

**EVALUATION OF THERAPEUTIC COMMUNITY (TC)
DRUG ABUSE TREATMENT SUCCESS IN PERU AND THAILAND**

by

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Related Publications

Johnson, K.W., Pan, Z., Young, L., Vanderhoff, J., Browne, T. & Linfield, K. (2008). Therapeutic Community Drug Treatment Success In Peru: A Follow-Up Outcome Study, Submitted to *Substance Abuse Treatment, Prevention and Policy*.3:26.

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Young, L., Johnson, K., & Bryant, D. (2002). Conducting a Therapeutic Community Training Experiment in Peru: Research Design and Implementation Issues, *Journal of Social Work Research and Evaluation*, 3 (1), 89-102.

Introduction

Over the past 30 years, an unprecedented number of applied addiction treatment outcome studies have been conducted. Major catalysts for this research have been the National Institute on Drug Abuse (NIDA) national research programs: Drug Abuse Reporting Program (DARP) in the 1970s (Simpson, 1982), Treatment Outcome Prospective Study (TOPS) a decade later (Hubbard, 1989); in the 1990s, the Drug Abuse Treatment Outcome Studies (DATOS) (Simpson & Brown, 1999); and the National Treatment Outcome Research Study (NTORS, 2000). A consistent body of research has supported the effectiveness of drug treatment in general (e.g., Simpson & Curry, 1997) and of TCs in particular (Condelli & Hubbard, 1994) in industrialized countries. In contrast, little is known about the effectiveness of drug abuse treatment in developing countries (Johnson et al., 2009a; Johnson et al, in-review).

This paper reviews what little research exists on TC drug abuse treatment in Peru and Thailand. Selective results of two recent national TC drug treatment follow-up studies, commissioned by the U.S. Department of State's Bureau of International Narcotics and Law Enforcement Affairs and conducted in these countries, are presented. These larger studies highlight positive change in former residents' use of illegal drugs and heavy alcohol use, and related problems six months after TC treatment and factors that may predict positive change in the treatment outcomes. The World Federation of Therapeutic Communities (WFTC) conference paper focuses attention only on change in illegal drug use outcomes and implementation fidelity of the TC model as a predictor of treatment success.

TC Drug Abuse Treatment in Peru and Thailand

In Peru, the United Nations Fund for Drug Abuse Control (UNFDAC) received contributions from the Government of Italy in the mid-1970s to establish Therapeutic Community (TC) treatment centers throughout the country. Unfortunately, drug abuse treatment studies in Peru have been scarce. Beginning in 1978, Navarro described the treatment and follow-up of only two patients dependent on coca paste (Navarro, 1978a,b); both patients subsequently stopped using the drug. In 1980, Sanchez published a study on the treatment of 50 drug addicts at the Nana TC center in Lima, of which 15 addicts eventually became abstinent (Sanchez, 1980). Several years later, Navarro and colleagues conducted a study on 26 clinical patients at Nana TC who were followed-up from 8 months to 4 years after treatment (Navarro, 1983). From 1982 through 1989,

Navarro conducted a larger study of 223 male patients of the Nana TC, who were mainly consumers of coca paste (Navarro, 1992). Over 47% were abstinent at follow-up. In 2005, over 500 clients of 33 TC facilities were follow-up after graduating or leaving treatment and 56% reported abstaining from any illegal drug use aft six months. (Johnson et al., 2009); the summary results of this study are presented in this paper.

In Thailand, TC drug treatment programs operate in national governmental networks and as free standing non-government organizations. One of the oldest treatment programs that use the TC model is the Thanyarak Institute on Drug Abuse (TIDA), established in 1959 under the Department of Medical Services of the Ministry of Public Health as a national treatment center for narcotics addicts. In 1985, the TC model was introduced as part of the TIDA treatment program and later expanded by the Thai government. The Thai Central Correctional Institution for Drug Addicts first introduced the TC treatment model in 1992. The Department of Corrections currently uses the CARE (Correctional, Addictions and Rehabilitation) model, which is a blend of the Daytop and the Communita Incontro treatment models (UNAFEI, 2005).

UNAFEI (2005) notes that evaluation studies on the effectiveness of drug treatment programs have not been conducted in the Asian region. Prior to this publication, the single exception found in the literature was a retrospective follow-up study of 278 residents who completed the Thanyarak Institute on Drug Abuse (TIDA) 18-month program in Thailand between 1986 and 2000 (Verachai, et aal., 2003). Although the researchers found that 73% of the former residents were still drug-free during aftercare, the study was limited by the fact that only 1% of clients (278 out of 2,881) completed the program. Since 2005, a second Thailand study has been completed that shows success among the TC programs across the country (Johnson et al., 2009; Johnson et al., in review); the summary results of this study are presented in this paper.

Methodology

Peru

Research Setting. The study in Peru was conducted in the capital city of Lima and five significant cities of the Provinces - Iquitos, Tarapoto, Chiclayo, Trujillo, and Arequipa. The sample includes 33 Peruvian TC drug treatment facilities that identified themselves as therapeutic communities during the Drug Abuse Treatment (DAT) Training Evaluation study that was conducted in 1999 (Johnson, Young, Suresh, & Berbaum, 2002). A majority

(64%) of the facilities had been certified by the Peruvian Ministry of Health; and the average length of time in operation was 10.2 years. The average number of paid full-time staff was 4; the average number of paid program professionals was 2.3 and part-time or contract staff was 2. The number of former clients participating in the Peru follow-up study ranged from 2 to 33 per facility with a mean of 15.4. The majority of the DAT facilities (58%) reported that their planned length of stay in treatment was 12 months and nearly one-fourth (24.2%) reported a planned length of stay of 6 to 11 months. The proportion of clients reported by the directors as dropping out before completing 30 days of treatment ranged from 0% to 64% across the facilities (mean = 21%). In addition to the TC treatment model, on average, the DAT facilities employ seven other treatment models with AA, Tough Love, and other behavior modification approaches being prominent in the participating centers.

