

Regular article

Client-related predictors of early treatment drop-out in a substance abuse clinic exclusively employing individual therapy

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Abstract

The present study examined predictors of early drop-out in a heterogeneous male and female outpatient sample enrolled in an addiction program. Clients who failed to attend five or more individual therapy sessions were considered “non treatment-engaged.” Sixty-four percent of the sample engaged in initial treatment, compared to 36% who were early drop-outs. The latter group, compared to the former group, was significantly less educated and was more likely to be African American, female, report cocaine as the primary drug of choice, and be referred from outside the larger medical center ($ps < .05$). In multivariate models, female gender and African American ethnicity were independent predictors of early treatment drop-out ($p < .00001$). Although substance-related factors influenced treatment outcomes, their effects were weakened when taken into consideration with demographic factors such as gender and ethnicity. Continued examination of ethnicity, gender, and other potential negative prognostic factors for attendance in various addiction treatment milieus may aid in provision of appropriate services especially for high-risk clients. © 2004 Elsevier Inc. All rights reserved.

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1. Introduction

Early drop-out from drug treatment continues to be a widespread problem, limiting overall treatment effectiveness, increasing likelihood of relapse, and exacerbating health, financial, and legal consequences (Agosti, Nunes, & Ocepek-Welikson, 1996; Alterman, McKay, Mulvaney, & McLellan, 1996; Brewer, Catalano, Haggerty, Gainey, & Fleming, 1998). The converse is also true: increased client participation and retention is associated with positive treatment outcomes, reduced psychosocial problems, and greater abstinence compared to those who prematurely drop out (for review, see Baekeland & Lundwall, 1975). Although there is a growing literature on client- and program-related factors predictive of early drop-out, there is a lack of consistency in describing treatment type or therapeutic modality, i.e., outside of stating programs were residential, inpatient, or intensive outpatient. Generalizations are also limited by a preponderance of studies that have examined patient sam-

ples with a narrow range of sociodemographic features (e.g., a majority of male clients, veterans, exclusive HMO or state funded clients, etc.). Further, there are few published studies to date examining patient-related predictors of treatment nonengagement beyond an alcohol-only client base (Project MATCH Research Group, 1997) and in a “real world” practicing clinic that treats a broad mix of clients exclusively with individual therapy. Such information might not only aid in treatment decisions for private practice clinicians, but it could also determine whether factors predictive of early drop-out in group programs also translate to the 1:1 treatment setting. Therefore, the present study examined the predictive validity of client-related factors to early treatment drop-out in a “real life” individual therapy addiction treatment program.

Although there is no consensus on whether or not specific features of a treatment program significantly improve client retention (Simpson, Joe, Rowan-Szal, & Greener, 1995; Sweet & Noones, 1989), there are several client-related variables shown to relate to lack of treatment engagement. In terms of socioeconomic and drug-related client variables, early drop-out has been shown in clients with current unemployment, lower education level, history

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of arrests, longer drug use histories, cocaine abuse, and greater previous treatments (Brower, Blow, Hill, & Mudd, 1994; Claus, Kindleberger, & Dugan, 2002; Gainey, Wells, Hawkins, & Catalano, 1993; McKay et al., 1998; Stark, 1992). Further, client-related psychological and attitudinal variables, such as lower perception of treatment benefits (Fiorentine, Nakashima, & Anglin, 1999), depression and avoidance coping (Kohn, Mertens, & Weisner, 2002), and lack of social support (McMahon, Kouzekanani, & Malow, 1999) have been shown to relate to lack of retention. Results are mixed in terms of gender and racial/ethnic factors, with some studies showing poorer treatment participation and retention in women and/or African American clients (McCaul, Svikis, & Moore, 2001; Mertens & Weisner, 2000; Hoffman et al., 1996), but other studies finding no differences (Fiorentine, Anglin, Gil-Rivas, & Taylor, 1997; Lundy, Gottheil, Serota, Weinstein, & Sterling, 1995; McCance-Katz, Carroll, & Rousanville, 1999). Other potentially important client-related factors have not been fully examined for prediction to treatment drop-out. For example, although chemically dependent clients are referred to treatment through various mechanisms, their referral source has not been systematically examined as a predictor of success or failure. Clients with current ongoing relationships with other providers (e.g., primary care physician) may be more likely to engage in treatment with an addiction provider, but this has not been systematically examined.

