

Behavioral Therapies for Female Drug Users: An Efficacy-Focused Review

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INTRODUCTION

This chapter summarizes current knowledge about the efficacy of behavioral therapies for women who abuse substances. Herein, the term “behavioral therapies” is synonymous with “psychosocial therapies.” It refers to all nonpharmacological interventions, such as contingency management methods and skills training from behavior therapy (Childress et al. 1985), cognitive therapy (e.g., Beck et al. 1993), and interpersonal psychotherapy (e.g., Rounsaville and Carroll 1993, pp. 319-352). Information in the chapter is derived primarily from a review of the clinical and empirical literature on opiate and cocaine abuse.¹ A focal question guided the review: Do female substance abusers require gender-specific therapies? The chapter also provides an overview of current directions in the development of behavioral therapies for women who are substance users. Some additional directions are suggested.

An extensive literature now exists on behavioral therapies for female substance users. It has increased exponentially since about 1960 (Davidson and Bemko 1978). However, the relevant literature consists largely of clinical observations with suggested treatment approaches, descriptive information on existing treatment programs, and epidemiological data. Although many behaviorally oriented therapy programs for women have been implemented in the United States, almost no efficacy data on them have been published. Few results are available from studies that specifically were designed to either evaluate the efficacy of behavioral interventions developed for female substance abusers or examine gender differences in the efficacy of existing non-gender-specific treatments.^{2,3}

The lack of relevant efficacy data is a major limitation. Treatment efficacy studies are important tools for systematically identifying therapies that might merit widespread implementation. Efficacy studies are

those in which experimental methods are used to obtain answers to questions such as: Does a therapy have desired effects, is it more efficacious than alternative therapies, and what are the characteristics of the individuals for whom it is most efficacious? Full efficacy studies require at least two treatment conditions, including a nontreatment or minimum-treatment control condition. The control condition tests whether the particular treatment is associated with greater change than naturally occurs with the passage of time, with typical fluctuations in symptom severity, or with life experiences that individuals of the type being treated can have. Efficacy studies also require random assignment of patients to study treatments and intent-to-treat analyses to reduce problems in interpreting findings caused by patient dropout (e.g., Howard et al. 1990, pp. 66-79).

Unfortunately, the majority of therapy outcome studies for substance use disorders are missing some of the crucial elements of efficacy studies. Thus, although many outcome studies exist, few conclusive findings on effects attributable mainly to the treatments of interest have been generated. This is particularly true for substance use treatments that have been recommended for women.⁴

WHAT ARE BEHAVIORAL THERAPIES?

Behavioral therapies consist of verbal and behavioral interventions derived from theories and findings from psychology (e.g., from behavior theory, social learning theory, and cognitive theory). Behavioral therapies, sometimes the sole treatments for substance use disorders, are also often combined with pharmacological agents. For example, treatment programs for heroin addiction in the United States often combine methadone with behavioral contingency methods to help reduce the use of ancillary substances such as cocaine. Some of the most common types of behavioral treatments applied to substance use are listed in table 1.

Table 1 lists the types of behavioral interventions for which at least some efficacy data are available. The therapies listed do not include those that have been hypothesized to be most efficacious for female drug abusers. Rather, they are the ones that most frequently have been examined in efficacy or partial efficacy studies.

TABLE 1. *Behavioral treatments commonly applied to substance use disorders*

| Treatment | Reference |
|-----------------------------|--|
| Behavior change techniques | Childress et al. 1985; Higgins et al. 1993; Stitzer et al. 1992; Onken et al. 1993 |
| Cognitive therapy | Beck et al. 1993 |
| Family or couples therapy | Szapocznik et al. 1988 |
| Interpersonal psychotherapy | Rounsaville and Carroll 1993, pp. 319-352 |
| Relapse prevention | Carroll et al. 1994a, 1994b; Rawson et al. 1993, pp. 92-115; Wells et al. 1994 |
| Skills training | Childress et al. 1985; Wells et al. 1989 |

TREATMENT-RELEVANT SUBTYPES OF FEMALE SUBSTANCE ABUSERS

The phrase “female substance abusers” suggests that women who use substances constitute a homogeneous class. However, like their male counterparts, female substance users can be subtyped on several dimensions. Examples are pattern of drug use (e.g., type and number of drugs abused, frequency of drug use, chronicity); degree of impairment in social roles associated with drug use; and socioeconomic, marital, and parental status. Subtyping on these dimensions creates groups such as single, employed professional women who use crack cocaine on weekends v. unemployed, poor, single mothers who are chronic intravenous heroin users and who also frequently use cocaine. The literature indicates that several potentially treatment-relevant subtypes of female substance abusers can be distinguished. That is, at least some subtypes are likely to be differentially responsive to existing and proposed therapies. For example, some subtypes are likely to need specialized therapy programs to achieve clinically significant improvement; others may not need gender-specific therapies.

