

Women and Substance Abuse: Gender Transparency

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Editors

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Residential Treatment for Women: Behavioral and Psychological Outcomes

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SUMMARY. Treatment outcomes are reported for a therapeutic community for women which provided substance abuse treatment. The 83 residents had a mean age of 28.3 years. Overall, the women had long histories of substance abuse and criminal activity, and high levels of psychological disturbance. Their main drug of choice was cocaine and crack. Differences between women with and without children during treatment were examined. Women without their children were older, more often white, had more severe drug and crime histories, showed more signs of psychological disturbance, and were more likely to use sedative type drugs. Major 6 and 12 month post treatment improvements included increases in employment and decreases in criminality, substance abuse, and psychological -disturbance. Women who remained over 3 months in treatment were significantly more likely to be employed and less likely to commit crimes or use drugs at 6 and 12 months post treatment. Remaining in treatment was also related to decreases in psychopathology.

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E-mail address: getinfo@haworthpressinc.com Similar outcomes were found for women who had their children with them during treatment. (Article copies available for a fee from The Haworth Document Delivery Service: 1-800-342-9678. E-mail address: getinfo@haworthpressinc.com)

INTRODUCTION

Data from the 1993 National Household Survey on Drug Abuse indicates that an estimated 77 million people ages 12 and older living in the United States (US) have used an illicit drug, alcohol or cigarettes at some point during their life and an estimated 12 million used at least one of these substances in the month prior to the survey (Substance Abuse and Mental Health Administration, 1994 a). Results from this same survey indicate that an estimated 48.9% of all US women of childbearing age (15-44 years) used an illicit drug, alcohol or cigarettes sometime during their life and 14.1% used at least one of these substances during the previous year.

The negative effects of alcohol and other drugs (AOD) on women who use drugs, her fetus, and her children are numerous. For the woman, AOD use may result in negative health-related consequences such as overdose, infections, human immunodeficiency virus (HIV) and other sexually transmitted diseases (STDs). Furthermore, prolonged drug use can result in social and psychological problems such as employability, criminality, depression and aggression (Bureau of Justice Statistics, 1992; Bowden, 1996). Babies exposed to drugs in the womb may be born addicted and/or experience other physical problems. Children of addicted mothers are at greater risk of accidents, illness, abuse, and neglect (Zuckerman, Frank & Brown, 1995).

Prior to 1990 most drug treatment programs were developed and facilitated by men for a predominately male population (Stevens, Arbiter and Glider, 1989). Specialized gender specific curriculum, daycare facilities, and housing for children at residential centers were offered by only a few programs nationwide (Stevens & Glider, 1994). Advocates for female substance abusers argued for implementation of services that met the needs of AOD using women and their children. By the early 1990s, federal funding for demonstration grants that addressed the needs of female substance abusers was approved and numerous programs nationwide were funded to implement such services.

In Tucson, Arizona, Amity, a not-for-profit therapeutic community (TC) was funded by the Center of Substance Abuse Treatment (CSAT) to provide long-term residential treatment for addicted women with children. The sample of women used in this study were pregnant or had children under 7 months of age. While Amity had already modified their TC to more adequately fit the needs of women and children (Stevens, Arbiter and Glider, 1989) further modifications were made to meet the needs of the 20 women and 40 children who were funded by the CSAT grant. Facility renovations were made at Amity's 23 acre Desert Willow Ranch so that appropriate family style housing for the mothers and children was possible and an on-site therapeutic nursery for the children under the age of three could be provided. Changes in the TC program were also made to include parenting classes, family sessions with a developmental specialist, after school programs for the preschool and school aged children, a full time registered nurse, additional focus on nutrition and health especially for the pregnant women,

and so on. Additionally, the schedule for curriculum and other daily activities was adjusted to balance the women's treatment needs with her parenting responsibilities.

In accord with the more classical TC model, women were expected to stay a minimum of 15-18 months in residence at Desert Willow (De Leon, 1989). Treatment was divided into four phases: Basic Interface (orientation, 0-3 months), Community Class (primary treatment, 3-12 months), Senior Class (re-entry readiness, 12-18 months) and Continuance (aftercare, 18-24 months). The major program components included: case management and referral, counseling and education, support groups, seminars, two day intensive workshops on various topics, parenting education, GED classes, pre-vocational and vocational training, and family and significant other programming.

With the exception of one early study by De Leon and Jainchill (1981), very little is known about the effectiveness of long term residential (TC) treatment for women. The prior study, which evaluated outcomes for a community TC that served both sexes, showed improvements in crime, drug use and psychological status, for males and females at 2 years after treatment. Since almost no outcome information is available on TCs designed specifically for women or for women with their children, the current study represents a pioneering effort. Treatment effects are studied for both women in treatment with their children and women in treatment without their children. Information on employment, criminal behavior, substance abuse, and mental health are provided.

