

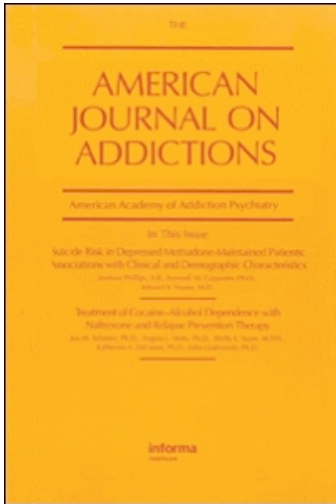
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Engagement and Retention in Outpatient Alcoholism Treatment for Women

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Engagement and Retention in Outpatient Alcoholism Treatment for Women

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Reviews of the dropout literature note significant attrition from addiction treatment. However, consistent predictors have not been identified and few studies have examined factors related to retention and engagement for women in gender-specific treatment. The current study consisted of 102 women and their partners randomized to individual or couples outpatient alcoholism treatment. Women attended more treatment sessions if they were assigned to individual treatment, older, had fewer symptoms of alcohol dependence, had more satisfying marital relationships, had spouses who drank, and had matched preference for treatment condition. Women were more engaged in treatment (ie, completed more assigned homework) if they had fewer children at home, fewer alcohol dependence symptoms, later age of onset of alcohol diagnosis, more satisfying marital relationships, and spouses who accepted or encouraged their drinking. Results highlight important associations of treatment and relationship variables with treatment retention and engagement. (Am J Addict 2009;18:277–288)

Given tightening of resources in the health care system, efforts continue to be made to provide the most effective and efficient treatments for clients with substance use disorders. These efforts are hindered by problems with engagement and retention. Treatment attrition results in programs spending

considerable resources on individuals who do not subsequently engage in the treatment process. Additionally, clients who do not show up for treatment contribute to staff frustration and burnout.^{1,2} Time in treatment is a predictor of positive outcome among patients with substance use disorders,^{2,3} and thus, attrition may contribute to poorer outcome compared to clients who remain in treatment. While poor retention has clear clinical implications, high rates of attrition also create problems for researchers. In treatment efficacy studies, retention is crucial to addressing the main research questions, as both internal and external validity are compromised by subject attrition.^{4,5}

A number of studies have found that dropout is a major problem in substance abuse treatment, especially during the first 3 months.^{2,6–8} Dropout rates of 50%–80% during this time are typical.² For instance, 56% of clients dropped out before the eighth session in a study of treatment for cocaine dependence.⁹ A similar range of attrition rates is seen for clients in outpatient alcohol treatment, with reports of 52–75% of clients dropping out by the fourth session.^{6,10}

Over the last 30 years, studies have attempted to identify both client and treatment predictors of retention in substance abuse treatment. Client factors include demographic variables (gender, ethnicity, age, education, marital status, social stability, socioeconomic status, and employment status), alcohol/drug use severity and treatment history, legal history, motivation for change, psychopathology, and social network.^{8,11} There is some evidence that age is related to attrition, with younger clients more likely to drop out of treatment.^{12,13} Similarly, some evidence suggests that lack of social stability and support are related to treatment attrition. For example, in several studies, clients who are single, living alone, or separated have been found to be more likely to drop out.^{9,14} Substance use severity, legal status,

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and psychopathology have not been consistent predictors of treatment attrition.

The research on treatment attrition and gender is mixed. Several studies have shown women to have poorer retention rates than men,^{15–17} but other studies have found that men were more likely to drop out of treatment than women.^{18,19} In a recent literature review, Greenfield et al.¹¹ report that, contrary to equivocal results found in smaller-study analyses of gender differences in substance abuse retention, population-based studies suggest no clear gender difference in treatment retention, although different predictors have been associated with attrition in each group. Some have suggested that women have more difficulty engaging in treatment due to gender-specific barriers such as child care, finances, stigma, extreme feelings of depression and guilt, lack of family support for treatment, and difficulty with confrontational types of treatment.^{20–23} These gender-specific barriers to treatment may also contribute to differences in predictors of treatment retention among males and females.¹¹

In addition to patient characteristics, treatment factors affecting retention have been studied and include the therapeutic alliance, ancillary programming (medical, employment, financial, etc.) offered, counselor characteristics, program barriers, program awareness of dropout as a problem, and treatment modality (individual, couples, group).^{8,24} Positive therapeutic alliance consistently has been related to lower attrition rates.^{25–27} Counselor characteristics such as gender and race have not been related to client attrition, but clinician experience has been related to attrition.²⁸ Relatively little research has focused on the relationship between treatment attrition and treatment modality, specifically, couples treatment modality. Generally, the likelihood that participants will enter and complete treatment is significantly increased when spouses or significant others are involved in treatment,^{29–31} but only a few studies have compared retention in individual and couples treatment. Zweben et al.³² found that couples treatment was associated with better engagement and retention than individual treatment. More recent studies have reported no difference in treatment attendance between individual and conjoint therapy in treatment of male substance use.^{33,34}

