

Vocational Rehabilitation of Drug Abusers

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Employment has been identified as an important element in the rehabilitation of drug abusers and, together with abstinence from illicit drugs and criminal involvement, is frequently used as a criterion of treatment outcome. The research literature for the last 20 years on variables affecting employment and the vocational rehabilitation of drug abusers is reviewed with an emphasis on (a) the identification of variables influencing the employment of drug abusers and (b) the evaluation results of interventions that have been developed for this purpose. It is concluded that a number of programs have been demonstrated to have had some success in the vocational rehabilitation of drug abusers. Specific recommendations are made concerning both the direction of further research in this area and the application of existing knowledge in current practice.

The purpose of this review is to examine the existing literature on employment, drug use, and addiction over approximately the past 20 years to clarify the role that has been played by employment in the onset of, maintenance of, and recovery from addiction. In addition, interventions designed to improve employment are reviewed in an attempt to identify those variables that may be useful in increasing employment in the addict population. The conclusions to be drawn from the existing literature reflect an increasing awareness of the important role employment and employment-related interventions play in the treatment of and recovery from drug abuse. Recommendations are made with respect to (a) areas in which additional research is needed regarding the relationship between employment and addiction and (b) those elements that require inclusion in any model of employment rehabilitation for drug abusers. The literature chosen has been limited to the nonprison population. The articles chosen for the review are among the most regularly cited in the field and can thus be viewed as prototypical.

This review focuses on opiate (almost always heroin) addicts, because this group has been the primary concern of employment-related studies, many of which have taken place within the context of methadone maintenance treatment; the extent to which these findings are generalizable to other populations of drug users (e.g., cocaine addicts) is not known. Also, the term *ex-addict*, when used, is reflective of the descriptions applied by the authors of specific studies, and thus its use may not be consistent across all studies. Considering the predominant con-

ception of addiction as a chronic relapsing disease (e.g., Kleber, 1989; Platt, 1995a), the term may have different meanings, depending on the client's position in the frequently repetitive cycle of addiction, recovery, and readdiction at the time of study.

There are long-standing and convincing arguments for the importance of employment in addiction treatment. Although a number of models can be suggested that would anchor these studies (e.g., the addict as disabled, the addict as morally flawed, or, as currently held, the addict as criminal), there is a startling lack of stated theoretical underpinnings for the research reviewed here. Changes in the definition of the addict have been evident in a shift to social control measures, as reflected by changes in funding emphasis over time (Humphreys & Rappaport, 1993). Most of the research reviewed here, however, has tended to speak of treatment and intervention reflecting a more medicalized model of addiction. Because no specific statement of the views of the researchers about addicts is available from the literature reviewed, however, evidence of theory shift toward (or away from) social control of addicts is not present.

This lack of theory does not, however, diminish the importance of the role of employment. In addiction treatment evaluation research, employment is viewed as both a desired outcome and an element of treatment. The acknowledgment by the drug treatment community of employment as a criterion for treatment outcome is reflected in the use of such a criterion by a number of researchers in the field of drug abuse treatment evaluation (e.g., DeLeon, 1984; Hall, 1984; Hubbard, Rachal, Craddock, & Cavanaugh, 1984; Simpson, 1984). In addition, employment may be an essential ingredient not only for a successful outcome to addiction treatment (e.g., National Institute on Drug Abuse [NIDA], 1979; Preble & Casey, 1976; see also Platt, 1986, pp. 287-291, for a discussion of this issue) but also for retention in treatment, a variable closely related to treatment outcome (e.g., DeLeon, 1984). In this regard, after comprehensively reviewing studies of the relationship between client characteristics and the impact of treatment, McLellan (1983) reported that 26 of 31 studies that included employment status as a variable found significant and positive correlations between employment status and retention in treatment. By holding a job, the client not only establishes a legal source of income but

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This article reviews publications appearing in the literature since 1972. Because of cultural differences affecting employment, the review is limited to research conducted in the United States.

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improves his or her self-esteem, which in turn may reduce use of illicit drugs and thus allow him or her to refrain from criminal activity (Joe, Chastain, & Simpson, 1990). Employment may also serve as a means of (re)socialization, allowing for integration into the "straight world." Thus, employment assumes a number of important roles in addiction treatment.

Rates and Correlates of Employment Among Addicted Populations

Rates of Pretreatment Employment in Addicted Populations

Employment is not usual for heroin addicts. Vaillant (1966, 1988) noted that, by age 40, New York heroin addicts had spent some 80% of their lives unemployed. He observed that "in someone whose daily life is unpatterned by a job, addiction poses a very definite and gratifying, if rather stereotyped, pattern of behaviour" (Vaillant, 1988, p. 1150).

The employment rate in the addict population before admission or at admission to drug treatment has remained, for the most part, relatively (and stably) low since 1970, ranging from approximately 15% to 35%. This range is found across different treatment modalities. Maddux and McDonald (1973), for example, found an employment rate of 21% among 100 chronic heroin users entering methadone treatment in Texas. Of those enrolled in the New York State Drug Abuse Control Commission methadone program, 14% were employed at the time of their admission in 1971 (Bloch, Ellis, & Spielman, 1977). Newman, Bashkow, and Cates (1974) found an employment rate of 14.8% for the 11,365 individuals applying for admission to the New York City Methadone Maintenance Program from July through December 1972. At about the same time, Dale and Dale (1973) found employment rates of 16% for female clients and 20% for male clients entering another New York methadone program.

In 1974, Suffet and Brotman (1976) found an employment rate of 29% at admission into an abstinence program; the same rate was found in the early 1980s in a sample of addicts maintained on methadone or in outpatient drug-free treatment (Aiken, LoSciuto, Ausetts, & Brown, 1984). McLellan, Luborsky, O'Brien, Barr, and Evans (1986) found that 34% of those addicted to alcohol or drugs were employed at the time of admission to three settings offering several treatment modalities. In a review article, Wolkstein and Hastings-Black (1979) noted that 73% of clients leaving treatment in 1976 were unemployed. Singh and his colleagues (Singh, Joe, Lehman, Garland, & Sells, 1982), reporting on the characteristics of more than 12,000 admissions to 211 methadone programs in 1977, found the mean rate of unemployment to be 63% at treatment entry; the median unemployment rate among the programs was 66%, a figure matched by the 65.5% rate found by Tims (1981) in 1980. Metzger and Platt (1987) reported an almost 26% employment rate in a sample of clients in four methadone clinics located in the greater Philadelphia/southern New Jersey geographic area for the period 1979 to 1981, a figure that, on reexamination, remained remarkably stable from 1981 through 1985 (Metzger, 1987). In 1989, Miranda, Frank, Marel, and Schmeidler reported unemployment rates among clients in outpatient treat-

ment to be 70% after 9 to 12 months in treatment. In 1990, Livingston, Randall, and Wolkstein reported that, for clients under the auspices of the New York State Division of Substance Abuse Services, there was an employment rate of 37%, noting this to be a decline of some 10% since 1980.

Thus, employment rates seem not to have dramatically changed over the last 20 years, despite several cycles of significant change in the economic environment. There is, however, at least one major exception to this pattern. Anglin, Booth, Ryan, and Hser (1988) found that more than 80% of Anglo and Chicano participants were employed in the period between the onset of their addiction and their entry into treatment. When the percentage of time these individuals were employed was factored in, however, their full-time employment rate was approximately 40%.

Thus, employment rates (and patterns) for the nonaddicted segment of the population are substantially above those for populations of drug abusers. For example, 72.3% of the civilian population between 25 and 64 years of age were employed in 1980, and 76.8% were employed in 1991 (U.S. Bureau of the Census, 1993). Even when the lack of a high school diploma is factored in, only 8.4% and 11.0% of the population between 25 and 64 years of age were unemployed in 1980 and 1991, respectively (U.S. Bureau of the Census, 1993). These data clearly indicate the need for interventions to increase employment among drug abusers.

Although drug addicts are defined as disabled by the Americans With Disabilities Act of 1990, their description would make them appear less so. Many studies have assessed the characteristics of addicts that might place them at higher risk for unemployment. In general, drug addicts can be described as more likely to be members of a minority group than the general population (Hser, Anglin, & Liu, 1990-1991; Kosten, Rounsaville, & Kleber, 1987b; Mathis, Navaline, Metzger, & Platt, 1994; McLellan, Ball, Rosen, & O'Brien, 1981; Simpson & Friend, 1988; U.S. Bureau of the Census, 1993). Their mean education level (highest year completed) ranges from 9.4 years (Hser et al., 1990-1991) to 11.8 years (Kosten et al., 1987b). This is comparable to the median education levels of the general population of 9.8 to 12.1 years (age 25+ and ages 25-29, respectively) in 1970, 12.0 to 12.5 years in 1980, and 12.4 to 12.7 years in 1990 (U.S. Bureau of the Census, 1993). Between 40% and 74% have completed high school (Marsh & Simpson, 1986; Mathis et al., 1994), a range slightly lower than the 51% to 79% found in the general population in 1990 (U.S. Bureau of the Census, 1993).

Definition of Employment

The results of the Anglin et al. (1988) study raise an important issue in any examination of employment among addicts: What definition of employment should be used? Different authors have reported employment at a given point in time, the number of days employed over a given period of time, the percentage of time worked, and the percentage of income derived from work.

