TREATMENT RESEARCH: ACCOMPLISHMENTS AND CHALLENGES

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This article reviews the history of substance abuse treatment and its evaluation. The authors comment on key aspects of this history and its implications for the future. Research has been a key factor in the support of substance abuse treatment and the expansion and improvement of treatment options. Despite the progress in the field, organizational structure and functioning, ambivalence on the moral/medical basis of addiction, and narrow perspectives on evidence-based practice have presented barriers for advancement. Future improvement of treatment is seen as dependent on the partnership of researchers and real world providers, studies of evidence- based practice in a wide variety of community based settings and the consideration of complex and changing real-world environments, particularly for rural, uninsured and under-served populations.

INTRODUCTION

The social and political history of drug abuse in the United States has helped set the stage for current public policy regarding drug addiction. The modern history of treatment research on substance use disorders can be traced to the residential programs that were established at the federal facilities at Lexington, Kentucky and Fort Worth, Texas in the 1930s. Research then focused on the pharmacological and psychiatric effects of abused substances, detoxification regimens, psychopathology,

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and follow-up studies of patients after they had been discharged and returned to their home environments.

As chronicled by Musto (1987), the 1960s were pivotal years. The Narcotic Addict Rehabilitation Act of 1966 initiated historical shifts from a limited institution-based approach to a national community-based treatment system for dealing with drug problems. By introducing a civil commitment (mandatory treatment) alternative to prison incarceration for addicted persons charged with certain types of crime, this legislation helped declare drug addiction a "health" problem. Some of the first outpatient studies were begun in the 1960s in the work of Dole and Nyswander (1965) with methadone maintenance. In 1972, President Richard Nixon declared the first "War on Drugs." With the establishment of the National Institute on Drug Abuse (NIDA) in the 1974, the scope of treatment research expanded, and through an unprecedented infusion of funding for community-based treatment programs, the modern era of drug abuse treatment and evaluation research was created. This work was further expanded when NIDA received substantial funding increases in the late 1980s after it became clear that HIV was being transmitted through substance-related behaviors, such as needle sharing. The expanding research scope at NIDA is reflected in the expanding scope and number of attendees at the annual meeting of the Committee on Problems of Drug Dependence, which increased from several hundred attendees in the 1980s to more than 1,200 by the year 2000 (Committee on the Problems of Drug Dependence, 2009).

The actions during this period of expansion put treatment services and research on the map, establishing programs in hundreds of communities. Four fundamental treatment modalities (mainly for addressing heroin addiction) were established, including methadone maintenance treatment, drug-free outpatient treatment, drug-free residential treatment, and opioid detoxification programs of varying lengths. Implementation and funding of these treatment approaches raised questions of effectiveness that carried implications for both science and policy.

Evaluation research has been crucial in establishing the credibility of a national network of drug treatment programs and in obtaining public funds for their support. It has led to new avenues of study involving modification and improvement of assessment and intervention strategies, and in the case of AIDS outreach initiatives, helped the field move beyond traditional treatment approaches to establish additional behavior change initiatives in the community. Many findings of evaluation studies have been translated into public policy and program development, in accord with the visibility given to those findings and their urgency. The following comments provide different research perspectives on the results of this work over the past 40 years.

ADVANCEMENTS IN TREATMENT

IMPORTANCE OF RESEARCH IN TREATMENT: DWAYNE SIMPSON

Questions asked of addiction scientists during the past 40 years have moved beyond "does treatment work?" to "how and when is it effective?" Long-standing findings from large-scale national evaluations and clinical trials show that more time in treatment is related to better outcomes (Gerstein & Harwood, 1990). Outcome research indicates that therapeutic benefits tend to begin showing up behaviorally (and reliably) after about three months of treatment. For agonist treatment, this retention threshold for posttreatment improvements is closer to a year. To explain this relationship, evaluation efforts have increasingly focused on the interactions between client attributes and clinical dynamics, and how they relate to retention and recovery indicators (Simpson, 1981; Simpson, Joe & Brown, 1997).