The main research questions addressed by the study include: (1) Who comes to treatment? (2) What client outcomes are obtained at 6 and 12, months post program? and, (3) Does time in program impact community outcomes?

METHOD

Recruitment of substance abusing women who were either pregnant and/or who had young children began in October of 1992. Staff at the Desert Willow ranch worked with personnel at other treatment facilities, Child Protective Services and various criminal justice agencies (i.e., courts, probation, jail). Entrance criteria for the Desert Willow program included women who were 18 years of age or older, had used alcohol or drugs for at least one year, were either pregnant or had children under 7 months of age, and who were not taking prescribed psychiatric medication for a diagnosed mental illness. The Desert Willow staff encouraged the referral of women whose background and life situation made them unable to access treatment elsewhere. This included women with numerous years of substance abuse, those with histories of relapse, violence and/or criminality, and those with difficult life histories and situations (i.e., years of prostitution, history of violence).

In addition to the CSAT funded women, the Desert Willow program also provided treatment for 20 women who did not have children or had children but were unable to secure custody of them. The same entrance criteria applied to those women except for the requirement of being pregnant or having a child under 7 months who could enter treatment with his/her mother.

Within two weeks of entry into Desert Willow the pregnant women and women with children as well as women who did not have children with them in treatment were given a baseline assessment which included a consent form, a locator form for follow-up purposes and numerous standardized instruments. In-treatment data was gathered quarterly and post treatment assessment were administered at six, 12 and 24 months after discharge from the program. All assessments were facilitated in private individual sessions with trained research assistants. To encourage honesty the clients were assured that the research data would be kept confidential and only aggregated data would be reported to the clinical staff. For the purpose of this paper, data from the Addictions Severity Index (ASI), the Beck Depression Inventory (BDI), and the Symptoms Checklist (SCL-90-R) which measures dimensions of psychopathology were analyzed.

Included in the analysis is data from the first 83¹ women who entered the Desert Willow program (44 women with children and 39 women without children) for whom data was collected both at admission and at 6 and 12 months post program. This outcome report provides information on: (1) who comes into treatment; (2) six and 12 month post treatment behavioral and psychological outcomes; and, (3) effects of length of stay in treatment (LOS) on six month outcomes.

RESULTS

Who Comes into Treatment?

Background information on women residing at Desert Willow, with and without children, are compared in Tables 1 and 2. Percentage differences between groups were tested with Chi-square while mean differences between groups were tested using T-test. The mean age of the entire group was 28.3 years with the women without children being significantly older (30.3 years) than the women with children (26.5 years). The total group of women were primarily Caucasian with the women without children being more likely to be Caucasian (72%) than the women with children (48%). The overall, education level was relatively high (11.8 years) with the two sub groups having similar levels of education. Over half the women were never married and 41 % had been employed during the year prior to treatment. While both groups of women were similar in terms of marital status, the women without children were significantly more likely to have been employed.

I. An additional 11 women with baseline information were not included in the analysis because of refusal to participate at follow-up (8 with children and 1 without children), death (1 woman without children) and being out of reach because of participation in a witness protection program (1 woman without children).

TABLE 1. Background Information at Program Intake for Women with 6 Month Follow-Up

	<u>Total</u>	<u>Group 1</u> Women with Children	<u>Group 2</u> Women without Children
Demographics	N = 83	N = 44	N = 39
Mean Age:	28.3	26.5	30.3**
Race:	%	%	%
Caucasian	59	48	72
African American	22	23	20
Native American	6	9	3
Hispanic	13	20	5
Mean Years of Education:	11.8	11.6	11.9
Marital Status:			
Married	24	18	31
Divorce/Separated/ Widowed	23	25	20
Never Married	53	57	49
Employed (during prior year)	41%	27%	56%
LEGAL HISTORY			
Ever Charged with a Crime:	78%	86%	69%
Mean # of Charges, Ever:	6.3	5.3	7.3
Mean # of Months Incarcerated (for those ever Incarcerated):	17.8	11.5	26.3*
On Probation or Parole (at Intake):	53%	52%	54%
Entered Program at Suggestion of CJS:	52%	57%	46%