Bloch et al. (1977) reviewed the literature on employment and identified three measures (time frames) commonly used in evaluation of treatment effectiveness (and assessed the value of

each through comparisons): (a) employment at program admission as compared with employment at the point of evaluation (point in time vs. point in time; 56% difference noted), (b) employment between the onset of addiction and program admission as compared with employment at the point of evaluation (period of time vs. point in time; 27% difference noted), and (c) employment between the onset of addiction and program admission as compared with employment during a minimum of 2 years of methadone treatment (period of time vs. period of time; 17% difference noted). The variability of each measurement type was attributed to the use of point in time or period of time measures. Treatment admission point in time data predispose findings of later success because functioning is lowest immediately before admission. The period of time between addiction onset and treatment entry provides a more stable baseline, but comparisons with a point of evaluation measure do not consider the extent of employment during treatment. Only period of time measures (both baseline and outcome) consider each of the failings of point in time measures.

Examination of later studies reveals similar patterns of difference resulting from the selection of baseline and outcome measurements. Kosten, Rounsaville, and Kleber (1987a) reported the mean number of days worked in the month before entrance into treatment and the average dollars earned during that time, whereas Anglin et al. (1988) reported the percentage of people employed and the average percentage of time they were employed for a defined period. Mathis et al. (1994) defined employment as currently having a job and examined the percentage of income derived from work by race and sex.

The variability of baseline and outcome measures chosen by researchers and discussed earlier makes comparison of the results of research very difficult at the least. In addition, the lack of distinction between full-time and part-time work in most studies makes results difficult to evaluate and comparisons with the population as a whole speculative.

Employment Patterns

In addition to discussions of the rate of employment, some researchers have developed typologies to categorize the work patterns of addicts. Platt and Metzger (1987) used a five-category classification for consistency of employment, and current employment at each of four data collection points was assessed. Addicts were described as "consistently unemployed" if they were unemployed at all four data collection points, "typically unemployed" if they were employed at only one point, "inconsistently employed" if they were employed twice during data collection, "typically employed" if they were employed at three data points, and "consistently employed" if they were employed at all four data collection points. As noted earlier, more than 26% of addicts were found to be typically or consistently employed (Platt & Metzger, 1987). Variability by race and gender was found in the data just described (Mathis et al., 1994) in that female clients had worked significantly less than had male clients, had received significantly less monthly income than their male counterparts, and had significantly more income from public assistance. In addition, female clients were less likely than male clients to be looking for work, and they re-

ported more frequently that they did not want employment. These findings are consistent with those reported elsewhere (e.g., Anglin, Hser, & McGlothlin, 1987) and should not be surprising, given the child-care responsibilities of women as well as the smaller workforce participation of women in the general population.¹ A typology of the employment activity of narcotic addicts similar to that developed by Platt and Metzger (1987) was developed by Shaffer, Wegner, Kinlock, and Nurco (1983). Regular full- or part-time work characterized the "successful straddler," "unsuccessful working addict," "solitary working addict," and "sociable, semiconventional addict" types, whereas antipathy toward work, often long-standing, characterized the "non-working addict" and the "solitary, successful criminal addict." Irregular work attendance characterized "deviant associates" and the "marginally subsisting addict."

Drawing on the same database used by Platt and Metzger (1987), Metzger (1987) was able to identify a number of variables that discriminated methadone clients with more or less stable patterns of employment (i.e., mostly unemployed, mostly employed, or stable employment). For all clients, three variables were found to significantly discriminate employment groups: parental employment, marital status, and race. In addition, for Black clients, two program involvement variables (length of time in the clinic and receiving take-home privileges) were found most strongly to discriminate between employment patterns, whereas four other variables also contributed to the prediction of stable employment (self-esteem, current drug use, parental employment, and marital stability). For White methadone clients, however, the factor scores representing work-related variables (i.e., not having problems at work, motivation to work, not seeking work, no work terminations, and relevant search for work) were related significantly to employment patterns. Interestingly, whereas the variables that best predicted employment patterns differed for Blacks and Whites, the pattern of parental work (type and frequency of parental employment during the client's childhood) was found to contribute most strongly to the function that predicted stable employment in both Black and White clients.

Race also plays a role in relationships between employment and other treatment variables. For example, Metzger and Platt (1983) reported a relationship between race and methadone dose, with Whites receiving higher doses of methadone than Blacks, and Blacks receiving higher doses than Hispanics. In the Metzger (1987) study, Blacks who received higher daily doses of methadone were more likely to acquire work within the study period that followed. Furthermore, when all other variables were held constant, race was found to be the most powerful explanatory variable for the employment characteristics of the study clients, which Metzger (1987) interpreted as suggesting a limiting effect of the environment on the rate of employment for Blacks. This result is consistent with an earlier one by Linn,

¹ It should be noted that women have been at a particular disadvantage in receiving drug abuse treatment in general; few programs have been developed to either identify or meet their specific needs (e.g., see Anglin, Hser, & Booth, 1987; Cuskey, Berger, & Densen-Gerber, 1977; Marsh & Simpson, 1986). It is interesting to note, however, that the employment of women in treatment is reflective of the employment of all women in the general population.

Shane, Webb, and Pratt (1979), who found that perceptions of the social climate of the ward environment were instrumental in whether or not Black addicts remained in treatment. Ward environment did not play a role in the retention of White patients, whose retention was influenced by intrapsychic factors.

Blacks also appeared to be helped more from the employment readiness intervention developed by Metzger and Platt (Metzger, Platt, Zanis, & Fureman, 1992). Black clients in this study (Platt, Husband, Hermalin, Cater, & Metzger, 1993; see later discussion) benefited more from the intervention than did White clients (19.7% employment in the experimental group and 8.1% in the control group for Blacks vs. 15.0% and 22.2%, respectively, for Whites), a finding that may be a function of the greater psychopathology often seen in White addicts (Platt, Steer, Ranieri, & Metzger, 1989). Furthermore, the results of the evaluation of the employment readiness intervention suggested that the effects of the intervention may have been more long lasting among Black than among White participants. At 12 months postintervention, the employment rate of Black participants was double the rate immediately after the intervention (20% and 10%, respectively). For White participants, employment decreased from 13% to 4% over the same period.

Role of Employment in the Development of Addiction

Anglin et al. (1988) defined the stages of an addiction career as the *preexperimentation phase*, the 12 months before the first use of narcotics; the *experimentation phase*, the first use of narcotics to the first daily use of narcotics; the *addiction phase*, daily narcotics use to first entry into treatment; and the *first treatment phase*, first entry into treatment to first discharge from treatment. Aside from the recognition of the multiple treatment episodes most addicts require, this model also acknowledges that, even before experimentation with narcotics, the future addict has begun his or her addiction career. In a study of more than 500 addicts enrolled in methadone maintenance in 1978, Anglin et al. (1988) found that 17% of Anglo women, 32% of Hispanic women, 34% of Anglo men, and 28% of Hispanic men reported that they had committed a property crime in the preexperimentation phase (before the age of first use [i.e., 15 to 30 years of age]). Between 17% and 45% were dealing, and between 19% and 47% had been arrested before any narcotic use. Nonnarcotic drugs were used by between one fifth and one half of the respondents in treatment. By contrast, the rate of nonmedical, nonnarcotic drug (excluding alcohol) use in the same age group in the general population ranged from 17% to 68% in 1979 (U.S. Bureau of the Census, 1993). These measures of delinquent behavior appear to be inversely related to the positive measure of employment. Employment rates were fairly high, ranging from 46% for Hispanic women to 63% for Hispanic men, and were comparable with the rates of the female and Hispanic populations as a whole in 1980 (U.S. Bureau of the Census, 1993). However, the employment involved was usually part time.

Helzer, Robins, and Davis (1976) studied addicted Vietnam veterans as to their preinduction employment status. Those who had had no full-time employment before induction were the most likely to become addicts after induction, those with more than 3 months of full-time employment were least likely

to become addicted, and those with less than 3 months of full-time employment fell between the other two groups (Helzer et al., 1976).

Employment and Criminal Activity

There is a clear relationship between higher unemployment and higher levels of criminal activity among addicts (e.g., Faupel, 1988; Platt, 1986). Not surprisingly, it has been concluded that addicts appear to rely less on legitimate work than on criminal or quasi-criminal activity as a source of income to maintain their habits (Flaherty, Kotranski, & Fox, 1984; Kozel, DuPont, & Brown, 1972; Nurco, Cisin, & Balter, 1981). Marsh and Simpson (1986) found dramatic decreases in criminal involvement clearly evident after treatment admission.