Although treatment retention generally is conceptualized as the converse of treatment dropout and attrition, the construct of engagement in therapy is not as clearly defined. Engagement has been defined as a function of duration of treatment and intensity (ie, number of individual and group sessions attended in a particular program),³⁵ participation and therapeutic relationship,³⁶ number of sessions attended,³⁷ and motivation.³⁸ Further, definitions of substance abuse treatment engagement specifically in women are lacking. In a study defining engagement as a function of duration and participation intensity, treatment factors (eg, therapist empathy, ancillary services) were found to explain a higher percent of variance in engagement among women in treatment for drug abuse than client characteristics.³⁵ This result may have been because ancillary treatment services were particularly valuable to women, and provision of additional support allowed women

to engage more in treatment. The lack of a clear measure of treatment engagement, the possibility that predictors of engagement might be different for women and men, and the importance of an understanding of process measures for conceptualization of substance abuse treatment models³⁹ all underscore a need for further research in this area.

To date, we are aware of no published studies that have examined the relationship between treatment modality and retention and engagement in a women-specific treatment program for alcohol use disorders (AUDs). The present study was conducted to examine three questions: (1) Will alcohol-dependent women in couples treatment have higher rates of treatment retention and engagement than women in individual treatment? (2) What specific factors are related to women's retention and engagement in treatment? (3) Do predictors of treatment engagement and retention differ between women in couples treatment and women in individual treatment?

METHOD

Participants

Participants were 102 women seeking outpatient treatment for alcohol problems and their male spouse or partner (married, cohabitating for at least six months, or in a non-cohabitating committed relationship for at least one year). Women were eligible for the study if they were at least 18 years old; in a stable, heterosexual relationship; had a partner willing to participate in treatment and follow up; met criteria for a DSM-IV alcohol abuse or dependence disorder diagnosis in the past 12 months; and used alcohol at least once in the 60 days prior to recruitment. Couples were excluded from the study if either partner exhibited current signs of psychosis or organic brain syndrome, if there was significant domestic violence, or if the woman was physiologically dependent on substances other than alcohol.

Couples were recruited through newspaper advertising and referrals from community outpatient addiction treatment programs, other community agencies, and physicians. A total of 442 individuals made a telephone inquiry about the treatment program and were screened for eligibility. Out of the callers screened, 254, or 57%, were excluded from the study for the following reasons: (1) woman did not meet eligibility criteria (12%), (2) various partner-related reasons (10%), (3) caller did not call back (26%), or (4) inability to determine eligibility (9%). In-person clinical screen interviews were scheduled with the 188 couples that met the initial eligibility criteria. Clinical screen interviews were completed and informed consents were signed by 124 of the scheduled couples (66%). These 124 couples were then scheduled for a baseline research assessment, which was completed by 109 couples (88%). An additional 7 couples dropped out of the study after the baseline assessment, leaving 102 (94%) of the scheduled participants from the baseline assessment that attended at least one treatment session. For more detail on the flow of subject recruitment see McCrady et al.⁴⁰

Measures

Demographics

Information about subject's age, ethnicity, employment, years of education, household income, marital status and children living at home was collected in a self-report intake form at the clinical screen interview.

The Time-Line Follow-back Interview (TLFB)

The TLFB⁴¹ was used to assess alcohol and drug use for both the woman and her partner in the three months prior to the baseline interview to determine: the percentage of days in which alcohol and drugs were consumed (actual days of use divided by days of possible use), the average number of standard drinks (defined as 5 ounces of wine, 12 ounces of regular beer, or 1.5 ounces of 80 proof liquor or equivalent⁴²) consumed on a drinking day, and types of drugs used. Test-retest reliability for the TLFB has been high and correlations of drinkers' self-report with collateral report have ranged from $r = .84$ to $r = .94$.⁴³

The Rutgers Consequences of Use Questionnaire (RCU)

The RCU⁴⁴ is a 78-item self-report measure that assesses how often the woman and her partner experienced alcohol- and drug-related consequences during the past six months. A 0–4 scale is used to measure frequency of occurrence over the previous six months of 39 consequences related to various domains including social/familial relationships, physical health, legal problems, and psychological health. Rhines et al.⁴⁴ reported high internal reliability (Cronbach's $\alpha = .94$) for alcohol consequences, and acceptable response variability.

