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Structural Ecosystems Therapy for HIV+ African American Women and Drug Abuse Relapse

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Abstract

This report examines the effect of Structural Ecosystems Therapy (SET) for (n=143) HIV+ African American women on rate of relapse to substance use relative to both a person-centered approach (PCA) to therapy and a community control (CC) group. A prior report has shown SET to decrease psychological distress and family hassles relative to these two comparison groups. In new analyses, SET and CC had a significant protective effect against relapse as compared to PCA. There is evidence that SET's protective effect on relapse was related to reductions in family hassles, whereas there was not a direct impact of change in psychological distress on rates of relapse. Lower retention in PCA, perhaps caused by the lack of a directive component to PCA may have put these women at greater risk for relapse. Whereas SET did not specifically address substance abuse, SET indirectly protected at-risk women from relapse through reductions in family hassles.

Keywords

Ecosystems; Family; Drug Abuse; Relapse; HIV/AIDS

African American women are disproportionately affected by drug use and HIV/AIDS. Whereas prevalence of drug use for women ages 25 to 29 over a years time was 9.1%, African American women in this age range had rates that were 64% higher than white women and more than double the rates for Hispanic women (NIDA, 2003). HIV infection is frequently an unfortunate consequence of drug use, particularly among African-American women (CDC&P, 2007). It is possible to trace HIV infection to drug abuse for 66% of estimated female AIDS cases (NIDA, 2000).

The latest rates of AIDS diagnoses for African American women are approximately 23 times higher than those for White American women and 4 times higher than those for Hispanic women (Centers for Disease Control and Prevention, CDC&P, 2008). AIDS has persistently been among the top ten causes of death for African American women in the past decade

(Whitmore, Satcher, & Hu, 2005) and is the leading cause of death in African American women ages 25 to 34 (Kaiser Family Foundation, 2006).

Women dually diagnosed with HIV and substance abuse face the physical and emotional problems associated with HIV disease, compounded by the complex legal, social, and health consequences resulting from substance use (Boyd & Holmes, 2002). For some, substance use in the past was a way to self-medicate painful feelings and cope with stressors, and for some, the urge to self-medicate once again returns after learning about their HIV diagnosis (Moser, Sowell, & Phillips, 2001). For others, an HIV diagnosis precipitates positive behavioral life changes (Gillman & Newman, 1996).

Drug abuse is a chronic relapsing disease (Scott, Dennis, & Foss, 2005). Many users who cease drug use frequently relapse after only limited periods of abstinence (Hser, Longshore, & Anglin, 2007; Moos, Moos, & Timko, 2006). Although women in drug abuse treatment relapse less frequently than men (National Institute on Drug Abuse, NIDA, 1998), drug-abusing women are more likely than drug-abusing men to have drug-abusing partners (Westermeyer & Boedicker, 2000) who may influence them to relapse (Knight, Logan, & Simpson, 2001). Women's greater involvement with family relationships, and more problematic relationships with family members and drug using partners, present unique challenges to sobriety and make women uniquely vulnerable to relapse (Grella, Scott, Foss, Joshi, & Hser, 2003). This study presents a secondary analysis to determine whether two distinct therapeutic interventions differed from a community control in the relapse rates of participants.

Family-Based Interventions

Substance abuse is a "family disease," including both genetic and family environmental causes (Kumpfer, Alvarado, & Whiteside, 2003). The role of family relationships in the creation and maintenance of drug and alcohol problems has been well documented (see Szapocznik, Prado, Burlew, Williams, & Santisteban, 2007). Family interventions have long been established as viable approaches for the prevention and treatment of drug and alcohol abuse (O'Farrell, 1989; Prado et al., 2007; Steinglass, Bennett, Wolin, & Reiss, 1987). However, there has not been much family therapy focus on women with substance abuse problems, particularly those with HIV/AIDS.