The relationship between crime and the maintenance of addiction has also been found among those involved in vocational rehabilitation programs (Brewington, Deren, Arella, & Randell, 1990). The most detailed study of this relationship was probably that of Faupel (1988); for this reason, it is reviewed here in some detail. Faupel (1988) hypothesized that when a person is legally employed, he or she has neither the time nor the need to obtain money through illicit sources, and that employment represents the shift of the addict from the drug subculture to mainstream culture. This relationship may be more complex, however. In a study conducted by Anglin et al. (1988), the percentage of addicts who were employed remained fairly stable across the addiction career. However, as the percentage of time spent working decreased, the percentage of persons reported committing property crimes increased, and vice versa. This finding suggests that legal employment itself may not be as significant as the amount of money earned through employment. The percentage of individuals arrested for drug-related offenses also follows this same pattern, thus explaining the need for more money. Faupel (1988) further illuminated the complexity of the relationship between crime and addiction in a careful analysis of the employment-criminality relationship in addicts. He examined addict criminality across legal employment levels (full time, part time, unemployed, or not in labor force), occupational categories (white collar, skilled-semiskilled, or unskilled), and crime types (personal, property, drug sale, or public order offenses) to test the hypothesis that occupational status and increased employment levels inhibited criminal involvement.

Using data from interviews with 544 daily heroin users in five cities, Faupel (1988) found only partial support for his hypothesis in that the average number of crimes in which his respondents were involved was greatest at the two extreme ends of his level of employment scale. Unemployed respondents (i.e., those not legally employed) had the highest levels of criminal activity, followed, in descending order, by full-time workers, part-time workers, and those not in the labor force (students, homemakers, etc.). When Faupel examined occupational status, however, he found that skilled and semiskilled workers reported the highest levels of criminal involvement, followed by white-collar employees and unskilled workers. Among women, the pattern was different, with the highest level of criminal involvement among unskilled workers, followed by white-collar, skilled, and semiskilled workers. When Faupel examined type of criminal activ-

ity, different patterns emerged. Women not in the labor force tended to commit the most property crimes, and both men and women who were employed full time tended to commit the most drug sale offenses (Faupel, 1988). For all crimes except public order offenses (i.e., prostitution, procuring, gambling, and alcohol offenses), full-time workers reported higher averages than part-time workers. Furthermore, with the exception of property crimes committed by women, full-time employees reported more criminal activities than did those not in the labor force. These findings appear to fly in the face of the belief that increased employment will result in decreased criminal activity, as well as the conclusions of Anglin et al. (1988) that hours worked and money earned are more significant than employment alone.

The study by Metzger (1987) similarly found criminal involvement to play only a minor role in explaining the current employment status of methadone clients. Criminal involvement was found to be related strongly to the acquisition of employment for Blacks but not to be related to acquisition of employment for Whites. Criminal involvement was found not to be related to the pattern of employment for either Blacks or Whites.

Employment and Drug Abuse Treatment

Entry into treatment and retention in treatment may have varying effects on employment. These effects are examined here from several perspectives. In considering the results of these studies, however, it should be kept in mind that vocational or employment services, or both, do not generally appear to be readily available to clients of addiction treatment programs. Hubbard (1981), for example, in his 1977 survey of 162 drug abuse treatment programs, found that only 9% of programs had funds specifically devoted to vocational services. Similarly, Senay, Dorus, and Joseph (1981) found that more than half the clients they studied reported that no employment-related services were available in their treatment programs. Joe, Simpson, and Hubbard (1991) reported that although 39.8% of the clients in their study of methadone maintenance programs were in need of employment services, only 8.8% actually received such services. These findings are perhaps explained by the fact that client vocational and employment needs, in contrast to other service needs, are typically given a low priority by programs (Arella, Deren, Randell, & Brewington, 1990a).

Pretreatment Employment and Treatment Outcome

Vaillant (1988), after examining admission variables predicting outcome at 12 years in a sample of treated heroin addicts, found that 63% of his stably abstinent group ($n = 30$), in contrast to 0% of his sustained addiction group ($n = 30$), had been employed for half of their adult lives before admission. Marsh and Simpson (1986) examined the posttreatment addiction careers of 84 female and 91 male addicts enrolled in methadone maintenance programs between 1969 and 1972. These addicts were interviewed at 6-year and 12-year intervals after admission to treatment. Employment was found to have improved over that time but was directly related to the employment that had occurred before treatment enrollment. The per-

centage of female addicts employed for 1 month or more increased from 49% in the year before enrollment to 54% at the 12th year posttreatment, a change that is consistent with the employment status of women in the general population between 1970 and 1980 (U.S. Bureau of the Census, 1993). The percentage of those with 6 or more months of employment increased from 25% to 34%. For men, the percentage with 1 or more months of employment increased from 65% to 68%, both rates being lower than those of the general population in 1970 and 1980 (79.7% and 77.4%, respectively; U.S. Bureau of the Census, 1993). Unlike in the general population, however, increased employment was reported at intake and at 12-year follow-up. For those employed for 6 or more months in the previous year, an increase of 14% to 52% was reported. Marsh and Simpson (1986) concluded that posttreatment differences in employment were more closely related to pretreatment differences (i.e., employment history) than to differential treatment effects. Elsewhere, Simpson (1984) summarized the results of several studies that found that a poor employment history *before and during* treatment was predictive of unemployment *after* treatment.

A retrospective examination of the employment patterns of 342 methadone clients in New York City conducted by Rothenberg (1978) revealed that, for clients remaining in treatment for a full year, the best predictor of employment during treatment was a history of work before treatment entry. Similarly, Hall, Loeb, LeVois, and Cooper (1981) found that lack of a recent history of employment before treatment was a powerful predictor of failure to obtain employment. When treatment outcome was examined as a function of client source of income before treatment, McLellan et al. (1981) found substantial treatment improvement among clients who had received their pretreatment income from jobs and illegal activities in contrast to those clients who had received their income from public assistance, despite general equivalence among clients in terms of demography, educational levels, and treatment histories.

Pretreatment employment has also been found to be related to remaining in naltrexone treatment (Capone et al., 1986). Of those in Capone et al.'s study who remained on medication for more than 60 days, more than 60% were employed; only 48% of those who did not remain in treatment were employed. At termination, 61% of those who remained more than 60 days were employed, with only 33% of those terminated at fewer than 60 days employed. Not all of those who were terminated had completed treatment, but the authors assumed that longer treatment leads to improvement (Capone et al., 1986). Employment before treatment entry has also been found to be associated with retention in methadone maintenance treatment (Ruiz, Langrod, Lowinson, & Marcus, 1977).

Craig (1980) reported a similar finding, namely a 31% employment rate among 322 methadone clients on entry into treatment, but an employment rate at entry of 61% for those clients who remained in treatment for 12 months. Not surprisingly, it should be noted that these results are similar to those obtained in outcome studies of alcohol dependence treatment, in which the best predictor of employment at follow-up after treatment has been found to be work history before treatment (Walker, Sanchez-Craig, & Bornet, 1982). Similarly, greater

employment, either alone (Sullivan, Targum, & Avani, 1982) or together with age and being married, has been found to characterize those individuals most likely to succeed in treatment for alcohol dependence (Ornstein & Cherepon, 1985).

A relationship between pretreatment primary source of income from employment and improvement in drug use, legal status, and psychological functioning for a group of addicts in methadone treatment was found by McLellan et al. (1981). However, those whose primary source of income had been criminal activity appeared to have had the greatest gains on the three outcome variables. Changes in source of income from illegal to legal were noted for this subpopulation (McLellan et al., 1981). Those individuals whose primary income source was public assistance fared poorest. A later study conducted by Kosten, Rounsaville, and Kleber (1987b) produced different findings, however, and reported improvement among all three groups, with the most consistent gains made by those whose primary source of income was public assistance.

Treatment and Employment: Posttreatment Measurement Only

Given that social adjustment through employment is a major goal of drug treatment, it is not surprising that most intervention studies for addicts, even when not focusing on interventions targeted on employment, include data on employment status after treatment as a measure of success. One such study found that 56.5% of clients successfully completing a detoxification program or attaining abstinence were employed or in school, in comparison with 43.5% of completers who were unemployed (Swartz & Jabara, 1974).

Treatment and Obtaining Employment: Premeasurement and Postmeasurement

In studies comparing employment at the time of enrollment and employment at discharge, improvement in the employment rate is usually found, with a wide variation in the magnitude of that change. Harlow and Anglin (1984), for example, found an increase of almost 18% in regular employment (from approximately 60% to approximately 70%) for heroin addicts in methadone maintenance. The increase was approximately concurrent with enrollment. This study also showed a downward curve in employment in the 10 years before enrollment in methadone treatment and fairly steady maintenance of employment for the 6 years after treatment entry (Harlow & Anglin, 1984).

An increase in employment from approximately 29% to almost 47% was found in a sample of clients in methadone maintenance and drug-free outpatient treatment from 30 days before the point of entry to 4-month follow-up (Aiken et al., 1984). There was, however, a great deal of variation in these increases by type of counselor. Employment increased from 29% to 48% for those clients who had been seen by professional counselors, from 30% to 55% for those who had been seen by paraprofessionals who were not ex-addicts, and from 28% to 40% for those who had been seen by paraprofessionals who were ex-addicts (Aiken et al., 1984). None of these increases were found to be significant, but significant differences were found between the

time of first client interview and follow-up for all three counselor groups (Aiken et al., 1984).