Readiness to Change Questionnaire (RCQ)

The RCQ,⁴⁵ a 12-item self-report measure determines the woman's stage of readiness to change (precontemplation, contemplation, or action). Items were rated on a 5-point Likert scale from *strongly disagree* to *strongly agree*. Higher scores on the contemplation and action scales, and lower scores on the precontemplation scale indicate a greater readiness to change. A single stage was assigned to the woman based on the stage for which she received the highest score; in the case of a tie, assignment was made to the stage higher on the continuum.⁴⁶ The RCQ has satisfactory reliability (Cronbach's alphas range from .73–.85 and test-retest correlations range from .78–.86) and validity for the three subscales.^{46,47} An additional item asked about the woman's desired drinking goal, which was coded as complete abstinence, time-limited abstinence, or moderated drinking.⁴⁸

Structured Clinical Interview for DSM-IV (SCID-IV)

Current and lifetime Axis I and Axis II diagnoses were assessed according to DSM-IV⁴⁹ criteria. Alcohol and drug use diagnoses were assessed as present in the past 30 days and/or in the past year using the alcohol and drug modules of the SCID. Age of onset was determined for any alcohol or drug

use diagnosis. The SCID was administered separately to both partners by trained doctoral, masters and bachelors level staff. In a previous study using a mixed gender sample, our lab found the mean inter-rater reliability (kappa) for this instrument to be .87.⁵⁰ Additionally, good overall inter-rater reliability has been reported for alcohol diagnoses (kappa = .75) and other substance use disorder diagnoses (kappa = .84).⁵¹

Profile of Mood States (POMS)

The POMS⁵² consists of 65 items on which participants rate their mood over the past week. Each item is rated on a 5-point Likert scale. The POMS yields six subscale scores (Tension-Anxiety, Depression-Dejection, Anger-Hostility, Vigor-Activity, Fatigue-Inertia, and Confusion-Bewilderment) and an overall total score. Higher scores indicate more current emotional distress. The POMS has excellent reliability (Cronbach's alphas range from .84–.95 and test-retest correlations range from .65–.74) and validity for the six subscales.⁵²

Dyadic Adjustment Scale (DAS)

The DAS^{53,54} is a 32-item self-report questionnaire that measures global marital satisfaction and commitment. The women and their partners both completed the DAS. Internal consistency of the DAS has been reported as .96⁵⁵ and split-half reliability as .88.⁵⁴ A cutoff score of 100 typically has been used to define "happy" couples; higher scores indicate greater marital satisfaction.

Important People and Activities (IPA)

The IPA⁵⁶ assesses number of individuals in the subject's social network. In addition, the IPA asks about the alcohol/drug use of network members as well as the degree to which members of the network are supportive of treatment and abstinence. The drinking status of the partner was categorized as 1) abstinent or in recovery, 2) light drinking, or 3) moderate or heavy drinking. Partner encouragement for drinking was categorized as 1) encouraged or accepted her drinking, 2) neutral, or 3) didn't accept or left when she was drinking.

Condition Preference

The woman's preference for treatment condition assignment was measured through a consensus rating done by members of the research staff (the clinical screener and baseline interviewer). Each rater indicated their perception of the woman's condition preference resulting in one of four responses: "wanted individual," "wanted couples," "no preference," and "unknown." Decision rules were developed to assist in making ratings. For cases that had no clear consensus, group discussion by the research team ensued to resolve discrepancies. All codeable cases were eventually classified according to one of three scenarios: agreement between interviewers on the same condition (preference coded as agreed-upon condition), disagreement between interviewers on the same condition (preference coded as "missing"), and ranking by one interviewer for a condition and by the

	Clinical Interviewer	Baseline Interviewer	Consensus
<u>Scenario 1:</u> Interviewers agree: Preference coded as the agreed-upon condition	Couples	Couples	Couples
	Individual	Individual	Individual
	No preference	No preference	No preference
<u>Scenario 2:</u> One interviewer assigns "No preference," the other assigns a condition: Preference coded based on recommendation of interviewer assigning preference	No preference	Individual	Individual
	No preference	Couples	Couples
	Couples	No preference	Couples
	Individual	No preference	Individual
<u>Scenario 3:</u> Interviewers disagree: Preference coded as missing	Individual	Couples	Missing
	Couples	Individual	Missing

FIGURE 1. Decision table of treatment preference assignment.

other as “no preference” or “missing” (preference coded as condition, not missing). For further information on decision rules, see Figure 1. The condition preference variable was then determined to be either 1) “matched” or 2) “mismatched” based on the assigned condition and the rating for the women’s condition preference. If the rating for the women’s condition preference was “no preference” then the condition preference variable was coded as a match. If the condition preference was rated as “unknown” then the condition preference variable was rated as missing. Because treatment preference was not a primary outcome of the main study and was determined to be a variable of interest after a portion of recruitment was done, the majority of ratings (80%) were done retrospectively.

Daily Drinking Log

A self-report daily drinking log was used to track drinking behavior during treatment. Women recorded the number of alcohol-related urges experienced, the quantity and type of any alcohol consumed during the day, and level of marital satisfaction.