The results have addressed the needs for establishing scientific evidence for treatment process as well as for practical applications for improving delivery of services. Longitudinal designs have been used to explain the sequential relationships between needs and motivation for treatment, early engagement, early recovery, length of stay in treatment, and post-treatment outcomes as elements of a stage-based process (Simpson, 2004). Findings show that higher pretreatment levels of client motivation and readiness for treatment are related to better treatment engagement, and that general indicators of treatment progress can be represented in three stages (Simpson & Joe, 1993). First, clients entering treatment must participate and begin forming positive therapeutic relationships with the counseling team. Favorable indicators of early engagement are especially important in the first two months after treatment admission, and they are positively related with client motivation and treatment readiness. Second, indicators of early recovery by month three are directly related to the level of early engagement shown by clients. Third, favorable evidence on early recovery indicators predicts better retention in treatment. Identifying some of these critical elements and how they are linked to treatment effectiveness helps service providers make more informed choices about improving services (Simpson, 2006).

Several reliable assessments of client functioning and treatment engagement have been developed for clinical applications. One option for monitoring client needs and progress is the *Client Evaluation of Self and Treatment* (CEST) assessment (Joe, Broome, Rowan-Szal, & Simpson, 2002), which includes brief scales for motivation, psychological and social functioning, therapeutic engagement, and social support. Repeating such assessments over time can also be used to evaluate the progress of individual clients or the overall program.

By establishing measurable stages of treatment process, interventions can be strategically planned and evaluated based on their efficacy for addressing specific

needs (Simpson, Joe, Dansereau, & Chatham, 1997). Treatment effectiveness literature generally supports the value of motivational enhancement techniques, cognitive strengths-based counseling, behavioral reinforcement therapy, and social support networking (National Institute on Drug Abuse, 1999). To enhance clinical practice, however, treatment strategies and interventions need to be adapted logically to define the optimal client treatment sequence. Client needs and progress at each stage of care therefore should guide the flow of services. Furthermore, the collective use of manual-guided interventions contributed proportionally to improvements in post-treatment outcome performance (Rowan-Szal, Bartholomew, Chatham, & Simpson, 2005). Effective treatment process is defined by deliberate integration of client needs and progress assessments with a specialized series of interventions. It is the goal of treatment care planning to monitor and manage these issues.

CHANGING TREATMENT OPTIONS: GEORGE WOODY

Options for the treatment of substance abuse have advanced significantly in the past 40 years from the days of self-help groups, limited slots in residential programs, and few referrals. The number of residential programs and therapeutic communities has increased, and intensive outpatient treatments have been developed. The 1989 Medications Development Program at NIDA facilitated a variety of advances. Benzodiazepines had been shown to be effective detoxification agents for alcohol dependence in earlier studies, and key elements of methadone maintenance programs, such as using adequate doses, were established. Although still not widely used, naltrexone has been approved for opioid dependence and more recently found helpful for preventing relapse to alcohol dependence. The use of buprenorphine, although off to a slow start, has been attracting those with opioid dependence who did not do well on existing treatment options. Nicotine replacement and buproprion therapies were developed for nicotine dependence.

Studies showing that psychosocial treatments are helpful broke new ground, moving research beyond its primarily pharmacological basis. The most widely studied psychosocial treatment has been contingency management followed by drug counseling (Petry, 2006). A range of psychotherapies have been used, including cognitive-behavioral, supportive-expressive, interpersonal, motivational enhancement and motivational interviewing, and self-help groups.

Most individuals with substance use disorders have psychiatric and medical problems that complicate the course of their recovery, and research has demonstrated that addressing these problems improves the overall prognosis (Institute of Medicine, 2005). The emergence of HIV and hepatitis C added new challenges, and studies show that HIV risk can be prevented by substance abuse treatment and risk reduction counseling (Turner, Miller, & Moses, 1989). Prevention efforts have also been

focused on the risky sexual behaviors associated with cocaine and amphetamine addictions (Volkov, 2004).

