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The Impact of Acculturation, Motivation and the Therapeutic Alliance on Treatment Retention and Outcomes for Hispanic Drug Involved Probationers

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Abstract

Factors associated with retention and outcomes for Hispanic offenders mandated to treatment for substance use disorders have been overlooked in the literature resulting in an impediment to providing evidence-based, culturally relevant treatment services. This project examined the roles of motivational factors, the therapeutic relationship, and acculturation in predicting treatment retention and recidivism among Hispanic male probationers mandated to residential treatment. By following a treatment cohort over one hundred and twenty days, this research identifies factors that may be targeted to improve interventions and policies. The following conclusions are supported: among Hispanic offenders, the number of days in treatment is positively related to motivation to change and level of acculturation.

Keywords

drugs; recidivism; probation; ethnicity

Introduction

In 2010, there were 50.5 million Hispanics in the United States, 34 % were adult males and of these 1 in every 54 was incarcerated in jail or prison and 1 in 27 was on probation or parole. Bureau of Justice statistics further indicate that 37% of Hispanic probationers are sentenced to probation supervision because of drug offenses (Glaze & Bonczar, 2009; Lopez & Light 2009; Warren, 2008) and young Hispanic males are at the greatest risk of being incarcerated for drug offences (Spohn & Delone, 2000; Steffensmeier & Demuth, 2000; 2001). Fifty eight percent of Hispanic offenders meet the criteria for a substance use disorder, yet only 8.6 % receive treatment (CASA, 2010). Without treatment probationers with substance use disorders are less likely to successfully complete probation (De Li, Priu, & MacKenzie, 2000; Lattimore, Krebs, Koetse, Lindquist & Cowell, 2005; Olson, Alderden, & Lurigio, 2003; Olson & Lurigio, 2000). Similar to other ethnic minority groups Hispanics are also more likely to discontinue treatment early before receiving the optimal measure of care (Sue, Zane, & Young, 1994; Zanis et al., 2009; UCLA ISAP, 2006; Evans, Li, & Huser, 2009).

The legal complications faced by Hispanic substance users involved with the criminal justice system accentuates the need for a greater understanding of the factors that have contributed to the low retention and high recidivism rate of Hispanics mandated to substance use treatment. Current analysis of the Treatment Episodes Data (TEDS, 2008) finds that among Hispanic adult males 42% of all admissions report the criminal justice system as the primary referral source and fewer than 48% of Hispanic males admitted to residential treatment complete. These findings are consistent with much of the extant research on health

care disparities regarding access and response to substance use treatment with populations for whom treatment was discretionary indicating that Hispanics are less likely to access needed care for substance use disorders (Amaro, Arevalo, Gonzalez, Szapocznik, & Iguchi, 2006; Brecht, von Mayrhauser, & Anglin. 2000; McGuire & Miranda, 2008; Niv & Hser, 2006; Wells, Klap, Koike, & Sherbourne, 2001). Moreover, when Hispanics do access care they tend to have greater delays before admission than non-Hispanics and are less satisfied with the treatment they receive (Wells, Klap, Koike, & Sherbourne, 2001). Delays in care can exacerbate the legal and health problems that are a consequence of drug use and increase addiction severity (Rempel & De Stefano, 2001). Disparities in access to substance use treatment programs are heightened for Hispanics during their community supervision by the criminal justice system as few community-based agencies are prepared to provide services to populations of drug offenders and fewer provide culturally sensitive services (Primm, Osher, & Gomez, 2005; Vega, 2005).

Alegría, et al. (2007) examined use of services for substance use disorders and found not only that service use disparities exist among subpopulations of Hispanics depending on ethnicity, nativity, language, and immigration histories but also that satisfaction and perceived helpfulness of services received varied. An analysis of the Treatment Episode Data (2008) also supports subgroup differences. For example using the most recent data available Hispanics of Puerto Ricans heritage are found to be more likely to access care voluntarily than other Hispanic subgroups and individuals of Mexican descent complete treatment episodes less often while individuals of Cuban heritage access treatment voluntarily less than Puerto Ricans, they are more likely to complete than either Puerto Ricans or Mexicans. Cubans, however, report they are less satisfied with care and report they found it less useful than either of the other subpopulations (TED, 2008). Satisfaction with care has a positive influence on outcome (Zhang, Gerstein & Friedmann, 2003). Locality also plays a role as Waidmann and Rajan (2000) argue that local conditions must be considered when examining health care disparities in subpopulations of Hispanics.

South Florida is described as an enclave of Hispanic diasporas that is both culturally insulated and economically integrated (Girard & Grenier, 2008). However, within this enclave there exists marked differences in the life trajectories for second generation Hispanics (Haller & Landolt, 2005). The purpose of this research project was to examine the roles of motivational factors, the therapeutic relationship, and acculturation in predicting treatment retention and outcome among Hispanic men mandated to residential treatment by the criminal justice system in south Florida. An understanding of the potential for these factors to affect treatment retention and treatment outcome may facilitate the development of strategies that will increase retention and improve outcomes. Two facets of the research problem are: (a) to distinguish the factors related to those Hispanic clients who are retained in treatment from those who terminate prematurely focusing on acculturation, motivation, and the therapeutic alliance and, (b) to examine if these factors are associated with outcome in terms of recidivism in the three years following admission to treatment.