One important advantage to identifying clients at risk for early drop-out may be to effectively triage or place such clients in appropriate or targeted programs, rather than a “one size fits all” approach. Although studies have not demonstrated a unitary set of client-related factors predictive of retention, as mentioned, several general background factors have been shown to relate to treatment drop-out. However, the ability to extrapolate these findings to practicing clinics in the “real world” is hampered because these studies have been largely conducted in circumscribed client samples enrolled in structured group-based treatment within the context of community mental health centers, residential settings, post-intensive treatment, or homeless shelters (Arfken, Klein, Di Menza, & Schuster, 2001; De Leon, Melnick, & Kressel, 1997; Kingree, 1995; McKay et al., 1998; McMahon et al., 1999; Orwin, Garrison-Mogren, Jacobs, & Sonnefeld, 1999).

Therefore, based on previous literature, the current study hypothesized that factors predictive of drop-out in group settings would translate to the individual therapy setting, particularly socioeconomic and drug-related indicators (i.e., lower education, greater cocaine use, unemployment, longer treatment history) as well as demographic factors (i.e., female gender, African American ethnicity). Other factors, such as patient’s referral from a non-medical source and greater self-rated perception of addiction severity, were also predicted to relate to early treatment drop-out. The target interval for retention focused exclusively on the first month of treatment, i.e., a critical juncture for establishing treat-

ment engagement, therapeutic alliance, and internally motivated change (Barber et al. 2001; Carroll, 1997; Miller & Rollnick, 2002). Although there is no definitive cutoff for determining treatment “engagement” status, the criteria employed in this study (i.e., attending five or more sessions) approximates a time frame supported by previous studies. The greatest attrition in substance abuse treatment usually occurs early in the therapeutic process, with the majority of dropouts occurring by the end of the first month of treatment (Baekeland & Lundwall, 1975; De Leon, 1991; Silberfeld & Glaser, 1978; Sweet & Noones, 1989).

2. Materials and method

2.1. Participants

Over the course of 18 months, a total of 128 individuals were referred to and attended an evaluation appointment at The University of Chicago Substance Abuse Clinic, a specialty outpatient clinic adjacent to the medical center. Because this is a “real life” clinic and not a separately funded state facility or treatment research center, individuals were required to have proof of a third-party payor (e.g., HMO, PPO, or Medicaid/Medicare) to be eligible for an evaluation. Of the first 128 individuals evaluated, ninety-seven (76%) were deemed appropriate for individual outpatient treatment at the clinic, as determined by the evaluating Master’s or Ph.D. level clinician. The remaining 31 individuals (24%) were not appropriate for treatment at the clinic, and when appropriate, were referred elsewhere. Reasons for ineligibility included logistical factors (e.g., moved, resided too far away from treatment clinic, etc; $n=5$), immediate health/safety issues (i.e., in need of inpatient detoxification; $n=7$), or the nature of the appointment (i.e., pre-surgery assessment; $n=19$). Therefore, the final sample for the present study ($N=97$) included only those individuals who presented with a current substance use issue and who were appropriate for and agreed to participate in weekly individual outpatient therapy.

2.2. Design and procedure

The protocol was fully approved by The University of Chicago Institutional Review Board. Since the study method was primarily chart review, there was no a priori consent form. Evaluation criteria required that individuals be 18 years of age or older and report a history of abuse or dependence on alcohol, cocaine, heroin, marijuana, amphetamine, or barbiturates. Breathalyzer tests were administered to all patients during evaluation. If the breathalyzer was positive for alcohol or the client had used any mood-altering substance on the day of the evaluation, the session was cancelled and rescheduled within one week. The clinic policy allowed a client up to three missed scheduled evaluation appointments before referring the patient to another facility.

Table 1
Demographic variables

	Non treatment engaged ^a	Treatment engaged ^b
Age (years)	40.8 ± 10.7	40.9 ± 12.9
Education (years)	13.3 ± 2.4*	14.5 ± 3.2
Gender (% male / female)	51 / 49**	82 / 18
Ethnicity (% Caucasian/ African American/ Other)	29 / 71 / 0**	63 / 31 / 6
Marital status (% married)	31	32
Employment (% full and part-time)	57	68
Caring for dependent child (%)	40	27
Referral Source (% med/psych/other)	51 / 23 / 26 **	47 / 47 / 6

Note. Results shown are mean ± S.D. (range) or %.

^a *n* = 35.