McLellan, Childress, Griffith, and Woody (1984) evaluated employment in the month before admission and in the month before a 6-month evaluation for drug abuse clients enrolled in methadone maintenance or a therapeutic community. They also ranked the clients by psychiatric severity (low, moderate, and high severity). The number of days worked increased for each of the six groups. For methadone clients, the increases were from 12 to 16 days among those with low psychiatric severity, from 15 to 18 days among those with moderate severity, and from 8 to 10 days among those with high severity. For therapeutic community patients, the increases were from 8 to 16 days among those with low severity, from 10 to 19 days among those with moderate severity, and from 6 to 9 days among those with high severity. Only the increases for therapeutic community patients with low and moderate severity levels were statistically significant.

A second study examining pretreatment and posttreatment employment, measured by the number of days worked during the month before intake and during the month before a 6-month, posttreatment follow-up, found significant increases (Arndt, McLellan, & O'Brien, 1984). The increases were significant both for those enrolled in a therapeutic community and those receiving naltrexone. When the two interventions were compared, however, the relationship was stronger for the first group, although not significantly so (Arndt, McLellan, & O'Brien, 1984).

A third study of this type reported the employment rates of alcohol abusers and drug abusers treated at three facilities (McLellan et al., 1986). The facilities differed by sponsorship and treatment offered. The first was a private treatment center outside Philadelphia offering inpatient, abstinence-oriented, therapeutic community treatment. The second was a private psychiatric hospital in New Jersey at which inpatient treatment averaging 28 days' duration was offered to a predominantly middle-class clientele. The third was an urban Veterans Administration (VA) clinic in Philadelphia offering methadone maintenance, narcotic antagonist, drug-free outpatient, and abstinence-oriented therapeutic community treatment. Overall, the number of days worked by alcohol abusers in the month before treatment and at 6 months increased significantly. However, when the treatment facility was considered, only those receiving treatment at the private center improved significantly. Drug abusers also showed overall improvement in the number of days worked, with the VA hospital and the private treatment center showing significant results (McLellan et al., 1986).

Joe and Simpson (1983) examined employment among opiate addicts over a 6-year period from 1972-1973 through 1978-1979. These addicts were divided into five types: those who became abstinent before entry into treatment, those whose abstinence followed entry into treatment or incarceration, those whose abstinence was delayed but who did not enter treatment or jail, those who continued their use of opiates, and those who substituted other nonopioid drugs (including alcohol) for their opiate use. Improvements in employment (measured as percentage of months employed) were found. Increases in percentage of months employed ranged from 53.92% to 55.14% for immediate abstainers (2.3% improvement) and from 38.05% to 52.94% for those abstaining after treatment or

incarceration (a 39.1% improvement). For those who continued their drug use, a decrease in employment of more than 13% (from 35.89% to 31.19%) was also found.

A 1-year and 6-year follow-up study conducted by Simpson and Friend (1988) discussed the changes in employment for opiate addicts in four treatment modalities: methadone maintenance, therapeutic community, drug-free treatment, and detoxification. Simpson and Friend also divided the sample by judicial status. Employment rates of between 53% and 64% were found in the 1st year after admission to treatment both for the methadone and therapeutic community clients and for the drug-free treatment clients with judicial involvement. Improvements of between 8.8% and 15.8% were found after 6 years for these groups. Greater increases in employment were found for the drug-free treatment (50% to 63%, an increase of 26%) and detoxification (41% to 56%, an increase of 36.6%) clients with no judicial involvement. The greatest improvement was for the detoxification clients with judicial involvement, whose employment rate increased from 43% to 74%.

A series of studies examined the addiction careers of Anglo and Hispanic substance abusers in southern California (Anglin, Booth, Kao, Harlow, & Peters, 1987; Anglin et al., 1988; Anglin, Hser, & Booth, 1987). These studies compared the period of time from entry into treatment to discharge from treatment (Period 1) with the period from discharge from treatment to time of interview (Period 2). Little change in employment rates for Anglo men from Period 1 (85%, $n = 193$) to Period 2 (87%, $n = 171$) was found (Anglin et al., 1988). Employment for Hispanic men did increase from 72% ($n = 89$) to 83% ($n = 81$) between the two periods. An interesting result was that the mean percentage of time spent working decreased between the two periods by almost 13% for Anglo males and more than 15% for Hispanic males (Anglin et al., 1988). Large increases in the percentage of women who worked were also found, particularly among Anglo women, whose employment increased 58.6% (from 46% to 73% between Period 1 and Period 2; Anglin, Hser, & Booth, 1987). The magnitude of the increase for Hispanic women was almost as large (43.3%), but the actual increase was substantially smaller (from 30% to 43%; Anglin, Hser, & Booth, 1987). Similar increases in the percentage of nonincarcerated time spent working were found for men in "real couples" (defined as having been in a relationship for at least 1 year) and for both men and women in "pseudocouples" (participants selected by the researchers to match as closely as possible the real couples; Anglin, Booth, et al., 1987). For women in real couples, the percentage of time spent working dropped 35% from 27% to 20% (Anglin, Booth, et al., 1987).

Some studies have shown no relationship between employment and success in treatment. Each of these studies has used a single measure of success: abstinence or retention in treatment. Dolan, Black, Penk, Robinowitz, and DeFord (1986) found that employment was not different for those who were abstinent or nonabstinent. No discernible difference was found in the employment rates of opiate addicts in four treatment conditions at entry and 2.5 years after initial evaluation (Kosten, Rounsaville, & Kleber, 1987b).

Treatment Modalities and Vocational Services

In methadone maintenance, Dole and Nyswander (1965) envisioned supportive services, such as vocational training,

as important to the successful treatment of addicts. Hubbard et al. (1989) suggested that although service intensity (in terms of number of supportive services received by clients) seemed to be increasing during 1979–1981, the availability of services across programs varied. Hubbard et al. (1989) also examined receipt of services in drug-free outpatient treatment, finding only 13% of Treatment Outcome Prospective Study (TOPS) clients reporting receiving job or financial services. Among the drug-free outpatient programs studied in the TOPS, only one reported that it specialized in vocational rehabilitation (Hubbard et al., 1989).

In a national study of outpatient drug abuse treatment, Price et al. (1991) reported that 35.9% of programs provided employment counseling. On the whole, employment counseling was more prevalent in methadone maintenance than drug-free programs, with 35.1% of methadone programs in community mental health centers, 59.4% of hospital-based methadone programs, and 47.3% of other methadone programs providing this service. In addition, referral to vocational rehabilitation programs outside the treatment setting was infrequently reported, with 2.8% of all programs indicating that such referrals were provided.

For those in residential treatment, Hubbard et al. (1989) found that employment history was important but that other factors (e.g., gender) played a significant role in predicting post-treatment employment. They observed that although male clients in outpatient treatment were more likely than female clients to hold full-time employment, female clients who participated in residential treatment were more likely than male clients to be employed full time. They suggested that the stronger emphasis on vocational services in residential treatment "may help residential clients surmount obstacles to employment, such as sex bias and a history of drug abuse treatment" (Hubbard et al., 1989, p. 137).

Employment and Relapse to Addiction

It is a commonly held belief that addicts require repeated episodes of treatment to attain what is commonly thought of as a "cure" (e.g., Platt, 1986). The extent to which relapse and the "revolving door" to treatment are inevitable receives a great deal of attention (e.g., Marlatt & Gordon, 1985; Vaillant, 1988).

An absence of adequate problem-solving skills exacerbates the stress and anxiety experienced by the addict. In the workplace, this lack of skills and emotional stress may result in work failure for the ex-addict (e.g., Hermalin, Husband, & Platt, 1990; Platt & Metzger, 1987). The loss of a job is clearly associated with relapse (Fisher & Anglin, 1987). Examining associations between postrelease circumstances and the behavior of youthful heroin offenders on parole, Platt and Labate (1976) found steady employment and absence of drug use to be related to parole success and to each other.

Anglin and Fisher (1987) identified a sequence of events in the treated addict's life that leads not only to relapse but to incarceration. Data were obtained from almost 300 admissions to methadone programs in California and analyzed for rates of retention, incarceration, addiction, crime, dealing, and loss of employment. In Anglin and Fisher's schema, the onset of any

drug use by a recovering addict was followed (in order) by the loss of a job, the start of dealing in illicit drugs, discharge from the treatment program, readdiction to the primary drug of abuse, participation in criminal behavior, and incarceration.

Vaillant (1966), examining factors associated with absence of relapse, concluded that a year of parole was much more effective in preventing relapse than either a short period of imprisonment or voluntary hospitalization. He related this to the fact that parole officers required proof, on a weekly basis, of employment in individuals who had previously believed that they could never hold a job. Citing similar findings for addicts who performed well in the highly structured setting of the armed forces, Vaillant (1988) concluded that "work provides structure to the addict's life and structure interferes with addiction" (p. 1154).

Vocational Rehabilitation Programs for Drug Abusers

Vocational rehabilitation is generally viewed as the most effective means of refocusing drug abusers toward the world of work and, subsequently, mainstream society (M. P. Deren & Randell, 1990). Rehabilitation typically includes assessment of individual vocational needs, counseling, skills training, and job placement. A number of vocational rehabilitation programs for addicted populations have been attempted. These programs, providing one or more of a range of interventions including supported employment, job placement, training in job-seeking skills, and employment readiness training, have met with varying success.