At least six potentially treatment-relevant subtypes of female substance users can be identified: (1) pregnant females (further distinguished as teens or adults), (2) intravenous drug users, (3) adolescent polydrug users, (4) single professionals, (5) housewives, and (6) seniors. The first three subtypes currently receive the most attention in the opiate, cocaine, and alcohol use literature. They also are the focus of more federally funded behavioral treatment research than the subtypes of single professionals, housewives, and seniors.

The research focus on pregnant drug users is justified in part by their prevalence, as well as by the obvious social impact of their drug use. One estimate is that 105,000 pregnant women per year need substance use treatment, although fewer than one-third of that number receive it (Institute of Medicine 1990, pp. 154-155). Single professionals, housewives, and seniors receive scant attention in the clinical and research literature on substance use (but see Barry 1986, pp. 65-69).

Cultural, ethnic, and racial backgrounds are other potentially treatment-relevant characteristics of female drug users that often are noted in the substance use literature (e.g., Moise et al. 1982).

FINDINGS ON GENDER DIFFERENCES ASSOCIATED WITH DRUG USE TREATMENTS

Treatment-Seeking

Female substance users are said to be proportionately less likely to seek treatment for their drug use than male substance abusers (e.g., Reed 1985). In an epidemiological review published in 1980, Ferrence (1980) concluded that the percentages of women with substance use problems who sought treatment were notably below estimated prevalence rates. In contrast, a more recent review of treatment studies published between 1984 and 1989 concluded that women are not proportionately underrepresented in studies of opiates, cocaine, or alcohol (Toneatto et al. 1992). However, Toneatto and colleagues used Ferrence's (1980) gender ratios to compare study samples, a procedure that might underestimate the current prevalence of some types of substance use among women. On the other hand, Carroll and Rounsaville (1992) compared a rather large sample of treatment-seeking (n=89) and non-treatment-seeking (n=89) cocaine abusers on several dimensions. No gender differences were found between the two groups, and both groups were predominantly male (67 to 69 percent).

To the extent that some differential treatment-seeking by gender exists, what might contribute to it? Experts suggest or provide evidence on several variables, including sexism of programs (e.g., predominantly male treatment staff) (Reed 1985; Toneatto et al. 1992) and shame about substance use. Socioeconomic and racial background are also thought to contribute to some women's seeking treatment less frequently (Marsh and Miller 1985). Another explanation is that mothers avoid treatment

because their children might be taken from them (Marsh and Miller 1985). Shame also might inhibit mothers and pregnant users from seeking treatment because of the inconsistency of their drug use with societal expectations for responsible parenting (Kumpfer 1991).

Child Care

Wellisch and Steinberg (1980) found that female drug abusers are just as likely to have children as women who do not use drugs. Expectably, a woman's child care responsibilities can interfere with treatment program attendance, particularly programs that require extensive time commitments (Marsh and Miller 1985). Some evidence supports this supposition (e.g., Reed et al. 1982, pp. 477-531). Thus, treatment programs for women should include child care arrangements (e.g., Finkelstein 1994).

Depression, Anxiety, and Self-Esteem

Several studies have shown that female substance users as a group have lower self-esteem than male substance users, but not necessarily lower self-esteem than women who have psychiatric disorders other than drug abuse (e.g., Beckman 1978). Another common finding is that female drug users are more likely than their male counterparts to have depression and/or anxiety symptoms or diagnoses (e.g., Blume 1986; Colten 1980, pp. 7-36; Griffin et al. 1989). However, the results of a study of mood and anxiety disorder diagnoses using the criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised* (American Psychiatric Association 1987) suggest that gender differences in depression and anxiety among substance users might be more complicated and less robust than prior studies indicated. In a sample of 50 male and 50 female substance-using inpatients, Brady and colleagues (1993) found that female substance users as a group were significantly more likely than male substance users to have an anxiety disorder, but *not* more likely to have a mood disorder. However, significant gender differences in comorbid anxiety disorders were not found among patients whose primary substance of abuse was cocaine.