Foundation of the Current Study

This study brings together overviews of theory and research regarding the influence of acculturation, motivation, and the therapeutic alliance in order to provide a context for understanding the potential influence of these factors on treatment retention and outcomes among Hispanic males mandated to residential treatment in South Florida. Geographic location and program structure complete the contextual foundation of this study. South Florida is a unique environment for immigrants and second generation Hispanics that has implications for group acculturation and individual adaptation strategies (Haller & Landolt, 2005). Unlike other regions of the country the pattern of Cuban immigration to South Florida has created the enclave influenced by a highly educated professional class of

refugees that forged a path for those Hispanics that followed and as in all social structures a class system was created (Stepick, Grenier, Castro, & Dunn 2003; Portes, Fernandez-Kelly, & Haller, 2005). Each wave of immigrants has had distinct receptions from the United States and from the local Hispanic community. Much like other areas of the United States in south Florida Hispanics are more likely to be incarcerated as opposed to being supervised in the community than white offenders with similar criminal histories and Hispanics receive harsher penalties whether incarcerated or supervised in the community (Spohn, & DeLone, 2000; Steffensmeier & Demuth 2001).

Nationally the various criminal justice systems have alternatives to incarceration that serve to provide drug users opportunities for treatment. The success of treatment as an alternative to incarceration has been thought to be retaining clients in the process until they have gained the beneficial effects of treatment with a focus on reducing recidivism as an outcome measure. Retention has been found to increase when legal mandates are in place and scholars continue to examine the impact on long term outcomes once the threat of consequences are removed (Urbanoski, 2009). There is a greater likelihood that Hispanic substance users will be referred to treatment by the criminal justice system (Zemore, 2009) and therefore their options for care are usually limited to those programs that the system contracts with to provide services and the capacity of local resources (Hiller, Knight, Rao, et al., 2002). Matching drug user's clinical needs with level of care is found to result in better outcomes (Gottheil, Thornton, & Weinstein, 2002; McLellan, Grissom, et al., 1997). Lower levels of care than needed can be harmful, and higher levels of care are wasteful of resources (Magura et al., 2003). Drug offenders who need a higher level of care because of their addiction severity are preferably placed in residential modalities (Prendergast, 2009).

The therapeutic community (TC) model has conventionally been the highest level of community-based care used for drug offenders and the standards for care defined by De Leon (2000) have been empirically supported as an effective form of long-term treatment. When the structure and intensity are modified from traditional TC to a more short-term contemporary model the fidelity to these standards is significantly impacted (Huey-Dye, Ducharme, Johnson, Knudsen, & Roman, 2009). A shorter duration of treatment demands greater professional staff involvement in community governance; there is less opportunity to remediate educational and vocational deficits and overall the impact of the community as an agent of change is less prominent. The model invariably still relies heavily on groups and meetings and the environment embodies the ideals and values of the mainstream culture. Reinerman (2005) provides some insight regarding the ethos of accepting a socially constructed view of drug use that is required in treatment and how it provides a client with a type of redemption from stigma however, whether this is a cross-cultural phenomenon is not understood. The evidence seems to suggest that acculturation, motivation and the therapeutic alliance have an influence on the retention in treatment and outcomes for Hispanics drug users involved with the criminal justice system, but more information is needed. The following section reviews relevant literature on acculturation, motivation, and the therapeutic alliance as they relate to retention and treatment outcomes.

Acculturation

Theoretical literature on acculturation defines it as a "process of cultural and psychological change that results following meeting between cultures" and identifies adaptation as how individuals manage the process (Sam & Berry, 2010, pg. 472)". Adaptation strategies remain poorly understood (De La Rosa, 2002) however, the relationship between acculturation and substance use and to a lesser degree criminal behavior has largely been attributed to marginalization, discrimination, and acculturative stress (Portes et al , 2005; Rumbaut, 2005; Waters, Tran, Kasinitz & Mollenko, 2010). Because adaptation strategies and the resultant outcomes vary for both immigrants and second-generation immigrants, the

focus of some acculturation research has attempted to explain these differences (Berry, 2003; Portes, Fernandez-Kelly & Haller, 2005; Waters, Tran, Kasinitz, & Mollenko, 2010). Theories of acculturation hold that individuals will adopt varying strategies for adaptation and some of the strategies result in poorer outcomes (Berry, 2003). Marginalization, defined as the rejection by the second generation immigrant of both the culture of their heritage and that of the host culture is found to result in diminished psychological well-being and sociocultural competence (Sam & Berry, 2010) while downward assimilation (Portes & Zhou, 1993) results in the adoption of the culture of the marginalized groups in the host country. Waters and colleagues (2010) found second-generation immigrants are more likely to experience downward assimilation when they have limited education, lack of instrumental ethnic community support, and are faced with discrimination. That the impact of an identity that is stigmatized with both substance use and criminal justice involvement warrants consideration as a factor that can alter an individual's adaptation strategy (Chiricos, Barrick, Bales & Bontrager, 2007; Sam & Berry, 2010) .

A body of research has examined the role of acculturation and patterns of substance use mainly among Hispanic adolescents and consistently found higher levels of acculturation associated with increased drug use (Cherpitel & Borges 2002; Gil, Wagner & Tubman, 2004; Gonzalez, Haan, & Hinton, 2001; Grant et al., 2004; Kang, Deren, Mino, & Cortés, 2009). A preference for speaking English and being fluent in English as well as being native-born or immigrating during childhood have also been linked to greater drug use among Hispanics (Amaro et al, 1990; Vega, Kolody, Hwang, Noble, & Porter, 1997). Drug dependence and acculturation among Hispanic adults has also been found to be positively associated (Ortega, Rosenheck, Alegria, & Desai, 2000; Turner, Lloyd, & Taylor, 2006). Turner and colleagues investigating acculturation and substance dependence among second generation immigrants and US born Hispanic adults concluded that cultural influences beyond measures of acculturation protect less acculturated Hispanic women from exposure to stressors. Their findings did not extend to Hispanic men and they suggested Hispanic males are less protected from stressful environmental experiences and therefore their risks of adverse outcomes are increased. Few studies have been published regarding the effect of acculturation during substance abuse treatment with the notable exception of the work of Amodeo and colleagues (2008). Using nativity as a proxy measure of acculturation with clients of Puerto Rican descent Amodeo et al found a significant association between acculturation and treatment retention. Using data from Project MATCH for two independent studies researchers found no significant differences in treatment effectiveness associated with levels acculturation among clients of Mexican heritage clients treated for alcohol use disorders (Arroyo, Westerburg, & Tonigan, 1998; Arroyo, Miller & Tonigan, 2003).

