

NIH Public Access

Author Manuscript

J Subst Abuse Treat. Author manuscript; available in PMC 2007 August 8.

Published in final edited form as: *J Subst Abuse Treat*. 2007 April ; 32(3): 291–300.

Organizational Characteristics of Drug Abuse Treatment Programs for Offenders

Christine E. Grella, Ph.D., Lisa Greenwell, Ph.D., Michael Prendergast, Ph.D., David Farabee, Ph.D., Elizabeth Hall, Ph.D., Jerome Cartier, M.A., and William Burdon, Ph.D. UCLA Integrated Substance Abuse Programs, NPI - Semel Institute for Neuroscience, David Geffen School of Medicine at UCLA, 1640 S. Sepulveda Blvd., Suite 200, Los Angeles, CA 90025

Abstract

This paper examines the association between organizational characteristics of drug abuse treatment programs for offenders and the provision of wrap-around services and three types of treatment orientations. Data are from the National Criminal Justice Treatment Practices Survey that was conducted with program directors (N = 217). A greater number of wrap-around services provided was associated with inpatient treatment, specialized treatment facilities, community setting (versus correctional), services provided for more types of client populations, college-educated staff, and planned treatment for more than 180 days. Therapeutic community orientation was associated with higher perceived importance on community treatment, more perceived staff influence on treatment, and treatment for 91–180 days. The 12-step orientation was most strongly associated with having staff specialized in substance abuse. Study findings have implications for developing effective re-entry programs for offenders that bridge correctional and community treatment.

Keywords

organizational characteristics; staff characteristics; treatment orientation; correctional treatment; offenders

1. Introduction

Historically, drug abuse treatment outcome research has focused on client characteristics as predictors of outcomes. Only recently has there been increasing focus on the organizational characteristics of programs as an important domain for understanding treatment processes and outcomes (Lehman, Greener, & Simpson, 2002). Recent national surveys have provided new information on the organizational characteristics of both public and private drug abuse treatment providers (Carise, McLellan, & Gifford, 2000;Greenlick & McCarty, 2001;McCarty, 2004;Roman, Johnson, Walker, & Knudsen, 2003;Roman & Johnson, 2002;Knudsen, Johnson, Roman, & Oser., 2003;Tinney, Oser, Johnson, & Roman, 2004), as well as programs within the Department of Veteran's Affairs treatment system (Swindle, Peterson, Paradise, & Moos, 1995;Swindle, Phibbs, Paradise, Recine, & Moos, 1995;Timko, Dixon, & Moos,

Corresponding author: Christine E. Grella, UCLA Integrated Substance Abuse Programs, 1640 S. Sepulveda Blvd., Suite 200, Los Angeles, CA 90025, phone (310) 267-5451, fax (310) 473-7885, e-mail: grella@ucla.edu

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

2005; Willenbring et al., 2004). Thus far, however, there has been limited research on the structure and characteristics of treatment providers that focus on offenders with substance abuse disorders.

Research conducted in correctional settings has shown that drug abuse treatment services are limited, compared with the estimated need for treatment among correctional populations. A 1997 national survey showed that over half of state and federal inmates reported that they had used drugs in the month before their offense, yet fewer than 10% participated in drug abuse treatment while incarcerated, including residential, professional counseling, detoxification, or pharmacotherapy (Mumola, 1999). Participation in other interventions was more prevalent, including 20% of state and 9% of federal inmates who participated in self-help, peer group, or drug education classes. A report by the Substance Abuse and Mental Health Services Administration (SAMHSA; 2000) showed that 40% of all correctional facilities, including federal and state prisons, local jails, and juvenile facilities, provided some kind of substance abuse treatment on-site. Yet most inmates received treatment within the general facility and less than one-third were treated in specialized substance abuse treatment units.

The predominant treatment approach used within prison-based settings is the therapeutic community (TC; DeLeon, 2000). A survey conducted in 2000 identified over 250 prison-based TCs in the United States, with the total projected to increase to 289 by 2002 (Rockholz, 2004). A survey conducted of 118 drug treatment programs in 24 state prisons in Pennsylvania showed a high level of consistency with regard to treatment approaches and content among the 6 TC programs that were included in the survey (Welsh & Zajac, 2004). The TC programs were longer in duration, provided more diverse services, were more likely to provide group counseling/therapy, assessed level of motivation as a selection criterion for admission, and used specific indicators of progress as the basis for determining successful discharge. Among the non-TC programs (i.e., drug education, outpatient, or combination outpatient/educational programs), there was generally a lack of consistent program structure and treatment approach and little assessment of treatment needs and individualized treatment planning. Similarly, in a study of 3 residential drug abuse treatment programs for offenders (2 for adults and 1 for juveniles), which used a social learning model of treatment, the majority of offenders received the same treatment regardless of their level of risk or profile of service needs (Latessa & Pealer, 2004).

Given the lack of research on organizational characteristics of drug abuse treatment programs for offenders, more research is needed to understand the structure and content of treatment provided to offenders and the organizational characteristics and treatment approaches that are associated with offender outcomes following their release to the community, namely recidivism and drug use. In particular, since there is increasing emphasis on linking offenders to community-based aftercare programs as they re-enter the community (Hiller, Knight, & Simpson, 1999), more information is needed on the treatment approaches used in correctional and community-based programs, and how organizational settings influences the provision of needed services (Etheridge & Hubbard, 2000;Simpson, 2004).

1.1. Organizational characteristics

The goal of this paper is to examine the organizational characteristics of drug abuse treatment programs that treat offenders in relation to the services provided and treatment orientations employed within these programs. We focus on the broad range of services typically needed by offenders as they re-enter the community (in addition to core substance abuse treatment services), referred to as "wrap-around services" (Pringle, Emptage, & Hubard, 2006). The study background draws upon research on organizational characteristics developed in the larger field of organizational psychology, as well as previous work conducted with community-based

drug abuse treatment programs. We focus on three aspects of organizations that may influence treatment processes and service delivery: organizational structure, culture, and climate.

