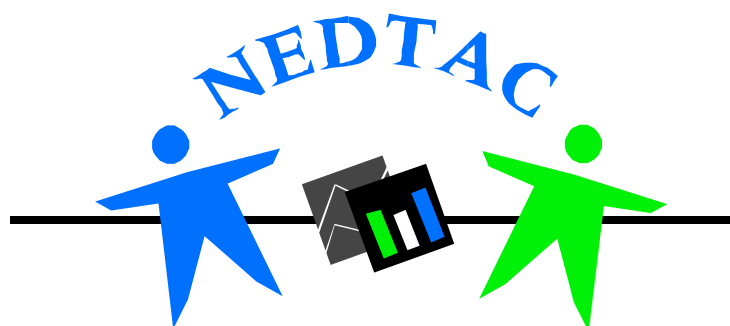


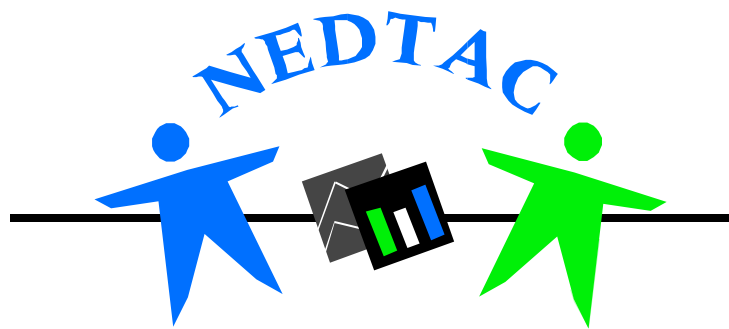
**NATIONAL EVALUATION DATA AND
TECHNICAL ASSISTANCE CENTER**



**PATIENT-TREATMENT MATCHING:
ANNOTATED BIBLIOGRAPHY**

April 1999

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FOREWORD

One of the missions of the Center for Substance Abuse Treatment is to enhance the nation's substance abuse treatment system by identifying, developing, and supporting appropriate policies, approaches, and programs. One component of the support involves providing technical assistance to CSAT grantees with information on existing and innovative treatment methods. In performing the mission to disseminate knowledge on substance abuse treatment, the National Evaluation Data and Technical Assistance Center provides resource materials for professionals in the substance abuse field with a series of bibliographies in key topic areas. This document belongs to that series. This annotated and selected bibliography provides references on linking substance abuse patients with the most appropriate treatment interventions, as well as the interaction between specific patient characteristics and treatment factors.

The concept of matching patients to treatment has gained support over the past decade. Research continues to corroborate the hypothesis that no single treatment works "best" for all substance abuse patients. Research suggests that patient-treatment matching is effective in terms of treatment outcome, cost containment, and resource utilization. In the past, this treatment method has involved tailoring interventions to correspond to individual patient characteristics, circumstances, and needs. Research in this treatment method is ongoing with more recent studies focusing on patient circumstances and needs rather than characteristics. Patient-treatment matching offers the potential to maximize treatment effectiveness while decreasing financial costs.

This bibliography, along with others in the series, was developed under the guidance and direction of Ron Smith, Ph.D., the NEDTAC Government Project Officer, Program Evaluation Branch, Office of Evaluation, Scientific Analysis, and Synthesis. We also wish to thank Tjinta May for compiling and Beth Archibald Tang for reviewing this document.

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Angres, D.H., & Easton, M. (1997). Treatment management for acute and continuing care. In N.S. Miller, M.S. Gold, & D.E. Smith (Eds.), Manual of therapeutics for addictions (pp. 269-284). New York: Wiley-Liss.

Many factors need to be considered in order to determine the appropriate type of treatment and level of care. These factors include addiction severity, type of addiction, and other patient characteristics (age, gender, employment status, etc.), not to mention legal problems, accessibility to treatment, and therapist factors. In addition to these factors, treatment modalities and treatment approaches are discussed, as well as the four levels of patient care (outpatient, intensive outpatient, intensive inpatient, and medically managed inpatient). Since patient-treatment matching is essential for recovery, this chapter concludes with a discussion of the reasons for addressing an individual's need for social support to reduce the potential for relapse.

Avants, S.K., Margolin, A., Kosten, T.R., Rounsaville, B.J., & Schottenfeld, R.S. (1998). When is less treatment better? The role of social anxiety in matching methadone patients to psychosocial treatments. Journal of Consulting and Clinical Psychology, 66, 924-931.

In response to a need to match drug users to the most appropriate and cost-effective level of care, the authors hypothesized that socially anxious patients (N=307) on methadone maintenance would attain greater benefit from coping-skills training provided in the context of a low-intensity enhanced standard methadone maintenance intervention (E-STD) than in the context of a high-intensity, socially demanding day treatment program (DTP). Social anxiety was assessed using the Social Anxiety and Distress Scale prior to randomization to either E-STD or DTP. The authors found that socially anxious patients were drug-free longer during treatment, were more likely to be abstinent at treatment completion, and showed greater reductions in HIV risk behaviors if assigned to the lower intensity intervention. In addition, the E-STD was provided at one-third the cost of the DTP.

Babor, T.F., Del Boca, F.K., McLaney, M.A., Jacobi, B., Higgins-Biddle, F., & Hass, W. (1991). Just say YES: Matching adolescents to appropriate interventions for alcohol and other drug-related problems. Alcohol Health and Research World, 15(1), 77-86.