^b *n* = 62.

* *p* < .05.

** *p* < .01, comparison between groups.

Also, telephone reminder calls were placed the evening prior to the appointment. The evaluation consisted of a 1 to 1.5-hour standard semi-structured interview by a Master's or Ph.D. level clinician. This interview was based on assessment of quantity-frequency (Cahalan, Cisin, & Crossley, 1969), time-line follow-back use patterns (Sobel & Sobel, 1995), substance-related DSM-criteria (American Psychiatric Association, 1994), and demographics and other general domains of health and psychosocial functioning. Once eligibility was confirmed, the client was scheduled for individual weekly psychotherapy sessions.

After the evaluation, clients were assigned to a therapist, who was the original evaluating clinician in the majority of the cases (i.e., >95%). The length of treatment typically consisted of an initial treatment plan of 12 weeks of individual (once weekly) psychotherapy. The therapy modality was primarily cognitive-behavioral, consistent with empirically-validated treatment manuals from the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism (Carroll, 1998; Miller, Zweben, DiClemente, & Rychtarik, 1992). Weekly supervision covering a detailed review of the therapy sessions with the program director (AK), a licensed clinical psychologist, was utilized to avoid clinician drift or deviation from the tenets of the therapy. Random urine samples (i.e., 1–2 times per month) were obtained and results were used as a tool to chart client progress and motivate clients to establish and work toward treatment-related goals. However, these results were not used as a negative tool or to terminate treatment. That is, treatment did not cease if the client was unable to achieve abstinence or relapsed during the first few weeks of treatment. Also, departing from traditional group-based addiction programs, clients were not required to attend 12-step groups or undergo formal psychoeducational or didactic lectures. A client was allowed two consecutive unexcused absences (i.e., “no show, no call”) before treatment was terminated and only after therapist outreach was unsuccessful (e.g., phone calls, letter, etc.).

2.3. Statistical analyses

Client characteristics and background data were obtained from the initial structured screening interview with the clinician which was entered and verified by a research assistant. Based on initial treatment attendance, clients were codified into two main subgroups, treatment engaged (attendance at five or more therapy sessions) and non treatment-engaged (drop-out before attending five sessions). Reasons for early drop-out were not obtained in a systematic manner since treatment usually terminated after unsuccessful outreach to the clients by treatment providers. Student's *t*-tests were employed to compare the means for the groups on continuous variables (age, education, etc.) and chi-square analyses were used for categorical variables (employment and marital status, gender, ethnicity, drug of abuse, referral source). To examine the unique variance for the factors predicting treatment retention from these analyses, a logistic regression analysis was conducted, with group as the dependent variable and the main significant client-related factors (i.e., gender, ethnicity, education, referral source, and primary drug of abuse) as the independent or predictor variables. Odds ratios and 95% confidence intervals (CI) were also calculated in the multivariate model. All analyses were conducted using the Statistica® (Tulsa, OK) software package.

3. Results

3.1. Demographics

The overall sample was diverse and heterogeneous, as determined by several background characteristics, including age (range 20–72 years), education (range 8–21 years), ethnicity (51% Caucasian; 45% African American, 4% Other), work status (64% full or part-time employed, 14% currently unemployed, and 22% disabled or retired), marital status (32% married; 40% single; 28% divorced/separated/

Table 2
Substance-related variables

	Non treatment engaged ^a	Treatment engaged ^b
Prior formal addictions treatment (%)	49	45
Prior AA/NA/CA attendance (%)	57	48
Self-rating (1-10) of addiction severity	7.5 ± 2.7	6.5 ± 2.4
Primary drug of dependence:		
Alcohol (%)	49	65
Cocaine (%)	31*	10
Heroin (%)	0	11
Marijuana (%)	6	3
Other (%)	14	11
Dependence on ≥2 substances (%)	34	26

Note. Results shown are mean ± S.D. (range) or %.

^a *n* = 35.

^b *n* = 62.

* *p* < .05, comparison between groups.