1.1.1. Organizational structure—Organizational structure refers to fixed or nonbehavioral organizational attributes (James & Jones, 1976) that may influence the treatment approach and types of services provided to clients (Durkin, 2002), including the provision of services that address the needs of specific populations (Strauss, Rindskopk, Astone-Twerell, Des Jarlas, & Hagan, 2006). Structural aspects of programs include age of the organization (Roman & Johnson, 2002); type of ownership (Olmstead & Sindelar, 2004); financial and human resources management (Heinrich & Lynn, 2002); type of modality (e.g., residential, hospital inpatient, or outpatient) (Etheridge et al., 1997; Mojtabai, 2004; OAS, 2002); administrator and staffing characteristics (Magura, Nwakeze, Kang, & Demsky, 1999); program capacity (Delaney, Broome, Flynn, & Fletcher, 2001); accreditation (Friedmann, Alexander, & D'Aunno, 1999); affiliation with the criminal justice system (Taxman & Bouffard, 2002); client case-mix (Friedmann, Alexander, Jin, & D'Aunno, 1999;D'Aunno, Vaughn, & McElroy, 1999; Swindle et al, 1995); proximity to other service providers (Schmitt, Phibbs, & Piette, 2003); inter-organizational relationships (Friedmann, D'Aunno, Jin, & Alexander, 2000; Friedmann, Lemon, Stein, Etheridge, & D'Aunno, 2001; Rivard, Johnsen, Morrissey, & Starrett, 1999:Hurlburt et al., 2004); and physical attributes of the program, including its setting and architectural features (Grosenick & Hatmaker, 2000;Timko, 1996).

1.1.2. Organizational culture—Organizational culture generally refers to shared norms, values, beliefs, and practices of the organization (Trice & Beyer, 1995). Schein (1992, p.12) describes organizational culture as "a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems." Organizational culture seems to vary along at least two dimensions: *content* (what practices are endorsed and prescribed) and *strength* (how widely views are shared and how deeply they are held). Program culture also refers to consistency and adaptability (Dennison & Mishra, 1995), including their capacity to access and use new information (Knudsen & Roman, 2004).

1.1.3. Organizational climate—Organizational climate is conceptually similar to organizational culture, but focuses on "the experienced organizational environment" (James & Jones, 1974), as exemplified in perceptions, beliefs, and attitudes (Denison, 1996). Attitudes and perceptions held by program staff members may influence the types of treatment approaches endorsed within the program (Glisson & James, 2002). Several studies have suggested that staff beliefs about treatment are a key factor in determining their acceptance of new treatment approaches, including the adoption of evidence-based practices (Amodeo, 2000;Humphreys, Noke, & Moos, 1996;Ball et al., 2002;Forman, Bovasso, & Woody, 2001;Forman et al., 2002). Climate has also been used to refer to the "treatment milieu" (Timko & Moos, 1998) or "treatment orientation" (Lee, Reif, Ritter, Levine, & Horgan, 2001;Moos, King, Burnett, & Andrassy, 1997;Swindle et al, 1995).

Several studies have shown that substance abuse treatment staff tend to adhere to an eclectic mix of treatment approaches (e.g., cognitive behavioral therapy, pharmacological, 12-step/self-help, motivational interventions, psychotherapy, spirituality), which can be classified into various schools or philosophical approaches (Ogborne, Wild, Braun, & Newton-Taylor 1998;Taxman & Bouffard, 2003;Poznanski & McLennan, 1999). Moreover, provider beliefs and attitudes about treatment are associated with individual characteristics, such as level of education, certification and training, and recovery status (Forman et al, 2001;Stoffelmayr, Mavis, & Kasim, 1998;Taleff & Swisher, 1997).

1.2 Current project

This paper uses data from the National Criminal Justice Treatment Practices Survey (NCJTPS) to examine the organizational characteristics of correctional- and community-based drug abuse treatment providers that serve offenders. The national scope of the NCJTPS sample of programs and the availability of a broad range of variables contained in the dataset have the potential to significantly advance our understanding of the organizational structure of drug abuse programs that treat offenders, including those in both correctional and community settings.

Our goal was to determine the relative importance of various organizational characteristics on services provision and treatment orientations within correctional and community programs. Specifically, we sought to examine the influence of structural features of these programs, staff and administrator characteristics, system-level integration with other providers, treatment climate, and treatment processes on the provision of wrap-around services to drug-abusing offenders and the treatment orientations employed within the programs.

2. Methods

The National Criminal Justice Treatment Practices Survey (NCJTPS) is a multilevel survey designed to assess all levels of the adult and juvenile justice systems in the United States. The primary goals of the survey are to describe the drug treatment practices currently available to offenders and to examine organizational factors that affect drug treatment practices in correctional and community-based treatment settings. Surveys were conducted with individuals at different levels within the corrections and treatment systems, including state-level administrators, regional and program-level administrators, and treatment program staff. The survey design and methods are described in this issue (Taxman, Young, Wiersema, Rhodes, & Young, 2007).

2.1 Measures

All measures used in this study are from the surveys conducted with program-level administrators, encompassing both correctional and community settings.

2.1.1. Dependent variables—*Total number of wrap-around services* is the sum of services provided in the program (not counting direct drug abuse treatment services) on a regular basis, including the following: case management, housing assistance, mental health counseling, family therapy, HIV/AIDS testing or counseling, child care, legal assistance, crisis intervention, counseling for co-occurring disorders, medical care, and other.

The three *treatment orientation* scales have been widely used to measure treatment orientation of both correctional- and community-based substance abuse treatment programs (Melnick & DeLeon, 1999;Melnick, Hawke, & Wexler, 2004;Melnick & Wexler, 2004). Scale scores are the average of summed responses to statements regarding treatment practices, ranging from 1 (strongly disagree) to 5 (strongly agree). *Therapeutic community* is the mean of 5 items (confrontation of unacceptable behavior outside of counseling, increased privileges with advancement, penalties for violation of rules, confrontation through group settings, and work; Cronbach's alpha=0.69); *cognitive-behavioral therapy (CBT)* is the mean of 5 items (problem-solving emphasis, thought-stopping techniques, encouragement of self-praise for good behavior, practice in saying no to drugs, and development of plans for returns to abstinence if substance use recurs; alpha=0.79); and *12-step* is the sum of 5 items (explains how to work the 12-step program, explains the reasons that the steps work, discusses the barriers of the 12-step program, discusses the goals and strategies of the 12-step program, and explains the importance of consistency in the 12-step program; alpha=0.94). We dichotomized the 12-step subscale at

4 or above because the distribution was bimodal; although lower values were distributed fairly well, 34% of the cases had means of exactly 4 and 17% of exactly 5.