	<u>Total</u>	<u>Group 1</u>	<u>Group 2</u>
		Women with Children	Women without Children
Substance Abuse	N = 83	N = 44	N = 39
Mean Years of Regular Drug Use (excluding alc.)	11.3	9.6	13.2*
Substances Ever Used:	%	%	%
Any Alcohol	95	93	97
Any Drugs	99	98	100
Marijuana	96	96	97
Cocaine/Crack	90	91	90
Heroin	42	23	64***
Hallucinogens	48	46	51
Inhalants	22	16	28
Methadone	16	2	31***
Other Opiates	27	9	46***
Barbiturates	16	7	26**
Sedatives	36	21	54***
Amphetamines	49	50	49
Primary Problem Substance (self report):	%	%	%
No problem	6	5	8
Alcohol	12	14	10
Marijuana	7	7	8
Cocaine/Crack	46	52	39
Heroin	13	2	26***
Amphetamines	16	21	10
Mean Length of last voluntary Abstinence from primary Problem substance (months):	9.22	5.5	13.4**
Mean Times In Prior Treatment:	Alc. Drugs	Alc. Drugs	Alc. Drugs
	1.17 1.76	.66 1.52	1.74 2.03

NOTE: Mean differences tested with T-Test; percentage differences tested with Chi Square.

*Difference between groups significant at p. < .05.

**Difference between groups significant at p. < .01.

***Difference between groups significant at $p. <.001$.

TABLE 2. Comparison of Psychological Scores at Intake for Women with Follow-Up

	<u>Total</u> N=64 t	<u>Group 1</u> Women with Children N=35	<u>Group 2</u> Women without Children N=29
Beck Depression	17.09	16.56	17.84
SCL-90-R			
Somatization	0.99	0.95	1.04
Depression	1.48	1.29	1.71*
Phobic Anxiety	0.49	0.49	0.50
Obsessive-Compulsive	1.10	1.00	1.21
Anxiety	0.95	0.73	1.20**
Paranoid	1.33	1.18	1.50
Interpersonal Sensitivity	1.23	1.04	1.45*
Hostility	1.01	0.75	1.31*
Psychoticism	0.83	0.71	0.95

NOTE: Mean differences tested with T-Test; percentage differences tested with Chi Square. Nineteen of the women with baseline and follow-up interviews had missing psychological tests.

*Difference between groups significant at $p. <.05$.

**Difference between groups significant at $p. <.01$.

Although both groups of women were highly criminal with 78% reporting ever having been charged with a crime, women with children were significantly more likely to have ever been charged (86% vs. 69%). This may be attributed to charges of child abuse or neglect which was the charge in which a significant difference was found between both groups of women. No

differences were found among the groups on number of charges --the women were charged a mean number of 6.3 times. Women without children spent significantly more time incarcerated than women with children (26.3 months vs. 11.5 months, respectively).

Over half the women were on probation or parole when admitted to the program and 52% reported entering the program at the suggestion of the criminal justice system.

The women at Desert Willow had severe substance abuse histories. Almost 100% of them had used alcohol and drugs and had used drugs regularly for 11.3 years. Women without children had used significantly longer which may be related to them being older. Table 1 shows that the women used a variety of drugs during their lifetime. Differences in drug use pattern were detected, with significantly greater use of heroin, methadone, other opiates, barbiturates, and sedatives by the women without children. The primary drug of abuse for both groups was cocaine/crack: followed by amphetamines and heroin. The single significant difference between the subgroups on the primary drug of choice was the greater likelihood for women without children to identify heroin as their primary drug.

As shown in Table 2, the women had high levels of depression as measured by the Beck Depression Scale as well as elevated SCL-90-R scales. Significant differences were found with the SCL-90-R. Women without children scored as more pathological on the Depression, Anxiety, Interpersonal Sensitivity, and Hostility scales. The group of drugs that the women without children were significantly more likely to have used (heroin, methadone, other opiates, barbiturates, and sedatives) all have sedating effects and may reflect attempts at self medication for their greater levels of psychological disturbance.

In summary, the women came into treatment with long histories of substance abuse and crime, and high levels of psychological disturbance. Their main drugs of choice were cocaine and crack. Women without their y children were older, more often white, had more severe drug and crime histories, and more signs of psychological disturbance. The differences in drugs and crime histories may have been age related.

Six and Twelve Month Outcomes

Table 3 shows the comparison of intake and 6 months post program information. Differences between pre/post responses were tested with McNemar. An important and consistent finding in the TC outcome literature is that positive client outcomes are related to time spent in program and positive effects are often found for residents who remain in TCs for 9 to 12 months (De Leon, Wexler and Jainchill, 1982; Simpson and Sells, 1982). Table 3 shows the average time in treatment for Desert Willow women was 9 months with almost no difference between the women with and without children.