Supported Work Programs

Supported work refers to subsidized employment characterized by intensive, ongoing support for clients with severe disabilities (Kreutzer & Morton, 1988). Supported employment involves job-site training, ongoing assessment, and, frequently, job-site intervention. It can be used with individuals whose background would indicate difficulties in obtaining or maintaining employment and is often recommended for drug abusers as a likely solution to employment problems. It generally involves on-site rather than classroom or other preparatory training and takes place in a real work setting, with wages and benefits comparable to those of other workers of similar experience (Groah, Goodall, Kreutzer, Sherron, & Wehman, 1990). Three types of supported work projects (described in the sections to follow) have been conducted with drug abusers.

The Wildcat experiment. This program was the first large-scale, random-assignment, controlled study of vocational rehabilitation in drug treatment. It was initiated by the VERA Institute of Justice and targeted ex-drug addicts (most of whom were methadone clients) and ex-offenders in New York City (Friedman, 1978). Over the 4 years of its existence, this demonstration project provided employment to more than 4,000 individuals, including 604 drug treatment clients, 80% of whom were involved in methadone programs. The project's approach was unique. Rather than using the traditional approach of providing job training and placement, it sought to restructure jobs so that these chronically unemployed people's chances of maintaining employment could be maximized. Participants were

randomly assigned to an experimental group, in which jobs would be made available, or to a control group, in which members would receive only those services offered by the referring treatment agencies.

Those in the experimental group were assigned to jobs in groups of 3 to 7 under a crew chief, who was also a participant. The supervisors placed equal emphasis on the rehabilitative needs of the participants and the production goals of the job. Forty percent of these jobs were classified as clerical or paraprofessional, 30% as maintenance, 14% as social or public service, 8% as construction related, and the remaining 8% as messenger positions.

It was hypothesized, in this project, that chronically unemployed people would work if they could obtain jobs, that they would keep the jobs for an extended period if the jobs were structured properly, that they would be productive in a supported work environment, and that the program would prepare the participants for jobs in the unsubsidized labor market. At the conclusion of the period of supported work, efforts were made to place participants in nonsupported jobs.

Data were collected at intake and at follow-ups during the next 3 years. The findings provided support for all four hypotheses. Of the 302 participants offered jobs under the Wildcat program, all but 30 showed up for work. More than half of those who started work stayed on the job for at least a year. The typical supported work participant was absent 1 day in 10. About one third of Wildcat workers "graduated" to unsubsidized jobs, and most kept these jobs for at least 6 months. The longer an employee was involved in the program, the more likely the employee was to find subsequent employment. The cost-benefit ratio was found to be 1:1.12, with \$15,405 produced for each \$13,127 spent. No differences were found with respect to drug use (Friedman, 1978).

Several problems complicated the interpretation of the Wildcat findings. For instance, the intervention itself was diffuse and insufficiently articulated, thus limiting the possibility of replication. Also, one third of the original sample dropped out, including the 30 participants from the experimental group who failed to take jobs assigned to them. Hall (1984), in the only comprehensive critique of the Wildcat experiment, correctly pointed out that these 30 clients probably were least motivated and that their exclusion probably increased the difference in outcomes.

National Supported Work Demonstration Project. Like the Wildcat experiment, this project provided supported work for people commonly faced with severe employment problems (in this case, approximately 8,696 individuals; Dickinson & Maynard, 1981). Targeted to chronically unemployed individuals, the study included ex-addicts ($n = 1,124$), former psychiatric patients and alcoholics ($n = 554$), ex-offenders ($n = 3,384$), recipients of Aid to Families with Dependent Children ($n = 1,766$), and youths ($n = 1,867$). Participants were recruited from 15 cities throughout the United States and were randomly assigned to an experimental or a control condition.

The experimental condition placed workers in jobs within a supportive environment for a period of up to 18 months. Work expectations were increased over this period, with the intent of developing job skills and appropriate work habits, to prepare participants to enter the job market on completion of the proj-

ect. Those in the control condition were placed in regular employment settings.

At the initial follow-up, few differences were found between the group of ex-addict experimentals and the controls on the variables of employment status, hours worked, or earnings. Follow-up at 36 months, however, showed moderately strong differences, with 48% of the experimental group employed and 31.6% of the controls employed.

Manpower Demonstration Supported Work Project. This study (Board of Directors, Manpower Demonstration Research Corporation, 1980) involved 10,043 participants, of whom approximately 1,200 were primarily ex-addicts in methadone maintenance programs, although some were drawn from drug-free programs. A 12-month supported work period was used, following which assistance was provided in finding employment. A 1-year follow-up yielded data on 974 ex-addict participants.

The results indicated that participants in the experimental group had worked more hours than controls and had higher employment rates; however, differences were much greater (and, thus, statistically significant) only for earlier, in contrast to later, entrants, apparently because of lower employment rates among early controls. The other findings were that arrest rates for the control group were lower, most noticeably during the period immediately after supported work; that methadone clients profited more from the program than did other drug treatment clients; and that drug and alcohol use did not differ as a function of participation in the supported work condition.

Again, problems such as the precise specification of the intervention and control over its delivery, particularly given the multisite nature of the experiment, attenuate the findings. Other problems noted by Hall (1984) involved lack of attention controls and handling of dropouts.

Job-Seeking and Placement Programs

Training, Rehabilitation, and Employment for Addicts in Treatment (TREAT) program. The report on this major vocational program is out of print and currently unavailable. It has been discussed and evaluated, however, in a secondary source. As a major program in the field of job seeking and placement, it must be discussed despite the inability to independently analyze the data. TREAT (Bass & Woodward, 1978, cited in Hall, 1984) recruited clients from a large multimodality program and randomly assigned them to either vocational training or a control condition. Training was provided under the Comprehensive Employment and Training Act (1973). Clients assigned to vocational training showed a decrease in drug use and better treatment outcome but did not differ from controls with respect to retention in treatment or criminal behavior. With respect to employment, clients in the experimental group worked full time more often and earned higher salaries but did not differ from controls in terms of the number of weeks worked.

Hall (1984) critiqued the TREAT program evaluation findings, noting that bias may have existed in favor of the experimental condition because of a difference in employment rate between the experimental and control participants: 21% of the experimental participants and 35% of the controls had not

worked in the 2 years before the study. Also, bias may have resulted from the practice of replacing early, but not later, dropouts from the experimental condition during the course of the study.

Employment specialist programs. Employment specialists were assigned to work with methadone, residential drug-free, or outpatient programs in New Jersey, Detroit, and Chicago in a study conducted by NIDA (1982). Control clinics were matched to those receiving the assistance of the specialists. The specialists worked either directly with clients or as staff consultants. Outcome was measured by global changes in clinic employment rates. No significant differences in employment were found, although significant improvements in treatment retention and reduction in illicit drug use were found in the experimental groups. It was also found that, of the 407 clients who did not see a specialist, 13% of those unemployed at admission became employed and 78% of those employed at admission remained employed. In a more recent study, McLellan, Arndt, Metzger, Woody, and O'Brien (1993) compared outcomes (medical, employment, drug, legal, and psychiatric) for 92 methadone patients randomly assigned to receive standard methadone service, enhanced methadone services, or minimum methadone services. As part of the enhanced condition, a half-time employment counselor was employed. The counselor "conducted a series of workshops and group sessions designed to teach reading and prepare for a general equivalency diploma, as well as job-seeking and job-holding skills" (McLellan et al., 1993, p. 1955). Those in the enhanced condition had significant improvements from baseline to 6 months in number of days worked, percentage of patients working, and income from public assistance, with close to significant improvement in income from employment.

JOBS for Rehabilitated Drug Abusers. This project was implemented in Boston, Detroit, Chicago, and Philadelphia by NIDA and the Special Action Office for Drug Abuse Prevention (Double & Koenigsberg, 1977). It was designed as a demonstration project to obtain jobs for ex-drug abusers, provide screening and counseling to facilitate appropriate placement within these jobs, and furnish follow-up to employers and workers in terms of problems encountered.

The jobs ranged from professional to service positions, with most placements in clerical and laborer positions. Four hundred twenty-two clients were placed in jobs in the four cities. Almost 79% of the employers rated the performance of employees who were ex-drug abusers as the same as or better than that of their other employees. Their attitudes toward the job, ability to relate to co-workers, and desire to succeed were rated very high in comparison with other employees. Only in the areas of punctuality (20.7%) and absenteeism (34.5%) were the negative ratings for ex-abusers greater than 20%.

Personal Competency/Skill-Building Programs

Job Seekers' Workshop. This project (Hall, Loeb, LeVois, & Cooper, 1981) was designed to increase success in obtaining employment by improving the job-seeking and interviewing skills of a sample of methadone maintenance clients seeking employment in San Francisco. It is included in this section because it was a *behaviorally based, skill training* program.

In the initial study (Hall, Loeb, Norton, & Yang, 1977), 49

methadone maintenance clients were randomly assigned to the treatment condition ("the workshop"), a 12-hr manual-based program specifically designed to address the "particular behavioral difficulties which urban drug addicts show in job-seeking situations" (Hall et al., 1977, p. 227), or to a 1-hr orientation to available employment resources in the area. After the workshop, a rater unaware of client assignments evaluated clients on their "employability/acceptability" as trainees. Three months later, participants were contacted about whether they had found a job. Fifty percent of those in the experimental group, versus 14% of the controls, had found employment or placement in a training program. In addition, higher ratings were attained by the workshop participants for both interview skills and completed application forms.