Homework Record

Homework was assigned after each session for individuals and couples. Homework was designed to reinforce skills practiced during session, and typically included a combination of self-monitoring of drinking or cravings, several short psychoeducational handouts (eg, “How to Refuse a Drink,” “Handling Slips and Relapses,” “For the Partner—Changing your Triggers for her Drinking”), and worksheets extending the topic discussed in session (eg, self-management planning,

for partners: recording positive partner actions). Therapists recorded the number of homework assignments assigned and completed on a homework record form. Percentage of homework completed was calculated for assignments made individually (for men and women in the couples condition and women in the individual condition) and assignments made to the couple in the couples condition. The percentage of homework the woman completed was used as an indicator of treatment engagement. Among samples of cognitive-behavioral treatment for cocaine dependence, homework completion has been found to be a significant predictor of treatment retention,⁵⁷ increase in coping skills,⁵⁸ therapeutic alliance,⁵⁸ and reduction in substance use.^{57,58} We chose to use homework completion as a proxy for treatment engagement because it is a key component to cognitive-behavioral treatment for substance abuse and is easily measurable. Moreover, lacking a universally accepted measure in the field, homework completion by substance abusers is compelling as a measure of engagement in that it is an index for time spent in activities designed to practice and reinforce concepts discussed in treatment.

Therapist Empathy

Therapist empathy was measured using rating scales adapted from Project MATCH⁵⁹ and Project IMPACT.⁶⁰ Four raters listened to audiotapes of the second and fifth sessions in their entirety and rated the extent and quality of the empathy shown by the clinician in the session. Empathy was defined as the therapist’s demonstration of sensitivity and warmth, genuine concern, extent to which the therapist was

non-judgmental, and conveyance of understanding of the patients' feelings and concerns. The quality of therapist empathy rated in the second session was used for analyses in this study. Higher scores on a 5-point Likert scale (1 = very poor, 5 = excellent) indicated higher ratings of therapist empathy. For more information about the therapist ratings see McCrady et al.⁴⁰

Treatment Retention

The total number of sessions attended by the female was used to define treatment retention.

Procedures

Telephone Screen

The telephone screen took approximately 10 minutes to complete and described the treatment project to the caller, assessed potential eligibility of participants, and determined whether to schedule an in-person clinical screen.

Clinical Screen Interview

Couples who were determined to be eligible for the study through the telephone screen were scheduled for a two-hour semi-structured clinical screen interview. Clinical interviews were administered by master's level social workers, advanced doctoral students in clinical psychology, or doctoral-level psychologists. The purpose of the clinical interview was to establish rapport with the couple, further explain study procedures, and assess potential eligibility. The interview consisted of a collection of demographic and screening measures. Interested couples were informed of the details of the research study, informed consent was obtained, and a baseline research assessment was scheduled.

Baseline Research Assessment

The baseline interview included an assessment of the woman's psychosocial functioning, the nature and extent of her social network, systematic collection of both partners' alcohol and drug use over the three months prior to the interview, a diagnostic assessment of the male's alcohol and drug use, and an evaluation of male and female Axis I and Axis II disorders. Baseline interviews were administered by trained research interviewers.

Treatment

After the baseline interview, couples were randomly assigned to either Alcohol Behavioral Individual Treatment (ABIT) or Alcohol Behavioral Couples Treatment (ABCT). In the ABCT condition, all treatment sessions were delivered in a conjoint format. Both conditions included 20 sessions over a 26-week treatment period and emphasized a goal of abstinence from alcohol. Treatment was administered by doctoral-level psychologists or advanced doctoral students in psychology. All therapists were trained to deliver both ABCT and ABIT using treatment-specific manuals developed by the third and fourth authors (EEE; BSM). Each therapist was assigned a consultant from the treatment team who regularly reviewed session audiotapes to assist in maintaining treatment fidelity.

Additionally, weekly group supervision was provided for study therapists to address treatment integrity and clinical issues. For a more detailed description of the treatment, see McCrady et al.⁴⁰ All study procedures were approved by the Rutgers University Institutional Review Board (IRB).

RESULTS

Sample Characteristics

The characteristics of the sample of 102 couples that entered treatment by gender and modality are seen in Table 1. Overall, couples had a mean household income of \$93,631 ($SD = \$58,717$), 95% of the couples were married or living as married, and about 56% of couples had children living at home. All women met criteria for a DSM-IV alcohol use disorder within the prior 12 months, and 98% of women met criteria for current alcohol dependence. On average, the women abstained from alcohol approximately 33% ($SD = 28.5$) of the days during the three months prior to the baseline assessment. Women drank a mean of 8.22 ($SD = 4.9$) standard drinks per drinking day in the three months prior to the baseline assessment. Across both conditions, women attended a mean of 13.7 ($SD = 6.5$) treatment sessions out of a total of 20 possible, and on average, women completed about 73% of all homework.