Youth Evaluation Services (YES) offers assessment and case management services to identify, refer, and track adolescents who need substance abuse prevention or treatment interventions. This program matches adolescents to the most appropriate treatment and social services. YES encompasses six independent, consecutive stages: an initial screening of substance abuse involvement; a core evaluation that concentrates on substance use, family and social issues, and

psychiatric functioning; a more intensive assessment that integrates data from adolescent clients, parents, student assistance teams, school officials, and outside specialists; treatment plan formulation; referral to service providers based on patient-treatment matching guidelines; and case management and aftercare. Reviewing client-level data from the first 200 program participants, the authors present clinical profiles, substance use patterns, compounding social and personal problems, and treatment profiles. In addition, they address the problems encountered in implementing this program and the solutions that were sought.

Ball, J.C. (1994). Why has it proved so difficult to match drug abuse patients to appropriate treatment? *Addiction*, *89*, 263-265.

The author examines a variety of conceptual, semantic, substantive, methodological, political, and cultural issues by focusing on the lack of knowledge about the treatment domain as well as the inadequacy of most instruments to measure program characteristics and the delivery of treatment services. In addition, the author discusses some issues that complicate patient-treatment matching, including disagreement within the substance abuse field about what constitutes effective treatment, the optimal length of treatment, and what additional components (such as psychotherapy) are integral or extraneous to treatment. The author discusses the impreciseness of the term "treatment" and notes that some treatment programs that use the same modality have different outcome rates, making it necessary to match patients with particular programs as well as with specific interventions. While acknowledging demographic and cultural determinants, Ball contends that it is more critical to resolve conceptual or theoretical questions about matching drug abuse patients to treatment and rehabilitation.

Ball, S.A., & Schottenfeld, R.S. (1997). Five-factor model of personality and addiction, psychiatric, and AIDS risk severity in pregnant and postpartum cocaine misusers. *Substance Use and Misuse*, *32*(1), 25-41.

This study examined a model for personality and addiction severity, AIDS risk, and treatment outcomes among pregnant and postpartum cocaine misusers (N=92) to subtype substance users in order to aid in understanding etiology and predicting treatment response. Results show that pregnant and postpartum cocaine-abusing women who scored higher on instruments that assessed impulsive sensation seeking, neuroticism-anxiety, and aggression-hostility demonstrated greater substance use, psychiatric symptoms, addiction severity, and high HIV-risk sexual behavior. Women scoring lower on sociability and activity exhibited higher drug-use severity. Results also suggest that for perinatal cocaine misusers, the severity of their addiction and related behaviors may be determined primarily by their neuroticism, and that impulsive and aggressive traits are secondary to this association. Scores on the personality traits were not related to severity of drug misuse or to treatment outcomes; however, the authors concluded that five-factor personality measures may have a role in research on patient-treatment matching.

Carroll, K.M. (1994). Treatment selection, treatment implementation, and process assessment in matching research. Journal of Studies on Alcohol (Suppl. 12), 137-162.

Issues related to treatment selection, treatment implementation, and assessment of the therapy process relevant to matching research are examined, with examples drawn from experience in Project MATCH. Issues faced by Project MATCH investigators in the process of selection of treatment types, modality, and delivery formats are described. The strategies used in this project to protect treatment integrity and discriminability while treating a large and heterogeneous sample of alcoholics in a number of geographically distant sites also are described. Assessment of the therapeutic process is particularly important in matching research. (NCADI abstract)

Connors, G.J., Allen, J.P., Cooney, N.L., DiClemente, C.C., Tonigan, J.S., & Anton, R.F. (1994). Assessment issues and strategies in alcoholism treatment matching research. Journal of Studies on Alcohol (Suppl. 12), 92-100.

Sensitive and comprehensive client assessment entails complex conceptual and methodological considerations. Such activity is at the heart of matching clients to appropriate treatments. This article begins by specifying the goals and functions of assessment to support matching, followed by a discussion of the strategies employed in Project MATCH to identify matching and outcome variables. The assessment battery used in Project MATCH is next described. Finally an overview of issues surrounding administration of assessment measures is provided. Particular attention is given to the topics of sequencing and timing of measures. (Author abstract modified)

Crowe, A.H., & Reeves, R. (1994). The importance of patient-treatment matching. In A.H. Crowe, & R. Reeves (Eds.), Treatment for alcohol and other drug abuse: Opportunities for coordination (Technical Assistance Publication No. 11, pp. 67-74), Rockville, MD: Center for Substance Abuse Treatment.

Patient-treatment matching has the potential to improve treatment success. When individuals receive the appropriate intervention, they are more likely to respond positively, remain in treatment longer and begin recovery. In addition, matching should increase program efficiency and decrease financial expenditures by maximizing scarce resources. The first steps of effective patient-treatment matching include a comprehensive assessment of the client's personality, background, cognitive abilities, psychiatric profiles, and substance abuse history in addition to setting individualized, realistic goals for treatment. It is unrealistic to expect every treatment provider to offer every service. As a result, case management and linkages with various agencies are necessary to ensure patients have access to a variety of treatment modalities and services.

Crowe, A.H., & Reeves, R. (1994). State courts coordinating with the state treatment field. In A.H. Crowe, & R. Reeves (Eds.), Treatment for alcohol and other drug abuse: Opportunities for coordination (Technical Assistance Publication No. 11, pp. 173-182), Rockville, MD: Center for Substance Abuse Treatment.

As the correlation between crime and substance abuse increases, state courts face many difficult challenges in appropriate sentencing and sanctioning decisions, family court, family placement issues, availability of substance abuse treatment and medical care, and cost-efficiency. This chapter examines the problem of treating the substance-abusing offender and advises that state courts coordinate with the treatment field to find solutions. This type of partnership can increase judicial efficiency by accurately assessing clients' treatment needs, minimizing duplication or gaps in necessary services, recommending appropriate case management services, and monitoring the possibility of relapse. Coordinating substance abuse treatment and the criminal justice system offers invaluable social benefits, because investing in treatment has the potential to decrease substance abuse, lower rates of criminal behavior, diminish health care and justice system costs, and increase productivity.