Although NIDA research has uncovered many ways to help persons with substance use disorders, no medication or combination of pharmacotherapy and psychotherapy has yet been developed that cures addiction. The fact that treatment can help but not cure the phenomenon of relapse even after extended periods of remission have led to addiction being viewed more as a chronic relapsing disorder rather than an acute problem that can be corrected with a single treatment.

Although self-help groups, addiction researchers, and clinicians have recognized that substance use disorders often require years or even a lifetime of sustained treatment, politicians and the general public do not share this view. This has created ambivalence about the degree to which treatment should be supported and presents barriers to the full application of research findings, including sufficient funding to meet treatment demand.

THE IMPORTANCE OF RESEARCH: ROBERT HUBBARD

Over 40 years of research, fundamental facts have been observed, including the positive effects of duration of treatment (Hubbard, Craddock, Flynn, Anderson, & Etheridge, 1997; Simpson, 1981), as well as the positive benefit-cost ratios of treatment and the cost-effectiveness of treatment (Flynn, Craddock, Hubbard, Anderson, & Etheridge, 1997) when compared to other options, such as prison. Major national studies, as well as individual studies, replicated these findings: Drug Abuse Reporting Program (DARP) 1969-1973 (Simpson & Sells, 1982), Treatment Outcome Prospective Study (TOPS) 1979-1981 (Hubbard et al., 1986), and Drug Abuse Treatment Outcome Study (DATOS) 1991-1993 (Hubbard et al., 1997). This occurred despite major changes in the client populations, the treatment programs, and the funding context. We have also made great strides in more complete and comprehensive descriptions of the clients entering treatment, the treatment they receive (Delany, Broome, Flynn, & Fletcher, 2001; Etheridge, Hubbard, Anderson, Craddock, & Flynn, 1997) and the environments in which programs function (Etheridge & Hubbard, 2000).

BARRIERS TO ORGANIZATIONAL CHANGE: DWAYNE SIMPSON

As treatment programs are being pressed to adopt evidence-based innovations for improving therapeutic effectiveness and efficiency, questions about organizational structure and functioning are beginning to receive greater attention. Relying on dissemination of innovation has proven to be ineffective, and evidence is mounting that organizational functioning is directly related to quality of care (Simpson & Flynn, 2007a). Therefore, some treatment systems are becoming increasingly interested in how to conduct an organizational assessment that is related to "readiness

for change" by staff members (Lehman, Greener, & Simpson, 2002; Simpson & Dansereau, 2007).

Treatment programs trying to implement innovations progress through systematic steps before new ways of doing things become accepted as practice (Simpson, 2002; Simpson & Flynn, 2007b). To adopt new ideas, decisions must be made based on the support solicited from both staff and leadership, the adequacy of resources committed to the change, and how well the change fits with prevailing values about treatment process and recovery. The next step involves implementation, which is guided according to the feasibility of innovations as well as staff and client perceptions about effectiveness. The ultimate step of new interventions from trial to routine practice depends largely on benefits (compared to costs), as well as having an effective monitoring and rewards system for sustaining progress. At each step of the way, however, barriers are present.

Bringing together clearly integrated assessment and intervention resources that are relevant to client needs and that can be implemented with the modest resources typically available is required for making meaningful changes in clinical care for drug-related problems. A crucial overarching dynamic in this change process involves institutional "atmosphere" and leadership, staff skills and interrelationships, resources, and motivational pressures. Implementation efforts require that appropriate staff skills be available, and a climate of vision, tolerance, and commitment is necessary to make them permanent. Resolving these barriers to widespread use of "evidence-based treatment" carries a high priority.