Male partners were older than females ($t(202) = -2.51$, $p = 0.013$) and nearly all (88%) males were employed full-time. At baseline, the mean number of drinks per day consumed by the women was substantially higher than the mean number of drinks per day consumed by the men (8.2 ($SD = 4.9$) vs. 3.5 ($SD = 2.7$), $t(161) = 8.46$, $p < 0.001$). That said, more than a quarter of males met current or past criteria for an alcohol use disorder, and as such, there was substantial variability in mean drinks per drinking day among men. Men with a current alcohol use disorder ($n = 13$) drank 6.4 ($SD = 2.8$) drinks per day. Further information on sample characteristics can be obtained from McCrady et al.⁴⁰

Condition Differences in Treatment Retention and Engagement

An independent sample's t-test was conducted to examine differences in treatment retention (sessions attended) and engagement (percent homework completed) for the women in the individual and couples treatment conditions. Women in the individual treatment condition attended significantly more sessions than women in the couples condition ($t(100) = -1.98$; $p = .05$). There were no significant differences between conditions in the percent of homework completed by the women in ABIT versus ABCT. There were no significant differences by condition and gender on any other demographic, substance severity, relationship, or treatment factor tested (see Table 1).

Correlates of Treatment Retention

In Table 2, results are presented from Pearson correlations, t-tests, and ANOVAs testing client and treatment factors

TABLE 1. Participant characteristics, relationship and treatment factors by gender and treatment modality

	ABCT		ABIT	
	Females (n = 50)	Males (n = 50)	Females (n = 52)	Males (n = 52)
Demographics				
Age (SD)	44.8 (9.1)	48.0 (9.6)	45.3 (9.3)	49.0 (11.1)
Years of education (SD)	14.6 (2.6)	15.3 (2.8)	14.5 (2.6)	15.2 (3.3)
Ethnicity (% Caucasian)	46 (92%)	47 (94%)	51 (98%)	51 (98%)
Employed full-time (%)	18 (36%)	44 (88%)	14 (27%)	43 (83%)
Household income – median	\$87,500.00		\$73,500.00	
Any children at home (% yes)	30 (60%)		27 (52%)	
Substance severity				
TLFB % abstinent days (SD)	35.0 (29.2)	66.3 (32.3)	32.0 (28.0)	66.5 (33.3)
TLFB Mean drinks per day (SD)	8.3 (4.1)	3.6 (2.7) (n = 44)	8.2 (5.6)	3.4 (2.7) (n = 47)
Total alcohol-related consequences (RCU) (SD)	38.6 (15.1)	5.4 (6.8)	36.4 (17.3)	3.8 (6.0)
Current alcohol use disorder ¹ (%)	49 (96%)	6 (12%)	52 (100%)	7 (13%)
Number of current alcohol dependence symptoms ¹ (SD)	5.4 (1.4)	0.5 (1.2)	5.1 (1.5)	0.5 (1.2)
Age of onset of alcohol use disorder (when current) ¹ (SD)	31.5 (10.9)	24.8 (11.9) (n = 5)	35.1 (10.7)	30.6 (19.3) (n = 7)
Relationship factors				
Dyadic adjustment scale (SD)	97.1 (24.0)	100.7 (21.3)	105.1 (19.2)	105.0 (16.7)
Spouse encouraging drinking (% yes/accepted)	18 (39%)	n/a	15 (31%)	n/a
Spouse drinking status (% moderate or heavy)	22 (45%)	n/a	21 (40%)	n/a
Treatment factors				
Therapist empathy (SD)	4.0 (0.8)		4.0 (1.0)	n/a
Female condition preference matched (%)	16 (43%) (n = 37)	n/a	27 (61%) (n = 44)	n/a
Sessions attended (SD)	12.4 (6.4)*	n/a	14.9 (6.5)*	n/a
Percent homework completed (SD)	73% (17%)	75% (20%)	74% (24%)	n/a

¹Diagnosis missing for 1 ABCT patient.

**p* = .05.

associated with treatment sessions attended. There were significant relationships between treatment sessions attended and client factors, such as the women's age, her total number of current alcohol dependence symptoms, DAS scores, and spouse drinking status. Women who were older, with fewer alcohol dependence symptoms, more satisfying marital relationships or with partners who were drinkers tended to attend more treatment sessions. In terms of treatment factors, women randomized to the individual condition and whose assigned treatment condition matched her preference attended significantly more sessions. Sessions attended was not significantly related to client motivation, current psychological distress, heavy drinkers in her social network, or therapist empathy.

Correlates of Treatment Engagement

Pearson correlation, t-test, and ANOVA analyses of women's homework completion and both client and treatment

factors are presented in Table 2. Significant relationships were found between percent homework completed and women's age, having children at home, her total number of current alcohol dependence symptoms, age of onset of alcohol dependence, DAS scores, and spouse encouragement of her drinking. Women who were older, had no children at home, had fewer alcohol dependence symptoms, later age of onset of an alcohol diagnosis, more satisfying marital relationships, and had partners who encouraged or accepted her drinking tended to complete a higher percentage of homework. The percent of women's homework completed was not significantly related to treatment preference or condition, motivation, current psychological distress, heavy drinkers in her social network, or therapist empathy.