Crowe, A.H., & Reeves, R. (1994). Who needs treatment: An overview of addiction and its treatment. In A.H. Crowe, & R. Reeves (Eds.), Treatment for alcohol and other drug abuse: Opportunities for coordination (Technical Assistance Publication No. 11, pp. 1-10). Rockville, MD: Center for Substance Abuse Treatment.

This chapter provides an overview of the process of addiction from the initial stage of experimental and social use through problem use to the final stage of dependency and addiction. As an individual moves through these stages, which may take 5-10 years to complete, related physical, social, and psychological problems evolve. It is not inevitable that every individual will proceed through all of these stages, but once a person has developed a chemical addiction, he or she cannot return to earlier stages and cannot be "cured." Treatment is essential to begin the recovery process. The chronic and relapsing nature of addiction requires that recovery must involve sobriety, abstinence, relapse prevention programs, and continuing supportive intervention. Effective treatment includes the following five critical components: assessment, patient-treatment matching, comprehensive services, relapse prevention, and accountability. Often treatment programs will employ pharmacological and/or behavioral modalities to reduce or eliminate clients' substance abusing patterns.

De Leon, G., Inciardi, J.A., & Martin, S.S. (1995). Residential drug abuse treatment research: Are conventional control designs appropriate for assessing treatment effectiveness? Journal of Psychoactive Drugs, 27, 85-91.

Since the late 1980s, interest has been renewed in residential drug abuse. Earlier research employed control group designs. This article argues that for today's treatment research, the applicability of control groups created by either matched groups or by random sampling is limited.

Four difficulties with control group designs are: client differences make assembling matched treatment and control groups untenable; implementing random designs is practically impossible in field research; there are ethical, political, and legal dilemmas in withholding treatment from a control group; and randomly selected client populations will behave differently from the more realistic treatment circumstance involving client populations who are selected based on need and motivation. A more applicable perspective for drug abuse treatment research than the control group design needs to recognize that the client influences the treatment as well as that the treatment influences the client. Also, it must be understood that most clients view residential treatment as only one aspect of their life. Most importantly, individual differences must be taken into account when predicting outcome. A perspective that incorporates these concepts can use client history or baseline as its no-treatment comparative condition, and make use of multivariate analyses to help account for many other influences on outcome.

Donovan, D.M., Kadden, R.M., DiClemente, C.C., Carroll, K.M., Longabaugh, R., Zweben, A., & Rychtarik, R. (1994). Issues in the selection and development of therapies in alcoholism treatment matching research. Journal of Studies on Alcohol (Suppl. 12), 138-148.

There are a large number of possible approaches to the treatment of alcohol abuse and dependence. From a practical and methodological standpoint, however, only a limited number of interventions can realistically be included in research studies of treatment matching. A key question in planning studies of matching is what treatments to include. The authors provide a framework within which to discuss alcoholism treatment matching and the criteria applied to decisions concerning modes of treatment, treatment format, specific therapeutic strategies and the treatment setting. The methodological and practical issues raised and the decisions reached in Project MATCH are presented in each of these areas. The therapies chosen for Project MATCH, based on these criteria are described. (Author abstract modified)

Donovan, D.M., & Mattson, M.E. (1994). Alcoholism treatment matching research: Methodological and clinical issues. Journal of Studies on Alcohol (Suppl. 12), 5-14.

Client-treatment matching is an area receiving increased attention both in clinical practice and research with alcoholism. While the notion of potentially improving treatment outcomes by matching has been suggested for some time, there are a number of methodological and practical barriers that have impeded progress in the development of theoretically and clinically relevant matching models. This article provides an overview of the potential benefits of matching, the methodological factors that increase the complexity of research in this area, and some of the clinical barriers that make implementation more difficult. This overview also introduces this special issue of the Journal of Studies on Alcohol, which examines in more detail each of the methodological issues involved in clinical research on treatment matching. While these methodological issues present unique challenges to the clinical researcher, the potential benefits of

matching appear promising and should serve to motivate clinicians and researchers to pursue continued work in this area. (Author abstract modified)

Finney, J.W. (1995). Enhancing substance abuse treatment evaluations: Examining mediators and moderators of treatment effects. Journal of Substance Abuse, 7, 135-150.

This article considers ways in which the basic, comparative approach to evaluating treatment for substance abuse is sometimes enhanced. The general strategy has been to make treatment evaluation projects explanatory by embedding them in a theoretical framework. Using either a theory of the treatment process or of patient-treatment matching as a guide, the typical approaches for enhancing comparative treatment evaluations are to identify either mediators or moderators of treatment effects. In addition to addressing the basic question of treatment efficacy, one can also ask in more explanatory evaluations how the treatment works or for whom the treatment works best. Variations of these questions that can be addressed in treatment process and patient-treatment interaction effect analyses are discussed. Particular attention is given to identifying mediators of patient-treatment interaction effects. Some advantages of making treatment evaluations more explanatory are discussed. (Author abstract modified)

Gastfriend, D.R., & McLellan, A.T. (1997). Treatment matching: Theoretic basis and practical implications. Medical Clinics of North America, 81, 945-966.

This study addresses the complexity of patient-treatment matching, including both cost and treatment considerations. Many matching variables have been identified that relate to specific modalities of treatment and to specific levels of care so that healthcare providers can address patients' substance use problems on a highly individualized basis. These variables include demographic factors (age, gender, culture), typology and severity (age of onset; severity of intoxication; withdrawal; quantity, recency, frequency of substance use), intrapersonal characteristics (psychiatric diagnosis, cognitive function, self-efficacy, stage of change), and interpersonal function (social stability). The evolution of formal criteria for patient placement such as the American Society of Addictive Medicine's criteria is a beneficial, adaptive process that is underway in numerous states, managed care entities, professional provider societies, and provider groups. Currently, matching approaches rely more heavily on consensus recommendations than on empiric matching data. The technology for conducting psychosocial treatment matching studies is rapidly increasing in sophistication. Although predictive validity has not yet been fully demonstrated on a large, multisite basis, the national research portfolio on treatment matching is expanding in size and complexity.