Table 3
Models predicting treatment nonengagement

Variable	B	SE B	t	p	OR	CI
Five-factor model						
Ethnicity (African American)	1.32	0.57	2.29	.02	3.75	(1.2–11.8)
Gender (Female)	1.29	0.53	2.43	.02	3.63	(1.3–10.4)
Referral (Medical Center)	1.14	0.73	1.56	.12	3.14	(0.7–13.4)
Cocaine Dependence	0.62	0.64	0.97	.34	1.86	(0.5–6.6)
Education (years)	0.02	0.10	–0.22	.83	0.98	(0.8–1.2)
Two-factor model						
Ethnicity (African American)	1.62	0.48	3.36	.001	5.07	(1.9–13.2)
Gender (Female)	1.33	0.51	2.60	.01	3.77	(1.4–10.4)

Note. Reference groups were Caucasian, male, outside referral, alcohol/other drugs, respectively. (note: 4 individuals of other races were excluded). OR = odds ratio; CI = 95% confidence interval.

widowed), and gender (71% male, 29% female). The sample was nearly equally divided in terms of past addiction treatment history, with 46% reporting a prior treatment experience and 54% reporting no prior treatment. Previous attendance at self-help (12-step) meetings was also nearly equally mixed (52% had self-help experience; 48% did not). Clients were referred from various sources, including within the medical center: primary care or medicine (49%), psychiatry clinics (38%); or outside referrals: self or employee assistance referred (13%).

3.2. Group comparisons

Results indicated that nearly two thirds of the sample was treatment engaged ($n=62/97$; 64%) compared to about one third of the sample that was non-engaged ($n=35/97$; 36%). Major demographic and substance-related characteristics are included in Tables 1 and 2. Many of the hypothesized background variables differed in the non treatment-engaged compared to treatment-engaged clients, including significantly less years of education: 13.3 vs. 14.5 yrs, $t(95)=-1.96$, $p=.05$; greater proportion of women: 49% vs. 18% female, $\chi^2(1)=10.36$, $p=.001$; greater proportion of African Americans: 71% vs. 31% African American, $\chi^2(2)=15.68$, $p=.0003$; cocaine as their primary drug of dependence: 31% vs. 10%; $\chi^2(5)=11.46$, $p=.04$; and referral source from outside the medical center: 26% vs. 6%, $\chi^2(2)=9.65$, $p=.008$. Other background characteristics were not different between the groups, such as age, employment or marital status, caring for a dependent child, and addiction variables (history of prior treatment and self-reported rating of addiction severity); these were not retained for subsequent multivariate models.

3.3. Predictors of treatment engagement

Logistic regression examining the five main predictors of treatment retention (i.e., education, gender, ethnicity, primary

drug of abuse, and referral source) revealed that the full model was statistically significant: likelihood ratio $\chi^2(5)=26.48$, $p<.0001$; Table 3. According to the Wald criterion, of the five predictors, only ethnicity (African American vs. Caucasians: $z=2.29$, $p=.022$) and gender ($z=2.44$, $p=.015$) reliably predicted treatment drop-out. Subsequent regression analyses retaining ethnicity and gender showed that none of the other three predictors (education, primary drug, and referral source) significantly added to the model once the effects of the former variables were taken into account. The interaction between ethnicity and gender was not a significant predictor ($p=0.87$); therefore, the final model included only ethnicity and gender as independent predictors of treatment nonengagement: likelihood ratio $\chi^2(2)=22.31$, $p<.00001$. Odds ratios indicated that the odds of early drop-out for African Americans was 5.1-fold greater (95% CI: 1.9 to 13.2) than in Caucasians, and 3.8-fold greater (95% CI: 1.4 to 10.4) in females vs. males.

4. Discussion

The observed overall treatment engagement rate during early treatment (64%) was consistent with or higher than reported in prior studies (i.e., 36–57% early phase retention; Arfken et al., 2001; Gottheil, Sterling, & Weinstein, 1997; Mulvaney, Alterman, Boardman, & Kampman, 1999). This may have been due to employing empirically-valid cognitive-behavioral techniques, utilizing only Master's and Ph.D. level therapists, and offering individual-based treatment in proximity to a larger medical center. The intense focus on individual therapy may also have avoided the pitfall of clients showing minimal participation in a larger group program and being at risk for "falling through the cracks," although future research is needed.