Epidemiological findings consistently have indicated that depression is more common among women than men in non-substance-abusing populations in the United States (e.g., Culbertson 1997; Kessler et al.

1994; Weissman and Klerman 1977; Weissman and Paykel 1974). Female-to-male ratios have tended to range from about 2:1 to 4:1, and recent cross-cultural evidence suggests that a gender difference is more likely to exist in more developed cultures (Culbertson 1997). Thus, the findings for depression among substance-using women might not be linked to drug abuse. However, depression also could be a risk factor for substance use if some women are motivated, in part, to use drugs because of negative affect states, including feelings of worthlessness and hopelessness.

**Polysubstance Use:
A Non-Gender-Specific Finding**

One robust, treatment-relevant but non-gender-specific finding is that many individuals who abuse opiates or cocaine concurrently abuse other drugs. For example, cocaine abusers often abuse alcohol (e.g., Higgins et al. 1994; Means et al. 1989), and heroin abusers often also abuse cocaine (e.g., Condelli et al. 1991; Stitzer et al. 1992).

**Employment Options, Rehabilitation
Success, and Poverty**

Providers in treatment programs for women who chronically engage in the most dangerous forms of drug abuse (e.g., intravenous heroin use) have found rehabilitation efforts to be handicapped by some women's lack of marketable skills. This is less frequently a problem for men. (Men, however, might encounter another type of job-related problem. Platt and Metzger [1987] speculated that high rates of relapse by men who successfully complete opiate treatment programs might be attributable in part to a "relapse potentiation" effect of completing a program only to find themselves in unrewarding, low-status, low-paying jobs.)

For female substance users, a correlate of lack of marketable job skills is poverty. The prevalence of poverty, in turn, supports recommendations such as providing transportation to treatment programs. However, this is not necessarily a gender-specific need.

Sexual Abuse

Some data indicate that (1) female substance users report higher rates of sexual abuse than males (Rohsenow et al. 1988; Wallen 1992)

and (2) sexual abuse increases the risk for substance use disorders, as well as for other psychiatric disorders such as depression (Winfield et al. 1990). Data on sexual abuse are cited to support the idea that prevention efforts focused on sexual and physical abuse of girls could reduce the risk of substance use disorders among women (e.g., Goldberg 1995). It should be noted, however, that high rates of reported sexual abuse were found among both teenage boys (42 percent) and teenage girls (71 to 90 percent) in an inpatient substance use treatment program (Rohsenow et al. 1988).

Gender Differences in Biological Effects of Drugs

Although not obtained from treatment efficacy studies, evidence shows that women's bodies respond differently than men's to at least some substances. For example, Jones and Jones (1976, pp. 103-136) reported that a dose of ethanol produces higher blood alcohol levels in women than in men. Frezza and associates (1990) reported that women metabolize only about one-quarter of the amount of alcohol metabolized by men, resulting in more absorption. In a small sample study of cocaine effects (n=7 males; n=7 females), Lukas and colleagues (1996) found that peak plasma levels were higher in males and that peak levels in females differed by phase of menstrual cycle.

Evidence also shows that drugs have differential gender effects at more molar biologic levels. For example, women who abuse alcohol are twice as likely as men who abuse alcohol to develop cirrhosis of the liver (Lex 1991, pp. 225-296).

TREATMENT IMPLICATIONS OF GENDER DIFFERENCE FINDINGS

What do these findings and speculations on gender differences imply about treatments for female substance users? Five implications for modifying existing therapies and/or developing new ones for women are discussed below. More extensive discussions of all the topics except biological factors can be found in the literature on treatments for female substance users.

Gender-Specific Treatments Might Be Needed for Some Subtypes of Women Substance Users

As previously noted, no clear research evidence shows the need for gender-specific treatments for female substance users. However, some findings are consistent with the possibility that gender-specific interventions might be valuable for subtypes of female users. For example, substance use treatment programs that target women who have difficulty coping with social role responsibilities (e.g., nonabusive parenting, financially supporting children) and that include interventions to build necessary coping and other skills (e.g., parenting skills, ability to find and access helpful community resources) might be more likely than current non-gender-specific programs to attract certain subtypes of female substance users.