AMBIVALENCE TOWARD ADDICTION AND TREATMENT: GEORGE WOODY

One of the greatest barriers to implementing research findings seems related to unresolved ambivalence about whether addiction is a moral/self-control problem or a medical disorder. This ambivalence has a long history that has alternated between these two positions both in the U.S. and other countries (Fischer, Rehm, Uchtenhagen, & Kirst, 2002; Lowinson, Payte, Joseph, Marion, & Dole, 1992) and has important treatment implications. If addiction were a medical disorder, then use of medications and other biologically-based therapies would seem appropriate. However, if addiction is a failure of morality or self-control, then psychosocial, religious, or criminal interventions seem more appropriate.

Throughout most of the 20th century, the prevailing view in the U.S. has been that addiction is a moral or self-control problem (Lowinson et al., 1992). This view is reflected in the proportion of funds spent for law enforcement as compared to treatment, the strict anti-drug laws and liberal use of prison as opposed to treatment for drug offenders, and in the reductions in money spent on substance abuse treatment over the past ten years.

The increased use of mandated treatment rather than incarceration for nonviolent drug offenders and the rapid expansion of drug courts can be seen as an attempt to find a middle ground between the moral or self-control view and medical view. A study done in Delaware (Inciardi, Martin, Butzin, Hooper, & Harrison, 1997) demonstrated benefits from a combination of legal pressure and treatment. Addicted individuals who received psychosocial treatment modeled after methods used in therapeutic communities while in prison had improved outcomes, with even better outcomes if treatment was continued following release (Inciardi, Martin, Butzin, 2004; Martin, Butzin, Saum, & Inciardi, 1999). Unfortunately, few insurance plans pay for opioid maintenance treatment although many studies have consistently shown that it is safe and effective when administered according to standard guidelines (Gerstein & Harwood, 1990). Along the same lines, courts rarely refer opioid-dependent patients to methadone maintenance, which, paradoxically, is the single treatment with the greatest level of empirical support (National Institutes of Health [NIH] Consensus Conference, 1998).

Treating addicted Vietnam veterans has been the only wide-scale program to receive unambivalent political support (Robins, 1974). As a result of widespread concern about returning veterans with heroin addictions, special funding was allocated for addiction treatment programs in the Department of Veterans Affairs in the early 1970s, toward the end of the Vietnam war. These programs grew with strong administrative support but began to slow in the mid 1980s and then declined sharply in 1995 when funds were reallocated to primary care (Jaffe, 1979).

Treatment advocacy has been very helpful in getting popular support for many medical disorders, but advocacy for addiction treatment suffers for many reasons. Many who have recovered or are doing well in treatment are reluctant to speak because they fear adverse social consequences, especially those who have been addicted to illegal drugs. In addition, many addicted persons have serious behavioral problems that generate negative responses from neighbors, the general public, and even their own families, making it difficult to obtain support for anything other than an expansion of criminal justice responses.

The founders of Alcoholics Anonymous (AA) believed that collaboration between 12-Step programs and the medical profession could provide benefits, but somehow that message found in the early writings became modified so that many 12-Step programs developed a philosophy that opposed the use of medications. The result was, in many cases, a peer-based opposition to the use of medication unless it was for detoxification (Alcoholics Anonymous, 1955). Compounding the problem of organized opposition to using medications was the fact that much addiction treatment in the U.S. developed outside the medical system. The result was that for many years AA was the only place to turn for help, and treatment became dominated by a non-

medical approach. This problem has lessened with the development of methadone maintenance, along with studies showing that medications to treat associated psychiatric problems, such as depression, are helpful (Nowinski, & Baker, 2003).

Relapse is a common problem even among patients who have been abstinent over long periods of time, and relapses lead to the perception that treatment does not work. This view is not applied to other chronic, relapsing disorders where improvement in the absence of cure is valued and it seems related to the idea that addiction is a moral rather than a medical problem. Addressing comorbidities and using medication require medical personnel, who are the most expensive treatment staff. Administrators trying to reduce health care costs have strong incentives to minimize the amount of medical services, which can result in barriers to treatments that use medications or that address comorbidity. Other barriers have been the regulatory structures under which methadone maintenance programs have been required to operate.