Geller, A. (1997). Comprehensive treatment programs. In J.H. Lowinson, P. Ruiz, R.B. Millman, & J.G. Langrod (Eds), Substance abuse: A comprehensive textbook (3rd ed., pp. 425-429). Baltimore, MD: Williams and Wilkins.

This chapter provides an overview of options available for treating addictions and summarizes current clinical and health services research findings. Chapter topics include the treatment setting; treatment models; services provided by treatment programs; treatment techniques; provider characteristics; the intensity of treatment; patient-treatment matching; efficacy and cost-effectiveness of treatment; treatment techniques and modalities (cue exposure, aversion, Alcoholics Anonymous, brief intervention, combined use of pharmacotherapy with other treatment modalities, and the use of naltrexone); the need to move from treatment efficacy to treatment effectiveness; and the characteristics of an ideal treatment program.

Gottheil, E., Sterling, R.C., Weinstein, S.P., & Kurtz, J.W. (1994). Therapist/patient matching and early treatment dropout. Experimental Therapeutics in Addiction Medicine, Part II 13(4), 169-176.

This study of intake procedures was initiated with a view toward reducing the early dropout rate of substance abusers. Eight different therapists conducted intake interviews of 634 cocaine-dependent first admissions to an outpatient cocaine treatment program. No significant differences in return rate were found across either the eight therapists or their level of academic training. The authors found that matching therapists and patients with respect to gender and race for the intake interview did not increase the proportion of patients returning for a second visit. In addition, the hypothesis that providing a sense of continuity by having the therapist who conducted the intake interview become the treatment did not result in a higher return rate than if the patient was assigned to a different treatment therapist. Although the results do not indicate methods of further reducing early treatment dropouts they are helpful in reducing concerns about who conducts intake interviews and how patients are assigned. (Author abstract modified)

Hser, Y. (1995). A referral system that matches drug users to treatment programs: Existing research and relevant issues. Journal of Drug Issues, 25, 209-224.

This article reviews the literature on matching to assess current knowledge and describes a conceptual framework for the development of an expert-guided, computerized system to be used in a central intake or referral agency. An effective central intake that matches clients to specific interventions needs to maintain an up-to-date list of local programs and the particular services they offer, to assess clients using a comprehensive instrument, and to link clients to the most appropriate treatment and case management services available using the results of the assessment. Hser contends that this type of expert-guided referral system that employs profile matching, although limited by available resources, will most likely enhance positive treatment outcomes. Profile matching can focus on many different treatment levels, such as program setting, therapist, therapeutic approach, and treatment stages, including acute intervention, rehabilitation,

maintenance, and aftercare. A systematic approach to selecting the most suitable treatment program for a specific client could encompass multiple dimensions of client characteristics, instead of relying on a single patient measure. In addition, researchers might examine the impact of dynamic variables, rather than static ones like demographics—for example, stages of change, stages of recovery, and stages of addiction, client preferences, perception, and practical needs; immediacy and areas of problem/need.

Institute of Medicine. (1992). Prevention and treatment of alcohol-related problems: Research opportunities. Journal of Studies on Alcohol, *53*(1), 5-16.

This article summarizes the major themes, conclusions and recommendations of a 2-year study conducted for the National Institute on Alcohol Abuse and Alcoholism by the Institute of Medicine. The study was devoted to the identification of research opportunities that will improve knowledge about the prevention and treatment of alcohol problems. In the first part of the report, the study committee examines the social and personal aspects of alcohol-related problems toward which prevention efforts are directed; delineates the features of a public health orientation that it deems most appropriate for the prevention task; discusses individual vulnerability to alcohol misuse; and reviews genetic, developmental, and social learning perspectives on prevention. In the second part of the report, which is devoted to treatment research, the committee considers the underlying philosophical issues as well as the formidable methodological problems in conducting treatment research. Central to this is a broad review of promising treatment modalities and the research needed for developing effective patient-treatment matching schemes. In the final part of the report, the committee concludes that cooperative multisite research efforts are indispensable to the implementation of the research directions it recommends. (Author abstract)

Kaminer, Y., Blitz, C., Burlison, J.A., & Sussman, J. (1998). The teen-treatment services review. Journal of Substance Abuse Treatment, *15*, 291-300.

This report describes the Teen-Treatment Services Review (T-TSR) and its initial testing. This brief interview, modified from an adult Treatment Services Review, furnishes a quantitative profile of the types and number of in- and out-program treatment services provided during a treatment episode for substance use disorders (SUD). One-day test-retest interval data were collected from adolescent patients in a partial hospitalization program (n=20) and from an outpatient clinic (n=24). The clinical utility was supported, but the test-retest reliabilities of the T-TSR were variable. This instrument may be useful at the programmatic level in describing and comparing programs by the type and number of services delivered to adolescents with SUD. Additionally, it may offer a tool for quality assessment by evaluating actual patient treatment-services matching.

Kaminer, Y., Burleson, J.A., Blitz, C., Sussman, J., & Rounsaville, B.J. (1998). Psychotherapies for adolescent substance abusers: A pilot study. Journal of Nervous and Mental Disorders, 186, 684-690.