Behavioral Treatments Might Be Differentially Efficacious for Some Women

To the extent that the depression, anxiety, and self-esteem problems of some female drug abusers are reactions to environmental, social, or intrapsychic variables, behavioral therapies are likely to be important components in treatment programs.

Women's Health Concerns as Indications for Gender-Specific Treatments

The fact that drug use treatment often is needed by pregnant women is one of the more compelling reasons to develop nonpharmacological treatments for drug abuse. Also, the known and unknown teratogenic effects of substance use (e.g., Jessup and Green 1987) make the development of efficacious treatment programs for pregnant substance users crucial from a public health perspective.

Recognizing facts of the foregoing type, NIDA spearheaded treatment and evaluation efforts for pregnant and postpartum substance users in its Perinatal-20 Treatment Research Demonstration Program (Rahdert 1996). Twenty demonstration projects were initiated during 1989 and 1990. Effectiveness reports are expected soon. One descriptive study from Perinatal-20 indicated that some pregnant substance users have intellectual limitations and high rates of psychiatric

comorbidity (Haller et al. 1993). Such data suggest that both behavioral interventions (e.g., skills training) and cognitive therapy (e.g., for anxiety and depression) might be required to achieve clinically significant effects with some types of pregnant substance users.

Gender Differences in Biological Effects Of Drugs Should Inform Treatments

Evidence on any gender differences in biological reactions to substances (e.g., rates and doses at which physiological dependence on different substances occurs) could be important to incorporate into behavioral therapies. For example, some biological evidence suggests that differential risk exists for men v. women for serious medical complications secondary to drug abuse. Including information of that type in behavioral treatments would enable women to make better risk-informed decisions about their substance use behaviors (Fischhoff and Downs 1997; Moras 1997).

Comprehensive Treatment Programs for Some Subtypes of Female Substance Users

Gender differences in characteristics such as employability, the likelihood of being the primary parenting figure, self-esteem, and comorbid psychiatric symptoms have led to a national focus on developing comprehensive treatment programs for some subtypes of female drug abusers.

Among the recommended components of comprehensive treatment programs are the following: prenatal and neonatal care, family involvement, parenting skills, vocational training, employment counseling, medical services, and HIV risk protection. Programs for women with such components are widely and enthusiastically recommended in the substance use treatment literature (e.g., Hagan et al. 1994; Kumpfer 1991; Marsh and Miller 1985; Wald et al. 1995; Zankowski 1988). Rationales for most of the components are likely to be evident from the material presented so far in this chapter (see Goldberg 1995). However, multicomponent treatment strategies previously were tried for alcohol dependence, with disappointing results (e.g., Miller and Hester 1986).

EFFICACY FINDINGS

What is known from existing studies about the efficacy of behavioral therapies for female substance users?

Low Percentages of Women in Treatment Study Samples

In most studies of major drugs of abuse (opiates and cocaine), women constitute 30 percent or less of the sample (e.g., Carroll et al. 1994a). In contrast, gender representation in nicotine treatment studies tends to favor females (estimated average of 60 percent women in samples) (Toneatto et al. 1992). The gender distributions in studies of major drugs of abuse are generally consistent with the estimate that 30 percent or fewer of substance users in treatment are women (National Institute on Drug Abuse 1989).

As noted previously, whether women are underrepresented in substance use studies is debatable; however, the most widely quoted study of behavior therapies for opiate addiction was an all-male sample treated at a Veterans Administration hospital (Woody et al. 1983, 1987). Underrepresentation aside, the small numbers of women in studies have direct implications for finding gender differences in the effects of behavioral therapies, if clinically meaningful differences do exist (see next paragraph).

Gender Differences in Treatment Efficacy Not Reported or Examined

Although gender differences in the efficacy of behavioral substance use treatments rarely have been reported, the question rarely has been examined. For example, in their review of treatment studies published from 1984 to 1989, Toneatto and colleagues (1992) found that outcomes by gender were reported in only 13 percent of the alcohol treatment studies and 23 percent of the studies of other drugs of abuse (not further defined). The lack of outcome analyses by gender in the relatively recent studies reviewed by Toneatto and coworkers (1992) reflects a longstanding pattern.