Hispanic populations in the United States are not homogenous and as their acculturation process is not uniform, their substance use treatment service needs may vary depending on their cultural heritage and the region of the country where they have settled (Alvarez et al., 2004; Caetano, Ramisetty-Mikler & Rodriguez, 2008). Given these factors, caution must be used when interpreting results from substance use studies reporting no differences across ethnic groups when Hispanic ethnicity is considered homogenous (Alvarez et al., 2004; Burlew et al., 2009).

Motivation

A great deal is unknown about motivation among Hispanics in treatment programs for substance use disorders as extant research typically combined Hispanic ethnic groups with the non-Hispanic Caucasian groups. Motivation is a construct defined in the research by the dimensions of treatment readiness (Miller & Tonigan, 1996), desire for help (Knight, Hiller, Broome, Simpson, 2000) and perceived need for help (Shen, McLellan, & Merrill, 2000). An underlying assumption these models have in common, as suggested by Longshore and

Teruya (2006) is that a lack of motivation is resistance. Some studies have found pretreatment motivation associated with greater retention and positive outcomes (Simpson & Joe, 1993; Lang & Belenko, 2000; Rempel & DeStefano, 2001; Shen et al., 2000), whereas other research fails to support this link determining treatment readiness was not associated with discontinuing drug use following treatment (Blanchard et al., 2003; Longshore & Teruya, 2006). Clients referred by the criminal justice system typically enter treatment with lower motivation to change drug-using behaviors than do clients who enter treatment under other types of pressure (Farabee, Nelson, & Spence, 1993; Polcin & Beattie, 2007; Prendergast, 2009; Sia, Dansereau, & Czuchry, 2000). Clients under community supervision demonstrated the ability to attend and comply with the requirements of the treatment programs yet resumed pretreatment drug using behaviors once supervision was discontinued (Blanchard et al., 2003; Longshore & Teruya, 2006). Legal pressure has been found to extend program stays (Joe et al., 1997) however; long-term behavioral change is influenced by the extent to which people are intrinsically motivated to perform that behavior (Deci & Ryan, 1985; Sheeran, Webb & Gollwitzer, 2005). Early research by Longshore et al., (1992) found Hispanic drug offenders less likely to perceive a need for treatment similarly ambivalence was found among Hispanics clients mandated to treatment for alcohol disorders (Youtz, Arroyo, Miller, Tonigan, 2002).

The various process and content dimensions of treatment motivation need to be unraveled in a coherent model that predicts outcome. Drieschner, Lammers, and van der Staak (2002) have proposed a model that offers some conceptual clarity. They define treatment motivation as the client's motivation to engage in treatment and define treatment engagement as the client's participation in the tasks of the treatment approach barring limitations of literacy or other cognitive factors. Engagement according to their model includes problem recognition, problem severity, external pressure, perceived outcome expectancy, perceived cost (both material and psychological), and the suitability of the treatment approach. Engagement so defined is then linked to the effectiveness of treatment that in turn predicts outcomes. This model will be extended in the present study of Hispanic offenders mandated to treatment. Limited research has examined motivation among Hispanic drug offenders. The cost psychologically in terms of culture and the treatment approach may have particular relevance for engagement.

Therapeutic Alliance

A limited amount of theoretical scholarship and less empirical work has examined the role of the therapeutic alliance with Hispanic clients (Alverson et al., 2007; Atdjian & Vega 2005; D'Angelo et al., 2009). Less research exists regarding this factor in offender rehabilitation (Ross, Polaschek & Ward, 2008; Tatman & Love, 2010). Andrews, Bonta, and Wormith, (2006) in their risk, need, and responsivity model of offender rehabilitation capture several elements of the alliance in their definitions of responsivity that includes treatment motivation, age, learning style, culture, and various barriers to participation as well as the type of service delivery unfortunately research is limited (McMurran, 2009). Florsheim et al. (2000) found a positive association between the therapeutic alliance and outcomes for youthful offenders in community based programs. Research regarding the role of the therapeutic alliance with drug users has not predicted a direct effect on drug use outcomes but has predicted greater retention (Barber et al., 2001; Belding et al., 1997; Crits-Christoph et al., 2009; Joe Simpson, & Broome, 1998; Kasarabada, Hser, Boles, & Huang, 2002; Meier, Barrowclough, & Donmall, 2005). Studies of alcohol users have found the therapeutic alliance to be associated with positive outcomes (Connors et al., 1997; Ilgen, McKellar, Moos, & Finney, 2006).