The second study (Hall, Loeb, LeVois, & Cooper, 1981) assigned 60 job-seeking methadone maintenance clients to either the workshop (presented in 11 hr over 4 days) or the minimal contact (information only) condition. After the intervention, ratings (made by a rater unaware of condition assignments) on a scale tapping specific interview behaviors were more favorable for the experimental participants. By the end of the 3-month follow-up study, 15 of the 30 experimental participants had found employment, as opposed to 9 of the 30 participants in the control group. The differences between the two groups, however, were not statistically significant. (Interestingly, it was found that a work history within the previous 5 years was significantly related to finding a job, regardless of the condition to which the individual had been exposed.)

When a sample of 55 probationers and parolees with heroin abuse histories participated in a modified form of the Job Seekers' Workshop, the results were stronger (Hall, Loeb, Coyne, & Cooper, 1981). As before, the two groups were rated differently on scales measuring interview skills and rates of employment immediately after the intervention. Three months after the workshop ended, however, 86% of the experimental group had found employment, as opposed to 54% of the controls.

Hall (1984) herself pointed out some of the weaknesses of her studies in that there was no control for either time in treatment or client expectations and that group leader characteristics were only partly examined in one of the three studies (Hall, Loeb, Coyne, & Cooper, 1981). Nonetheless, Hall's studies represent an important step in research in this field: the application of principles of behavioral analysis to the problem of increasing employment among drug abusers.

One important aspect of the Job Seekers' Workshop studies was the evaluation by Sorensen et al. (1988) of the effectiveness of three methods of disseminating information (technology transfer) about the workshop to drug treatment programs in six states. Sorensen et al.'s study provides important information regarding the dissemination of any successful program in this area. Sorensen and his colleagues (1988) attempted to target individual treatment programs rather than high-level decision makers or system planners who control organizational resources or policy. One hundred seventy-two drug treatment programs were randomly assigned to receive printed materials only, printed materials plus on-site technical assistance, printed materials plus training at a conference, or no intervention. These dissemination methods reflect the techniques used since the late 1960s (Hall, Sorensen, & Loeb, 1988). At follow-up 3

months later, the highest adoption rate was for those programs that had involved site visits (28%), followed by those in the conference (19%), printed material (4%), and control (0%) conditions. Residential treatment facilities were more likely to adopt the program than were outpatient drug-free or methadone maintenance programs.

When another criterion defining adoption (implementing the workshop or adopting elements of it) was used, adoption rates increased 31.3% for the programs involving site visits and 25.8% and 5.6%, respectively, for programs in the conference and printed materials only conditions (the adoption rate did not increase in the control condition; Hall et al., 1988). Increased rates were also found for a subsample of clinics followed through 9 months after dissemination (Hall et al., 1988).

Because random assignment to the dissemination methods was important to the conduct of the study, little effort was made to assess which programs were unmotivated to adopt or which programs had characteristics making them conducive to adoption (Sorensen et al., 1988). When programs were queried as to why they did not adopt the workshop, concerns included time, staff, and funding limitations, as well as lack of involvement of those higher in the drug treatment system (Hall et al., 1988).

Sorensen et al. (1988) and Hall et al. (1988) concluded that those dissemination methods that involved personal contact (site visits and conferences) produced more adoption than did the use of printed materials alone and that residential treatment programs, in comparison with outpatient drug-free or methadone programs, were more likely to adopt the workshop. These findings clearly indicate the superiority of planned dissemination over dissemination through traditional academic channels (i.e., paper presentation and publication) alone. The authors noted that the finding that residential programs adopted the workshop at a higher rate was not surprising given these programs' greater likelihood of including employment as a particular focus in later stages of treatment. Perhaps the most important finding was that in-person contact with programs appeared to have been absolutely essential for adoption to have taken place.

Employment Readiness Skill Intervention. The objectives of this project (Platt et al., 1993) were to document patterns of employment among methadone clients and to develop and implement a program, based on interpersonal cognitive problem-solving training (i.e., Platt, Prout, & Metzger, 1986; Platt, Taube, Duome, & Metzger, 1988), designed to assist these clients to identify and respond to their personal employment barriers, thus readying them for work (Platt & Metzger, 1987). The theoretical basis of the project was that effective coping with employment barriers would lead to higher employment rates.

Participants were recruited from methadone clinics in Philadelphia and southern New Jersey. Participants were randomly assigned either to an experimental group that received a series of 10 small-group workshop sessions in addition to regular methadone treatment or to a control group that received methadone treatment only. The 10 sessions addressed the following issues: the value of work, barriers to employment, assessing resources to overcome barriers, identifying personal skills and strengths, projecting positive images, developing networks, setting realistic goals, assessing alternative employment-seeking strategies and the consequences of these strategies, defining success and failure, and taking responsibility for one's own behav-

ior. Training on overcoming the barriers to employment included discussions of motivation, education, experience, the job market, job-seeking skills, personal issues, transportation, and child care.

Six months after the training, employment was found to be significantly higher for those participating in the experimental condition (26.9% at 6-month follow-up vs. 13.4% at baseline) than for those involved in the control condition (9.5% at 6-month follow-up vs. 11.1% at baseline). Client sex, source of financial support, previous job training, past history of unemployment compensation, perceived job problems related to work history, level of schooling completed, and perception of job availability were found to be unrelated to employment at outcome. Only race was significantly related to employment at follow-up, with Black participants demonstrating greater benefits (i.e., rate of employment) after the intervention than Whites.

The gains in this study were, however, limited to the 6-month follow-up point. At a 12-month follow-up, the experimental and control groups did not differ, with the experimental group losing gained ground. Also, this study, as has been the case with other employment interventions, suffered from a significant loss of the original sample (Platt et al., 1993).

Interventions From Other Fields and Populations

The Job Club

The Job Club (Azrin & Besalel, 1982; Azrin, Flores, & Kaplan, 1975) is aimed at helping clients identify and obtain jobs that will promote their mental health. Although the Job Club is not directed specifically at drug abusers, such clients have been included in samples of primarily nonaddicts. This program, which involves a standardized, manual-driven intervention (Azrin & Besalel, 1982), is based on a conception of job seeking as a social interaction in which obtaining job leads is the initial response of a chain of behaviors (Jones & Azrin, 1973).

One study (Azrin & Philip, 1979) used the intervention with people with severe handicaps, including alcohol or drug problems, that limited job seeking. One hundred fifty-four clients were randomly assigned to either the Job Club condition or a standard counseling condition. At 6 months postintervention, 95% of the clients had obtained jobs, in comparison with 28% of the controls. In addition, the Job Club participants obtained jobs with a higher median salary and obtained jobs earlier (10 days vs. 30 days) than control subjects. Similar findings were obtained in a later evaluation of the Job Club program with welfare recipients (Azrin, Philip, Thienes-Hontos, & Besalel, 1980).

The approach was specifically recommended for use with alcoholics by its developers (Sisson & Azrin, 1989), who noted that jobs requiring long work hours followed by long periods of unemployment encourage the use of alcohol during times of hiatus to relieve boredom. They stated that the Job Club would help clients to identify the link between the jobs they choose and their drinking behavior and to seek other kinds of work in appropriate instances. Clients would then be trained on approaches designed to obtain such a job (e.g., discovery of initial

job lead, first contact with potential employers, and interview techniques).

Improving Interview Skills

Among the most commonly used techniques to improve chances of employment has been instruction to improve interviewing skills (Hall, Loeb, Norton, & Yang, 1977; Hollandsworth, Dressel, & Stevens, 1977; Kelly, Laughlin, Claiborne, & Patterson, 1979; Venardos & Harris, 1973). Such programs have been both self-contained (Hollandsworth et al., 1977; Kelly et al., 1979; Venardos & Harris, 1973) and part of larger rehabilitation programs (e.g., methadone maintenance; Hall, Loeb, Norton, & Yang, 1977). This approach has been applied to college students as well as to mentally ill clients and other rehabilitation clients. Although employment has not necessarily been the outcome measured in these studies, all have found improvement in skills deemed important for successful job interviewing.

Various techniques of teaching interviewing skills, including discussion only, approaches to modify behavior, videotaping, and role-playing (Hall, Loeb, Norton, & Yang, 1977; Hollandsworth et al., 1977; Venardos & Harris, 1973), have been used. When the techniques have been compared, behavioral interventions have been found to be more effective than discussion (Hollandsworth et al., 1977).

Barriers to Vocational Rehabilitation and Employment

Even an optimal rehabilitation program cannot overcome all of the structural or societal barriers to employment that may be faced by recovering addicts (Arella, Deren, Randell, & Brewington, 1990a). Not surprisingly, employment has been found to be inversely proportional to the number of social disadvantages for each addict (Hermalin, Steer, Platt, & Metzger, 1990; Suffet & Brotman, 1976). Social disadvantages, defined as the absence of a high school diploma, the presence of a criminal record, and minority group status, have been found to decrease the likelihood of employment (Suffet & Brotman, 1976).