One problem that contributes to the lack of gender difference analyses is that the relatively small numbers of female participants do not allow gender effects to be examined in statistically reliable ways

(with adequate statistical power). Thus, investigators generally do not report analyses for gender effects even in studies regarded as among the best available (e.g., Carroll et al. 1994a).

The fact that women historically have participated at lower rates than men in substance use treatment studies can be evidence for gender differences in efficacy when the substance use problem being treated is equally prevalent among men and women who reside in the vicinity of a treatment program. In such circumstances, differential participation rates are an index of the treatment's acceptability. If women who qualify for treatment do not enter it at the same rate as men do, the treatment is less acceptable to women. Because treatment cannot be efficacious for that proportion of a relevant population who reject it outright, different rates of treatment participation by men and women, when the prevalence of the substance use disorder under treatment is comparable by gender, can be interpreted as evidence for differential efficacy by gender. Unfortunately, information of the type needed to evaluate acceptability by gender rarely is included in study reports.

High Dropout Rates

High dropout rates are a robust finding in treatment studies of substance abuse (Stark 1992). High attrition often is found early in the treatment engagement phase (e.g., the time between evaluation for participating in a treatment study and the beginning of treatment). For example, Gawin and Kleber (1984) reported a 54-percent dropout rate *before* beginning treatment for cocaine users who were accepted for treatment. On the other hand, Carroll and coworkers (1994a) reported a low pretreatment dropout rate (13 percent) in a study of cocaine users, but the percentage of patients who were offered treatment and who completed it was also quite low (35 percent).

As suggested by Carroll and colleagues' (1994a) 35-percent finding, high attrition also typically is found for individuals who start substance use treatment. Stark's (1992) review of substance use studies conducted primarily in the 1980s indicated high dropout rates among substance users who entered treatment. For example, Gossop and associates (1987) reported that 83 percent of the outpatients in an opioid detoxification program did not complete it. Similarly, Silberfeld and Glaser (1978) reported 83 percent attrition by alcohol or narcotic users from an outpatient program.

Somewhat surprisingly, Stark (1992) concluded that although dropout rates from substance use treatment programs are high, they “do not differ dramatically” from treatment studies of non-substance-using psychiatric patients. This conclusion is inconsistent with the fact that dropout from efficacy studies of treatments for mood and anxiety disorders tends to be 35 percent or less (e.g., Elkin et al. 1989).

Although gender differences have been reported in dropout rates in some substance use studies (e.g., Agosti et al. 1991), gender typically has not been examined as a dropout predictor. The review by Toneatto and colleagues (1992) found that only 10 percent of alcohol studies and 18 percent of studies of other drugs reported dropout by gender.

The existing attrition figures indicate that substance use treatments can be vastly improved for both males and females.

Few Efficacy Data on Gender-Specific Treatment Programs for Women

Only one study of a gender-specific intervention was found in which randomized assignment was used. Dahlgren and Willander (1989) reported that female alcohol users assigned to a treatment program for women had better outcomes than those in a mixed-gender program. In another alcohol use treatment study in which randomization was not used, no advantages were found for women-only compared to mixed-gender programs (Copeland and Hall 1992; Copeland et al. 1993). However, Copeland and coworkers (1993) also reported that the women-only program attracted some women who were demographically different from those in the mixed-gender program. This finding suggests that the availability of some types of women-only programs might expand the population of female substance users who will at least enter treatment.

Bartholomew and colleagues (1994) examined an assertiveness and sexuality treatment module for women in outpatient methadone maintenance programs. Unfortunately, the methodological problem of no randomized assignment, leading to confounding through self-selection bias, does not allow conclusions to be drawn about the value of adding the gender-specific module to the standard, mixed-gender program.

Few Efficacy Data on Comprehensive Treatment Programs for Women

Comprehensive treatment programs for female substance users that include components like those described previously (e.g., prenatal and neonatal care) were evaluated in NIDA's Perinatal-20 demonstration projects. Outcome data are not yet published from these projects, but a large number of *efficacy* data are not expected. Most of the projects were not designed to generate efficacy findings, and those that were included only partial efficacy research methods. However, the demonstration projects will yield information on implementation feasibility of some comprehensive treatment programs for pregnant substance users, the acceptability of the programs to targeted recipients, and effectiveness.