This study tested the hypothesis that dually diagnosed adolescent substance abusers could be matched to effective treatments on the basis of their comorbid psychopathology. Specifically, patients with externalizing disorders would have better outcomes when treated with cognitive-behavioral group treatment (CBT), and subjects with internalizing disorders without comorbid externalizing disorders would fare better in interactional group treatment (IT). Thirty-two dually diagnosed adolescent substance abusers were randomized into two 12-week manual guided outpatient group psychotherapies: CBT and IT. At 3-month follow-up, no patient-treatment matching effects were identified. Adolescents assigned to CBT demonstrated a significant reduction in severity of substance use compared with those assigned to IT. Improvement in severity of family function showed a trend in favor of CBT. School function, peer-social relationships, legal problems, and psychiatric severity all showed a consistent nonsignificant direction in favor of CBT over IT. CBT appears to be a promising short-term psychosocial intervention for adolescents.

Kauffman, J.F., & Woody, G.E. (1994). Matching treatment to patient needs in opioid substitution therapy (Treatment Improvement Protocol No. 20). Rockville, MD: Center for Substance Abuse Treatment.

Guidelines for treatment providers working with opiate-addicted persons offer methods for matching patients with their best treatment options. Patients in this population often need a broad range of services in addition to opioid substitution therapy, and research has shown that providing these services as part of the therapy program greatly increases retention in treatment and improves outcomes. A model is outlined for matching patients to services that takes into account the changing needs of patients at different phases of treatment. A comprehensive assessment process for identifying patient needs is delineated. The core treatment elements for addressing those needs are described. Step-by-step guidelines also are presented to assist programs in designing and implementing evaluation studies since evaluation and self-monitoring are important ways to ensure that programs stay responsive to patient needs. The costs of opioid substitution therapy are examined, with a review of several approaches to determine the costs and benefits of matching patients to needed services.

Landry, M.J. (1995). Overview of addiction treatment effectiveness. Rockville, MD: Substance Abuse and Mental Health Services Administration.

This report from the Office of Applied Studies overviews the effectiveness of addiction treatment. Specific treatment approaches, treatment settings, and treatment components and services are described and an analysis of the effectiveness of each is provided. This literature review indicated that addiction treatment works: Patients in treatment typically reduce, if not stop, their substance

use. Such reductions often persist several months or years after treatment. Studies have shown that addiction treatment has a positive effect on physical health, psychosocial functioning, employment stability, criminal justice involvement, and prevention of relapse. While matching patients to treatments holds promise for improving outcomes, the effectiveness of patient-treatment matching remains in question. Program characteristics associated with positive treatment outcomes include adequate funding and staffing, management and clinical staff efforts to ensure quality services, provision of adequate clinical treatment services, and flexible policies that emphasize individual treatment needs. Evidence suggests that high levels of therapist empathy and counselor functioning in interpersonal skills are associated with positive outcomes. Among patients in methadone maintenance treatment, patients stabilized on higher doses have better treatment outcomes than those on lower doses. Medications, such as disulfiram and naltrexone, used to prevent spontaneous substance use are generally ineffective when used as the sole treatment, but are more effective when used by motivated patients in the context of a comprehensive treatment program. Social skills training, relaxation techniques, stress management can be effective adjuncts to addiction treatment.

Link, T. (1993). The corporation as treatment matching facilitator. Employee Assistance Quarterly, 8(3), 31-42.

Based on the evidence that Veterans Administration hospitals have successfully implemented patient-treatment matching for alcoholism, the article discusses how business can serve as effective matching facilitators. Although corporate settings are not suitable for full, intensive substance abuse treatment, they can play a large role in educating and matching employees with individualized treatment. While individuals need help navigating the complex maze of substance abuse treatment programs that offer various interventions, philosophies, settings, and modalities, corporations can mitigate the confusion by providing employees with assessment instruments and counseling designed to increase self-knowledge as well as information concerning the various programs available in the area. The potential for positive treatment outcomes increases in a corporate setting because the client population tends to possess a higher functioning level, greater financial and job stability, health insurance, and better social support than the general treatment population. In addition, the employer can require mandatory information sessions and make information more accessible by using a bulletin board. Companies would benefit from increased productivity, less absences, enhanced job satisfaction, lower turnover rates, decreased health care costs, improved relations with co-workers, and fewer relapses and treatment readmissions. The disadvantages of treatment in the workplace consist of confidentiality, the exclusion of family members, and the lack of trained personnel, facilities, and funds to operate extensive rehabilitation programs.

Litten, R.Z., Allen, J.P., Gorelick, D.A., & Preston, K. (1997). Experimental pharmacological agents to reduce alcohol, cocaine, and opiate use. In N.S. Miller (Ed.), Principles and practice of addictions in psychiatry (pp. 532-546). Philadelphia: W.B. Saunders Company.

This chapter addresses pharmacological agents that are intended to reduce the use of abused substances but are considered experimental because they have not received Federal Drug Administration approval. The agents considered for reducing problematic drinking are opioid antagonists and serotonergic agents, including serotonin reuptake inhibitors, 5-HT sub1A agonists, 5-HT sub2 antagonists, 5-HT sub3 antagonists, gamma-aminobutyric acid agonists, and dopamine agonists and antagonists. A variety of experimental drugs are also available for the treatment of cocaine use and opiate abuse. It is concluded that, in addition to psychosocial, behavioral, and cognitive therapies, growing evidence suggests that medications may also display patient-treatment matching effects and that continued research is warranted in this area.

Mattson, M.E. (1994). Patient-treatment matching: Rationale and results. Alcohol Health and Research World, 18, 287-295.

In research, evaluations comparing various types of substance abuse treatment have often revealed no significant outcome differences, but analyzing interactions between particular patients and treatment types results in more evidence of differential benefits. Certain types of treatment work better for certain types of clients. This article explores the role of matching in alcoholism treatment and research and delineates the key components of Project MATCH, which is long-term, multisite study of patient-treatment matching. The author argues that effective matching involves systematic assignment of patients to well-defined treatments, comprehensive assessment of client characteristics and needs, and explicit treatment matching guidelines or rules. Initially, client-treatment matching researchers need to identify the characteristics and needs of patients that may be critical for selecting the most appropriate intervention. Patient variables encompass demographics, substance abuse-related characteristics, intrapersonal qualities (e.g., psychiatric problems, cognitive functioning, self-confidence), and interpersonal attributes (e.g., social supports). As an alternative to patient traits, substance abuse practitioners might match their clients with pharmacological interventions, allow them to choose from a variety of treatment options, or link clients with individual therapists who possess characteristics the clients finds particularly salient.