Predictors of Treatment Retention

Using multiple regression, sessions attended was simultaneously regressed on the significant correlates in each category,

TABLE 2. Relationship between treatment retention and engagement and selected variables

	Female treatment retention and engagement			
	Sessions attended		Percent homework completed	
	Pearson	t-test/ANOVA	Pearson	t-test/ANOVA
Demographics				
Age	.27 [†] (n = 102)		.32 [‡] (n = 101)	
Children at home		t = -0.63 (n = 102)		t = 2.61* (n = 101)
Substance severity				
Current dependence symptoms	-.20* (n = 101)		-.22* (n = 100)	
Age of onset for alcohol diagnosis	.17 (n = 101)		.21* (n = 100)	
Motivation				
Treatment goal		t = -0.02 (n = 96)		t = 1.66 (n = 95)
Psychological distress				
POMS total score	-.08 (n = 101)		.01 (n = 100)	
Relationship characteristics				
Female DAS score	.34 [‡] (n = 101)		.30 [†] (n = 100)	
Social support for drinking/abstinence				
Heavy drinkers in network	-.17 (n = 102)		-.11 (n = 101)	
Spouse drinking status		F = 9.13 [‡] (n = 101)		F = 1.39 (n = 100)
Spouse encouraging drinking		F = 2.39 (n = 94)		F = 3.64* (n = 93)
Treatment factors				
Therapist empathy	.07 (n = 97)		-.08 (n = 97)	
Female condition preference		t = -2.73 [†] (n = 81)		t = -1.08 (n = 81)
Treatment condition		t = -1.98* (n = 102)		t = -0.21 (n = 101)

Note: * $p < .05$; [†] $p < .01$; [‡] $p < .001$.

which were women's age, total number of current alcohol dependence symptoms, female relationship quality score, spouse drinking status, and women's condition preference. The equation containing these five variables accounted for approximately 40% of the variance in sessions attended ($F(5, 72) = 9.39, p < .001$). Beta weights were examined to assess the relative importance of these variables in the

prediction of sessions attended (see Table 3). Results show that women's relationship satisfaction and spouse drinking status (abstinent vs. any drinking) both had significant beta weights at $p < .01$. Women having a more satisfying relationship and a spouse/partner who was a drinker predicted more treatment sessions attended. Women whose condition matched her treatment preference attended more sessions at $p = 0.095$.

TABLE 3. Beta weights and t -values obtained in multiple regression analyses predicting treatment sessions attended ($N = 78$)

Sessions attended by female participant		
Predictor	Beta*	t -value
Age	0.10	1.00
Sum of dependence symptoms	-0.02	-0.17
Female DAS score	0.34	3.35 [‡]
Spouse drinking status	0.40	4.09 [§]
Female condition preference	0.17	1.69 [†]

$F(5, 72) = 9.39, p < 0.001; R^2 = 0.395, \text{adjusted } R^2 = 0.353.$

[†] $p < 0.1$; [‡] $p < .01$; [§] $p < .001$.

*Beta weights are standardized multiple regression coefficients obtained when Treatment Sessions Attended was regressed on the five predictor variables.

Predictors of Treatment Engagement

Since there was more than one significant variable within the demographic and substance severity domains, the variable with the strongest correlation within each domain was retained and entered into the regression analyses in order to maintain power to observe at least medium effects. Percent of homework completed was then regressed on the linear combination of women's age, total number of current alcohol dependence symptoms, female DAS score, and spouse encouragement of drinking. The equation containing these four variables accounted for 20% of the variance in women's homework completed ($F(4, 86) = 5.48, p < .001$). Beta weights are shown in Table 4. Results show that only women's age had a significant beta weight at $p < .05$ and that women who were older completed higher percentages of homework. Additionally, spouse encouragement of her drinking had a beta weight at a trend level ($p < .07$); women with spouses who

TABLE 4. Beta weights and *t*-values obtained in multiple regression analyses predicting percentage homework completed (N = 91)

Percentage of homework completed by female participant		
Predictor	Beta ^a	<i>t</i> -value
Age	0.25	2.43*
Sum of dependence symptoms	-0.14	-1.37
Female DAS score	0.16	1.60
Spouse encouragement of drinking	0.18	1.80†

$F(4,86) = 5.48, p < 0.001; R^2 = 0.203, \text{adjusted } R^2 = 0.166; \dagger p < 0.1; *p < .05.$

^aBeta weights are standardized multiple regression coefficients obtained when Percentage of Homework Completed was regressed on all four predictor variables.

encouraged or accepted her drinking tended to complete a higher percentage of homework.