One study examined a non-gender-specific, semicomprehensive treatment program that offered additional services to both male and female substance users. McLellan and associates (1993) reported improved outcomes on some variables when adjunctive interventions were used for specific problems, but no gender differences were reported.

Only one randomized study of a comprehensive treatment program for women was found (Carroll et al. 1995). It was a small study of 20 pregnant, opiate-addicted women who received either standard treatment (methadone maintenance, weekly group counseling, and urine drug screenings three times per week) or "enhanced" standard treatment (standard treatment plus weekly prenatal care, weekly relapse prevention groups, contingency awards for drug abstinence, and child care during treatment visits). The comprehensive program was not associated with better substance use outcomes, but it was associated with longer gestations and infants with higher birth weights.

Effectiveness of Behavioral Therapies

The strongest efficacy evidence for existing behavioral therapies for substance use is for contingency management techniques (e.g., Higgins et al. 1993; Silverman et al. 1996; Stitzer et al. 1992) derived from behavior theory and the principles of operant conditioning discovered by B.F. Skinner. For example, the introduction of contingency management techniques in methadone maintenance clinics repeatedly has been found to reduce the use of other drugs (e.g., Stitzer et al. 1992). In such contingency management programs, individuals in treatment for

heroin addiction are given privileges such as taking home 3 days of methadone doses when their urine tests negative for other substances of abuse. The reward is not having to come to the clinic daily. Some impressive results have been reported with contingency management techniques. For example, in a small study (n=38) Higgins and coworkers (1993) found that 68 percent of cocaine-dependent participants in a treatment program that offered rewards for cocaine-negative urine specimens achieved 8 weeks of continuous abstinence from cocaine. The comparable figure was 11 percent for those who received only drug counseling. No gender differences have been found in the efficacy of contingency management methods.

A persistent limitation of contingency management is that the behavior change does not continue when the reward system is withdrawn (Childress et al. 1985; Stitzer et al. 1992). Also, even when a contingency management system is maintained, abstinence effects can diminish. For example, in the Higgins and colleagues (1993) study, 42 percent of the contingency management patients achieved 16 weeks of continuous abstinence, compared with the 68 percent who achieved 8 weeks of continuous abstinence.

Few true efficacy findings on the other major, non-gender-specific behavioral therapies used in the United States for substance use disorders (see table 1) have been reported. One notable exception is the study by Carroll and associates (1994a, 1994b) in which relapse prevention was compared with medication for cocaine use and which included a pill placebo control condition. In general, findings from efficacy studies or partial efficacy studies that do not include a control condition (e.g., Carroll et al. 1991; Wells et al. 1994) often indicate some reduction in drug use but tend to be disappointing in terms of the amount of reduction and the percentage of treated individuals who achieve clinically significant improvement (e.g., the Woody and coworkers [1983] findings for cognitive-behavioral therapy plus group drug counseling and the Carroll and colleagues [1991] findings for interpersonal psychotherapy).

High Relapse Rates and Relapse Prevention

All treatments for substance use tend to be associated with high posttreatment relapse rates (DeLeon 1993). High rates of relapse are found across drugs of abuse, including nicotine, and in general do

not differ by gender. One underutilized, potentially valuable research topic is gender differences in reasons for relapse (e.g., Saunders et al. 1993⁵).

High rates of relapse contributed to the development and widespread use of relapse prevention treatment strategies (e.g., Marlatt and Gordon 1985; Rawson et al. 1993, pp. 92-115) in substance use treatment programs. As noted (e.g., Carroll et al. 1994a), relapse prevention interventions also have been tested in efficacy or partial efficacy studies. However, studies of relapse prevention strategies are not fully consistent with the connotation of the term “relapse prevention,” which suggests that recovery has been achieved and that the intervention is intended to prevent recurrence. Semantics aside, findings for relapse prevention treatments tend to indicate that benefit is achieved and also that substantial room exists for better efficacy (e.g., percentage of those treated who achieve a recovery criterion). For example, in a small study (n=42) of cocaine abusers, Carroll and colleagues (1991) found that 57 percent attained 3 weeks or more of continuous abstinence and 43 percent met a criterion of recovery at the end of a 12-week treatment program. In a later study, Carroll and colleagues (1994b) also found some evidence that gains attained during acute treatment were maintained (i.e., findings consistent with the connotation of relapse prevention) in a 1-year followup of relapse prevention and pharmacotherapy for cocaine abuse. Treatment gains were maintained and even increased to some extent for the relapse prevention-alone condition. Gender differences in the efficacy of relapse prevention treatments have not been reported.