2.1.2. Organizational structure/characteristics—*Inpatient program* (0=no, 1=yes) includes both therapeutic community treatment and other forms of residential treatment.

Drug abuse treatment facility (0=no, 1=yes) indicates a specialty drug abuse treatment facility, as compared with other types of facilities (e.g., boot camp, work release program, drug court).

Program capacity is average number of offenders participating in the program on a daily basis. Because of the skewed distribution of this variable (range = 0 - 4200, median = 49) the log of this variable was entered into the multivariate models.

Prison/community setting (1=community, 2=prison) indicates whether the facility is in a prison or in the community (county-level).

Number of clients for whom specific services are provided is based on a question asking "Is this program specifically designed to meet the needs of a particular client population?" Programs that indicate "no" in response to this question are coded as "0"; those that indicate "yes" are then asked to check a list of 13 client populations for which they provide specific services; these include: males, females, pregnant women or women with children, youthful offenders, adolescents, Spanish-language speakers, African Americans, clients with co-occurring disorders, heroin addicts, sex offenders, individuals with HIV/AIDS, homeless individuals, or other. Positive response to each item are summed (total possible range: 0 - 13).

Program accreditation refers to whether the program is licensed, accredited, or certified by an outside agency (0=no, 1=yes).

2.1.3. Administrator/staff characteristics—*Administrator education* was measured by a dichotomous variable with 1 = Master's degree or higher and 0 = less than a Master's degree.

Staff with substance abuse training refers to whether most or all of the program's primary substance abuse counselors have specialized training in substance abuse treatment from outside the program or credentials in substance abuse treatment (0=no, 1=yes).

Staff with college degrees indicates the estimated proportion of primary substance abuse counselors in the program who have a four-year college degree (1=none, 2=some, 3=about half, 4=most, 5=all).

2.1.4. System integration—*Integration with judiciary* indicates the number of the following activities characterizing the program's working relationships with the judiciary (i.e., criminal justice, correctional, and judicial entities) on issues concerning offender substance abuse treatment (for each component item, 0=no, 1=yes): sharing information on offender treatment services, employs similar requirements for program eligibility, have written agreements providing space for treatment services, hold joint staffing/case reporting consultation, have joint policy and procedure manuals, have pooled funding for offender substance abuse services, coordinate policies and procedures to meet each other's requirements, share budgetary oversight of treatment programs, hold joint staff meetings, share operational oversight of treatment programs, cross-train staff on substance abuse issues, and have written protocols for sharing client information (possible range: 0–12; alpha=0.89).

Integration with community corrections uses the same variables as above, with reference to community corrections programs (possible range: 0–12; alpha=0.88).

2.1.5. Treatment climate/culture—*Staff Influence on treatment improvement* is the mean of 5 items indicating the director's perception of how much influence program staff have (informally) on improvement of substance abuse treatment practices. Individual items are scored from 1=strongly disagree to 5=strongly agree (alpha=0.92).

Importance of community treatment is the program director's rating, on a scale of 1 to 10, of how important it is to provide treatment in the community to offenders who have drug problems.

Correctional staff respect for treatment is the mean of three items rated on a 1-to-5 scale (1=strongly disagree, 5=strongly agree) indicating the program director's perception of correctional staff's attitudes toward drug abuse treatment, with regard to the program's importance, respect for program staff, and lack of interference with the provision of treatment services (alpha=0.82).

Importance of other services relative to drug abuse treatment is derived from a list of 10 variables, each of which is rated in its importance relative to substance abuse treatment, with $1 = much \ less \ important$ to $5 = much \ more \ important$. These services include: education/GED, HIV/AIDS counseling or treatment, mental health counseling, vocational training, life skills, transitional housing, work assignments or release, community service, criminal thinking, or job placement (alpha=0.90). The ratings of each item are summed (possible range = 10–50).

2.1.6. Treatment process—*Planned duration* is the planned treatment duration in days. Because of the skewed distribution of this variable (range: 5 - 1000, median = 140 days), we used a categorical variable coded as 0 - 90, 91 - 180, and 181 or more, with the lowest category as the reference group in the multivariate models.

Uses written protocol/curriculum (0=no, 1=yes) indicates whether the program uses a written treatment protocol or curriculum.

2.2 Analyses

Prior to beginning the analyses, we assessed intraclass correlations (ICCs) indicating clustering of the four outcome variables (number of wrap-around services, therapeutic community orientation, cognitive-behavioral therapy orientation, and 12-step orientation) (a) within region and (b) in prison vs. community programs to ascertain whether multilevel models would be appropriate. When ICCs for a dependent variable are negligible across organizational units and cluster size is small, multilevel models are not appropriate or necessary (Kreft & deLeeuw, 1998;Snijders & Bosker, 1999).

The ICCs were small; across all dependent variables, their mean was 0.008 for region and 0.07 for prison vs. community programs. The only large ICC was 0.24 for the therapeutic community orientation variable nested within prison vs. community programs, indicating that 24% of the variance in the therapeutic community orientation variable is explained by dividing programs into "prison" and "community" groups (i.e., by the difference in the mean of the therapeutic community orientation variable for prison versus community programs). Hence, we decided to use OLS regression (for continuous outcome variables) and logistic regression (for categorical outcome variables) to fit the data. OLS was used to analyze all outcome variables except the 12-step orientation; the distribution of that variable appeared to be bimodal and so we dichotomized it and used logistic regression. Also, in the model analyzing the therapeutic community orientation, we removed "inpatient program" as a predictor because that variable was basically defined as having a therapeutic community program, and only 12/122 community programs were classified as inpatient programs.

We also inspected all variable distributions and determined that the level of missing data warranted the use of multiple imputation (MI) to impute missing values. The advantage of this technique over single imputation is that it creates multiple data sets with imputed values, thereby introducing variability among the imputed values. This variability reflects the uncertainty involved in the act of imputation (i.e., the true values of the missing data are unknown). MI assumes that data are missing at random (MAR). Specifically, MAR assumes that the causes of missingness do not depend on the variables that are missing, although they may depend on the variables that are observed (Schafer & Graham, 2002).