Table 3 shows differences in levels of functioning prior to program and at 6 months post program. Overall, the groups showed increases in employment, decreases in crime, decreases in drug use (except for opiates), and improvements in serious self reported depression. Employment for the total Desert Willow women group significantly increased 14% and crime significantly decreased 37% at six months post treatment. The women -with children and the women without children showed similar increases in employment, but women with children had a greater decrease in crime. While at intake women with children were almost 1.5 times more likely to have engaged in illegal activities, at follow-up the percentage reporting crimes was lower than women without children.

Overall, there were large significant decreases in the number of women who reported any drug use and any alcohol at six months post treatment (72% and 16% respectively). The total group showed significant reductions in alcohol and drug use for all drugs except for opiates at 6 months post treatment discharge. Women with children showed significant reductions in “any drug,” cocaine, sedatives and amphetamines. Women without children showed significant drops in use of alcohol, “any drug,” marijuana, cocaine, sedatives, and amphetamines. In addition, women with children showed an increase in opiate use, although the difference was not significant.

TABLE 3. Comparison of Intake and 6 Months Post Program Information

	<u>Total</u>	<u>Group 1</u>		<u>Group 2</u>
		Women with Children		Women without Children
	N=83	N=44	N=39	
Mean Months In Program	8.99	8.55		9.49
Employed	%	%		%
Intake	41	27		56
6 Mo. post	<u>55</u>	<u>43</u>		<u>68</u>
Difference	14*	16		12
Committed Illegal Acts				
Intake	78	86		69
6 mo. post	<u>41</u>	<u>38</u>		<u>44</u>
Difference	-37***	-47***		-25**
Substance Use (30 days prior)				
Any Alcohol				
Intake	41	30		54
6 mo. post	<u>25</u>	<u>18</u>		<u>33</u>
Difference	-16**		-12	-21*
Any Drugs				
Intake	100	100		100
6 mo. post	<u>28</u>	<u>25</u>		<u>31</u>
Difference	-72***	-75***		-69***
Marijuana				
Intake	25	21		31
6 mo. post	<u>12</u>	<u>11</u>		<u>13</u>
Difference	-13**	-10		-18**

Cocaine/crack
Table 3 continued

TABLE 3. Comparison of Intake and 6 Months Post Program Information

	<u>Total</u>	<u>Group 1</u> Women with Children	<u>Group 2</u> Women without Children
Intake	45	36	54
6 mo. post	<u>16</u>	<u>15</u>	<u>14</u>
Difference	-30***	-21**	-40***
Opioids/Opiates			
Intake	12	2	23
6 mo. post	<u>12</u>	<u>9</u>	<u>15</u>
Difference	--	07	-08
Substance Use (30days prior)			
Sedative/Tranq.			
Intake	72	84	59
6 mo. Post	<u>3</u>	<u>0</u>	<u>5</u>
Difference	-69***	-84***	-54***
Amphetamines			
Intake	60	57	64
6 mo. Post	<u>7</u>	<u>3</u>	<u>11</u>
Difference	-53***	-54***	-53***
Psy/Emotional Problems in past 30 days (includes drug induced)			
Serious Depression			
Intake	61	61	62
6 mo. Post	<u>38</u>	<u>42</u>	<u>33</u>
Difference	-23**	-19**	-29**

Table 3- continued

	<u>Total</u>	<u>Group 1</u> Women with Children	<u>Group 2</u> Women without Children
Serious Anxiety or Tension			
Intake	63	59	67
6 mo. Post	<u>57</u>	<u>58</u>	<u>56</u>
Difference	-06	-01	-11
Hallucinations			
Intake	10	9	10
6 mo. Post	<u>9</u>	<u>7</u>	<u>10</u>
Difference	-01	-02	00
Confusion			
Intake	45	45	44
6 mo. Post	<u>46</u>	<u>54</u>	<u>39</u>
Difference	01	09	05
Psy/Emotional Problems in past 30 days (includes drug induced)			
Trouble Control. Violent Beh.			
Intake	26	23	31
6 mo. Post	<u>20</u>	<u>23</u>	<u>15</u>
Difference	06	00	-16*
Serious Thoughts of Suicide			
Intake	23	20	26
6 mo. Post	<u>19</u>	<u>21</u>	<u>18</u>
Difference	-04	01	-08

Note: Significance in difference between and pre and post responses tested with McNemar.

* One-tail test p. <.05. ** One-tail test p. <.001.

Table 3 also shows the incidence of self reported psychological and emotional problems, captured by the ASI, for the 30 day period prior to; program admission and the 30 days period prior to the six month follow up: interview. Overall there were decreases in the percentage of women who reported each of the mental health problems at time of follow-up, with the exception of "confusion." However, the decreases were generally small except for serious depression which decreased a significant 23%.