D'Angelo et al., (2009) found high therapeutic alliance scores when bicultural and bilingual practitioners were matched with low-income Latino families. Alverson and colleagues

identified the failure to engage a client's family and the strict adherence to a medical model resulted in a failure to engage Hispanic clients and they endorsed clinicians attending to the clients narrative of discrimination in their daily lives client's perception of the disorder. Atdjian and Vega (2005) echo these recommendations regarding family inclusion and sensitivity to personal narratives. Consistent with research suggesting a convergence of values between the client and therapist influential for forming an alliance (Hersoug, Hoglend, Monsen, & Havik, 2001; Hersoug, Monsen, Havik, & Hoglend, 2002) practice implications from Aez, Silva, Paris and Bedregal (2008) endorse the need to assess adherence to the cultural values. Other research has found that less formality in the sessions result in a weaker alliance among Hispanic clients in substance use programs (Bamatter et al., 2010). The crucial role of establishing a therapeutic alliance is recognized as essential for client retention and recovery yet research with offenders and drug users have yet to examine the role of acculturation in this process.

Retention

Client retention in treatment is a major contributor to successful outcomes when defined as the reduction of criminal behavior, the reduction or cessation of substance use, improved social functioning and a reduction in health risk behaviors (Connors, Grant, Crone, & Whiteside-Mansell, 2006; De Leon, 2001; Hellemann, Conner, Anglin, & Longshore, 2009; Zanis et al. 2003). Ninety days of residential treatment has been found to be the minimum length of time to see statistically significant symptom improvement (Hser, Evans, Huang, & Anglin, 2004; Katz et al., 2004; Simpson & Joe, 2004), and treatment retention beyond this threshold has been associated with increased positive outcomes (Harrell & Roman, 2001; Messina, Wish, & Nemes, 2000; Simpson, 2003; Simpson & Flynn, 2008). Notably, Zhang, Friedmann and Gerstein (2003) examined length of stay and outcomes and could not support ninety day or one year thresholds, however they did find that there was a positive association with the length of stay in treatment (less than 18 months) and successful outcomes. Current scholars argue that addiction is a chronic disorder should be afforded the ongoing support that is standard for other chronic diseases (McLellan, Lewis, O'Brien, & Kleberg, 2000; White, 2009).

Only a few studies have examined predictors of treatment retention among Hispanics. Amodeo, Chasslera, Oettingera, Labiosab, and Lundgren (2008) examined static factors related to retention among Hispanic substance users admitted to a culturally focused long term residential program and found the predictors of retention to be similar to those found in studies of non-Hispanics. The extent to which these findings are applicable to Hispanic probationers in programs that are not culturally focused is unknown. Over a decade of research not specific to Hispanics has explored the demographic, clinical, drug use, and legal variables among clients who were retained in treatment versus those who left early (Anglin et al., 1999; Dumas, Blasey, & Thacker, 2005; Hellemann, Conner, Anglin, & Longshore 2009; Knight, Hiller, Broome, & Simpson, 2000; McCaul, Svikis, & Moore, 2001; Maglione, Chao, & Anglin, 2000; Messina et al., 2000; Nielsen & Scarpitti, 2002; Rawson et al., 2000; Veach, Remley, Kippers, & Sorg, 2000). Overall the findings for predicting attrition have been somewhat equivocal. The most consistent risk factors found for treatment dropout are younger age (Agosti, Nunes, & O'Connell, 1996; Choi & Ryan, 2006; Melnick, et al., 1997; SAMHSA, 2009; Sinha, Easton, & Kemp, 2003) belonging to an ethnic minority group (Agosti, Nunes, & O'Connell, 1996; Melnick et al., 1997; SAMHSA, 2009; Veach, Remley, Kippers, & Sorg, 2000); lower motivation upon admission (Anderson & Berg, 2001; Ball et al., 2006; Brocato & Wagner, 2009; Evans, Li, & Huser, 2009; Palmer, Murphy, Piselli, & Ball, 2009; Joe, Simpson, & Broome 1998) and co-occurring disorders (Amodeo et al., 2008; Brunette, Mueser, & Drake, 2004; Green,

Polen, Dickinson, Lynch, & Bennett, 2002; Haller et al., 2002; Lang & Belenko, 2000; Mertens & Weisner, 2000).

The findings for specific classes of drug use are mixed, both cocaine use (King, & Canada, 2004) and heroin use have been reported to predict early termination. Recent drug use (Amodeo et al., 2008; Butzin et al., 2002) and a lengthier criminal record (Evans, Li, & Huser, 2009; Knight Logan, & Simpson, 2001; Mateyoke-Scrivner et al., 2004) have also been found to predict dropout.

The evidence seems to suggest that acculturation, motivation and the therapeutic alliance may have an influence on the retention in treatment and outcomes for Hispanics drug users involved with the criminal justice system, but more information is needed. This study examined a set of specific variables among Hispanic males in south Florida who were mandated to treatment in a modified therapeutic community.

Four hypothesis were tested (a) Clients with greater motivation will remain in treatment longer (b) Clients who are more acculturated will remain in treatment longer (c) Clients with a stronger therapeutic alliance will remain in treatment longer and (d) Clients who remain in treatment longer will be less likely to recidivate.

Methods

Design and Instrumentation

Data analyzed in this study were derived from a longitudinal study designed to examine the predictors of retention among clients mandated to residential treatment (for details on the original study, see Brocato & Wagner, 2009) The data were collected through in-person interviews at three contact points. The major dependent variables for the sample included The Stage of Change Readiness and Eagerness for Treatment Scale, (Miller, & Tonigan, 1996) administered upon intake and 90 days later. The Working Alliance Inventory (WAI), (Horvath & Greenberg, 1986) and an Acculturation Scale that is based on ARSMA-II Hispanic/Latino designed to measure acculturation and discrimination were administered at intake (Cuellar et al., 1980). Recidivism data were determined from official records obtained from county and correctional databases gathered 3 years post treatment. Client characteristics associated in the literature with treatment retention were included. These variables were age, comorbidity, prior convictions, primary drug used, severity of problems related to drug use, and frequency of drug use.