For each dependent variable, we applied MI to a set of variables comprised of that dependent variable plus all of the model predictors. Ideally, this set should include these variables and other important causes of the outcomes (Croy & Novins, 2005). We examined bivariate correlations to identify the major predictors of the outcomes. To conduct MI, we used SAS Version 9.1.3 (SAS Institute, 2004) PROC MI and PROC MIANALYZE. We created 20 data sets with imputed missing values; this is greater than the number usually recommended (Croy & Novins, 2005), and given our variables' fractions of missing information estimated by the model, which range from 0.03 to 0.46, produces relative efficiencies from .98 to well over .99.

We used the Markov Chain Monte Carlo method of introducing variation among these imputed values. This method is appropriate for missing data that follow an arbitrary pattern, which we believe characterizes that in our data. While the method assumes multivariate normality among the variables, this is a fairly robust assumption, particularly for a sample the size of ours (Schafer & Graham, 2002). R-squared statistics for each model were obtained by taking the simple average of the 20 R-squared statistics estimated for each of the imputed data sets. Unstandardized coefficients for the independent variables are reported for the regression models.

3. Results

3.1. Characteristics of correctional and community treatment providers

The majority of the sample of programs was located in the community (56.2%) rather than in correctional settings (43.8%). The distributions of all variables for the total sample and by correctional versus community setting is shown in Table 1.

Nearly half (48%) of the correctional programs were inpatient compared with 10% of the community programs, however, this difference is a function of the survey design and sampling frame. A greater proportion of the community-based programs were specialized drug abuse treatment facilities, as compared to those in correctional settings. Correctional programs provided specific services to more types of client populations and had an average higher program capacity, but this latter difference was not statistically significant and capacity was highly variable. Overall, the majority of all programs had some kind of accreditation, although the proportion was higher among the community programs.

With regard to administrator and staff characteristics, nearly three quarters of community program directors had a Master's degree or higher, compared to about half of correctional program directors. Similarly, a greater proportion of the staff in the community programs (79%) had specialized training in substance abuse treatment, compared with staff in the correctional programs (55%), although the proportion of staff with college degrees was approximately the same across the two types of programs.

As might be expected from their organizational settings, correctional and community programs differed in their integration with other service systems, however, the differences were not statistically significant. Community programs scored higher on the measure of integration with

the judiciary, whereas correctional programs scored higher on the measure of integration with community corrections.

The two types of programs differed significantly on two of the measures of treatment climate. Community programs averaged higher scores on the measure of staff influence on treatment improvement and on importance of substance abuse treatment relative to other types of services. There were no differences on the measures of the importance of community-based treatment for offenders and perceived level of respect for treatment among correctional staff.

With regard to the two measures of treatment process, correctional programs had longer planned treatment duration, with nearly three-quarters providing treatment for over 90 days, compared with half of the community programs. In addition, a greater proportion of the correctional programs indicated that they adhered to a written treatment protocol or curriculum.

Overall, there was a marginal difference in the number of wrap-around services provided, with community programs having somewhat higher mean scores (4.8 vs. 4.3). When the individual service items were examined (data not shown), there were significant differences in the proportion of community and correctional programs, respectively, that offered the following: family therapy/counseling (69.8% vs. 39.3%, p < .0001); child-care (9.2% vs. 0, p < .01); legal assistance (5.0% vs. 13.5%, p < .05); and medical services (19.3% vs. 44.9%). Community and correctional programs differed on only one of the three treatment orientation scales, with correctional programs having significantly higher scores than community programs on the TC orientation.

3.2. Findings from regression analyses

Separate regression models were fitted to determine the unique predictors of total number of wrap-around services provided and the degree of adherence to each of the 3 therapeutic orientations. Results from the regression analyses are shown in Table 2. In the first model, a greater number of wrap-around services is associated with inpatient settings, specialized drug abuse treatment facilities, community versus correctional setting, and a greater number of client populations served. In addition, having a greater number of college-educated staff and a planned treatment duration over 180 days (compared with 90 days or less) are associated with provision of more wrap-around services.

In the model predicting degree of adherence to the TC orientation, the strongest predictor is prison-based setting. Secondarily, location in a specialized drug abuse treatment facility is also predictive of TC orientation. There are marginal, and positive, relationships with program capacity as well as with the measure of perceived importance of community treatment for offenders.

Two measures of treatment climate are positively associated with the cognitive behavioral therapy orientation: the degree of staff influence on treatment improvement and the perceived importance of community treatment for offenders. Further, planned treatment duration of 91 - 180 days is associated with this orientation, compared with treatment of 90 days or less. Use of a written protocol or curriculum is also marginally associated with this orientation.

In the logistic regression model predicting a high degree of 12-step orientation, the strongest predictor is having more staff with specialized training in drug abuse treatment. Three program characteristics are marginally associated with this orientation: inpatient setting, a greater degree of staff influence on treatment improvement, and, inversely, whether the program is accredited.

4. Discussion

A recent review of drug treatment aftercare in the criminal justice system concluded that the "precise nature of aftercare services needed [by offenders] is not well understood" (Pelissier, Jones, & Cadigan, 2007). Furthermore, these authors called for more research to "identify the most effective type and intensity of aftercare" as well as the relationship of drug treatment to other types of services provided to offenders as they transition to the community (page XXX). The study findings directly address this lack of knowledge by identifying the organizational characteristics of correctional and community based drug treatment programs for offenders and the relationship of these characteristics with the content of services and type of treatment provided.

The study findings have shown that correctional and community drug abuse treatment programs for offenders have several areas of divergence with regard to treatment approaches and service delivery. Overall, programs in the community were more likely to be specialized facilities for substance abuse treatment. Accordingly, community programs employed more staff who had been trained in substance abuse treatment. Community programs also scored consistently higher on various measures of treatment climate that express commitment to and importance of drug abuse treatment, relative to other types of services. Community-based programs provided a broader range of wrap-around services, in addition to core components of drug abuse treatment, and this relationship was retained in the multivariate models that controlled for other organizational characteristics.

Several aspects of correctional programs reflect their institutional location and mission. Correctional programs had, on average, longer planned treatment durations, provided services tailored to more types of client populations, and were more likely to use written treatment protocols. Dedicated drug abuse treatment units were less likely to be sited in correctional programs, and accordingly, had a smaller proportion of staff with specialized training in this area. Consistent with previous literature, correctional programs scored higher on the TC treatment orientation and this relationship was retained in the multivariate model.