A family ecological intervention, Structural Ecosystems Therapy (SET; Mitrani, Szapocznik, & Robinson-Batista, 2000; Szapocznik et al., 2004), was developed to address the family and contextual factors of HIV+ African American women. SET builds on the social contextual family therapy work of Nancy Boyd-Franklin (Aleman, Kloser, Kreibick, Steiner, & Boyd-Franklin, 1995; Boyd-Franklin & Boland, 1995) with HIV+ African American women. Boyd-Franklin's multisystemic and culturally sensitive model was developed in her practice with African-American and other minority families and draws from multiple systems-oriented approaches. In particular, the model emphasizes harnessing the richness of the family's inner resources to confront the myriad emotional and functional challenges of families affected by HIV/AIDS and improving famlies' interactions with

health and other service providers. Dr. Boyd-Franklin had a formative influence on our model through consultation and training during development.

The intervention was designed to improve family functioning and strengthen the woman and family's ties with resources outside of the family as a means to improve psychosocial adaptation to HIV/AIDS and reduce psychological distress. Further, because psychosocial factors such as family problems/hassles, problematic romantic relationships, and psychological distress have been linked to substance abuse and dependence (Aneshensel, 1999), SET aims to reduce these sources of stress and increase positive drug-free family and social support therefore indirectly reducing rates of substance use relapse.

The Present Study

The present study represents a secondary data analysis of a randomized clinical trial that tested the efficacy of SET for improving psychosocial functioning when compared with an attention-control person-centered (PCA) condition and a community control (CC) condition (Szapocznik et al., 2004). The PCA condition was included to compare the family and systems-oriented SET to a person-oriented therapeutic modality that did not address the family or other systems in which the women are embedded. The CC condition was included to control for the background services that dually-diagnosed women accessed in the community. The aim of the parent study was to promote adaptation to HIV in a sample of 209 urban low-income African American women. Results of the primary analysis of the parent trial revealed that SET was more efficacious than either the PCA or CC conditions in reducing psychological distress and family related hassles (Szapocznik et al., 2004). The parent study excluded women with a current drug or alcohol use diagnosis (abuse and/or dependence) in the six months prior to study induction because these women would have required a higher level of care than provided by the planned study interventions. Despite this exclusion, 68.4% (n=143) of the randomized women did have a lifetime history of substance abuse or dependence. This report examines the impact of the two therapeutic interventions (SET and PCA) on the rates of relapse to a diagnosis of substance abuse and/or dependence when compared with the community control (CC) condition. We hypothesized that relative to PCA and CC, SET would have a significant effect on reducing substance use relapse by addressing family and social factors related to relapse. Additional analyses examine whether changes in psychological distress or changes in family hassles function as mediators in the relationship between treatment condition and rate of relapse.

Method

The parent study was conducted under the oversight of an institutional review board and all participants were informed of the procedures, given an opportunity to ask questions, and signed the appropriate consent form prior to data collection. Women were recruited from agencies providing HIV and social services in the community. In the parent study, 209 of 473 African American mothers with HIV who were interested in the study were randomized to one of the three treatment conditions: SET, PCA, or CC. Only 49 women refused to participate. The additional 215 women were excluded because they did not meet one of 7 criteria: reporting no drug use in prior 6 months, endorsed at least two interpersonal

problems, no severe psychiatric disorders requiring hospitalization (other than perhaps for prior drug use), CD4 cell count greater than 50 cells/cumm, not homeless or institutionalized, not cognitively impaired, and not enrolled in our pilot study or currently enrolled in another clinical trial (Szapocznik, et al. 2004). The measures reported in this article were part of a larger assessment battery administered to participants. Women in the study were assessed at baseline, 3-, 6-, 9-, and 18-months post baseline. Women were reimbursed $50 for the baseline, 3-, 6-, and 9-month assessments and $100 for the 18-month assessment. The follow-up rate at 18-months was only 63.2% because of funding constraints that did not permit all women to be assessed at this final time point. Attrition was limited to less than 10% from baseline through the 9-month assessment time point. Drug abuse diagnoses were assessed at baseline, 9- and 18-months. The primary analyses utilize data from the 9 month time point to minimize the effect of missing data. Extensive details of the design, methods and procedure can be found in Szapocznik et al., 2004.

Treatment Conditions

SET targets social interactions, particularly those that are maladaptive, at the interfaces among the woman, her family, and the social environment (Mitrani, Szapocznik, & Robinson-Batista, 2000). Interactions are exchanges, verbal or nonverbal, between two or more people. This intervention is considered structural in that it targets family interaction patterns—repetitive verbal or nonverbal exchanges that take place between or among family members that are experienced as aversive and result in symptomatic behavior, or that cause family functions to go unfulfilled. For example, these exchanges may lead to emotional responses that either prevent the family from resolving underlying conflicts or lead to particular members feeling unsupported. The intervention also reinforces and strengthens positive and adaptive interaction.