Participants

Seventy-seven Hispanic clients were admitted into residential treatment at two locations May 2002 and June 2003. The sampling approach was naturalistic in that consecutive admissions to programs were approached for recruitment. Of these clients, 12 were excluded because they fell outside the age range, and 10 declined to participate, six reported alcohol to be their primary drug, another six left within the first 72 hours following admission. Complete data were gathered from 43 Hispanic male participants, which represent 73% of eligible residential treatment clients. Participants volunteered for the research. Program staff who conducts the initial assessments identified potential participants and the researcher then contacted the potential participant, and gave a brief explanation of the study's purpose. Participants provided informed consent as approved by the Florida International University Institutional Review Board and the Research Review Committee for the State of Florida Department of Corrections. Hispanic adult males 18-44 years of age, who met the criteria of using a primary drug other than alcohol and who agreed to participate were included.

Treatment & Therapists

The study was conducted at a community based drug treatment program located in two counties in South Florida. The State of Florida Department of Corrections contracts with private not-for-profit agencies to provide secure and non-secure treatment services for drug offenders as an alternative to incarceration. The Department of Corrections as a condition of the contract specifies the guidelines for length of stay, limits certain activities of the participants and the department closely monitors progress and urinalysis results. Failure to complete the program, for non-compliance with the program rules or voluntary premature termination, may result in the revocation of probationary status and the imposition of a prison term.

The residential program is a highly modified and structured therapeutic community with a significant level of professional clinical rather than peer direction. All program group, and family group activities are conducted in English. Residential program completion is 90 days and then clients move to the reentry phase of treatment for an additional 90 days, aftercare is optional for mandated clients.

Measurement

Independent variables—Data were collected using both single item and composite measures assessing legal involvement, prior attempts to change drug using behavior, prior treatment, autonomy, and psychological problems (program records were used to confirm co-occurring mental health diagnosis). The Stages of Change Readiness Model and Treatment Eagerness Scale (SOCRATES) (Miller & Tonigan, 1996) is a 19 item self-administered questionnaire adapted for this study by prompting the participants to respond to questions assessing attitudes related to their use of their primary drug. The 19 items are divided into questions loading on the 3 dimensions: Recognition (Re), Ambivalence (Am), and Taking Steps (Ts). Each item on the SOCRATES has five possible responses in which a score of 1 indicates strong agreement and a score of 5 indicates strong disagreement. A coefficient alpha of .94 suggests the scale is reliable for these participants. The subscale scores for problem recognition were used in the current study.

The Working Alliance Inventory (WAI) (Horvath & Greenberg, 1989) is a 36 item self-report instrument with items factoring into three 12-item subscales of the Task, Goal, and Bond. Participants choose items on a 7-point Likert scale, ranging from never to always. Items vary between negative and positive responses. Thus, total scores can range from 36 to 252. The total score was used, as a single factor model has been most reliable with offender populations (Tatman & Love 2010). For the client version of the WAI, internal consistency estimates ranged .83 to .97 for the total scores. A coefficient alpha of .84 suggests the scale was reasonably reliable for the participants in this study.

The items of the acculturation scale were comprised of eight language-use items. Participants responded to items about language preferences in different contexts (friends, family members) on a 5-point Likert type scale. Items on this scale assessed whether the respondent usually speaks English ranging from (none of the time=0) to (all the time=5). This construct was based on a linear model of acculturation a ranging from low to high acculturation drawn from a measure by Vega and Gil, (1998) derived from the work of Cuellar et al. (1995). This prior research has provided a considerable degree of confidence that these items represented reliable proximal measures of acculturation. Because of the anticipated diversity of the Hispanic population in this location, the format of the questions was changed to depict the respondents' own classification of their ethnic heritage in each question. This has been determined to be an adequate way of addressing multiple Hispanic

populations in a single study (Cabassa, 2003). A coefficient alpha of .78 indicates satisfactory reliability with the participants in this study.

A Time Line Follow Back was used to gain information regarding patterns of participants drug use during the past 90-days this structured interview instrument has been shown to provide excellent reliability and validity and has been widely used (Sobell & Sobell, 1992).

The DSM-IV TR Checklist originated in part from the Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDADIS) and has demonstrated a reliability (kappa) coefficient of 0.75 (Grant, Harford, Dawson, Chow, & Pickering; 1995). Sobell (2001) developed Guided Self-Change DSM-IV Checklist as a self-administered instrument in order to assess if client's substance using behavior meets the clinical criteria for substance abuse or dependence. A coefficient alpha of .80 indicates satisfactory reliability in the present sample.

The Brief Important People Interview (Zywiak, Longabaugh, & Wirtz, 2002) calculates components of a participants support network that will predict future use. This instrument was modified for drug use instead of drinking. Social network size has been found to be associated with long-term treatment outcomes (Zywiak et al., 2009).

Dependent Variables—Treatment retention was defined as the number of consecutive days a participant remains in treatment beginning with the day of admission to the program. These data were collected from program records. The residential phase of treatment is 90 days. Participants move from the residential phase of treatment to the reentry phase for an additional 90 days. For mandated clients aftercare was not a requirement.

State and county criminal justice databases were used to measure recidivism providing records of arrests and convictions as well as sentencing outcomes for individual participants that violated their probation and or committed a new offence. A three-year timeframe was the parameter of the search and only new convictions or probation violations resulting in revocation of probation were included. The state does not report ethnicity in the data for overall program success and recommitment therefore general comparisons were used.