Relationship Factors Related to Treatment Retention and Engagement by Treatment Condition

Since many of the women's relationship factors (relationship quality, spouse encouragement of drinking, spouse drinking status, and woman's condition preference) were significantly related to sessions attended and homework completed, we examined these factors separately for each condition. For the couples condition, significant relationships were found between sessions attended and woman's DAS score ($r = 0.35, p < 0.05$) and treatment condition preference ($t(35) = -2.07, p < 0.05$). Those women with more satisfying relationships and those whose preference for couples condition was matched attended significantly more treatment sessions. In the individual condition, only spouse drinking status was significantly related to sessions attended ($t(50) = -4.34, p < 0.01$), with women who had abstinent spouses attending significantly fewer sessions than women with light or moderate/heavy drinking partners.

Relationship factors were more strongly related to percentage of homework completed in the couples rather than the individual condition. In the couples condition, higher DAS scores ($r = 0.38, p < 0.01$), spouse encouragement of drinking ($t(44) = -2.16, p < 0.05$) and woman's condition preference ($t(35) = -2.13, p < 0.05$) were significantly related to homework completion. Women with higher relationship satisfaction, spouses who accepted or encouraged her drinking, and with a matched treatment condition preference completed significantly more homework. In the individual condition, there were no significant associations between homework completed and any of the relationship factors.

Due to smaller sample sizes, limited power to detect medium effects, and the exploratory nature of this analysis, regression analyses were not conducted to identify predictors of treatment retention and engagement within each treatment condition.

DISCUSSION

This study examined the relationship between treatment modality and better treatment retention and engagement for women with alcohol problems. Additionally, the study sought to identify client and treatment factors that were predictive of participant retention and engagement. Finally, this study focused on whether the relationship between retention/engagement and predictive variables differed between couples and individual therapy. We defined treatment retention as the total number of sessions attended within a prescribed period of time (six months). Additionally, treatment engagement was defined by the client's active participation in treatment through the completion of homework assignments.

Results showed that women in the individual treatment condition were retained in treatment longer than women in the couple condition. This finding does not replicate results found in the literature that show having a spouse involved in treatment either improves treatment engagement and retention²⁹⁻³¹ or does not significantly impact the number of treatment sessions attended.⁶¹ The former studies specifically addressed male alcoholics: our finding may be explained by our study's position as one of the first to assess the role of spouse involvement in treatment for women alcoholics. In the latter study, a recent trial of behavioral couples versus an individual or psychoeducational condition for women alcoholics and their spouses,⁶¹ couples in which the male partner met criteria for substance dependence were excluded, which was not the case in our study. There may be several reasons why women in couples treatment may not be retained as long as those women in individual treatment. In general, studies suggest that approximately 50% of partners of women with alcohol problems also have a substance abuse/dependence problem.⁶² The male partner may find attending treatment uncomfortable or threatening to his own alcohol and/or drug use. Also, women tend to have family and friends, particularly men, who are opposed to her getting treatment.⁶³⁻⁶⁵ The spouses of women alcoholics may be somewhat ambivalent about their partner's treatment. Thus, when scheduling conflicts arise, the treatment may not be a priority. Finally, in general, women alcoholics experience a great deal of shame when addressing their addiction.¹⁷ Having exclusively conjoint sessions, especially if the partner is extremely frustrated and angry, might lead both participants to view treatment as particularly unappealing.

In this study, women who attended more treatment sessions were older, had fewer current symptoms of alcohol dependence, had more satisfying marital relationships, had spouses who drank, and had been randomly assigned to their preferred treatment condition. Additionally, women who completed more homework were older, had fewer children at home, fewer alcohol dependence symptoms, later age of onset of alcohol diagnosis, more satisfying marital relationships, and partners who encouraged her drinking. Age, alcohol severity, and relationship satisfaction are client characteristics that have had

some support in the literature as impacting attrition. However, the finding that women attended more treatment sessions with partners who were drinkers and completed more homework with partners who encouraged or accepted her drinking is somewhat surprising. Generally, one would expect a spouse who is abstinent to provide a more supportive environment for a woman's recovery and make it more likely she would attend and engage in treatment sessions. However, it may be that women attended more treatment not only to assist in their own recovery, but also to have a refuge to discuss ways of coping with a drinking spouse and to receive support for her change. On the other hand, it may be that a spouse who is abstinent provides enough support and modeling for the woman to make changes in her drinking without treatment. Further, it may be that a woman whose spouse encourages her to drink is driven to treatment more by her own perception of her problem instead of external pressures, and thus, she may be more likely to engage in treatment. The impact of spouse drinking and spousal encouragement of drinking is important but not well studied. Further studies are needed to examine the influence of spouse attitudes toward drinking on women's alcohol use and recovery through interview and/or women's self report. Specifically, women with heavily drinking spouses might particularly value discussion of topics related to their spouses' drinking (eg, shared activities that do not involve drinking, partner-related functional analysis) and, as such, attendance may be further enhanced by providing more time for these discussions with their spouses present.