Table 4 shows the comparisons of test scores that assess psychological disturbance at admission and at six months post treatment measured by the Beck Depression Inventory and the SCL-90-R. Improvements were four for all groups on all scales at six months post treatment with 9 of the 1 differences reaching significance for the combined group. Over half of improvements for the women with children and the women without children groups reached significance. Thus, it appears that participation in the Desert Willow TIC had a positive impact on the mental health of women.

Of the 83 women with 6,month follow-up, 77 had been out of treatment long enough to allow for 12 months post data to also be collected. Sustained post treatment improvements were found for the women on creased employment and decreased criminal activities, drug use and set reported pathologies during the 30 days prior to interview. In addition, the women maintained their psychological improvements at 12 months post treatment and showed further significant improvements as indicated by lower scores on the SCL-90-R. Women without children showed larger decreases in SCL-90-R scores, but it should be noted that their scores were more elevated than the women without children at baseline, and the women in both groups reached similar test levels at 12 months.

Impact of Time in Program on Six Month Outcomes

Because previous research on TC outcomes has demonstrated that positive treatment effects are present after 3 months length of stay (LOS) in treatment, a preliminary examination of time in program effects for Desert Willow participants was done by comparing outcomes for women who dropped out prior to 3 months and women who stayed longer than 3 months. Table 7 shows the mean number of months in program for the less than 3 month Dropouts was 1.5 months and 12.0 months for the more than 3 months Remains. In general, women who remained in treatment had far better outcomes than those who dropped.

There were some differences between Dropouts and Remains at admission to the program (see Table 5). Overall, the residents who dropped out in less than 3 months reported more drug use and psychological disturbance at admission into the program. Although the

differences were generally more pronounced for the women with children, the pattern was similar in the women without children group. The Dropouts tended to be more employed and somewhat less likely to have reported illegal acts at admission although the differences did not reach significance.

Table 5 shows the impact of remaining in program less than 3 months (Dropouts) versus more than 3 months (Remains) on differences in functioning at program admission and at 6 months post program. Table 5 includes statistical tests of significance for differences between Dropouts and Remains at intake and at 6 months as well as for intake versus 6 month post program differences.

TABLE 4. Comparison of Psychological Scores at Intake and 6 Months Post Program

	Total N=64	Group 1 Women with Children N=35	Group 2 Women without Children N=29
Beck Depression			
Intake	17.1	16.56	17.84
6 Mo. post	<u>12.3</u>	<u>10.39</u>	<u>14.88</u>
Difference	-4.8***	-6.01***	-2.96
SCL-90			
Somatization			
Intake	0.99	0.95	1.04
6 Mo. Post	<u>0.72</u>	<u>0.67</u>	<u>.078</u>
Difference	-0.27***	- 0.28*	- 0.26*
Depression			
Intake	1.48	1.29	1.71
6 mo. post	<u>1.03</u>	<u>.84</u>	<u>1.26</u>
Difference	-0.45***	-0.45**	0.45**
Phobic Anxiety			
intake	0.49	0.49	0.50
6 mo. post	<u>0.39</u>	<u>0.33</u>	<u>0.45</u>
Difference	- 0.10	- 0.16	- 0.05
Obsessive-Compulsive			

Intake	1.10	1.00	1.21
6 Mo. post	<u>.085</u>	<u>0.77</u>	<u>.093</u>
Difference	- 0.25**	- 0.23*	- 0.28*
Anxiety			
Intake	0.95	0.73	1.20
6 Mo. post	<u>0.67</u>	<u>0.56</u>	<u>0.80</u>
Difference	-0.28**	-0.17	
	0.40**		
Paranoid			
Intake	1.31	1.16	1.50
6 mo. post	<u>0.87</u>	<u>0.68</u>	<u>1.10</u>
Difference	-0.44***	-0.48**	-0.40**
Interpersonal Sensitivity			
Intake	1.23	1.05	1.45
6 Mo. post	<u>0.85</u>	<u>0.69</u>	<u>1.05</u>
Difference	-0.38***	-0.36**	-0.40**
Hostility			
Intake	1.01	0.75	1.31
6 mo. post	<u>0.73</u>	<u>0.58</u>	<u>0.91</u>
Difference	-0.28**	-0.17	-0.40**
Psychoticism			
Intake	0.83	0.71	0.95
6 mo. post	<u>0.55</u>	<u>0.44</u>	<u>0.67</u>
Difference	-0.28**	-0.27*	-0.28**

Note: Significance in difference between pre and post scores tested with T-test.

*One Tail Test, p. < .05.

**One Tail Test, p. < .01.

***One Tail Test, p. < .001.

TABLE 5. Comparison of Intake and 6 Months Post Program:
Dropouts (3 Mo. or Less) vs. Remains (>3 Mo.)