Data Analysis—Analyses began with bivariate exploration and a correlation matrix of the primary measures. Variables that were not significant at the bivariate level were not considered for the multivariate analyses. Further comparisons of those who completed the 90 residential treatment phase with those who dropped out of treatment prematurely (i.e., < 90 days) were conducted using independent *t tests* for continuous variables and χ^2 tests for categorical variables. The Bonferroni approach was used to control for Type I errors across the independent *t tests*, a p-value of less than .02 was required for significance; however, observed effect sizes are reported along with exact *p* values in order to evaluate the importance of the results given the small sample size (Nakagawa, 2004). Hierarchical multiple regression was the primary analytical approach (Cohen & Cohen, 1983). The sample size of 43 has sufficient power to detect an effect size of .35. Bi-variate and non-parametric analyses explored group differences on the recidivism measures for participants who completed residential treatment(90 days) and those who left before completing the residential phase.

In the regression models, retention was the dependent variable. The independent variables were (a) motivation (b) therapeutic alliance, and (c) acculturation. Initial covariates drawn from the literature included: (a) severity of drug use, (b) age, (c) prior convictions, (d) co-occurring Axis I diagnosis, (e) primary drug of choice (f) frequency of drug use prior to admission, and (g) social support. Only prior convictions, co-occurring disorders, and

primary drug of choice emerged as significant from the data reduction process and were used to build multivariate models. The distributional properties of each variable were examined, and only minor deviations from normality were detected. Both the sample size and test methods were considered robust enough to proceed. To detect collinearity and multicollinearity, a correlation matrix and tests of tolerance and variance inflation were generated as per Field (2000) and Pedhazurs and Schmelkin (1991). Across these procedures, no evidence was found for multicollinearity among predictors the average VIF was close to 1 and tolerance was above 0.2.

Results

Sample Description and Frequencies

In this sample of Hispanic male probationers the mean age was 28.6 (SD =8.7) with no significant differences in age between those who completed the residential phase of treatment and those who left prematurely (see Table 1). Clients who identified as being of Cuban heritage comprised 72 % of the sample another 14 % identified as Puerto Rican and the remaining clients identified as being of Colombian 5%, Nicaraguan 5%, and Dominican 5% descent. In this sample, 35% reported being born outside of the United States and of these 27% entered the country before the age of 10. The mean number of days in treatment for the entire sample is 91.3 days (SD = 41.1). A greater percentage of those who completed reported their primary drug to be cocaine (54% vs. 28%). Of those who left treatment before 90 days, 40% are diagnosed with a co-occurring disorder compared to 18 % of those who completed $X^2(1) = 2.52, p = .11$. The two groups do not differ significantly on whether or not they violated their probation or were convicted of a new charge within 3 years of program completion with 52.4% of the sample recommitted.

Table 2 presents the mean scores and standard deviations for the primary measures. The SOCRATES total score for those who completed residential treatment is significantly higher than the score of those who left treatment ($t(41) = 2.7, p < .01$). The mean number of prior convictions is significantly higher for those who completed treatment compared to those who left early ($t(41) = -2.33, p = .03$). Bivariate correlation analysis determined the number of days in treatment and acculturation scores are positively and significantly correlated ($r = .36, p < .05$) and scores of acculturative stress are negatively associated with WAI total scores ($r = -.30, p = .06$). Mann-Whitney U was conducted to evaluate whether increased social support would result in greater retention for Hispanic offenders. The results were not significant, $z = -.258, p = .80$. Clients who completed residential treatment had an average rank of 21.64 while those who left early had an average rank of 22.67.

Motivation and Retention

The first multivariate analysis examined the degree to which the total score on the SOCRATES and the subscale score of Recognition could predict the number of days clients remained in treatment. The overall SOCRATES score accounted for significant variance in days in treatment as indicated by ($R^2\Delta = .17, p = .003$), the subscale score of Recognition accounted for the largest amount of variance $R^2\Delta = .18 p = .002$, see Table 3. For this sample the mean decibel scores for the SOCRATES subscales of Recognition was 28.9 considered low; Ambivalence was 13.9 again is low while Taking Steps 34.8 falls into the medium range. Subscale scores were significantly different between those who completed residential treatment and those that left early the Recognition mean 24.7(SD=3.49), $t(41) = 2.48 p = .03$ and for Taking Steps, mean 31.27(SD=9.61), $t(41) = 2.12 p = .05$.

Acculturation and Retention

The second multivariate analysis examined the degree to which the score on the acculturation scale could predict the number of days clients remained in treatment. The acculturation score is a significant predictor of days in treatment, after controlling for primary drug, co-occurring disorder, the number of prior convictions and motivation ($R^2\Delta = .10$ $p = .013$, $d = .13$), see Table 4. A higher percentage of foreign-born, 31% left treatment early compared to 22% of those remained 90 days or more. Of the foreign-born who dropped out, 60% had been in the United States less than 10 years compared to 17% of those who remained in treatment. Of those who remained 90 or more days, 83.3% had immigrated before the age of 10 compared to 40% of those who left.

The Therapeutic Alliance and Retention

In the third multivariate analysis the WAI total score demonstrated no predictive power for retention. Further analysis using bivariate correlation analysis determined that the WAI is positively and significantly correlated with motivation scores at 90 days ($r = .51$, $p = .002$).

Recidivism and Retention

Sixty percent of clients who completed the residential phase of treatment were recommitted to the criminal justice system within 3 years of treatment compared to 76 % of those who left prematurely. A Mann Whitney U test examined the recidivism outcomes at three years post treatment and found the distribution of days to be the same among participants who recidivated within three years and those who did not ($p = .32$). Moreover, recidivism was not found to be significantly related to the number of prior charges ($p = .075$) or the type of current charge $X^2(3) = .388$, $p = .94$.