The Institute of Medicine published a comprehensive report on the effect of regulations on access to methadone (Rettig & Yarmolinsky, 1995). This report concluded that although regulations were necessary, the current structure was overly restrictive. It led to a shift for monitoring methadone programs from the regulatory approach of the Food and Drug Administration (FDA) to accreditation involving Joint Commission on Accreditation of Healthcare Organizations (JCAHO), Commission on Accreditation of Rehabilitation Facilities (CARF), or state agencies and provided the basis for the Addiction Treatment Act of 2000. This act permits agonist and other medications classified as Schedule III or below and approved for addiction treatment to be used under less restrictive circumstances than has been the case with methadone. Related to this legislation was the approval of buprenorphine/naloxone (Suboxone®) as a Schedule III medication for maintenance treatment of opioid dependence. The increasing use of buprenorphine for detoxification and maintenance demonstrates how this Congressional action helped reduce barriers to agonist treatment.

PERSPECTIVES ON RESEARCH: ROBERT HUBBARD

The field has made great strides to develop professional competence, use evidence-based practice, and integrate with the general health care system. The benefits of this movement should be weighed against the possible unanticipated negative effects, such as managed care, shortages and turnover of credentialed staff, evidence-based practices incompatible with many treatment contexts, and the stigma attached to the field within the general health care system. The attempt to develop scientific credibility for the field has resulted in an emphasis on clinical trials of specific interventions at the expense of critically needed research on the

complex issues of organizational structure, treatment process, and recovery dynamics impossible to address within a clinical trial paradigm. Narrow perspectives on the broad array of core and comprehensive components of treatment and a myopic vision of the field may hinder future advances as well as place effective programs and approaches at risk. The arbitrary constriction of "28-day" short-term inpatient programs and the shift to group therapy are two major changes in the treatment system undertaken without empirical basis.

FUTURE

RESEARCH AND APPLICATION: DWAYNE SIMPSON

In 1968, Texas Christian University (TCU) launched the first national evaluation of community-based treatment effectiveness (DARP). The late Saul B. Sells assembled a small team of researchers to address the "question of the day" on whether a new national system for delivering treatment for substance abuse through existing community health agencies was feasible and effective. This created a "niche" of applied evaluators, and several original members of this team are still together at TCU and still working on the answers for treatments being provided in community and correctional settings. After several hundred publications, however, it seems the questions have grown more complicated over time. The attributes, needs, and situations of clients; the attributes, counseling styles, and cognitions about clients and colleagues of counselors; and program settings all represent dynamic forces that preclude stable or simplistic conclusions about effectiveness. The applications of randomized clinical trial designs for clinical efficacy studies and natural (longitudinal) designs for field effectiveness studies still seek peaceful coexistence in their mutual pursuit of evidence, but a balance between these perspectives is necessary to sustain progress in addiction treatment. In the end, it is important to hear from real-world service providers who can apply the findings (and related resources) and say thanks for helping to make them better. Most scientists staring at their "40-year reflection" in the mirror will likely admit that such feedback from the front-lines is the most powerful motivator for what they do.

PROGRESS AND IMPROVEMENTS: GEORGE WOODY

Over the last 40 years, the range and availability of addiction treatments have improved substantially. NIDA funding and the many dedicated professionals working in the field have greatly facilitated progress despite the many barriers to the implementation of evidence-based treatments. The NIDA Clinical Trials Network (CTN) is a recent effort to overcome some of the barriers and seems to be making progress as judged by its success in conducting treatment outcome studies in a wide range of community-based programs.

Persistence in working to improve treatment and reduce barriers so that treatment benefits can be more fully realized is essential. In looking back, the patients I saw on the medical and surgical units during medical school rounds in the early 1960s would now have a much better chance of finding a treatment that helped. It seems important to keep a longer-term perspective in mind and to be thankful for what we have achieved, while at the same time trying to do better.