	Total	Group 1 Women with Children		Group 2 Women without Children		
	Dropout (N = 24)	Remain (N = 59)	Dropout (N = 13)	Remain (N = 31)	Dropout (N = 11)	Remain (N = 28)
Mean Months in Pgm	1.5	12.0	1.46	11.51	1.55	12.61
Employed	%	%	%	%	%	%
Intake	54	36	54	16**	55	57
6 mo. post	<u>29</u>	<u>66***</u>	<u>15</u>	<u>55**</u>	<u>46</u>	
79*						
Pre/post Diff	-25	30ttt	-38	38ttt	-09	22
Committed Illegal Acts						
Intake	67	83	69	94*	64	71
6 mo. post	<u>67</u>	<u>31**</u>	<u>69**</u>	<u>26**</u>	<u>64</u>	<u>36</u>
Pre/post Diff	--	-52ttt	--	-68ttt	--	-35tt
Substance Use (30 days prior)						
Any Alcohol						
Intake	67	31**	54	19**	82	43*
6 mo. post	<u>29</u>	<u>24</u>	<u>15</u>	<u>19</u>	<u>46</u>	<u>29</u>
Pre/post Diff	-38tt	-07	-39t	00	-36	-14
Any Drugs						
Intake	100	100	100	100	100	100
6 Mo. post	<u>46</u>	<u>20**</u>	<u>31</u>	<u>23</u>	<u>64</u>	<u>18**</u>
Pre/post Diff	-54ttt	-80ttt	-69ttt	-77ttt	-36	-82ttt
Marijuana						
Intake	38	20	39	13*	36	29
6 Mo. post	<u>17</u>	<u>10</u>	<u>15</u>	<u>10</u>	<u>18</u>	<u>11</u>
Pre/post Diff	-46tt	-24tt	-37	-03	-18	-18t

TABLE 5 (continued)

	Total	Group 1 Women with Children		Group 2 Women without Children		
	Dropout (N = 24)	Remain (N = 59)	Dropout (N = 13)	Remain (N = 31)	Dropout (N = 11)	Remain (N = 28)
Cocaine/crack						
Intake	63	37*	54	29	73	46
6 Mo. post	<u>17</u>	<u>13</u>	<u>17</u>	<u>15</u>	<u>18</u>	<u>12</u>
Pre/post Diff	-46tt	-24tt	-37	-14	-55t	-34t
Substances Use (30 days prior)						
Opioids/Opiates						
Intake	29	05**	08	00	55	11**
6 Mo. post	<u>25</u>	<u>07*</u>	<u>15</u>	<u>07</u>	<u>36</u>	<u>07*</u>
Pre/post Diff	-04	02	07	07	-19	-04
Sedatives/Tranq.						
Intake	67	75	77	87	55	61
6 Mo. post	<u>08</u>	<u>00*</u>	<u>00</u>	<u>00</u>	<u>18</u>	<u>00*</u>
Pre/post Diff	-59ttt	-75ttt	-77ttt	-87ttt	-37	-61ttt
Amphetamines						
Intake	75	54	77	48	73	61
6 Mo. post	<u>13</u>	<u>04</u>	<u>00</u>	<u>04</u>	<u>27</u>	<u>04*</u>
Pre/post Diff	-62ttt	50ttt	77ttt	44ttt	46	57ttt
Psy/Emotional Prob. In past 30 days (Includes drug Induced)						

Serious Depression						
Intake	71	58	77	55	64	61
6 Mo. post	<u>48</u>	<u>34</u>	<u>42</u>	<u>42</u>	<u>55</u>	<u>25</u>
Pre/post Diff	-23	-24 ^{tt}	-35	-13	-09	-36 ^{tt}

Dropout	Remain	Dropout	Remain	Dropout	Remain		
		(N = 24)	(N = 59)	(N = 13)	(N = 31)	(N = 11)	(N = 28)

Serious Anxiety or Tension						
Intake	75	58	69	55	82	61
6 Mo. post	<u>61</u>	<u>56</u>	<u>50</u>	<u>61</u>	<u>73</u>	<u>50</u>
Pre/post Diff	-14	-02	-19	09	-09	-11

Hallucinations						
Intake	25	03 ^{***}	15	07	36	00 ^{***}
6 Mo. post	30	00 ^{***}	25	00 ^{**}	36	
Pre/post Diff	02	-03	10	-07	00	00

Confusion						
Intake	58	39	54	42	64	36
6 Mo. post	<u>61</u>	<u>41</u>	<u>67</u>	<u>48</u>	<u>55</u>	<u>32</u>
Pre/post Diff	03	02	13	06	-09	-04

Trouble Controlling Violent Behavior						
Intake	46	19 ^{**}		31	19	64
6 Mo. post	<u>26</u>	<u>17</u>	<u>17</u>	<u>26</u>	<u>36</u>	<u>07*</u>
Pre/post Diff	-20	-02	-14	07	-28	-11

Serious Thoughts of Suicide						
Intake	33	19	23	19	46	18
6 Mo. post	<u>30</u>	<u>15</u>	<u>33</u>	<u>16</u>	<u>27</u>	<u>14</u>
Pre/post Diff	-03	-04	10	-03	-19	-04

Note: Difference between groups tested with Chi Square (*). Difference between pre and post responses tested with McNemar (t).