The present study focused on the early acute phase of treatment engagement, cited as the time of greatest attrition (Baekeland & Lundwall, 1975; De Leon, 1991; Silberfeld & Glaser, 1978; Sweet & Noones, 1989), in contrast to studies examining intermediate- or longer-term outcome (Arfken et al., 2001; McCaul et al., 2001). Similar to other studies, lower education levels and cocaine as the primary drug of choice significantly predicted negative outcome (Claus et al., 2002; Gainey et al., 1993; Gottheil et al., 1997; Hoffman et al., 1996; Siqueland et al., 1998). Self- and outside-referred clients also did not progress as well as within-medical center referrals. The latter variable, which has not been previously studied, may be associated with improved retention because of the referral link within one setting and/or less stigma associated with attending addictions treatment in a familiar setting. Also, clients with an already established physician-patient relationship may be a self-selected group and more likely to engage with another practitioner. Although all three predictor variables (referral source, education level, and primary drug) were significant in univariate analyses, none of these factors remained

associated with treatment engagement vs. nonengagement once African American ethnicity and female gender were taken into account. Thus, our results extend prior research demonstrating the role of client background and demographics predicting retention beyond substance-related factors (Ingersoll, Lu, & Haller, 1995; McCaul et al., 2001) and extend them to a treatment program employing once-weekly individual therapy.

Consistent with previous studies (Arfken et al., 2001; McCaul et al., 2001), female gender was a significant predictor of drop-out, with only 39% (11/28) of women treatment engaged compared to 74% (51/69) of the men. Several factors have been posited to be associated with female clients' higher odds of failing to engage in treatment, including history of trauma (Miller, Wilsnack, & Cunradi, 2000; Reed, 1985; Wallen, 1992), stress and mood-related factors (King, Bernardy, & Hauner, 2003; Najavits, Weiss, & Shaw, 1997), or lack of social support (Kingree, 1995). The present study may rule out the possibility that women's greater drop-out is the result of exacerbation of trauma symptoms in the context of a male-dominated milieu (Wallen, 1992), since lower retention was still observed in the context of individual therapy with a preponderance of female therapists (i.e., seven of nine therapists were women). Finally, although the sample size is small, post-hoc tests showed that women who dropped out early were significantly more likely than women who remained in treatment to be unemployed ($p < .05$) and have less education ($p < .01$) and to directionally have dependent children under their care (40% vs. 27%). These factors, taken together, suggest that complex and subtle socioeconomic and/or role-related factors (extended family issues, qualitative parenting factors, household issues) might factor into continuing in a perhaps less time-intensive individual treatment, just as they do in more intensive and structured programs.

In addition to gender, African American clients were also five times more likely to drop out than Caucasians, consistent with previous studies (McCaul et al., 2001; Mertens & Weisner, 2000). Several possible factors underlying their lower retention may be speculated. First, general sociodemographic indicators, such as lower overall income levels, greater unemployment, disparate health outcomes and ongoing environmental stressors (e.g., urban violence; O'Hare, Pollard, Mann, & Kent, 1991; Tidwell, 1994) may play a role in their lack of treatment engagement. However, several socioeconomic factors obtained in this study (i.e., work status, education levels) did not differ between treatment-engaged and non-engaged African Americans, arguing against a general socioeconomic theory. Second, lower retention in African Americans may relate to multicultural issues (Sue & Sue, 1999) and possible shortcomings within the intervention and treatment setting context (i.e., only two therapists were minorities). It has been suggested that African Americans may be reluctant to disclose personal information because of

hardships experienced by racism (Ridley, 1995; White & Parham, 1990) or perceptions of less expertise or like-ability in non-African American counselors (Dalton, 2001). Finally, the individual therapy setting may not employ the extended family and kinship networks common in the African American community, which might be a rich resource in a treatment milieu (Hines & Boyd-Franklin, 1996).

In sum, the findings of this study in a mixed, heterogeneous addiction sample indicated that female gender and African American ethnicity were robust predictors of early treatment drop-out in an individual-therapy based program. Although there is debate (McMahon et al., 1999), early drop-out has been shown to be linked to drug and alcohol relapse and poorer long-term prognosis (Agosti et al., 1996; Alterman et al., 1996; Simpson et al., 1995). Several limitations of the present study are worth noting, including examining only a circumscribed set of factors, relying solely on self-reported client variables, and utilizing a singular definition of treatment engagement status. Future research should examine more detailed information on client factors to continue to aid our understanding of the important factors of retention in "real life" treatment programs that employ an individual therapy, private practice model. Reliance solely on generalizing results from client samples attending group-based addictions treatment to other settings may be problematic. As addiction and other mental health disorders are becoming increasingly integrated into ambulatory settings or less intensive treatment clinics (Bell, 1994; Friedmann, Saitz, & Samet, 1998), the factors associated with retention or lack of retention may become of paramount importance.

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