SET is an ecological extension of Brief Strategic Family Therapy (BSFT™; Szapocznik, Hervis, & Schwartz, 2003). BSFT was designed to identify and correct maladaptive interactional patterns within the family. The three core techniques of BSFT and SET are joining, diagnosis, and restructuring. The therapist works to join with all family members and to create a therapeutic team in which the therapist is the leader. Diagnosis of family strengths and weaknesses is facilitated by encouraging the family to act as they would if the therapist was not there. Family interactional patterns are restructured by cognitive reframing, directing or redirecting communication, shifting family alliances, and helping families increase their conflict resolution skills.

SET extends the principles of BSFT to apply also to relationships between the family and outside systems (e.g., health care providers). As a family-focused systemic intervention SET includes both the HIV+ woman and her family members in the intervention as well as any important persons in larger systems important to the family (such as health care providers). Eight therapy sessions were considered a minimum dosage of therapy (Mitrani, Prado, Feaster, Robinson-Batista, & Szapocznik, 2002); therapy and/or booster sessions could continue up to 9 months, if necessary.

The focus of PCA is on the quality of the relationship between the therapist and the client, in which the therapist demonstrates empathy, unconditional positive regard, and congruence

(Rogers, 1959). PCA is nondirective, whereas SET is directive; PCA targets the individual, whereas SET targets the family and the ecosystem; PCA targets self, whereas SET targets family interactions; and PCA sets no goals for the client, whereas SET is strategic as well as directed. The dosing opportunity for PCA was the same as for SET.

The CC condition was a limited contact control intended to reflect the baseline level of services that HIV+ African American women receive in the local community. Women in this condition would have continued to receive any services from the community they had been receiving at study entry and were free to add additional services if they desired. These women received no services from the study. However, like women in all conditions, they received referrals to outside services if they expressed a desire or need during induction or follow-up assessments. Use of non-study related services were tracked for all three conditions.

SET uses the principles and strategies of its therapeutic approach to maximize engagement into therapy (Prado et al., 2002). This involves assessing and targeting the barriers to participation for both the woman and her family members, including direct outreach to family members. PCA, as implemented in the current study, also focused on engagement to therapy, however, its methods were limited to contact with the woman only and non-directed attempts to build empathy, unconditional positive regard, and congruence.

Therapists were nested within condition. All study therapists were African American women with experience in African American culture and counseling African Americans, and underwent extensive training in SET or PCA (Szapocznik et al., 2004). After randomization to condition, a woman was assigned to the therapist within the condition with the smallest current caseload. Therapists in both conditions understood that the aim of therapy was to help the woman adapt to living with HIV.

To ensure that both the SET and PCA conditions were implemented with fidelity to the respective therapeutic model, each was managed by experienced clinical supervisors. Each therapist worked in only one condition, either SET or PCA. Supervisors met weekly with therapists to review case progress (including review of videotapes of therapy) and discuss engagement into therapy. Videotapes of both intervention conditions were rated by trained graduate student raters for behaviors that were expected to be observed in one or the other types of therapy but not both. Both SET and PCA showed good adherence to their respective prescribed and proscribed techniques (Szapocznik et al., 2004).

Participants

The present secondary analysis focuses only on the 143 women who entered the parent study with a prior diagnosis of substance abuse or dependence because only these women are at risk for relapse to a current diagnosis of substance abuse or dependence. The 66 women who were excluded had never experienced substance use sufficient to be classified as abuse and/or dependence. The included women with a substance diagnosis history were older (M = 37.9, SD = 6.3) than those without a history of diagnosis (M = 31.0, SD = 9.2; $t(92.6) = 5.48$, $p < .0001$). The women with a history of a substance diagnosis were also more likely to be divorced or separated (30.1%) than their counterparts without a history of

diagnosis (12.3%; $\chi^2 = 7.62$, $p < .006$). Otherwise, the two groups looked similar on demographic variables. The women all had at least one child with an average of 3 children total (*SD* =1.9). Approximately 50% of the sample had less than a high school education and the median annual income of the women was $6900 with a household median income of $9840.