*p. < .05 **p. < .01 ***p < .001.

t One-tail test $p. < .05$

tt One-tail test $p. < .01$

ttt One-tail test $p. < .001.$

TABLE 6. Comparison of Psychological Scores at Intake and 6 Months Post Program: Dropouts (3 Mo. or Less) vs. Remains (> 3 Mo.)

	Total		Group 1 Women with Children		Group 2 Women without Children	
	Dropout (N = 19)	Remain (N = 42)	Dropout (N = 10)	Remain (N = 25)	Dropout (N = 9)	Remain (N = 17)
Beck Depression						
Intake	22.21	14.84	23.40	13.92	20.89	16.23
6 mo. Post	<u>18.84</u>	<u>9.37</u>	<u>14.70</u>	<u>8.73</u>	<u>23.44</u>	<u>10.35</u>
Difference	-3.37	-5.47***	-8.70*	-5.19**	2.55	-5.88*
SCL-90 Somatization						
Intake	1.06	0.97	1.13	0.89	0.99	1.07
6 mo. post	<u>1.13</u>	<u>0.57</u>	<u>1.14</u>	<u>0.53</u>	<u>1.12</u>	<u>0.63</u>
Difference	0.07	-0.40***	0.01	-0.36**	0.12	-0.44
Depression						
Intake	1.53	1.47	1.22	1.31	1.80	1.67
6 mo. post	<u>1.43</u>	<u>0.89</u>	<u>1.22</u>	<u>0.73</u>	<u>1.62</u>	<u>1.10</u>
Difference	-0.10	-0.58***	0.00	-0.58***	-0.18	-0.57
Phobic Anxiety						
Intake	0.53	0.48	0.48	0.49	0.57	0.47
6 mo. post	<u>0.59</u>	<u>0.31</u>	<u>0.62</u>	<u>0.25</u>	<u>0.56</u>	<u>0.40</u>
Difference	0.06	-0.17*	0.14	-0.24*	-0.01	-0.07
Obsessive-Compulsive						
Intake	1.03	1.11	0.95	1.01	1.11	1.25
6 mo. post	<u>1.23</u>	<u>0.70</u>	<u>1.18</u>	<u>0.65</u>	<u>1.27</u>	<u>0.77</u>
Difference	0.19	-0.44***	0.23	-0.36**	0.16	-0.48
Anxiety						
Intake	0.99	0.93	0.87	0.70	1.08	1.25
6 mo. Post	<u>1.05</u>	<u>0.74</u>	<u>0.88</u>	<u>0.47</u>	<u>1.18</u>	<u>0.63</u>
Difference	0.06	-0.39***	0.01	-0.23	0.10	-0.62

Beck Depression

	(N = 19)	(N = 42)	(N = 10)	(N = 25)	(N = 9)	(N=17)
Paranoid						
Intake	1.43	1.28	1.02	1.19	1.75	1.38
6 mo. post	<u>1.28</u>	<u>0.74</u>	<u>1.14</u>	<u>0.56</u>	<u>1.38</u>	<u>0.98</u>
Difference	-0.15	-0.54***	0.12	-0.63***	-0.37	-0.40
Interpersonal Sensitivity						
Intake	1.24	1.23	0.81	1.12	1.61	1.38
6 mo. post	<u>1.16</u>	<u>0.74</u>	<u>1.06</u>	<u>0.58</u>	<u>1.23</u>	<u>0.97</u>
Difference	-0.08	-0.49***	0.25	-0.54***	-0.38*	-0.41*
Hostility						
Intake	1.25	0.93	0.47	0.82	1.85	1.07
6 mo. post	<u>1.31</u>	<u>0.53</u>	<u>1.02</u>	<u>0.46</u>	<u>1.53</u>	<u>0.63</u>
Difference	0.06	-0.40***	0.54	-0.36**	-0.31	-0.44**
Psychoticism						
Intake	0.94	0.79	0.68	0.72	1.13	0.88
6 mo. post	<u>1.02</u>	<u>0.38</u>	<u>1.02</u>	<u>0.28</u>	<u>1.02</u>	<u>0.52</u>
Difference	0.08	-0.41***	0.34	-0.44***	-0.11	-0.36**

Note: Significance in differences between pre and post scores test with T-test.