Mattson, M.E., & Allen, J.P. (1991). Research on matching alcoholic patients to treatments: Findings, issues, and implications. Journal of Addictive Diseases, 11(2), 33-49.

This article reviews the current research literature on patient-treatment matching and describes three different models for patient-treatment matching and the empirical evidence that supports matching. The first model distinguishes between outcome predictors and treatment matching variables. For outcome predictors, the patient characteristic indicates the outcome, making the

type of treatment received irrelevant. Some outcome predictors include severity of alcohol dependence, age of onset, family history, social stability, and psychopathology. The other two models deal exclusively with treatment matching variables, where particular patient characteristics are matched with specific treatment modalities to optimize treatment benefits. Client traits could be matched with a variety of treatment characteristics, including method or modality, goals of treatment, intensity or setting, and therapist qualities. The authors also discuss the pros and cons of matching in clinical settings and recommend ideas for future research.

Mattson, M.E., Allen, J.P., Longabaugh, R., Nickless, C.J., Connors, G.J., & Kadden, R.M. (1994). A chronological review of empirical studies matching alcoholic clients to treatment. Journal of Studies on Alcohol (Suppl. 12), 16-29.

During the past 20 years researchers have become increasingly interested in exploring the benefits of differential assignment of alcoholics to treatments based on client-specific characteristics, rather than searching for a single best practice intervention for all clients. Thirty-one empirical studies on client-treatment matching are reviewed, particularly from the perspective of how research methodology in this area has evolved. In addition, general observations are provided on how research methodology on this topic can be further enhanced. Finally, several promising interactions between client characteristics and particular interventions are noted, based on empirical studies to date. (Author abstract modified)

Mattson, M.E., & Donovan, D.M. (1994). Clinical applications: The transition from research to practice. Journal of Studies on Alcohol (Suppl. 12), 163-168.

As validated and improved alcoholism treatment methods emerge from Project MATCH and other studies, a dedicated and systematic effort will be needed to incorporate them into ongoing programs, to monitor their success in real world settings and to make adjustments and refinements as needed. Accomplishing this involves responsibilities for both researchers and practitioners. A complex continuum of activities designed to move interventions from research to practice is common to all therapeutic areas, with a fundamental component being researcher-provider interactions. Challenges include clarification of misperceptions realistic evaluations of the feasibility of making changes in the treatment system; effective communication between providers and researchers; and proactive guidance from leaders who set standards of practice. Findings from relevant studies in alcoholism research can be assimilated into the treatment system with as little delay as possible as linkages between researchers and providers are strengthened. These linkages will be further strengthened by research in organizational, management and delivery mechanisms conducted by emerging applied research areas such as health services. (Author abstract modified)

McLellan, A.T., & Alterman, A.I. (1991) Patient treatment matching: A conceptual and methodological review with suggestions for future research. In R.W. Pickens, C.G. Leukefeld, & C.R. Schuster (Eds.), Improving drug abuse treatment (pp. 114-135). Rockville, MD: National Institute on Drug Abuse.

This chapter examines conceptual and methodological issues associated with matching strategies and discusses methodological difficulties in performing patient-treatment matching research and demonstrating a matching effect. The authors analyze past studies in order to determine the direction that future research should take. Treatment must be effective and delivered in the intended manner, quantity, and intensity in order for matching to work successfully. It is important to measure specific treatment ingredients within a particular modality to avoid the inaccurate conclusion that a setting is correctly matched to a patient, when in reality a specific combination of outcomes resulted in the positive outcome. In addition, research results may erroneously indicate no correlation between patient variable and modality if the nature and duration of treatment ingredients are not measured. Patient-treatment matching should be reevaluated during each of the discrete, well-defined stages of rehabilitation—patient assessment and treatment selection, provision of intervention services, and continuing care.

McLellan, A.T., Alterman, A.I., Cacciola, J., Metzger, D., & O'Brien, C.P. (1992). A new measure of substance abuse treatment: Initial studies of the treatment services review. Journal of Nervous and Mental Disease, 180, 101-110.

This paper describes the development and initial testing of the Treatment Services Review (TSR). The TSR is a 5-minute, technician-administered interview that provides a quantitative profile of the number and types of treatment services received by patients during alcohol and drug abuse rehabilitation. Test-retest studies indicated satisfactory reliability administered either in person or over the phone. Tests of concurrent validity showed the ability to discriminate different levels of treatment services and good correspondence with independent measures of treatment provided. While additional studies are still needed with this instrument, the data collected thus far suggest that the TSR may serve two types of needs. At the programmatic level, the TSR may prove useful in describing and comparing programs in terms of the nature and number of services actually delivered to patients. At the individual patient level, the TSR may offer a means of evaluating the match between a patient's needs and the services actually provided. (Author abstract modified)

Mee-Lee, D. (1994). Caring for patients in a changing environment. Chevy Chase, MD: American Society of Addiction Medicine.

Managed care is a system that integrates the financing and delivery of appropriate medical care. Within this new environment of cost containment, there lie at least four opportunities to catalyze the development of cost-conscious addiction treatment: individual case management, which emphasizes flexibility in matching patients with levels of care and treatment options, rather than

simply cutting costs by limiting access and lengths of stay; privatization by states of mental health systems under systems that would have them contract for care with private sector providers; placing new emphasis on outcomes management; and increasing attention given to managed competition, encouraging managed care organizations to compete for insurance contracts on the basis of price and quality.