With regard to the cognitive behavioral therapy orientation, there was no difference in the bivariate relationship between correctional and community programs. The strongest predictor of this orientation in the multivariate models was a treatment climate measure reflecting greater importance of substance abuse treatment. This finding may reflect a higher commitment to treatment quality, as seen in greater reliance upon an evidence-based treatment practice.

The study findings have implications for developing effective transitions between correctional and community-based treatment, particularly since research has shown that post-release treatment in the community significantly reduces the likelihood of recidivism, compared with in-prison treatment only (Butzin, 2002;Butzin, Martin, & Inciardi, 2005). The findings suggests that differences in treatment approach and orientation between correctional and community-based treatment may result in discontinuity of treatment approaches during the community reentry phase, particularly regarding the differing emphases placed on the principles of TC-based treatment settings. Whether continuity of approach is related to better post-release outcomes is an area for research; one could hypothesize that continuity of approach is less important than providing services that offenders need to improve their chances of successful reintegration into the community. The greater provision of ancillary services within community-based programs may reflect the need to equip offenders with a broader range of services, including housing, vocational, and family-related, as they prepare to re-enter the community.

Several limitations need to be addressed with regard to the survey data, which generally stem from the survey design. Although all efforts were made to obtain a high survey response-rate, the resultant sample of programs cannot be considered representative of the universe of

correctional or community treatment programs for offenders. However, it does represent the most comprehensive survey to date of these providers. Further, there were large amounts of missing data on some variables, most likely stemming from the use of a mail-in survey. Although we addressed this problem through multiple imputation, it may have constrained our ability to determine significant relationships among some variables. Lastly, our analyses were conducted solely with data from program directors, and although it may be assumed that they have a large influence on various aspects of treatment climate and processes, their views are not necessarily congruent with those of online staff. Other papers in this volume directly address this issue.

In sum, the findings provide a foundation for understanding the types of supportive services and treatment approaches available in both correctional- and community-based treatment programs that serve drug-abusing offenders. At present, there is increasing emphasis on the use of evidence-based treatment approaches within programs that treat offenders, as well as pressure to demonstrate the effectiveness of both in-prison and community-based treatment. In response to these imperatives, providers to offender populations may be expected to adopt a wider array of treatment practices as well as to meet specific performance objectives. Future research can build upon these findings to better understand how organizational characteristics are associated with the ability of programs to respond to these changes in the drug abuse treatment system and how they impact treatment provided to offenders and their associated outcomes.

Acknowledgements

This work was supported by NIDA grant 5 U01 DA16211, Pacific Coast Research Center (PCRC) of the Criminal Justice Drug Abuse Research Studies (CJ-DATS); Principal Investigator: M. Prendergast. This study was funded under a cooperative agreement from the U.S. Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse (NIH/NIDA). The authors gratefully acknowledge the collaborative contributions by NIDA, the Coordinating Center (Virginia Commonwealth University/University of Maryland at College Park, Bureau of Governmental Research), and the Research Centers participating in CJ-DATS (Brown University, Lifespan Hospital; Connecticut Department of Mental Health and Addiction Services; National Development and Research Institutes, Inc., Center for Therapeutic Community Research; National Development and Research; University of Delaware, Center for Drug and Alcohol Studies; University of Kentucky, Center on Drug and Alcohol Research; University of California at Los Angeles, Integrated Substance Abuse Programs; and University of Miami, Center for Treatment Research Drug Abuse) The contents are solely the responsibility of the authors and do not necessarily represent the views of the Department of Health and Human Services, NIDA, or other CJ-DATS participants.

References

- Amodeo M. The therapeutic attitudes and behavior of social work clinicians with and without substance abuse training. Substance Use & Misuse 2000;35:1507–1536. [PubMed: 10993386]
- Ball S, Bachrach K, DeCarlo J, Farentinos C, Keen M, McSherry T, Polcin D, Snead N, Sockriter R, Wrigley P, Zammarelli L, Carroll K. Characteristics, beliefs, and practices of community clinicians trained to provide manual-guided therapy for substance abusers. Journal of Substance Abuse Treatment 2002;23(4):309–318. [PubMed: 12495792]
- Butzin CA. Evaluating component effects of a prison-based treatment continuum. Journal of substance abuse treatment 2002;22(2):63–69. [PubMed: 11932131]
- Butzin CA, Martin SS, Inciardi JA. Treatment during transition from prison to community and subsequent illicit drug use. Journal of substance abuse treatment 2005;28(4):351–358. [PubMed: 15925269]
- Carise D, McLellan AT, Gifford LS. Development of a "treatment program" descriptor: The addiction treatment inventory. Substance Use & Misuse 2000;35(12–14):1797–1818. [PubMed: 11138708]
- Croy CD, Novins DK. Methods for addressing missing data in psychiatric and developmental research. Journal of the American Academy of Child and Adolescent Psychiatry 2005;44(12):1230–1240. [PubMed: 16292114]