COPING WITH COMPLEXITY: ROBERT HUBBARD

Despite the major advances in knowledge and practice over the past 40 years, the system is still marginalized, stigmatized, and fractionated. It is under pressure and at risk of failure in many areas, particularly for rural, uninsured, and underserved populations. Improved effectiveness must be the goal for both knowledge and practice. This can only be achieved through research, political support for treatment development, and practice that takes into account how clients and programs function in complex and changing real-world contexts.

REFERENCES

Alcoholics Anonymous, 2nd edition.
1955 New York: AA World Services.

College on the Problems of Drug Dependence
2009 Retrieved April 21, 2009 from, www.cpdd.vcu.edu.

Delany, P.J., Broome, K.M., Flynn, P.M., & Fletcher, B.W.
2001 Treatment service patterns and organizational structures: An analysis of programs in DATOS-A. *Journal of Adolescent Research 16*(6), 590-607.

Dole, V.P., & Nyswander, M.E.
1965 A medical treatment for diacetylmorphine (heroin) addiction. *Journal of the American Medical Association, 193*, 646-650.

Etheridge, R.M., & Hubbard, R.L.
2000 Conceptualizing and assessing treatment structure and process in community-based drug dependency treatment programs. *Substance Use & Misuse, 35*(12-14), 1757-1795.

Etheridge, R.M., Hubbard, R.L., Anderson, J., Craddock, S.G., & Flynn, P.M.
1997 Treatment structure and program services in the Drug Abuse Treatment Outcome Study (DATOS). *Psychology of Addictive Behaviors 11*(4), 244-260.

Fischer, B., Rehm, J., Uchtenhagen, A., & Kirst, M.
2002 Compulsory treatment: What do we know and where should we go? *European Addiction Research, 8,* 52-53.

Flynn, P.M., Craddock, S.G., Hubbard, R.L., Anderson, J., & Etheridge, R. M.
1997 Methodological overview and research design for the Drug Abuse Treatment Outcome Study (DATOS). *Psychology of Addictive Behaviors, 11*(4), 230-243.

Gerstein, D.R., & Harwood, H.J. (Eds.)
1990 *Treating drug problems, 1.* Washington, DC: National Academy Press.

Hubbard, R.L., Craddock, S.G., Flynn, P.M., Anderson, J., & Etheridge, R.M.
1997 Overview of 1-year follow-up outcomes in the Drug Abuse Treatment Outcome Study (DATOS). *Psychology of Addictive Behaviors 11*(4), 261-278.

Hubbard, R.L., Marsden, M.E., Rachal, J.V., Harwood, H.J., Cavanaugh, E.R., & Ginzburg, H.M.
1986 Drug abuse treatment: A national study of effectiveness. Chapel Hill: University of North Carolina Press.

Inciardi, J.A., Martin, S.S., & Butzin, C.A.
2004 Five-year outcomes of therapeutic community treatment of drug-involved offenders after release from prison. *Crime and Delinquency, 50*, 88-107.

Inciardi, J.A., Martin, S.S., Butzin, C.A., Hooper, R.M., & Harrison, L.D.
1997 An effective model of prison-based treatment for drug-involved offenders. *Journal of Drug Issues, Spring,* 261-278.

Institute of Medicine.
2005 Improving the quality of health care for mental and substance-use conditions: Quality chasm series. Washington, DC: National Academy Press.

Jaffe, J.H.
1979 The swinging pendulum: The treatment of drug users in America. In R.L. Dupont, A. Goldstein, & J. O'Donnell (Eds.), *Handbook on Drug Abuse,* 3-16, Rockville, MD: National Institute on Drug Abuse.

Joe, G.W., Broome, K.M., Rowan-Szal, G.A., & Simpson, D.D.
2002 Measuring patient attributes and engagement in treatment. *Journal of Substance Abuse Treatment, 22*(4), 183-196.

Lehman, W.E.K., Greener, J.M., & Simpson, D.D.
2002 Assessing organizational readiness for change. *Journal of Substance Abuse Treatment, 22*(4), 197-209.