Few Methodologically Sound Studies

As noted earlier, substance use treatment outcome studies often have methodological weaknesses that reduce the conclusiveness of any efficacy data provided. Methodological improvements are clearly evident in the newest studies. However, consumers of existing studies need to be mindful of a few common methodological limitations, in addition to those described above. For example, study therapists often do not receive extensive training in the specific treatments being tested. The conduct of the therapies is not clearly and comprehensively articulated in written manuals that are used to train therapists. Manuals and training are important because they help standardize the

implementation of study therapies and ensure their quality. In addition, no attempts are made to ensure that therapists adhere to the designated interventions. Thus, neither the integrity of the treatments nor the competence with which they are delivered is ensured. When evidence for a therapy's efficacy is not found, limitations of the foregoing type reduce the reliability of the conclusion that it is not efficacious. Such weaknesses mean that it cannot be determined whether the treatment of interest was tested.

SUGGESTED DIRECTIONS FOR TREATMENT RESEARCH AND DEVELOPMENT FOR FEMALE SUBSTANCE USERS

Adolescent Polydrug Users

Some evidence exists that women who are chronic substance users, and whose lives reflect extensive functional impairment, manifest certain patterns of substance use in adolescence. One group that is at high risk of developing chronic substance use is adolescent polydrug users. Thus, focusing treatment development efforts on this group could help reduce the frequency of chronic, severe substance use and social dysfunction among adult women. Female adolescent polydrug users, particularly pregnant females, already are targeted in NIDA-funded research. The potential of sexual abuse prevention efforts for girls to reduce risk for later substance abuse is discussed above.

Self-Esteem and Life Options

Interventions that focus on self-esteem enhancement and life options "training" could be beneficial adjuncts to treatment programs for adolescent polydrug abusers as well as to prevention efforts focused on adolescent girls. Life options training might consist of several components such as helping girls to (1) become aware of options that are realistically available to them, (2) learn the steps needed to successfully pursue options of the most personal interest, and (3) learn to seek and use social supports and community resources to help sustain the behaviors needed to achieve their goals.

Interventions for Depression and Anxiety

The potential importance of including behavioral therapies with demonstrated efficacy for depression and anxiety in treatment programs for female substance users is discussed above.

Comprehensive Treatment Programs

The rationales in the literature for comprehensive, multimodule treatment programs for female substance abusers, particularly those who are mothers or who are pregnant, are compelling (but also recall the caveat from the alcohol treatment research literature). However, conducting efficacy studies of such programs is extremely challenging (e.g., Rahdert 1996). One novel methodological suggestion is that marked heterogeneity in psychosocial development among women who need comprehensive programs indicates that individualized outcome assessment methods should be used to evaluate efficacy. Such methods should take into account differences in reasonable outcome expectations across individuals (Hagan et al. 1994).

Costs of comprehensive treatment programs affect the decisions of the public policymakers who determine whether efficacious programs may be implemented. Thus, including cost-effective methodologies is important for studies of comprehensive programs.

Efficacy Studies

This chapter views efficacy studies as critical for obtaining reasonably conclusive findings about which treatments are most likely to produce desired outcomes in treatment-relevant subtypes of female substance users. Thus, conducting efficacy trials designed to examine therapies that have been recommended for various subtypes of female substance users, and that compare the efficacy of those therapies with other available therapies, is recommended.

Survey Studies of Women's Treatment Preferences and Experiences

Survey methods are a potentially useful research strategy to aid in developing efficacious treatments for female substance users. For example, Burman (1993) collected data on women's views of various treatments.

One interesting suggestion was that some treatment programs might be more efficacious if women-only and mixed-gender treatment components were provided in a “staged” sequence; for example, an initial women-only phase focused on selected issues, followed by mixed-gender treatment components that address other issues. The potential value of survey research designed to obtain patients’ perceptions of efficacious features of therapies also is illustrated by Lovejoy and associates (1995). Unfortunately, women were underrepresented in the respondent sample.