- D'Aunno T, Vaughn TE, McElroy P. An institutional analysis of HIV prevention efforts by the nation's outpatient drug abuse treatment units. Journal of Health and Social Behavior 1999;40:175–192. [PubMed: 10467763]
- Delany PJ, Broome KM, Flynn PM, Fletcher BW. Treatment service patterns and organizational structures: An analysis of programs in DATOS-A. Journal of Adolescent Research 2001;16(6):590–607.
- DeLeon, G. The therapeutic community: Theory, model & method. New York: Springer Publishing Co; 2000.
- Denison DR. What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. Academy of Management Review 1996;21(3):1–36.
- Denison DR, Mishra AK. Toward a theory of organizational culture and effectiveness. Organization Science 1995;6(2):204–223.
- Durkin EM. An organizational analysis of psychosocial and medical services in drug abuse treatment programs. Social Service Review 2002;76:406–429.
- Etheridge RM, Hubbard R. Conceptualizing and assessing treatment structure and process in communitybased drug dependency treatment programs. Substance Use & Misuse 2000;35:1757–1795. [PubMed: 11138707]
- Etheridge RM, Hubbard RL, Anderson J, Craddock SG, Flynn PM. Treatment structure and program services in the drug abuse treatment outcome study (DATOS). Psychology of Addictive Behaviors 1997;11(4):244–260.
- Forman RF, Bovasso G, Woody G, McNicholas L, Clark C, Royer-Malvestuto C, Weinstein S. Staff beliefs about drug abuse clinical trials. Journal of Substance Abuse Treatment 2002;23(1):55–60. [PubMed: 12127469]
- Forman RF, Bovasso G, Woody G. Staff beliefs about addiction treatment. Journal of Substance Abuse Treatment 2001;21(1):1–9. [PubMed: 11516921]
- Friedmann PD, Alexander JA, D'Aunno TA. Organizational correlates of access to primary care and mental health services in drug abuse treatment units. Journal of Substance Abuse Treatment 1999;16 (1):71–80. [PubMed: 9888124]
- Friedmann PD, Alexander JA, Jin L, D'Aunno TA. On-site primary care and mental health services in outpatient drug abuse treatment units. Journal of Behavioral Health Services & Research 1999;26 (1):80–94. [PubMed: 10069143]
- Friedmann PD, D'Aunno TA, Jin L, Alexander JA. Medical and psychosocial services in drug abuse treatment: Do stronger linkages promote client utilization? Health Services Research 2000;35(2): 443–465. [PubMed: 10857471]
- Friedmann PD, Lemon SC, Stein MD, Etheridge RM, D'Aunno TA. Linkage to medical services in the drug abuse treatment outcome study. Medical Care 2001;39(3):284–295. [PubMed: 11242322]
- Glisson C, James LR. The cross-level effects of culture and climate in human service teams. Journal of Organizational Behavior 2002;23(6):767–794.
- Greenlick, M.; McCarty, D. Assessment of the National Drug Abuse Clinical Trials Network: A baseline for investigating diffusion of innovation (Baseline Study). Portland, OR: Oregon Health Sciences University; 2001.
- Grosenick JK, Hatmaker CM. Perceptions of the importance of physical setting in substance abuse treatment. Journal of Substance Abuse Treatment 2000;18(1):29–39. [PubMed: 10636604]
- Heinrich CJ, Lynn LE. Improving the organization, management, and outcomes of substance abuse treatment programs. American Journal of Drug and Alcohol Abuse 2002;28(4):601–622. [PubMed: 12492259]
- Hiller ML, Knight K, Simpson DD. Prison-based substance abuse treatment, residential aftercare and recidivism. Addiction 1999;94:833–842. [PubMed: 10665073]
- Humphreys K, Noke JM, Moos RH. Recovering substance abuse staff members' beliefs about addiction. Journal of Substance Abuse Treatment 1996;13(1):75–78. [PubMed: 8699546]
- Hurlburt MS, Leslie LK, Landsverk J, Barth RP, Burns BJ, Gibbons RD, Slymen DJ, Zhang J. Contextual predictors of mental health service use among children open to child welfare. Archives of General Psychiatry 2004;61(12):1217–1224. [PubMed: 15583113]

- James LR, Jones AP. Organizational climate: A review of theory and research. Psychological Bulletin 1974;81(12):1096–1112.
- James LR, Jones AP. Organizational structure: A review of structural dimensions and their conceptual relationships with individual attitudes and behavior. Organizational Behavior & Human Performance 1976;16(1):74–113.
- Knudsen HK, Roman PM. Modeling the use of innovations in private treatment organizations: The role of absorptive capacity. Journal of Substance Abuse Treatment 2004;26(1):353–361. [PubMed: 14698799]
- Knudsen HK, Johnson JA, Roman PM, Oser CB. Rural and urban similarities and differences in private substance abuse treatment centers. Journal of Psychoactive Drugs 2003;35(4):511–518. [PubMed: 14986881]
- Kreft, I.; de Leeuw, J. Introducing multilevel modeling. Thousand Oaks, CA: Sage; 1998.
- Latessa, EJ.; Pealer, JA. Measuring program quality over time: Examples from three RSAT programs. In: Knight, K.; Farabee, D., editors. Treating addicted offenders: A continuum of effective practices. Kingston, NJ: Civic Research Institute, Inc; 2004. p. 7.1-7.9.
- Lee, MT.; Reif, S.; Ritter, GA.; Levine, HJ.; Horgan, CM. Access to services in the substance abuse treatment system: Variations by facility characteristics. In: Galanter, M., editor. Recent developments in alcoholism: Services research in the era of managed care. 15. New York: Kluwer Academic/ Plenum Publishers; 2001. p. 137-156.
- Lehman WE, Greener JM, Simpson DD. Assessing organizational readiness for change. Journal of Substance Abuse Treatment 2002;22(4):197–209. [PubMed: 12072164]
- Magura S, Nwakeze PC, Kang S, Demsky S. Program quality effects on patient outcomes during methadone maintenance: A study of 17 clinics. Substance Use & Misuse 1999;34(9):1299–1324. [PubMed: 10419225]
- McCarty, D. Organization and treatment unit surveys: Initial results; Presented at the Association of Health Services Research Meeting; Philadelphia, PA. 2004 Oct.
- Melnick G, Wexler HK. Multimodality Quality Assurance Instrument for prison- and community-based substance abuse treatment programs. Offender Substance Abuse Report 2004;4(1):13–15.
- Melnick G, Hawke J, Wexler HK. Client perceptions of prison-based therapeutic community drug treatment programs. The Prison Journal 2004;84(1):121–138.
- Melnick G, DeLeon G. Clarifying the nature of therapeutic community treatment: The Survey of Essential Elements Questionnaire (SEEQ). Journal of Substance Abuse Treatment 1999;16:307–313. [PubMed: 10349603]
- Mojtabai R. Which substance abuse treatment facilities offer dual diagnosis programs? American Journal of Drug and Alcohol Abuse 2004;30(3):525–536. [PubMed: 15540491]
- Moos RH, King MJ, Burnett EB, Andrassy JM. Community residential program policies, services, and treatment orientations influence patients' participation in treatment. Journal of Substance Abuse 1997;9:171–187. [PubMed: 9494948]
- Mumola, CJ. Publication No. NCJ 172871. Washington, DC: Bureau of Justice Statistics; 1999. Substance abuse and treatment, state and federal prisoners, 1997.
- Office of Applied Studies, Substance Abuse and Mental Health Services Administration. The DASIS report: Facilities offering special programs for dually diagnosed clients. Rockville, MD: U.S. Department of Health and Human Services; 2002 May.
- Ogborne AC, Wild TC, Braun K, Newton-Taylor B. Measuring treatment process beliefs among staff of specialized addiction treatment services. Journal of Substance Abuse Treatment 1998;15(4):301– 312. [PubMed: 9650138]
- Olmstead T, Sindelar J. To what extent are key services offered in treatment programs for special populations? Journal of Substance Abuse Treatment 2004;27:9–15. [PubMed: 15223088]
- Pelissier, B.; Jones, N.; Cadigan, T. Journal of Substance Abuse Treatment. 2007. Drug treatment aftercare in the criminal justice system: A systematic review.
- Poznanski JJ, McLennan J. Measuring counsellor theoretical orientation. Counseling Psychology Quarterly 1999;12(4):327–335.
- Pringle JL, Emptage NP, Hubbard RL. Unmet needs for comprehensive services in outpatient addiction treatment. Journal of Substance Abuse Treatment 2006;30:183–189. [PubMed: 16616161]