Measures

Engagement into Treatment—For participants within the SET and PCA conditions, engagement was defined as attendance at two or more intervention sessions. Two sessions is the minimum for engagement because returning to the second session is an indication that the therapist truly engaged the individual/family into treatment (Prado, et al. 2002).

Substance Use Diagnosis—The Structured Clinical Interview for DSM–III–R: Non-patient version for HIV studies (SCID-NP-HIV; Spitzer, Williams, Gibbon, & First, 1988) was used to determine drug diagnoses. The SCID, a clinical interview of the woman, is considered the gold standard for psychiatric diagnosis. The measure was administered by trained master's level clinicians under the supervision of a psychiatrist. This measure was collected at baseline and at 9 month follow-up and had adequate inter-rater reliability ($\kappa = .78$). A lifetime substance diagnosis implies a history of diagnosis but not necessarily a current diagnosis (at baseline in the current study, no woman had a current diagnosis). For the purpose of this study, presence of a lifetime diagnosis implied that the woman had at least one of the following lifetime diagnoses: drug abuse, alcohol abuse, drug dependence, or alcohol dependence. As detailed in the results, most of the women with a diagnosis had diagnoses involving more than one substance.

Psychological Distress—Global Severity Index from the Brief Symptom Inventory (Derogatis, 1993) was used to measure psychological distress. Each item is rated on a 5-point Likert scale ranging from 'not at all' (1) to 'extremely' (5) during the past seven days. The Global Severity Index is the item mean response across the 53 items. In this study, Cronbach's α for scores on the Global Severity Index was .96.

Family Hassles—The Hassles Scale (DeLongis et al., 1988) was used to assess daily hassles over the past month. The family hassles score (Szapocznik et al., 2004) was obtained by counting the number of family-related items that the women rated as a hassle. There were 12 family hassles items (e.g. parents, relatives, spouse, health of relative) and scores ranged from 0 to 12. Cronbach's α for scores on the family hassles subscale in this sample was .70.

Service Use—Services from outside of the study were assessed by the Services Utilization Schedule (Kaminsky, Kurtines, Blaney & Szapocznik, 1989). This instrument assesses the quantity of various services that potentially are supportive: psychosocial services (10 items, range 0 to 211), social services (16 items, range 14–38), religious/spiritual services (3 items, range 0–210), and medical services (6 items, range 0–97). Items are the number of visits and may include multiple visits per day (e.g. prayer). The instrument was administered at baseline and 3, 6 and 9 months post-baseline.

Analytic Strategy

Descriptive statistics concerning drug abuse diagnoses and comparisons of demographic characteristics, engagement, and retention are presented for this sample of women who entered the study with a prior history of substance dependence and/or abuse diagnosis. A logistic regression analysis tested the primary hypothesis to examine differences by treatment condition in the rate of relapse to an active substance abuse and/or dependence diagnosis. With the current sample size there would need to be between a 10% and 16% risk difference to have over 80% power as the rate in the more frequent group varies from 30% to 20% (Hintze, 2006).

Mediation Analyses—A series of analyses were performed to examine whether psychological distress and family hassles played mediating roles in any observed differences in relapse rates by condition. This was assessed using Mplus V5.1. A model was estimated wherein the effect of intervention assignment on the intercept and slope of a growth curve of the potential mediator (psychological distress or family hassles). The model also included an equation in which the intervention assignment as well as intercept (corresponding to 3 months post-randomization) and slope term of the hypothesized mediator were included as predictors of the probability of relapse estimated by a logistic regression. Mediation was examined using two methods. First, the Baron and Kenny (1986) conditions for mediation were examined. If the effect of the slope on the mediator is a significant predictor of relapse and the effect of intervention assignment is no longer significant when controlling for the slope on the hypothesized mediator, this implies that change in the hypothesized mediator variable actually was at least a partial mediator of the effect of the intervention on relapse. Second, the significance of the product of the path coefficients from intervention to the mediators and from the mediators to relapse were tested (MacKinnon et al., 2002).

Results

Baseline Profile—There was not a significant difference in the number of women with a lifetime diagnosis of substance abuse and/or dependence across the three conditions at baseline, nor was there a difference in the rate of follow-up across conditions. In addition there was no difference in the total number of drugs showing a diagnosis nor in the rates of particular diagnoses across the three conditions.

