognition of the benefits of early engagement behaviors, and these findings are consistent with other similar studies conducted in MM settings (Iguchi, Belding, Morral, Lamb, & Husband, 1997; Silverman et al., 1996).

Family support. The role of social support systems is regarded as another important influence on early treatment engagement and compliance, but has received limited attention in

treatment evaluations. We examined family and peer networks before and during treatment, and developed indices of meaningful change over the first 3 months after admission (Knight & Simpson, 1996). Using measures based on family conflict and peer deviance, we observed that positive social changes were related to greater reductions in drug use and criminal involvement during treatment. More recently, we have found social support networks are associated with follow-up outcomes as well (Griffith, Knight, Joe, & Simpson, in press), with linkages to treatment engagement and early recovery components (also see Costantini, Wermuth, Sorensen, & Lyons, 1992, and Kidorf, Brooner, & King, 1997).

Manuals for special topics. Another productive strategy in our research was the development and use of counselor-friendly manuals to help guide sessions on special topics, such as HIV/AIDS education, sexual health and assertiveness training for women, communication skills for men, and transition to aftercare (Bartholomew, Chatham, & Simpson, 1994; Bartholomew & Simpson, 1994, 1996; Bartholomew, Simpson & Chatham, 1993). Evaluation findings support the use of these manuals to improve patient knowledge, attitudes, psychological functioning, and retention in treatment (Bartholomew, Rowan-Szal, Chatham, & Simpson, 1994; Boatler, Knight, & Simpson, 1994).

Conclusions and Comments

This paper describes a chain of evidence involving several patient and treatment attributes, and how they fit together in a process model that helps explain “effectiveness.” It also illustrates the functional significance of viewing treatment delivery and recovery in “phases” which are more amenable to identifying behavioral objectives, measurable outcomes, and appropriate interventions in a logical sequence. As illustrated in Figure 1, progress is being made toward identifying and understanding key elements of the “black box of treatment.”

Not all patients enter treatment with high motivation and readiness, and others have good intentions that are only short lived. Thus, treatment programs are challenged to find ways to strengthen and sustain positive motivational commitments over time. This can be accomplished in part by the kinds of program enhancements discussed in this paper (representing a variety of

cognitive, behavioral, and psychoeducational interventions), but additional strategies that target patient readiness and early engagement problems are needed. By viewing treatment as an integrated series of discrete phases (Hoffman & Moolchan, 1994; Simpson, 1997), specific patient needs and therapeutic objectives can be addressed sequentially and more deliberately at different stages of treatment. For example, an “induction and early engagement phase” begins at intake and is when patient orientation, initial assessment, and treatment planning activities are most intense. From the patient’s perspective, this is a critical period for review of personal motivation and commitments, leading to a decision-making process about staying in treatment and behavioral changes that determine compliance patterns. This process can be gauged by several early indicators – such as attitude, session attendance, urinalysis results – and is subject to therapeutic influence. Establishing regular compliance with therapeutic guidelines improves the prognosis for outcomes, which, in fact, parallels the conditions for recovery from cancer or other medical disorders.

Maintenance of patient recovery progress and social reintegration are the goals for later treatment stages. Following initial engagement, the range and intensity of treatment services become key elements in determining the effectiveness of MM programs (Joe, Simpson, & Hubbard, 1991; Joe, Simpson, & Sells, 1994; McLellan et al., 1993), elements that generalize across other types of treatment settings as well (McLellan et al., 1994). In MM, more frequent session attendance is related to forming better therapeutic relationships, which promotes positive behavioral changes and psychosocial functioning (Magura et al., 1994; Rosenblum et al., 1995; Simpson, Joe, Rowan-Szal, & Greener, 1995).

Improving drug abuse treatment effectiveness requires an understanding of the dynamic components of therapeutic process, including patient strengths and deficits, program participation, therapeutic relationships, psychosocial functioning, and behavioral compliance. We have identified several measurable domains that have direct connections with better treatment retention and outcomes. Patient cognitive and behavioral responses to services therefore should be used to assess progress through successive stages of engagement and

recovery. Efficient assessment systems that include routine monitoring of patients, service delivery, and therapeutic interactions in clinical settings are needed (Dennis et al., under review; Gainey, Catalano, Haggerty, & Hoppe, 1995; Simpson, 1997); this will facilitate efforts to match patient needs with appropriate services and overall management of care.

Ultimately, providing treatment that is comprehensive and “patient specific” requires more options than are found in many of our current community-based MM programs (Etheridge, Craddock, Dunteman, & Hubbard, 1995; Etheridge, Hubbard, Anderson, Craddock, & Flynn, in press; Price, 1997). More diverse and intensive treatment over a relatively long period of time requires a well-designed patient assessment and service delivery tracking system, counseling expertise in both individual and group settings, a broad base of curriculum materials, and a comprehensive array of services to support therapeutic objectives. Not every opioid addict, however, is expected to need or benefit from highly intensive programming. Some individuals leave treatment early and find other avenues of recovery (sometimes in other treatment programs), and experience suggests that a few (usually older, very long-term addicts) may not have sufficient cognitive functioning or social incentives to benefit from heavily demanding components of treatment. Such instances call for emphasis on medical management with MM, or possibly using longer-acting medications (e.g., LAAM), without some of the demanding cognitive interventions that may be applicable in other cases. Thus, expectations for recovery goals should be defined in view of patient needs and services. Outcome evaluations must likewise be tailored to address these issues.

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