Brewington, Arella, Deren, and Randell (1987) categorized the obstacles faced by drug abusers in their use of vocational services under the classifications *client level* (financial disincentives and psychological factors), *program level* (treatment philosophy and program priorities, staff development and coordination, choice of strategy, criminal justice issues, and strategy information dissemination), *client-program interactions* (client-counselor relationship, discrepant perceptions of vocational issues, and joint commitment to goals of treatment), and *external-societal* (special needs of women and employer issues).² Evaluation of clients in four methadone programs (one each in Buffalo, Pittsburgh, Milwaukee, and San Jose) before assignment to training and employment programs indicated that the following types of barriers mediated against client employment: family and societal barriers (including lack of social skills, inadequate

² The reader is referred to Brewington, Arella, Deren, and Randell (1987) for a more detailed discussion of obstacles to the use of vocational services than is possible here.

clothing, and disincentives from public financial support), job-related barriers (including lack of education and training, minimal work experience, employment gaps, and lack of needed equipment), medical and emotional barriers (including continued drug use, current methadone use, unrealistic goals, low self-esteem, and lack of motivation), program-level barriers (including poor staff training regarding vocational services, lack of referrals, and lack of integration of vocational rehabilitation programs), and structural barriers (including employer bias, trainer bias, tight job market, bureaucracy, and red tape; French, Dennis, McDougal, Karuntzos, & Hubbard, 1992).

A survey of employers and personnel managers conducted in the early 1970s revealed a decreasing order of acceptance for employment by ethnic background, physical disability, criminal record, and mental instability (Colbert, Kalish, & Chang, 1973). A more recent study of barriers to employment for homeless people found that 31% were prevented from obtaining employment as a result of their drug use, the second most-cited reason after lack of a high school education (Hagen, 1989). Given that employers cannot legally terminate an employee simply because the employee is addicted and that employers are also responsible for the negligence of their employees, reluctance to hire addicted or formerly addicted individuals may be understandable, even if deplorable (Howard, 1990).

Even among those working in the field of addiction treatment or those whose interest in addicted individuals led them to attend a drug symposium, concern about hiring ex-addicts can be seen (Morton, 1976). Morton found that more than 30% of such individuals believed that poor attendance or performance worked against their hiring ex-addicts, whereas 13% feared thefts or violent crime. Responses to a 1-year demonstration project conducted by the Pennsylvania State Employment Service to provide support services to soon-to-be-released offenders (62% of whom were ex-addicts) confirmed the existence of this fear. Regardless of the occupational level at which the ex-addict-ex-offender found work, placement was difficult not only because of the individual's lack of skills and knowledge but because of employer attitudes. Some employers feared the ex-addict would resume his or her habit "and steal me blind" (Snyderman, 1974, p. 713).

The Venus Project

This project (M. P. Deren & Randell, 1988) was designed to identify the major obstacles to the provision and use of vocational services in drug treatment, as well as to implement and evaluate strategies to overcome these obstacles. Obstacles to vocational service use by drug abuse clients were identified through a literature review and a field study in four methadone clinics in New York City. Obstacles identified included public assistance disincentives to work, the client's fear of work, a lack of sufficiently trained professionals, the lower priority given to vocational services by clinics, understaffing, gender stereotyping, employer biases, and unrealistic or nonexistent client goals.

An expert panel recommended remedies to these problems, including the removal of welfare disincentives and the hiring of "vocational integrators" to work with clinic staff. The presence of such integrators was found to increase client participation

in vocational programs. Changes in welfare disincentives were found to have resulted in only a small decline in the use of services. The strategy phase of the project lasted only 1 year, however, and a longer assessment period may have been needed to determine the full effect of the project.

In addition to structural and societal barriers, factors specific to the addict and to the availability of drug treatment services interfere with successful vocational rehabilitation. For the client, unrealistic expectations may severely hamper his or her ability to find work. In a study of 40 clients in four methadone maintenance clinics, only those individuals involved in rehabilitation programs were seen as having realistic vocational aspirations (i.e., those consonant with training or experience; Brewington et al., 1990). Even among those who were employed at that time, 25% had unrealistic vocational expectations (Brewington et al., 1990). The importance of cognitions (e.g., perceptions, set, and expectations) on the part of the addict appears to be particularly relevant. In the study by Metzger (1987), the absence of self-perceived work problems, together with the frequency of job-seeking behaviors, was most strongly associated with work status and pattern and job acquisition.

The psychiatric status of clients can also prevent their participation in either vocational rehabilitation or work (Arella, Deren, Randell, & Brewington, 1990b; Brewington et al., 1987; M. P. Deren & Randell, 1990), although some findings suggest that psychological symptomatology in methadone clients is more likely a consequence than a cause of unemployment (Metzger, 1987). Outside responsibilities (e.g., caretaking) that compete with participation in rehabilitation, income and type of insurance, and current criminal justice involvement have all been found to be related to participation (Arella et al., 1990a, 1990b; Brewington et al., 1987; M. P. Deren & Randell, 1990). Clients have also cited lack of motivation, fear of work, lack of child-care services, poor education, language barriers, and other factors as interfering with their participation (Brewington et al., 1990).

Elements specific to the treatment site can also interfere with the use of vocational rehabilitation services or employment of clients. Rehabilitation programs have been historically underfunded for such services, reflecting either a lower priority having been given to these services or the frequent medical-psychiatric orientation of drug treatment (Arella et al., 1990a; Brewington et al., 1987). The background of the counseling staff has also been found to be related to employment. Brown and Thompson (1975-1976) found employment rates of 58.1% for clients treated by ex-addict counselors and 70.0% for those treated by nonaddict counselors. Livingston et al. (1990) were undoubtedly correct when they stated that the development and implementation of effective vocational services in drug abuse treatment settings require well-trained staff who are both knowledgeable about the problems of clients with disabilities and skilled in developing appropriate interventions.

General Discussion

Limitations

Several overall conclusions can be drawn from this review of the literature. One is that, over the last 20 years, there has been

an increasing awareness of the importance of employment and employment-related issues in drug abuse treatment, together with a number of efforts to develop interventions for the purpose of increasing employment.

Relatively few interventions exist, however, and there are none without shortcomings that either limit their generalizability or raise questions about the worth of investing scarce program funds in applying them on a large scale. In instances in which an intervention appears to be powerful in other populations, such as in the case of Azrin's Job Club, further evidence supporting the applicability of the intervention to drug addicts is needed. Perhaps the most glaring absence in the employment literature, however, is that of a *comprehensive theory that can drive research*. Some of the existing interventions do derive from theories (e.g., behavior therapy, behavioral analysis, and interpersonal cognitive problem-solving theory), but *there are no theoretical schemas specific to employment and related issues*. Given the multiplicity of the variables affecting employment and the complexity of employment behavior itself, organizing theories are sorely needed. Merely changing the behavior or improving the skills of the addict will not sufficiently address societal attitudes, the job market, and other factors that complicate the training and employment of this population.

Another limitation of the present body of knowledge on the vocational rehabilitation of drug abusers is its extensive reliance on publically funded clinics that tend to serve lower socioeconomic groups as sites for the conduct of the research on which it is derived. Even when research is sited in nonpublic clinics (i.e., proprietary programs), such clinics typically serve clients similar to those in public programs. It is highly likely that such programs typically attract a higher percentage of nonworking clients than do fully private programs that do not welcome research. Thus it is not possible to develop a completely accurate understanding of employment rates among all drug abusers. This criticism applies equally to almost all drug abuse research on users of "hard" drugs. Those clients treated in private residential treatment settings, for example, are rarely if ever included in treatment evaluation studies (Platt, 1995a, 1995b). Such settings are largely oriented toward treating employed individuals and their families (Gerstein & Harwood, 1990). Thus, the paucity of data on the clients of such programs represents a serious deficiency in current knowledge.

Issues for Future Research

Even after acknowledging the concerns just mentioned, however, there is a good deal to glean from the current literature, and a number of recommendations for future research can be made on the basis of the existing findings. These recommendations can be conceptualized as a preliminary agenda for a third generation of employment research. In the first generation, the work histories and habits of addicts were assessed. In the second generation, attempts to provide vocational rehabilitation leading to employment were instituted. The third generation would attempt to create and evaluate programs resulting from a synthesis of successful elements found in earlier studies. Such studies would enable researchers to determine which elements work for which clients and the configuration of elements needed to ensure successful outcomes.

It is critical that future research learn from the successes of the past and seek to answer the questions raised by previous research. For this reason, a presentation of some of the issues that should be addressed echoes the format of the previous discussion of employment research. Recommendations for future research studies and for program modification are also made.

Definition of employment. The questions raised by the varying definitions of employment (e.g., income earned, days worked, weeks worked, and full time or part time) must be addressed, as must the time frame within which employment factors are examined (point in time or period of time). Consistent measurement tools must be adopted if comparisons across research studies are to be made. The *Documentation Standards 2 for the Treatment of Addictions* (Deutsche Gesellschaft für Suchtforschung und Suchttherapie e. V. [Hrsg.], 1992), developed in Germany, may serve as a model for the development of measurement tools (Platt, Bühringer, Widman, Künzel, & Lidz, 1994).