As can be seen in Table 1, most women had clinical diagnoses on more than one substance. Most women also had both a dependence and an abuse diagnosis. The percentage of women with a diagnosis associated with particular substances were as follows (note that percentages are not mutually exclusive and consequently add to more than 100%): 77.6% cocaine, 61.5% alcohol, 40.6% marijuana, 13.3% opiates, 11.2% polysubstance, 8.4% sedatives, 5.6% other, 4.9% amphetamines, and no diagnoses involving hallucinogens. These diagnoses were assessed to be in remission at study entry.

Engagement by Condition—Of the 143 women with a history of a substance use diagnosis, 95 were randomized to one of the two active treatment conditions [SET (n = 47) or PCA (n = 48)] and 48 were randomized to the community control condition. As in the full

sample, engagement rates were not significantly different between SET and PCA, χ^2 (1) = .63, $p < .43$. Finally, as in the full sample, SET was more successful than PCA at retaining participants in treatment with SET having significantly more hours of therapy contact (M = 12.6, SD = 13.1) than the PCA condition (M = 6.1, SD = 5.6, F (1, 93) = 9.82, $p < .003$).

Primary Hypothesis: Relapse to Diagnosis Within 9 Months—Of the 143 women in the present sample, 129 participants were assessed at the 9-month follow-up. There was a significant difference in the rate of relapse to diagnosis by treatment assignment ($\chi^2(2) = 9.60$, $p < .009$). Examination of the coefficients on the particular interventions showed that PCA was significantly more likely than SET to have a relapse ($\chi^2(1) = 5.35$, $p<.03$), but SET was not significantly different from CC in the rate of relapse. By 9 months post-baseline, 4 (9.1%) of the 44 women from the SET condition, 13 (29.6%) of the 44 women from the PCA condition, and 3 (7.3%) of the 41 women in the CC condition had relapsed to diagnosis. Clearly, women in the PCA condition relapsed at a much higher rate than women in either the SET or CC conditions. The women in PCA were 4.19 (95% CI: 1.32, 13.32) and 5.31 (1.52, 18.53) times as likely to relapse as were women in the SET and CC conditions respectively. In additional analyses, these significant differences between condition remained when including the limited amount of data at the 18 month follow-up.

Mediation Analyses: Influence of Distress and Family Hassles

As noted, the parent study showed a reduction in psychological distress and family related hassles by treatment (Szapocznik et al., 2004) and the current study showed an effect of treatment assignment on rates of relapse to a drug diagnosis. In the current sample the mean score on the Brief Symptom Inventory's global severity index was 1.05 (SD = .69) which is considerably higher than the clinical cutoff of .83 for significant distress as defined by non-patient female norms. Family hassles had a mean of 4.01 (SD = 2.49) which reflects that on average the women were reporting that about one third of the family items were actually hassles for them. The analyses presented below examine whether the interventions had an effect on psychological distress and family hassles in this sample and whether the intervention effect on relapse may have been mediated by the intervention effect on psychological distress and/or family hassles.

Psychological Distress—There were no significant differences in the trajectory of psychological distress by intervention condition in this subsample (though SET did have the largest decline is psychological distress), nor was the effect of intervention assignment on relapse diminished when the trajectory of psychological distress was included as a predictor. Thus, there is no evidence that psychological distress mediates the relationship between treatment condition and relapse.

Family Hassles—Treatment condition had a significant effect on the trajectory of family hassles in this sample ($\chi^2(2) = 9.93$, $p < .007$, note that the effect of both interventions on the linear slope was tested jointly). PCA demonstrated a significant increase in family hassles over time ($t(120) = 2.00$, $p < .05$). On average the increase in family hassles was 1.00 (SD = 3.07). The CC condition showed no significant change over time and significantly less change than PCA ($t(120) = -2.07$, $p < .04$). Finally, women in SET showed a significant

decline in family hassles over time ($t(120) = -2.59$, $p < .01$) which was a significantly different rate of change in family hassles than women in PCA ($t(120) = -3.185$, $p < .001$). The mean reduction in hassles for women in SET was −1.18 ($SD = 3.19$). The effect of intervention on relapse was no longer significant when the trajectory of family hassles was included as a predictor of relapse, indicating that change in family hassles may partially explain the differences in relapse rates. There was not strong evidence of mediation, however, both because a significant relationship between the trajectory of family hassles and relapse did not exist and that the indirect effect (product of pathways) was not statistically significant.