Summary of Results

This study examined the role of motivation, the therapeutic alliance, and acculturation in predicting retention among Hispanic males involved with the criminal justice system and mandated to residential treatment for substance use disorders in south Florida. Further analysis examined the role of retention on the recommitment to the criminal justice system three years post treatment. Three hierarchical multiple regression models tested the predictive power of motivation at intake, acculturation, and the therapeutic alliance to determine retention in treatment.

Two hypotheses were supported in that greater motivation at treatment entry predicted longer stays and clients who were more acculturated remained in treatment a greater number of days. The null hypothesis was retained for two hypotheses in that the therapeutic alliance did not predict length of stay and greater retention in treatment did not influence recidivism at 3 years post treatment.

Discussion

Similar to earlier studies, individual characteristics in general were not associated with retention. However, three individual characteristics that were associated with retention were drug preferences, prior convictions and a diagnosis of a co-occurring disorder. Clients who remained in treatment were more likely to report cocaine as their primary drug than clients who dropped out of treatment inconsistent with prior research, which suggested cocaine use to be negatively associated with treatment retention (Joe, Simpson, & Broome, 1999; King, & Canada 2004). Moreover, clients in the current study who left early were more likely to report marijuana similar to the findings of Nielsen and Scarpitti (2002). This was also the case for clients who reported heroin as a primary drug consistent with the findings of other studies (Choi & Ryan, 2006; Evans, Li, & Huser, 2009). Notably, the number of prior

convictions was found to predict retention in contrast to the findings of Evans, Li, and Huser (2009). One possible explanation is that the number of prior conviction in the present study for completers 4.4 vs. non-completers 1.9 was considerably less than that of Evans and colleagues 11.6 vs. 10.3. Consistent with prior research (Amodeo et al., 2008; Brunette, Mueser, & Drake, 2004; Green, Polen, Dickinson, Lynch, & Bennett, 2002; Haller et al., 2002; Lang & Belenko, 2000; Mertens & Weisner, 2000) a diagnosis of a co-occurring disorder was found to be a predictor of dropout. This finding is difficult to explain given the enhanced capacity of this modified TC to provide care for individuals with co-occurring disorders. Integrated treatment is considered best practice yet it is possible that psychiatric-drug use comorbidity clients who are less acculturated find the milieu difficult to tolerate as both internal and external stressors including acculturative stress challenge them.

Prior studies using race-comparison designs or studies combining all ethnic groups have indicated that increased retention in residential treatment among substance abusing individuals is associated with better client outcomes in terms of recidivism (Connors, Grant, Crone, & Whiteside-Mansell, 2006; French, Fang & Fretz, 2010; Hiller Knight & Simpson, 2006; Inciardi, Surratt, Martin, & Hooper, 2002). In the current study, 47.6 % of Hispanic clients did not recidivate within the 3-year period following program admission regardless of time in treatment. This parallels the 50.9% (n=358) recommitment rate for all five secure programs for all ethnic and racial groups reported by the Florida Department of Corrections. Two possible explanations for this finding are because for clients on community supervision aftercare is not funded and is optional therefore less than 5% of Hispanic clients participated in aftercare (data not shown), studies with positive outcomes demonstrated aftercare to be a key component of success (Inciardi et al). The zero tolerance laws of community supervision in Florida may have played a role in the high recommitment rates noting that Hispanic offenders face harsher judicial responses.

Prior research has documented a direct effect of therapeutic engagement on retention, but offer mixed support for an association between therapeutic alliance and retention (Barber et al., 2001; Belding et al., 1997; Crits-Christoph et al., 2009; 2011; Joe Simpson, & Broome, 1998; Kasarabada, Hser, Boles, & Huang, 2002; Meier, Barrowclough, & Donmall, 2005). This current study attempted to replicate and expand on these previous findings with a sample of Hispanic males mandated to treatment by the criminal justice system and was only able to find partial support in terms of a positive association between the scores of the WAI and SOCRATES following 90 days of treatment. Using the client version of the Working Alliance Inventory the current study failed to replicate findings associating the therapeutic alliance with treatment retention. The overall scores on the WAI were lower for this sample than for populations with alcohol disorders such as that in Project MATCH and youthful offenders (Connors, DiClemente, & Dermen, 2000; Florsheim et al., 2000), suggesting that Hispanic probationers are under-engaged one month into treatment relative to treatment seeking clients and youthful offenders. Based on the interpretive ranges from three studies using the WAI the mean scores for the WAI in the current study were in the low range for treatment completers 175.7 and the very low range for those who dropped out 168.3. Then these scores are compared to the 211.77 to 214.87 range for MATCH participants, scores for youthful offenders 185.07 to 198.40 (Florsheim et al.) and scores for adult male offender populations 191.97 to 212.43 (Tatman & Love) the findings of this study would suggest low WAI scores are not confounded by offender status and culture may influence the alliance. No association was found between acculturation scores and the alliance scores however, foreign-born clients had lower total alliance scores. How acculturation influences the development of the therapeutic alliance in the context of a modified therapeutic community remains largely unanswered.

In the current study, those clients who completed the 90-day residential phase of treatment had greater motivation to change at the time of admission replicating prior research with mixed ethnic groups, greater problem recognition was also a consistent finding (Evans, Li & Huser, 2009; Hiller, Knight, Leukefeld, et al. 2002; Lang & Belenko, 2000; Rempel & DeStefano, 2001). The low overall and decibel scores on the subscales are similar to those found by Prendergast et al., (2009) with an ethnically and racially mixed offender population in community based treatment. No comparisons by ethnicity are available. The findings of lower problem recognition among dropouts in this study are consistent with those of Longshore.