Lowinson, J.H., Payte, J.T., Joseph, H., Marion, I.J., & Dole, V.P.
1992 Methadone maintenance. In J.H. Lowinson, P. Ruiz, R.B. Millman, & J.G. Langrod (Eds.), *Substance Abuse: A Comprehensive Textbook,* (pp. 405-414). Philadelphia, PA: Williams and Wilkins.

Martin, S.S., Butzin, C.A., Saum, C.A., & Inciardi, J.A.
1999 Three-year outcomes of therapeutic community treatment for drug-involved offenders in Delaware: From prison to work release to aftercare. *The Prison Journal, 79*(3), 294-320.

Musto, D.F.
1987 *The American disease: Origins of narcotic control.* New York: Oxford University Press.

National Institute on Drug Abuse.
1999 *Principles of drug addiction treatment: A research-based guide* (NIH Publication No. 99-4180). Bethesda, MD: National Institutes of Health, Author.

National Institutes of Health [NIH] Consensus Conference.
1998 Effective medical treatment of opiate addiction. *Journal of the American Medical Association, 280*, 1936-1943.

Nowinski, J., & Baker, S.
2003 *The Twelve Step Facilitation handbook: A systematic approach to recovery from substance dependence.* The Project MATCH Twelve Step Treatment Protocol. Center City, MN: Hazelden Foundation.

Petry, N.M.
2006 Contingency management treatments. *British Journal of Psychiatry, 189*, 97-98.

Rettig, R.A., & Yarmonllinsky, A. (Eds.)
1995 *Federal regulation of methadone treatment.* Washington, DC: National Academy Press.

Robins, L.N.
1974 A follow-up study of Vietnam veterans drug use. *Journal of Drug Issues, 4*, 61-63.

Rowan-Szal, G.A., Bartholomew, N.G., Chatham, L.R., & Simpson, D.D.
2005 A combined cognitive and behavioral intervention for cocaine-using methadone clients. *Journal of Psychoactive Drugs, 37*(1), 75-84.

Simpson, D.D.
1981 Treatment for drug abuse: Follow-up outcomes and length of time spent. *Archives of General Psychiatry, 38*, 875-880.

Simpson, D.D.
2002 A conceptual framework for transferring research to practice. *Journal of Substance Abuse Treatment, 22*(4), 171-182.

Simpson, D.D.
2004 A conceptual framework for drug treatment process and outcomes. *Journal of Substance Abuse Treatment, 27*(2), 99-121.

Simpson, D.D.
2006 A plan for planning treatment. *Counselor: A Magazine for Addiction Professionals*, *7*(4), 20-28.
Simpson, D.D., & Dansereau, D.F.
2007 Assessing organizational functioning as a step toward change. *Science & Practice Perspectives,* January 2007, 12-20.
Simpson, D.D., & Flynn, P.M. (Eds.).
2007a Organizational Readiness for Change (Special Issue). *Journal of Substance Abuse Treatment, 33*(2).
Simpson, D.D., & Joe, G.W.
1993 Motivation as a predictor of early dropout from drug abuse treatment. *Psychotherapy*, *30*(2), 357-368.
Simpson, D.D., Joe, G.W., & Brown, B.S.
1997 Treatment retention and follow-up outcomes in the Drug Abuse Treatment Outcome Study (DATOS). *Psychology of Addictive Behaviors, 11*(4), 294-307.
Simpson, D.D., Joe, G.W., Dansereau, D.F., & Chatham, L.R.
1997 Strategies for improving methadone treatment process and outcomes. *Journal of Drug Issues*, *27*(2), 239-260.
Simpson, D.D. & Sells, S.B.
1982 Effectiveness of treatment for drug abuse: An overview of the DARP research program. *Advances in Alcohol and Substance Abuse*, *2*, 7-29.
Turner, C.F., Miller, H.G., & Moses, L.E.
1989 AIDS Sexual Behavior and Intravenous Drug Use. Washington, DC: National Academy Press.
Volkov,N.D.
2004 Cocaine abuse and addiction. National Institute on Drug Abuse Research Report Series, November.