There has been little work examining the influence of preference for treatment modality on retention. Some studies have been conducted on patient choice of treatment goal,⁶⁶ but we are aware of only a few studies^{67,68} that examined the effect of choice in substance abuse treatment modality on retention and outcome, and none that compare choice of individual versus couples treatment with women alcoholics. Results of the extant literature suggest that treatment preference does not make a difference on client retention or outcome. This is contrary to our finding that women who received their treatment of preference attended significantly more sessions than women who were not assigned to their condition of choice. Our finding that treatment preference does make a difference in terms of sessions attended may be due to differences in sample characteristics or treatment modalities provided. For example, it may be that treatment preference is not associated with attrition for a cocaine-dependent mixed gender sample assigned to either intensive group therapy or weekly individual therapy, but treatment preference may be a predictor of attendance for alcohol-dependent females assigned to either individual or couples therapy. Indeed, factors contributing to treatment retention may be much more personal when an individual is assigned to individual versus conjoint therapy with their spouse. Our result is consistent with studies on client input in treatment planning,⁶⁹ although more research is needed in this area, specifically in client choice of treatment modality by gender and substance of abuse. Many have noted the numerous differences between men and women in the

onset and effects of problematic alcohol use,^{70,71} but generally, treatment has been developed and programmed based on a model of treating male alcoholics.⁷² Providing a choice in treatment modality may be particularly important to women entering treatment in order to feel a sense of empowerment and commitment to the treatment.

The regression analysis showed that spouse drinking status and the woman's marital satisfaction were significant independent predictors of sessions attended. Age and (at a trend level) spouse encouragement of drinking were significant independent predictors of treatment engagement. Prior attrition studies that have focused on client characteristics have not included specific relationship factors or substance use characteristics of the spouse. This is somewhat surprising given the recognition that spouses/family have a significant influence on the help-seeking and change processes. The results of this study suggest the importance of assessing the impact of specific relationship factors on treatment retention and broadening the definition of "client characteristics" to include these relationship factors in predicting treatment attrition. In addition, an important issue to consider is how information about predictors of attrition, especially client or spouse characteristics, can be used to improve treatment retention. Understanding the process of how certain client characteristics influence attrition is crucial and may provide valuable insight for treatment programming.

Given that substance abuse treatments designed specifically for women have only been developed and studied relatively recently with promising results,¹¹ much of what we know about treatment retention and engagement is based on mixed gender or primarily male samples. Our findings, some of which are somewhat surprising considering existing literature, underscore the importance of continuing to identify the unique predictors of retention and engagement among women generally as well as in gender-specific treatment.

Study Limitations

This study had several limitations. The sample was primarily Caucasian and middle- to upper-class, and our retention was unusually high (only about 13% of women in our sample completed 4 or fewer treatment sessions, compared with dropout rates greater than 50% by the fourth session for outpatient alcohol treatment samples.^{6,10}) Further, our study required that women have male partners who are willing to participate in treatment. As described in McCrady et al.⁴⁰ a number of potentially eligible women were thus excluded from the study, either because they or their partners were not amenable to couples treatment. As such, our study may have oversampled women with alcohol use disorders with particularly functional relationships. All of these factors limit the generalizability of our results.

Another limitation was the assessment of the condition preference variable, which was done retrospectively for a majority of the sample and relied on judgments made by research personnel. Baseline and clinical interviewers spent

upwards of six hours with each subject before randomization. As such, their perceptions of treatment preference may have been freer from bias than those who had greater interaction with the subject later on in the study (ie, the therapists). Further, although there are many ways to define treatment engagement (eg, mean number of days between sessions, strength of the therapeutic relationship, percent days abstinent throughout treatment, and percentage of homework completed), we decided to use the percentage of homework completed as a proxy for treatment engagement. There may be disagreements about whether this is an optimal measure of treatment engagement. However, homework completion has been measured in many manual-guided treatments and has recently been evaluated as a potential mediator for substance abuse treatment outcomes,⁵⁸ suggesting both the accessibility and importance of the variable. Also, homework completion may be particularly valuable as a broad marker of treatment engagement as it indicates client activity between sessions related to relevant treatment tasks. That said, as evidenced by the variety of ways of testing engagement in substance abuse treatment, consensus on universal measurement in the field is warranted and is an area for future research. It is likely that homework completion is only one of many valuable measures of the multidimensional construct of treatment engagement.

Conclusions

Research on the influence of treatment modality on treatment retention and specific factors related to attrition in a women's-specific treatment program has been limited. Results of this study show that women attended significantly more treatment sessions when they were in individual treatment rather than couples treatment. In addition, results highlight important associations between treatment and relationship variables with retention and engagement. Specific relationship factors, such as marital satisfaction, spouse encouragement for drinking, and spouse drinking status were significant predictors of treatment engagement and retention and need further study. Results also reinforced the importance of providing clients choices in their treatment, which has implications for treatment matching.

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