*One Tail Test, p. < .05.

**One Tail Test, p. < .01 .

***One Tail Test, p. < .001.

The women who remained in program over 3 months showed a 30% increase in employment at follow up as compared to a 25% decrease in employment found for the Dropouts. Additionally, the Remains showed a 52% decrease in illegal activity at follow up versus no change for Dropouts. For Remains, the pattern of employment and crime results for women with children was better than for women without children (increase in employment 39% vs. 22%, decrease in crime - 68% vs. - 35%).

Both the total Dropout and Remain groups showed significant reductions in substance abuse at follow up. Only the Dropouts showed significant reductions in alcohol abuse at follow up, which was probably related to their higher levels of alcohol abuse at admission. Significantly fewer Remains than Dropouts reported "any drug use" at follow up. The pattern of results was similar for the individual drugs reported in Table 5.

Overall, both Dropouts and Remains reported decreases in psychological problems at follow up. The results for self reported psychological and emotional problems showed few pre/post differences between Dropouts and Remains. The pattern of results for women with and without children were consistent with the total group results.

Table 6 shows the psychological test results, measured by the Beck Depression Inventory and the SCL-90-R for Dropouts and Remains. A very consistent pattern of significant improvement for Remains and a general worsening for Dropouts was found. Among the ten scales of psychological disturbance, Remains showed significant improvements in all of them while Dropouts showed none and they showed some worsening on six of the scales. Similar patterns were found for the women with children and without children with significant improvements on nine of the ten scales.

DISCUSSION

In general, the women at Desert Willow had long histories of substance abuse with the most frequently reported choice of drugs being cocaine and crack. Most of the women had experienced prior treatment failures. They also reported extensive criminal histories which included many arrests and lengthy periods of incarceration. High levels of depression were observed at baseline as well as elevated scales on the SCL-90-R which indicates greater psychopathology. The women without children were older, more often white, had used drugs significantly longer and had spent more time in prison than the women who had children. Some evidence of self medication was found for the women without children who were more likely to use sedating type drugs (heroin, methadone, other opiates, barbiturates, and sedatives) that may have been related to their greater levels of psychological disturbance.

The preliminary findings indicate that the Desert Willow is an effective program for female substance abusers. A number of improvements were found when comparing behavior reported at baseline with that reported six months after discharge from the treatment program. Major improvements included a significant decrease in substance abuse and criminal behavior and a significant increase in employment. Additionally, a very consistent pattern of significant decreases in several measures of psychopathology were found including a large and significant decrease of serious depression.

Outcomes for women who had children with them in treatment did not differ from the outcomes for women who did not have children. This finding is contrary to that reported by Stevens and Patton (this volume), perhaps due to the differences in the comparison groups (e.g., women without children) of each of the respective studies. In this study, the women without children included women who were either childless, had adult-aged children, or had no hope of ever obtaining custody of their children. Consequently, having one's children was not a factor at treatment entry. In the Stevens and Patton study, all the women had the possibility of obtaining custody of their children. As Stevens and Patton point out, treatment outcomes may not be as good for those who have the opportunity for custody of their children but are not allowed to bring their children into treatment with them.

While this study did not include a "no treatment control group," the positive outcomes shown by the residents with over 3 months of treatment (mean of 12 months) compared to those with less than 3 months of treatment are impressive. Consistent with results of other TC studies, the women who remained in treatment at Desert Willow had, in general, better outcomes than those who dropped out of treatment. The comparison of Dropouts and Remains shows that women who remained in treatment for more than 3 months were significantly less likely to use drugs and commit crimes, and significantly more likely to be employed. The study findings essentially replicate the earlier positive female TC results reported by De Leon and Jainchill (1981).

The findings in this study suggest that women's TC substance abuse treatment programs can be effective for women with extensive histories of drug use, criminal behavior and psychopathology. Both groups of women (women with children and women without children) demonstrated equally positive outcomes indicating that a treatment environment that includes, children may be beneficial for both groups. Having children in the treatment environment may not only be good for women who have children, but may also be good for women who are childless, have adult-age children, or who have lost custody of their children. Living with and helping with

other women's children may provide a sense of shared responsibility and community; important concepts in a healthy TC milieu. Moreover, for women who have lost custody of their children due to their drug use and other related negative behaviors, helping with other women's children may provide an opportunity to make amends; yet another important concept in the TC treatment process. And, finally, having children in the environment may trigger unresolved painful childhood memories opening opportunities for in-depth introspection and healthy transformation of the entire person; a primary goal for those enrolled in a TC.

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