Mee-Lee, D. (1994). Placement criteria and patient-treatment matching. Chevy Chase, MD: American Society of Addiction Medicine.

The American Society of Addiction Medicine (ASAM) Patient Placement Criteria provide an important resource in promoting flexible, cost-effective treatment that conserves scarce health care resources. These criteria focus on six dimensions to define biopsychosocial severity: potential for acute intoxication; biomedical conditions and complications; emotional/behavioral conditions or complications; treatment acceptance/resistance; relapse potential; and recovery environment. Criteria listed under these six dimensions help guide placement to one of four levels of care, which is the first step in matching patients to treatment. Biomedical modalities focus on improved detoxification regimens, anti-craving medication, antagonist medications, methadone treatment, and psychopharmacological approaches. In the sociocultural dimension, treatment modalities include the community reinforcement approach, family therapy, therapeutic communities, and various motivational techniques, such as intervention and contingency management. Matching patients to treatment involves matching severity of illness with intensity of service.

Moos, R.H., Pettit, B., & Gruber, V.A. (1995). Characteristics and outcomes of three models of community residential care for substance abuse patients. Journal of Substance Abuse, 7, 99-116.

Three models of transitional residential community care for substance abuse patients are defined based on the differential provision of health and treatment services: a psychosocial model, a supportive rehabilitation model, and an intensive treatment model. Facilities that provided a high level of on-site health and treatment services were categorized as following an intensive treatment model; these facilities had the strongest emphasis on medical, dual diagnosis, and family treatment orientations. The facilities also had clearer policies and provided their residents with more opportunities to participate in setting policies; however, staff were not more accepting of patient impairment or problem behavior. Patients in facilities with intensive treatment programs obtained more outpatient mental health aftercare. In each of the three types of facilities, a longer length of care was associated with a lower readmission rate; patients who dropped out of psychosocial model facilities had especially high readmission rates. Overall, the findings identify substantial variations among community residential facilities for substance abuse patients, but show relatively little matching of patients' needs with facility services and programs.

Myers, M.G., Rohsenow, D.J., Monti, P.M., & Dey, A. (1995). Patterns of cocaine use among individuals in substance abuse treatment. *American Journal of Drug and Alcohol Abuse*, 21, 223-231.

Recognition of the heterogeneity among substance abusers has led to increased attention to the issue of client-treatment matching. One approach involves identifying different patterns of use within samples of substance abusers. This preliminary report employed a cluster analysis of various aspects of cocaine use to examine subgroups of cocaine users within a sample of individuals in treatment for substance abuse. Three clusters emerged, primarily differentiated by quantity/frequency of use and route validity. Results suggest that subgroups of cocaine use patterns exist within a sample of substance abusers. In addition, these subgroups differ in age of cocaine use onset and the severity of negative consequences. Future research is needed to establish the clinical utility of these clusters. (Author abstract modified)

Nielsen, B., Nielsen, A.S., & Wraae, O. (1998). Patient-treatment matching improves compliance of alcoholics in outpatient treatment. *Journal of Nervous and Mental Disorders*, 186, 752-760.

The purpose of this investigation was to determine whether the proper matching of patient, treatment, and therapist would improve patient compliance in the outpatient treatment of alcoholics. The authors randomly placed 119 alcohol abusers who had begun protracted outpatient treatment for alcoholism in either low- or high-structured treatments. These patients were offered 12 months of individual treatment; interruption of this treatment was recorded as noncompliance. The consequence of compliance for long-term prognosis was described by means of the Addiction Severity Index. The form of treatment in itself had no importance for compliance; however, correct matching of a patient and a treatment structure resulted in a compliance rate of 63 percent as opposed to 38 percent compliance among mismatched patients. Twenty-four months after the initiation of treatment, patients in the compliance group had a significantly higher level of function than those in the noncompliance group. The authors' investigation showed that the correct matching of patients and treatment structure improves compliance and long-term prognosis. (Author abstract modified)

Nirenberg, T.D., & Maisto, S.A. (1990). The relationship between assessment and alcohol treatment. *International Journal of the Addictions*, 25, 1275-1285.

Recently, considerable attention has been paid to the matching hypothesis as an explanation of the failure to find a treatment of alcoholism that is generally beneficial. Clinicians, however, have long claimed that they match treatments to their patients' characteristics. The purpose of this study was to obtain descriptive data on the practice of patient-treatment matching in alcohol treatment programs. A survey questionnaire was sent to the directors of Veterans Affairs inpatient alcohol treatment programs across the United States. The questionnaire concerned program characteristics, treatment content, and patient-treatment matching practice. The results

suggest that matching commonly occurs in the sample treatment programs, despite their typically structured format. Questions about the practice of patient-treatment matching that the findings raised are addressed. (Author abstract modified)

Salazar, C. (1997). Relapse prevention and nursing interventions. In G.H. Rassool, & M. Gafoor (Eds.), Addiction nursing: Perspectives on professional and clinical practice (pp. 67-79). Cheltenham, United Kingdom: Stanley Thornes.

Relapse prevention (RP) acknowledges the biological, psychological, and sociocultural factors involved in addictive behaviors. It encompasses a wide range of relapse management strategies, from the use of disulfiram to the use of the Alcoholics Anonymous fellowship. Examining the factors involved in the relapse process has led to an understanding of the real difficulties that individuals encounter when trying to achieve a substance-free lifestyle. RP incorporates work on motivation and motivational interviewing, and the model of change. This chapter provides a brief overview of the RP model with focus on the process of change. The importance of a patient-treatment matching approach and implications for nursing practice are addressed.

Schmidt, L., & Weisner, C. (1993). The emergence of problem-drinking women as a special population in need of treatment. In M. Galanter (Ed.), Recent developments in alcoholism: Vol. 12. Women and alcoholism (pp. 309-334). New York: Plenum Press.