Berry (2006) has defined acculturation stress as “a response by people to life events that are rooted in intercultural contact” (p. 43). The milieu of a therapeutic community can be conceptualized as an intensified microcosm of the values and beliefs of the dominant culture. Cultural anthropologists consider the system of shared concepts, meanings, and beliefs that underlie the implicit rules that govern a culture the most consequential (Keesing & Stranther, 1997). The influence of acculturation on treatment retention among Hispanic males involved with the criminal justice system is a unique contribution of this research and documents higher levels of acculturation to be significantly associated with treatment retention and examining generational status offered some additional insight. South Florida is a multicultural environment with a steady influx of Hispanic immigrants all of whom will adopt a strategy for acculturation. The research informs us those with greater social capital and less discrimination will likely experience less acculturative stress (Portes, Fernandez-Kelly & Haller; Waters, Tran, Kasinitz, & Mollenko). These findings suggest when acculturative stress is compounded with substance use problems; criminal justice involvement the cultural environment for rehabilitation plays a role in retention.

Limitations

The above findings have implications that must be considered in light of several limitations. Most notably, the number of the total sample was small, limiting the stability and generalizability of these findings. Sample size issues also prevented subgroup analyses based on nativity. This study was comprised entirely of male participants 75% of Cuban descent. Therefore, results may not be generalizable to Hispanic female offenders. The measurement equivalence of the instruments has not been established and although the sample was English, speaking the conceptual and metric equivalence of the tools remains unclear.

Four suggestions are offered for research, practice, and policy. Research exploring the acculturation adaptation strategies of Hispanic immigrant and second-generation drug using offenders could offer insight into practice for enhancing engagement, retention, and outcomes. In locations where a majority of the population are Hispanic the development of residential treatment programs that are adapted to the culture with the capacity to provide treatment for drug using offenders and investigation of these elements could provide increased opportunity for retention and stable recovery. Finally, when Hispanic drug offenders have limited treatment options and are placed into treatment programs that may be culturally inadequate, the criminal justice system and community treatment providers alike are faced with ethical and professional responsibility questions.

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Table 1

Demographic Characteristics by Retention Status

	Completed (n =28)		Retention <90 days (n =15)	
	M	SD	M	SD
Days:	117.8	7.2	42.1	31.2
Age:	27.6	8.4	30.5	9.5
	n	%	n	%
Heritage/Migration				
Cuban	18	64	13	87
Other Hispanic	10	36	2	13
Foreign Born	8	28.6	7	76.7
U.S. Entry <10	1	12.5	3	42.9
Marital Status				
Unmarried	24	85.8	12	73.3
Education				
Less than HS	13	46.4	7	46.7
Employment				
Employed	20	71.4	9	60.0
Co Occurring DX	5	18.0	6	40.0

Table 2

Primary Measures

	Completed			Retention <90 days			<i>p</i>	<i>d</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
SOCRATES	28	82.02	8.49	15	68.9	21.9	.04	.79
Recognition	28	31.18	3.50	15	24.73	9.74	>.001	.79
WAI	27	175.7	21.8	8	168.3	13.2	.36	.41
Acculturation	28	21.33	3.43	15	19.11	5.12	.07	.51
DSM IV Checklist	28	7.42	2.64	15	6.0	3.65	.15	.45
TLFB	28	30.0	34.7	15	28	36.04	.86	.06
Prior Convictions	28	4.41	4.46	15	1.93	1.66	.03	.74

Table 3

Legal Characteristics

Current Charge:	Completed		Retention<90Days	
	(n=28)		(n=15)	
	n	%	n	%
Drug	6	21.4	2	13.3
Property	4	14.3	2	13.3
Violence	6	21.4	4	26.7
Probation Violation	12	42.9	7	46.7
Re-offense 3 yrs.	12	60.0	10	76.9
Primary Drug				
Cocaine	15	53.6	4	27.6
Marijuana	10	35.7	6	40.0
Heroin	3	10.7	5	33.3

Table 4

Days regressed on SOCRATES Recognition Score (N =43)

	b	SE b	β
Step 1			
Constant	91.914	8.88	
Primary Drug	-26.016	14.91	-.249
Co-occurring Disorder	-24.107	13.28	-.259
Prior Convictions	3.096	1.53	.290
Step 2			
Constant	7.284	27.63	
Primary Drug Heroin	-36.238	13.61	-.351
Co-occurring Disorder	-20.221	11.85	-.217
Prior Convictions	2.558	1.36	.290
SOCRATES Recognition	2.593	0.768	.442**

Note. $R^2 = .21$ for step 1: $\Delta R^2 = .18$ for step 2 ($p=.002$).

*
p<.05,

**
p<.01

$d=.32$

Table 5

Days regressed on Acculturation (N =43)

	b	SE b	β
Step 1			
Constant	7.284	27.63	
Primary Drug	-36.238	13.778	-.347 *
Co-occurring Disorder	-18.779	12.057	-.202
Prior Convictions	2.877	1.375	.270 *
SOCRATES Total	1.107	0.346	.424 **
Step 2			
Constant	-54.238	34.859	
Primary Drug	-30.150	13.037	-.289 *
Co-occurring Disorder	-25.923	11.553	-.278 *
Prior Convictions	2.531	1.287	.237
SOCRATES Total	1.070	0.322	.424 **
Acculturation	3.224	1.233	.328 *

Note. $R^2 = .38$ for step 1; $\Delta R^2 = .10$ for step 2 ($ps=.013$).

* $p < .05$,

** $p < .01$

$d = .12$