Study and Non-Study Related Service Utilization

Without strong evidence that psychological distress and family hassles explained most of the relationship between treatment condition and relapse, participant use of study and non-study related services was considered as a possible alternate explanation. Differences in service utilization from either inside or outside of the study may have been a contributing factor to differential rates of relapse across conditions.

Differences in non-study related service utilization were analyzed by conditions across two time periods: (1) the 3 months prior to baseline, and (2) the period from baseline until the 9-month assessment. Because of the non-normal distributions of service utilization, medians (*Mdn*) and interquartile range (*IQR*) are reported. The Kruskal-Wallis χ^2 test with t approximation are used to assess statistical significance. There were no significant baseline differences in the use of non-study related services by treatment condition. Only psychosocial services showed a significant difference between conditions in total service utilization from study initiation to 9-month follow-up ($\chi^2(2) = 7.90$, $p < .02$, see Table 2). Decomposition of this effect shows that the women in the CC condition used significantly more psychosocial services in the 9-months post-baseline than women in either PCA ($\chi^2(1) = 6.57$, $p < .011$) or SET ($\chi^2(1) = 4.93$, $p < .03$); the difference between PCA and SET was not significant. There was no difference between PCA and SET on use of psychosocial services. It is important to note that approximately 55% of the psychosocial services received by women in all conditions were group-based drug services.

Finally, the investigation concluded with an analysis of whether the significant differences in non-study related psychosocial services were related to the relationship between treatment group and relapse using the mediating model described above. In this model, change in psychosocial services predicted probability of relapse ($\beta = .08$, $SE = 0.04$, $p < .04$). Neither CC nor SET remained significant predictors of relapse when change in psychosocial services was included as a predictor of relapse. It should be noted that increases in psychosocial service use were associated with increased probability of relapse. Though not significant, higher early levels of psychosocial service use (as measured by the intercept which corresponds to 3 months post randomization) were associated with lower probability of relapse ($\beta = -.11$, $SE = 0.07$, $p \leq 0.11$). Therefore early psychosocial service use was at least partially protective of relapse. However, increasing use of services after the third month is positively related to relapse. When removing the intercept from the prediction of relapse, the effect of PCA (relative to CC) on the rate of relapse became significant again.

This implies that the initial higher level of psychosocial services in CC was somewhat protective against relapse and partially explains the difference between CC and PCA in rates of relapse. Again, however, there is not strong evidence of mediation because the product of the two pathways was not significantly different from zero.

The amount of study related services did mediate the effect of the intervention on relapse. Higher dose of study services was shown to significantly reduce the likelihood of relapse ($\beta = -.024$, $SE = 0.011$, $p \leq 0.03$). As noted above the two interventions also had significant differences in the number of sessions. The product of these two relationships which represents the indirect effect of treatment assignment on relapse through the dose of therapy was significant for both PCA ($a*b = .241$, $t(120) = 2.14$, $p < .04$) and SET ($a*b = -.275$, $t(120) = -.198$, $p < .05$) indicating that dose of study treatment did mediate the difference in treatment on rates of relapse.

Discussion

The women assigned to PCA had significantly higher rates of relapse than either the women assigned to CC or the women assigned to SET. One possible explanation is that PCA is a non-directive therapy and does not in any way guide the participant, thus women in PCA are not systematically approached to change behavior or cognitions in any domain. Rather, the therapeutic effect is transmitted by the relationship between therapist and participant and is based on empathy, unconditional positive regard, and congruence. Whereas these Rogerian principles have been utilized as components within drug treatment, for example Motivational Interviewing and Motivational Enhancement Therapy (Carroll et al., 2002; Miller & Rollnick, 1991), they are generally coupled with specific directed interactions to change behavior. Thus it seems that a non-directive approach in the absence of more directed treatment components can have iatrogenic effects in women who are susceptible to substance abuse.