This chapter chronicles the development of advocacy for improvements in alcohol treatment services for women during the 1970s and 1980s and its influence in terms of real change in treatment systems in the United States. The authors follow the development of a “women’s alcoholism movement” from its inception in the late 1970s through its transition during the late 1980s into a broader movement focused on drug abuse and perinatal addiction. New governing images of problem-drinking women that advocates presented, their claims about the nature of substance abuse problems in women, and their recommendations for a more “gender-sensitive” treatment system are described. Also reviewed is the increased Federal involvement in the issue over the course of the 1980s, as pressure mounted on policy makers to respond to the crisis over drug-exposed infants by making treatment services more accessible to women. The chapter concludes by considering these developments from the perspective of national treatment system statistics, finding modest growth in specialized and women-only treatment units, as well as moderate increases in the representation of women in substance abuse treatment caseloads. (Author abstract modified)

Smith, M.B., & Hoffman, N.G. (1992). Assessment and treatment outcome evaluation: The CATOR approach. St. Paul, MN: CATOR/New Standards.

This paper explores the current state of the art regarding addiction. The following five aspects are considered: data demonstrating that addictions tend to be discrete diagnostic disorders and the procedures for identifying them; screening to identify risk for addictions; treatment placement

methods; efficacy of rehabilitation treatments; and cost offsets relevant to health care. The authors argue that we do have the technology to find and diagnose most cases of addictions in patients found in medical and other populations. Accurate treatment matching or placement (i.e., matching each patient to the appropriate level and intensity of care) is now possible because of newly available reliable and valid placement instruments. A number of current treatment approaches have demonstrated reasonable outcomes through proper outcome evaluation procedures. The cost offsets of addictions treatment yield a significant payback into the system and suggest that addictions treatment should be an integral component of strategies for health care cost containment.

Sterling, R.C., Gottheil, E., Weinstein, S.P., & Serota, R. (1998). Therapist/patient race and sex matching: Treatment retention and 9-month follow-up outcome. *Addiction*, *93*, 1043-1050.

This study was conducted to replicate previous findings regarding the effect of patient/therapist race and sex-matching as this relates to the early dropout rate of substance abusers, and to examine the impact of such matching on treatment retention and 9-month outcome for African-American patients (N=967). Patient and therapist characteristics were crossed in a 2 x 2 factorial design; matching effects were then tested using retrospective data. Follow-up data were drawn from the Addiction Severity Index, the Risk for AIDS Behavior Inventory, and a questionnaire measuring post-discharge need for treatment, employment, and education. Retention was defined as the number of days inclusive between the last date of service and the date of admission. No significant differences in early dropout rates were found after initial contact with 10 different therapists. Matching therapists and patients with respect to gender and race did not decrease the premature dropout rate, but partial support for gender matching was noted. The authors concluded that matching therapists and substance-abusing patients on gender and race may not necessarily be essential to improving retention and outcome. (Author abstract modified)

Tarter, R.E. (1995). Rationale and method of client-treatment matching. *The Counselor*, *13*(4), 26-30.

In an age of managed care, client-treatment matching offers an effective tool for increasing positive treatment outcome, while reducing costs. Traditionally, substance abuse treatment has utilized an approach that provides essentially the identical treatment to chemically dependent patients. In contrast, client-treatment matching focuses on the individual's unique personality and problems. Although the idiographic approach has the advantage of being tailored to individual needs, it is less systematized and formalized than the nomothetic approach and the quality of treatments varies widely from program to program. To maximize treatment efficacy, The author recommends combining nomothetic and idiographic interventions because substance abuse encompasses a variety of etiologies, natural histories, and medical, psychological, and social consequences. Treatment failure, defined as quitting the program before treatment completion and relapse, can often be attributed to mismatch between intervention methods and client's needs, circumstances, and characteristics. This type of failure could be averted by client-treatment

matching that follows systematic guidelines. The author presents a practical method that has demonstrated empirical validity and links information obtained from assessment to appropriate interventions. This method follows three consecutive stages: the first stage involves a comprehensive assessment using the Drug Use Screening Inventory (DUSI), the second stage conducts a in-depth diagnostic evaluation of the key problem areas identified by the initial assessment, and the last stage matches the client to the “best” treatment for him or her. Appropriate assessment considers the severity of the client’s drug use, co-existing mental or emotional problems, as well as family, social, or work-related difficulties. Client-matching enhances the effectiveness of treatment and reduces the likelihood of repeat treatment episodes.

Tarter, R.E. (1994). Client-treatment matching. The Counselor, 12(2), 22-25.

Treatment failure may be the result of a mismatch between client needs, circumstances, and characteristics. The author reviews screening, comprehensive diagnostic evaluation, and client-treatment matching. In a nomothetic treatment approach, all clients receive the same treatment. In an idiographic model, a comprehensive rehabilitation is concerned with the unique features and problems of the person. Both nomothetic and idiographic interventions must be integrated to recognize that alcoholism and drug abuse have manifold etiologies, diverse natural histories, and multiform medical, psychological, and social concomitants and consequences.

Wirtz, P.W., Carbonari, J.P., Muenz, L.R., & Stout, R.L. (1994). Classical analytical methods for detecting matching effects on treatment outcomes. Journal of Studies on Alcohol (Suppl. 12), 76-82.

This article presents an approach to analyze repeated measures designs with specific application to treatment matching studies. A generic treatment-matching hypothesis is formulated under the multivariate general linear model, transforming the dependent variables to account for the repeated measure structure of the data. Issues of primary importance in the use of this approach (such as correcting for inflated Type I error and robustness of statistical tests to parametric assumptions) are discussed. The article concludes with an assessment of the strengths and weaknesses of this approach compared with alternative approaches. (Author abstract modified)

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