- Rivard JC, Johnsen MC, Morrissey JP, Starrett BE. The dynamics of interagency collaboration: How linkages develop for child welfare and juvenile justice sectors in a system of care demonstration. Journal of Social Service Research 1999;25(3):61–82.
- Rockholz, PB. National update on therapeutic community programs for substance abusing offenders in state prisons. In: Knight, K.; Farabee, D., editors. Treating addicted offenders: A continuum of effective practices. Kingston, NJ: Civic Research Institute, Inc; 2004. p. 14.10
- Roman P, Johnson JA. Adoption and implementation of new technologies in substance abuse treatment. Journal of Substance Abuse Treatment 2002;22(4):211–218. [PubMed: 12072165]
- Roman, PM.; Johnson, JA.; Walker, LC.; Knudsen, HK. The national treatment center study and the CTN: Preliminary findings and future plans; Invited presentation to the Steering Committee of the NIDA Clinical Trials Network; Miami, FL. 2003 Jan.
- SAS Institute. SASOnlineDocR. Cary, NC: Author; 2004. (Version9.1.3) [Computer software]
- Schafer JL, Graham JW. Missing data: Our view of the state of the art. Psychological Methods 2002;7 (2):147–177. [PubMed: 12090408]
- Schein, EH. Organizational culture and leadership. San Francisco: Jossey-Bass Publishers; 1992.
- Schmitt SK, Phibbs CS, Piette JD. The influence of distance on utilization of outpatient mental health aftercare following inpatient substance abuse treatment. Addictive Behaviors 2003;28(6):1183–1192. [PubMed: 12834661]
- Simpson DD. A conceptual framework for drug treatment process and outcomes. Journal of Substance Abuse Treatment 2004;27(2):99–121. [PubMed: 15450644]
- Snijders, TA.; Bosker, RJ. Multilevel analysis: An introduction to basic and advanced multilevel modeling. Thousand Oaks, CA: Sage; 1999.
- Stoffelmayr BE, Mavis BE, Kasim RM. Substance abuse treatment staff: Recovery status and approaches to treatment. Journal of Drug Education 1998;28(2):135–145. [PubMed: 9673073]
- Strauss SM, Rindskopf DM, Astone-Twerell JM, Des Jarlais DC, Hagan H. Using latent class analysis to identify patterns of hepatitis C service provision in drug-free treatment programs in the U.S. Drug and Alcohol Dependence 2006;83:15–24. [PubMed: 16289523]
- Swindle RW, Peterson KA, Paradise MJ, Moos RH. Measuring substance abuse program treatment orientations: The drug and alcohol program treatment inventory. Journal of Substance Abuse 1995;7:61–78. [PubMed: 7655312]
- Swindle RW, Phibbs CS, Paradise MJ, Recine BP, Moos RH. Inpatient treatment for substance abuse patients with psychiatric disorders: A national study of determinants of readmission. Journal of Substance Abuse 1995;7:79–97. [PubMed: 7655313]
- Taleff MJ, Swisher JD. The seven core functions of a Master's level alcohol and other drug counselor. Journal of Alcohol and Drug Education 1997;42(3):1–17.
- Taxman FS, Bouffard JA. Treatment inside the drug treatment court: The who, what, where, and how of treatment services. Substance Use & Misuse 2002;37(1213):1665–1688. [PubMed: 12487238]
- Taxman FS, Bouffard JA. Substance abuse counselors' treatment philosophy and the content of treatment services provided to offenders in drug court programs. Journal of Substance Abuse Treatment 2003;25(2):75–84. [PubMed: 14629989]
- Taxman, FS.; Young, DW.; Wiersema, B.; Rhodes, A.; Young, S. The national criminal justice treatment practices survey: Multi-level survey methods & procedures. 2006. Manuscript under review
- Timko C. Physical characteristics of residential psychiatric and substance abuse programs: Organizational determinants and patient outcomes. American Journal of Community Psychology 1996;24(1):173– 191. [PubMed: 8712185]
- Timko C, Dixon K, Moos RH. Treatment for dual diagnosis patients in the psychiatric and substance abuse systems. Mental Health Services Research 2005;7(4):229–242. [PubMed: 16320106]
- Timko C, Moos RH. Outcomes of the treatment climate in psychiatric and substance abuse programs. Journal of Clinical Psychology 1998;54(8):1137–1150. [PubMed: 9840784]
- Tinney SM, Oser CB, Johnson JA, Roman PM. Predominantly female caseloads: Identifying organizational correlates in private substance abuse treatment centers. Journal of Behavioral Health Services & Research 2004;31(4):403–417. [PubMed: 15602141]

- Trice HM, Beyer JM. Writing organizational tales: The cultures of work organizations. Organization Science 1995;6(2):226–228.
- Welsh WN, Zajac G. A census of prison-based drug treatment programs: Implications for programming, policy, and evaluation. Crime & Delinquency 2004;50(1):108–133.
- Willenbring ML, Kivlahan D, Kenny M, Grillo M, Hagedorn H, Postier A. Beliefs about evidence-based practices in addiction treatment: A survey of Veterans Administration program leaders. Journal of Substance Abuse Treatment 2004;26(2):79–85. [PubMed: 15050084]