This non-directive, non-strategic characteristic of PCA may have contributed to its higher rate of relapse because it did not systematically address issues relevant to relapse, unless prompted by the client. Even if these issues are discussed by the client, the therapist would not direct the therapy to address the drug use. The women in this study have histories consistent with more severe substance use problems and were in a relapse-prevention stage of their recovery. Thornten et al. (1998) found that patients with more severe drug problems gained more benefit from structured therapy rather than facilitative, less structured approaches. Giovaszolias and Davis (2005) found that drug treatment clients who were in the later stages of treatment preferred more action-oriented therapeutic interventions than non-action oriented. Consistent with this, women in PCA attended significantly fewer intervention sessions than did women assigned to SET.

SET, in contrast to PCA, is directive, has a specific focus on engaging the woman and her family, and then specifically addresses and alters family and systemic interactions that support continued maladaptive behavior patterns. In the current implementation, SET did not contain any content specific to drug use. Rather, SET focused on the family's specific stressor constellation to diagnose and repair maladaptive family (and systemic) interactions.

SET's focus on maladaptive family interactions would uncover issues of substance use problems related to these maladaptive behavior patterns and thus would address substance use in changing these patterns.

The mediation analyses showed that the protective effect of SET relative to PCA was related to reductions in family hassles and that SET significantly lowered family hassles in this sample. Szapocznik and Prado (2007) suggest that individually-focused interventions may have iatrogenic effects on the family. This investigation showed that an individually focused intervention (PCA) may have iatrogenic effects on individuals in drug recovery that are at least related to family problems as measured by family hassles. Therefore, in addition to the strictly non-directive aspect of PCA, given the importance of family in substance abuse recovery for women, an individual-focused intervention may have contributed to relapse among highly vulnerable women by not reducing family hassles.

In additional analysis, the most obvious difference between CC and PCA is the level of service use early in the study period. Restrictions were not placed on any participants regarding their use of services outside the treatment received as part of the study. PCA showed the lowest levels of both study and non-study related services. The reduced number of contact hours for PCA implies that PCA's less directive approach to engagement and retention in therapy was not sufficient to lead to adequate engagement of participants to study-related services. Neither would PCA have encouraged and directed participants toward service utilization outside the study. The nature of PCA limits therapeutic discussion to whatever the woman wants to discuss. Therefore outside services would only be a topic of therapy should the woman bring that as an issue she wanted to discuss. By contrast, in SET the therapist would have assessed existing service use and additional need for outside services and tried to engage the woman with new appropriate services, or reduce services which were not being effective, as part of the ecosystemic aim of SET.

The results also imply that women with a lifetime diagnosis of substance dependence and/or abuse who were only treated in the community (the CC condition) were also protected against drug relapse. While the specifics of their treatment are unknown, results of additional analysis demonstrate they had a significantly higher level of psychosocial service utilization than either the PCA or SET conditions in the period between randomization and 9-month follow-up and that this difference was strongest early in the study period. These services consisted in large part of individual therapy as well as group support for both drug problems and HIV related problems. Most community services do take a much more directed approach than the Rogerian approach of PCA.

The effect of outside service use early in the study period tended to decrease risk of relapse, whereas increasing service use over time was associated with higher rates of relapse and this late increase was most evident in the women of the PCA condition who relapsed. PCA started with the lowest level of outside service but the subset that relapsed did increase their outside service use. Increased use of these services and engagement into different service systems by the women can create conflicts and additional problems by weakening family connections (Colapinto, 1995) unless services are coordinated using systemic assessment (Imber-Black, 1991) which is a fundamental component of the SET intervention. These

unintended problems potentially created by services that do not take a family systems approach may have actually contributed to relapse. Further study of the structure and consequences of community services that women access during recovery may be warranted to understand this more fully.

Whereas SET was protective against relapse relative to PCA, SET was not significantly better than the CC condition. The fact that 55% of psychosocial services were drug-related may have been protective for the women assigned to CC. This is further strengthened by the fact that women in the CC condition received significantly more psychosocial services early in the study than the women in either SET or PCA. It is also the case that drug and HIV services available in this community are generally much more directive than was PCA. This fact, coupled with the sustained use of services in CC, appears to have protected these women from relapse.