Employment patterns. Studies examining the variables underlying the important role played by parents and significant others in modeling employment behaviors should be conducted. The study by Metzger (1987), for example, suggests that a salient family characteristic consistently associated with methadone clients' pattern of employment is the type and frequency of parental employment during the addict's childhood. Another issue here is that fewer job opportunities are available to those in poor neighborhoods, thus continuing the discouraging cycle of intergenerational unemployment (Tienda & Stier, 1991). Such findings indicating the importance of parental models and the familial route to influencing employment suggest that programs such as supported work be explored. Supported work could begin to act as a means of counteracting intergenerational patterns of unemployment in two ways: by replacing the example of an unemployed parent with an employed one and through prevention efforts directed at the children of addicted parents.

Further evaluation is needed regarding the special employment-related needs associated with membership in ethnic minority groups. Distinct differences appear to exist between Black and White methadone clients with respect to variables explaining employment (e.g., Metzger, 1987; Metzger & Platt, 1983) and with respect to the outcome of the employment readiness intervention described earlier (Platt et al., 1993). This issue requires additional study.

Because many studies are limited to male clients, there is a lack of information on employment for female clients. For example, although the Drug Abuse Reporting Program research sample included women, the comparative analyses involved only men, because women were not available in sufficient numbers across modalities (i.e., methadone and drug-free outpatient treatment). Studies that oversample female populations or that are devoted solely to women should be initiated to examine gender differences.

Employment-related needs of women present a range of special problems, including the fact that women usually have more demands placed on them for child care than do men. As noted elsewhere (Mathis et al., 1994; Platt, 1995b), child-care services are needed that would provide female drug abusers with the time needed to acquire employment-related skills and to

seek, gain, and maintain employment. There may, however, be other issues operative with respect to women entering employment in that women in the Mathis et al. (1994) study also were less likely than men to want or to be looking for work. For example, many women enter into drug use through their male partner and develop a dependent relationship during the addiction, relying on the man for the continuation of the habit. They may remain more dependent on men during and after treatment, thus necessitating preemployment interventions designed to socialize them into the workforce. On the other hand, research designed to examine female addicts in the workforce has noted a participation rate rather similar to that for all women. Further research on the special situations facing women and on their unique needs is called for.

Studies examining the predictive formulas of age, length of addiction, work history, treatment history, and employment outcomes need to be conducted. Finally, attention must be paid to the individuals for whom vocational rehabilitation is appropriate and those for whom physical or emotional disability makes employment unrealistic.

Role of employment in the development of addiction. The evidence strongly suggests that preaddiction employment status is associated with the start of addiction, with unemployed people more likely to become addicts than employed people. More intensive qualitative studies leading to a greater understanding of the behaviors and attitudes underlying preaddiction employment need to be conducted. Such studies would allow the assessment of the possibility of the prevention of addiction through early identification and intervention in high-risk groups.

Treatment modalities and vocational services. Drug treatment programs need to make a serious effort to provide vocational/employment services, particularly in light of the importance of employment in the social (re)adjustment of addicts. As noted earlier (e.g., Hubbard, 1981; Senay et al., 1981), such services tend to be relatively nonexistent in drug abuse clinics, and the situation has become worse, if anything, during the past 10 years. Furthermore, staff members engaged in providing such services should have specific training in "what works" and should ideally provide services in accord with a predetermined protocol that allows for identification of personal barriers to employment and provides for their remediation. In addition, the appropriateness of specific vocational rehabilitation programs in different treatment modalities must be assessed; for example, the suitable programs for a 28-day inpatient treatment or detoxification program might differ from those used in long-term treatment.

Employment and relapse to addiction. Studies concerned with determining the role played by cognitions (e.g., sets, attitudes, perceptions, and expectations) in obtaining and maintaining employment are needed. Such studies would address the way in which cognitions influence motivation for work, job seeking, and use of vocational services. For instance, Hermalin, Steer, et al. (1990) found that clients who did "not know how to look for work," who "believed that no jobs were available," or who "lacked the desire to work" were approximately 3 times more likely than those not citing these and similar work-related problems to be unemployed.

General vocational rehabilitation programs for drug abusers.

Any model program needs to be carefully designed, implemented, and evaluated. As Hall (1984) has correctly pointed out, several studies using random assignment and control groups have suffered from ambiguities in interpretation because of such problems as poor definition of the intervention and failure to adhere to the experimental design, among others. The use of treatment manuals that would guide the intervention, allow for evaluation and revision of modular units requiring "adjustment," and permit replication of the intervention is essential to careful program design. Such manuals have been used in several studies with successful outcomes (e.g., Azrin et al., 1980; Hall et al., 1977; Platt et al., 1993). Other means of technology transfer must also be used and assessed so that the knowledge gained can be transmitted successfully (Sorensen et al., 1988). The provision of "booster sessions" to consolidate and maintain gains made in rehabilitative programs, thus minimizing relapse, may also be necessary.

Supported work programs. As a means of addressing criticisms of the rigor of the work required by supported work programs, procedures should be instituted that would involve gradual increases in the expectations placed on workers to ensure their ability to maintain jobs in the workplace. Furthermore, the impact of such procedures should be measured (e.g., Dickinson & Maynard, 1981).

Personal competency and skill building. Clients need to be assisted in the identification of personal barriers to employment, development of personal skills and competencies needed to overcome such barriers, and maintenance of effective employment-related behaviors (Azrin & Besalel, 1982; Platt & Metzger, 1987). There is also a need for ongoing encouragement and support for attendance at vocational rehabilitation programs designed to assess individual vocational needs and to provide the counseling and skills training necessary to meet those needs (e.g., see S. Deren & Randell, 1988). In addition, attention to an evaluation of the most effective methods for increasing interviewing and job-seeking skills of addicts are necessary (e.g., see Hall, Loeb, Coyne, & Cooper, 1981; Hall, Loeb, LeVois, & Cooper, 1981; Hall et al., 1977; Hollandsworth et al., 1977). Clients who have never been a regular part of the workforce will need special attention in terms of identification of their personal strengths and weaknesses. There will also need to be a careful assessment of those client and workplace attributes that relate to success and identification of the most salient ones so that a proper "match" that maximizes positive outcomes can be attained.

Barriers to vocational rehabilitation and employment. Attention should be paid to the significance of psychopathology and vocational participation in obtaining and maintaining employment. Given the importance of social participation to mental health and the high prevalence of personality disorders (especially antisocial personality), affective disorders (especially depressive disorders), and anxiety disorders (Havassy & Wasserman, 1992; Rounsaville, Weissman, Kleber, & Wilber, 1983) among drug abuse clients, two or three strategies might be followed. For example, strategies for combining mental health services—medications with vocational rehabilitation or habilitation programs, during both formal treatment and aftercare, should be developed. Also, research is needed to better understand the obstacles pre-

sented to vocational functioning by psychopathology (e.g., How is "fear of work" operationalized by the client? What are its roots?). These strategies and research should lead to the identification of a spectrum of interventions for drug abuse clients with psychiatric disorders and differing levels of impairment.

Further understanding is required concerning the relationship between the economic climate, particularly that at the local (and even neighborhood) level, and the employment of addicts. It should be determined whether attempts to provide employment to drug abusers are likely to be fruitless in an economic climate that undermines these attempts at rehabilitation. On the other hand, economic downturns do not last forever, and drug abusers need to be prepared to reenter the workforce when opportunities become available.

In addition, structural factors related to the willingness of employers to hire and train drug abuse clients must be considered to address the interplay of labor market and employer attitudes and to identify strategies that would increase the labor force participation of drug abuse clients. Appropriate provision of worker support services in the workplace would allow attention to be paid to the rehabilitative needs of clients "in the field" (e.g., Friedman, 1978). "Employer support services" would provide employers with guidance in terms of worker problems such as maintaining discipline, following work rules, and coping with relapse.

For an evaluation of the worth of such a program in the real world, it is perhaps important that it not only offer, for example, supported employment in its early stages, but that success be measured through the attainment and maintenance of employment outside of a sheltered or supported setting. Finally, studies assessing the maintenance of employment gains made by clients immediately after treatment should be conducted, and methods to encourage or increase employment later in the posttreatment career should be developed.

Conclusions

The literature reviewed in this article clearly demonstrates the validity of the long-held belief that employment is essential to the social rehabilitation of addicts and establishes employment as one reasonable measure of treatment success. The extent of employment after what was otherwise seen as successful treatment is less clearly delineated. A range of innovative interventions designed to increase the employability and employment of addicts has been presented here. Each of these programs has had some success, but none has provided the sole answer to meeting the vocational needs of this vulnerable population. What has also been demonstrated, however, is the need for future research and imaginative programs to continue the processes described.

One caveat should, however, be noted. As Brown et al. (1972) stated,

A client's employability depends not only on his nonuse of illicit drugs, it depends as well on diverse factors such as the state of the economy, the attitudes of employers, the vocational and academic skills of the client, municipal and state law, and so on. (p. 395)

Failure to take into account these important environmental

variables will result in an incomplete understanding of programs designed to reduce drug use, increase employment, or both. For employment to occur and be maintained, a complex interaction among client, intervention, and environment is required. Each must provide the appropriate set of circumstances but must not ignore the realities of the other factors involved.

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