	Correction	al Programs $(n = 95)$	Commun	iity Programs $(n = 122)$	-	Total (N = 217	
Variable	Number	Percent or Mean (SD)	Number	Percent or Mear (SD)	Number	Perc	cent or Mea (SD)
Program Characteristics	:						
Inpatient program, % ***********************************	44	48.4	12	10.4	56		27.2
Drug abuse treatment facility, $\%^{\circ}$	42	44.2	72	59.0	114		52.5
Program capacity (mean no. of offenders) (range = 0.4300)		175.3 (222)		134.5 (434)		152.9 (354)	
Accreditation. %	60	65.2	114	95.0	174		82.1
No. of clients for whom program provides specific		2.95 (2.6)		2.08 (3.0)		2.46 (2.9)	
services (mean, range=0-13) Administrator and Staff Characteristics							
Administrator has MA degree or higher.%	46	48.9	89	74.2	135		63.1
Staff with substance abuse training, %	52	54.7	96	78.7	148		68.2
Staff with college degree, %	τ		e T		÷		t
None Some	75	8.2 70 A	21	10.8	19		765
About half	1 [12.9	17	15.3	28		14.3
Most all	23	27.1	35	31.5	58		29.6 10.0
All Suntam Internation	IY	4.77	70	18.0	6 C		19.9
<u>oysten megraton</u> Integrated with judiciary (mean score, range = 0–12) Integrated with community corrections (mean score		2.54 (3.2) 4 46 (3 0)		3.33 (3.1) 3 77 (3 3)		3.01 (3.2)	
range = 0–12)						(c.c) co.t	
<u>Ireatment Climate/Culture</u>		3 67 (0.8)		105.00.61		3 88 (0 7)	
Stall influence on treatment improvement $(mean come readed - 1 \le)$						(1.0) 00.0	
Importance of community treatment (mean score,		9.4 (1.8)		9.8 (1.0)		9.6 (1.4)	
range = $1-10$)						7 75 (0 0)	
Correctional statt respect for treatment (mean score, range $= 1-5$)		5.29 (0.9)		5.41 (0.7)		(8.0) 66.6	
Importance of other services relative to drug		28.0 (5.4)		30.2 (6.8)		29.2 (6.3)	
treatment $\frac{3\pi}{2}$ (sum, range = 10–50)							
<u>Ireatment Process</u> Dlannad duration (dayc) 06							
0-90	22	27.5	51	50.0	73		40.1
91-180	27	33.8	33	32.4	60		33.0
>180	31	38.7	18	17.6	49		26.9
Uses written protocol/curriculum, %	99	72.5	58	50.0	124		59.9
Wrap-around services provided ^{$\dot{\tau}$} (mean number,		4.27 (2.4)		4.79 (2.1)		4.56 (2.2)	
range = 0-11) Treatment orientations							
Therapeutic Community (mean score, range =		4.00 (0.7)		3.47 (0.6)		3.7 (0.7)	
Cognitive Behavioral Therapy (mean score, range		4.02 (0.6)		4.11 (0.5)		4.07 (0.5)	
= 1-5)							
12-Step (% high)	54	61.4	83	69.2	137		65.9

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

Page 15

 $\stackrel{f}{p}<.10,$

Grella et al.



NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript

_
_
_
_
_
U
~
_
_
_
_
_
-
\mathbf{n}
_
~
<
_
0
^u
_
_
<u> </u>
2
5
IJ,
snu
Snu
Snu
านระ
nuscr
nuscri
nuscrip
nuscrip
nuscrip

NIH-PA Author Manuscript

Grella et al.

	tions
Table 2	nd Services Provided and Treatment Orientat
	nber of Wrap-Arour
	lels Predicting Nun
	Regression Moc

	No. of Wrap-Arou Provide	ud Services d	Therapeutic Co Scale	mmunity	Cognitive Bel Therapy S	lavioral cale	12-Step Sc	ale ^a	
Variable	Coefficient	S.E.	Coefficient	S.E.	Coefficient	S.E.	Coefficient	S.E.	OR
Program Characteristics	*	0.30			710	010	4 co 0	0.46	2 30
Drug abuse treatment facility	0.90	0.30		0.09	-0.05	0.07	-0.07	0.34	0.94
Program capacity (logged)	-0.11	0.13	0.07^{\dagger}	0.04	0.01	0.03	-0.03	0.14	0.97
Located in prison (vs. community)	-0.93^{*}	0.40	0.44	0.12	-0.07	0.10	-0.38	0.44	0.68
No. of clients provided specific	0.18	0.05	0.01	0.02	0.02	0.01	0.09	0.06	1.09
services Program accreditation	0.33	0.43	-0.13	0.14	0.05	0.11	-0.82 $\dot{\tau}$	0.51	0.44
<u>Staff Characteristics</u> Staff with substance abuse training	0.16	0.35	0.00	0.11	0.09	0.08	1.16^{**}	0.39	3.19
Staff with college degree	0.29^{**}	0.12	0.05	0.04	-0.01	0.03	-0.08	0.13	0.92
System Integration								0	
Integrated with judiciary Integrated with community	0.03	0.06 0.05	0.01 -0.01	0.02	0.00	0.01	0.00	0.06 0.06	1.04
corrections									
<u>Staff influence on treatment</u>	-0.01	0.24	-0.03	0.08	0.12^*	0.06	0.51^{\dagger}	0.27	1.67
improvement Importance of community	-0.08	0.12	0.07^{\dagger}	0.04	0.10^{***}	0.03	-0.01	0.13	0.99
treatment Correctional staff respect for	0.33	0.21	0.08	0.07	-0.02	0.06	-0.18	0.25	0.83
treatment									
Importance of other services relative to drug treatment	0.02	0.02	0.00	0.01	0.01	0.01	0.02	0.03	1.02
<u>Treatment Process</u> Planned duration (ref = 0–90 davs)									
91–180	0.34	0.40	0.09	0.12	0.19^{*}	0.09	0.22	0.44	1.25
>180	1.39^{**}	0.43	0.19	0.13	0.04	0.12	0.13	0.51	1.14
Uses written protocol/curriculum <u>Model R²</u>	0.27 0.18	0.33	0.01 0.20	0.10	0.13^{T} 0.20	0.08	-0.47 0.16^{b}	0.38	0.63
^a Logistic regression used with 1 =	high. 0 = low:								
	(
b max rescaled pseudo R ²									
$\dot{r}_{n<10}$									
$\mathbf{P} = \cdot 10,$									
$\stackrel{*}{p} \leq .05,$									
$^{**}_{p \leq .01,}$									
• *** **									
$p \leq .001$									