Clinical Implications

There is significant comorbidity of HIV/AIDS and substance abuse among minority women These women are at risk for relapse which would have detrimental effects on their health, adherence and emotional wellbeing. It is therefore advisable for providers of health and psychosocial services to directly assess for substance abuse and address it even if in remission. Current recommendations direct providers of care to person living with HIV/AIDS to incorporate risk screening, including substance abuse, into their medical care (CDC&P, 2003). The recommendations suggest the use of paper-pencil or computer-assisted questionnaires, structured interviews, or discussions. A brief screening tool has been developed specifically for persons living with HIV/AIDS and includes seven items on substance abuse (Pence et al., 2005).

This study also suggests that a directive family-based approach, by reducing the problems that HIV+ women in substance abuse recovery encounter with their family members, can help to prevent relapse. In contrast, an individually-focused non-directive approach can exacerbate family problems and increase relapse risk. It should be highlighted, however, that SET couples a directive approach with a deliberately respectful, strengths-oriented and, if necessary, lengthy therapeutic engagement. Clinically it is important for the therapist to join adequately with all family members before instituting extensive diagnostic probing and restructuring of interactions. This is in part to counter the resistance of low income African American families who frequently have had unsatisfactory interactions with the larger systems in which they are embedded (Boyd-Franklin, 1987) and therefore may have significant initial mistrust of the therapist. Once the therapist has established a therapeutic bond with the family, the ecosystemic focus of SET frequently resonates with these families precisely because of their history of unsatisfactory relationships with larger systems.

Limitations

This study clearly has several limitations. First, the study was not originally designed to examine relapse and utilizes only the subgroup of those women who were at risk for relapse in the parent study. The parent study sample was also restricted to those who had not had a diagnosis of drug abuse or dependence for the prior six months. Whereas this was a clinical

decision because of the level of care of the SET intervention, it also means that women in the relapse analyses had been more stable than women just exiting drug abuse treatment and this needs to be kept in mind when generalizing results. In addition, because the primary aim of the trial was not on drug abuse relapse, the measures included did not have as much detail concerning substance use and relapse related information, thus limiting the ability to examine potential mediators and related variables. Related to this, the definition of relapse is based on diagnosis of active abuse or dependence, a particularly stringent definition and not a standard approach to relapse analysis. Another limitation is that social support was not examined in relation to relapse. This was in part because the parent study did not find effects on social support. Nevertheless, more information about how utilization of services protected against relapse (e.g. through increased perceived support or bolstering coping) would be useful. Finally, because the study was not designed to examine relapse, the interventions involved did not focus specifically on drug use issues.

Conclusion

The SET intervention is an outgrowth of BSFT and extends the systemic focus to multiple social systems. BSFT is a family therapy intervention for adolescent problem behaviors and drug abuse. The parent study (Szapocznik et al., 2004) showed that SET was useful for HIV + women in adjustment to living with HIV. The present study shows that SET was also as protective as CC against relapse to an active diagnosis of substance abuse and/or dependence for this population. Future research should examine the utility of modifying SET specifically to address adult populations with substance drug abuse problems.

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Table 1

Drug Diagnoses

Number of Substances	n	%
One	38	26.6%
Two	58	40.6%
Three	30	21.0%
Four or more	17	11.9%
Type of Diagnosis		
Abuse Only	10	7.0%
Abuse and Dependence	103	72.0%
Dependence Only	30	21.0%

Table 2

Median Level of Services Used in the 9 Months Post Baseline by Condition

	Community Control	PCA	SET	χ^2	p-value
Psychosocial Services[(a)]	24 (48)	3 (25)	6.5 (24.5)	7.90	.02
Social Services[(b)]	72 (15)	68.5 (26.5)	65 (18)	2.58	.28
Religious Services/Prayer	136 (111.5)	147.5 (98.5)	132.5 (91)	0.83	.66
Medical Services[(c)]	10.5 (10)	8 (9.75)	9 (11.5)	3.63	.17
Sample Size	41	44	44		

The Kruskal-Wallis Chi-square Test is used for the test statistic due to deviations from normality.

[(a)] Professional therapy, pastoral counseling, AA, Narcotics Anonymous, etc, though also includes HIV related groups

[(b)] Case Management, transportation assistance, food stamps/vouchers, Section 8 and other housing assistance, job training/placement assistance

[(c)] In- and out-patient medical, dental & psychiatric appointments, including home nursing visits