Education of Medical Practitioners

The overprescription of psychotropic medications, particularly those associated with physiological dependence, has not been discussed in this chapter (see Marsh and Miller 1985; Kandel et al., this volume). One potentially useful and efficient intervention for prescription drug abuse by housewives and other working women is education of medical practitioners. Education efforts could include federally initiated dissemination of information to practitioners about prescription patterns that demonstrate overprescription to women of medications with abuse potential. The American Psychiatric Association might support State-required participation in continuing education courses on this topic.

In conjunction with educational interventions, contingency management methods might be initiated for practitioners; for example, (1) the creation of incentives to refer women with ongoing anxiety or depression symptoms to mental health professionals for behavioral interventions and (2) censure for prescribing psychotropic medications for women beyond specified durations, *unless* the patient is also concurrently in a behavioral therapy program *and* the prescriber can verify that both treatment providers agree that continuation of the medication is indicated. The implementation of measures such as the latter is, of course, dependent on the availability of affordable and convenient behavioral therapy.

Concurrent with interventions for practitioners, public health information campaigns could be targeted to women and their significant others about overprescription of medications for women for symptoms that might be efficaciously treated by behavioral interventions.

CONCLUSION

The development and evaluation of treatments for female substance users clearly merits the attention of researchers and mental health professionals. As we approach the 21st century, essentially no data exist on the efficacy of existing and proposed treatments for distinctive subtypes of female substance users. The lack of controlled data is in marked contrast to a large literature that includes compelling arguments for gender-specific treatments for at least some subtypes. Existing efficacy studies provide little evidence for gender differences in the effects of non-gender-specific treatments. However, for reasons discussed in this chapter, the lack of evidence cannot be understood as evidence for lack of gender differences. Much work remains to systematically test the extensive existing recommendations for gender-sensitive therapies. Perhaps one benefit of the women's movement in the United States in the past 35 years is that it has become politically safer to suggest that at least some women differ from men in ways that might merit gender-sensitive therapies. Thus, it can be hoped that the rate of the needed treatment research on and development of gender-specific interventions will increase exponentially in the years to come. Such activity would mirror the markedly accelerated focus on women in the drug abuse literature since 1960.

NOTES

1. PsychLit and MEDLINE databases were used for the literature search. The search was limited to publications from 1980 through the first 6 months of 1996. Many keywords and permutations were used (e.g., substance use treatment and outcome and gender; drug treatment and outcome and gender; substance use and gender). Relevant references also were found in the reference lists of articles located by the search. A second source was used specifically for information on efficacy findings for the treatment approaches listed in table 1. The source was unpublished literature reviews obtained in 1994 for NIDA by Lisa Onken and Jack Blaine of NIDA's Treatment Research Branch in the Division of Clinical Research. The reviews evaluated the state of outcome findings and other knowledge of the most commonly used behavioral treatments for drug abuse and identified promising and needed directions for research.

2. "Efficacy" studies are contrasted with effectiveness studies in treatment outcome research (Blaine et al. 1994, pp. 593-624). Efficacy studies use experimental methods (e.g., randomization, control of confounding variables such as changes associated with the passage of time) to determine whether a treatment is associated with statistically significant benefits compared with putatively inactive treatments. Effectiveness studies are conducted in naturalistic settings, with less use of experimental controls to estimate a treatment's effects when it is performed in "real life" conditions (e.g., by all therapists in a setting, including those who might not be particularly committed to the treatment approach). Effectiveness studies are the expected next steps in evaluating treatments that have demonstrated efficacy.
3. Efficacy studies also are distinguished from evaluation research, which is similar to effectiveness research. The results of evaluation studies of woman-focused treatments are not reviewed in this chapter. Marsh and Miller (1985) reviewed that evaluation research. They observed, however, that limited data are available from evaluation research treatments for female substance users. The paucity of studies mirrors the situation with efficacy studies.
4. For a concise review of gender difference findings in substance use research, see Greenfield (1996, pp. 299-321). Note, however, that Greenfield's summary of treatment outcome and other findings is not limited to efficacy studies.
5. Saunders and associates (1993) actually examined predictors of relapse, not drug users' stated reasons for relapse.

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