Research Design. The Peru study design was a retrospective pretest (RPT) design with baseline collected retrospectively at a six-month follow-up assessment. This design is used when it is not possible to collect accurate pre-treatment data. Nimon and Allen (2007) conducted an extensive review of RPT literature and found that recently this evaluation design is reappearing more frequently in the literature since the seminal work of Howard et al. (1979).

Data Requirements. Treatment success was defined in Peru as the presence or absence of 30-day use of illegal drug. We created dichotomous change scores (1 = use at baseline [retrospective measure] and no use at follow-up; 0 = other) for change in use of illegal drugs. Data collection was conducted by a Peruvian partner (SERPA) in collaboration with U.S. investigators of Pacific Institute for Research and Evaluation, Inc. (PIRE) between January 15, 2003 and October 31, 2004. In-person interviews of the 33 directors occurred in January and February 2003 and of the 509 former TC clients between October 2003 and October 2004. We interviewed treatment residents who graduated and those who left treatment early. Eligible follow-up study participants were identified as clients/residents who were already in treatment a minimum of 30 days as of January 15, 2003, or who were admitted after that date and who stayed a minimum of 30 days in the program. Study participants were informed that they were participating in the evaluation and they signed a written informed consent informing them of the goals and procedures of the study. One copy was also given to the client.

We used a drug testing procedure involving a random sample of 8% of the sample to increase the accuracy of the self-reported drug use data. We advised subjects that they might be randomly selected for a urine specimen that would be tested for the presence of marijuana or cocaine; but, their participation was completely voluntary (Aguinis & Henle, 2001). An analysis of the test results found no significant differences in self-reported drug use between respondents who were tested and those who were not, indicating that the strategy was successful.

Thailand

Research Setting. In Thailand there were 22 TC DAT programs that participated in the study. Nine (9) of the programs are located in greater Bangkok, which is the Capital, and the remaining 13 are scattered across various regions—four in central, three in north eastern, two in northern, two in southern, one in western, and one in eastern Thailand. There are three systems of TC treatment programs: a voluntary system, a convicted system, and a compulsory system. For the voluntary system, patients/drug users come to treatment either on a voluntary basis or under pressure from family members. For the convicted system, the TC programs are designed to treat drug addicts who are found guilty of drug charges and are currently imprisoned. For the compulsory system, drug abusers are confined in specialized treatment facilities instead of prisons with the goal of attaining total abstinence from drugs, and the confinement is legally enforced according to laws enacted by the Thai government. Forty-one percent of the sampled TC programs were members of the Asian Federation of TC. The number of beds devoted to the TC program of DAT centers in Thailand ranged from 40 to 400, averaging 113. The total number of staff ranged from five to 65, averaging 17 staff members per program. On average, the TC programs have been in operation for 7 years. The number of former clients participating in the Thai follow-up study ranged from 27 to 33 percent with a mean of 24.3. The average planned length of stay in treatment was 4.5 months and ranged from 2 to 7 months across the participating centers. Forty-one percent of the center directors reported that the drop out rate before 30 days was zero. The average dropout rate was 16.6% and ranged from 0% to 59%. The center directors reported that, on average, centers used five other treatment models, with cognitive learning, family matrix, group therapy, and re-entry and aftercare models being used by a majority of the participating centers.

Research Design. In Thailand, a before and six-month follow up prospective design was employed. This design has been used in a number of national drug abuse treatment studies including the Drug Abuse Treatment Outcome Study (DATOS) (Hubbard et al., 1997)

Data Requirements. The outcome measures of the Thai study included prevalence of residents' illegal drug use and specific illegal drug use (includes methamphetamine, speed, ice, ecstasy, marijuana/hashish, inhalants, heroin and other opiates, crack or cocaine, other drugs). The illegal drug use included 30-day and six-month use. These outcome measures were adapted from the DATOS Methadone Outpatient Follow-up Interview instrument (Simpson, 2001). For both the 30 day and six month outcomes, we created dichotomous change scores (1 = use at baseline [retrospective measure] and no use at follow-up; 0 = other) for change in use of illegal drugs.

A total of 41 center directors with TC programs completed a screener questionnaire with demographic information about the center, director, and TC program. Thirty-four centers met the eligibility criteria of a planned length of stay of less than 12 months since we could not conduct the six-month follow up interview within the study timeframe. Eventually 22 TC programs participated in the study while others of the 34 centers either closed or could not obtain permission from the higher authority because they belong to the Thai military.

Data collection partners (CSN) in Bangkok assembled and trained a team of interviewers to collect (1) organizational and program data via a self-administrated questionnaire data from 22 drug treatment program directors and 193 staff that worked in treatment programs using the TC model, (2) in-person baseline interview data from 769 eligible residents who stayed 30 days or more in treatment and 6 months in the community after treatment, and (3) six-month follow-up in-person interviews with 510 former residents (66% response rate) who had left the program after 30 days of treatment. As in the Peru study, we included treatment residents who graduated and those who left treatment early.

In addition, the interview team implemented a drug testing protocol to increase the accuracy of the self-reported drug use data among former residents at the six-month follow-up interview. That is, we informed the TC residents that we planned to test a random sample of 20% of those participating in the follow-up study. An analysis of the test results found, as in the Peru outcome study, no significant differences in self-reported drug use between respondents who were tested and those who were not.

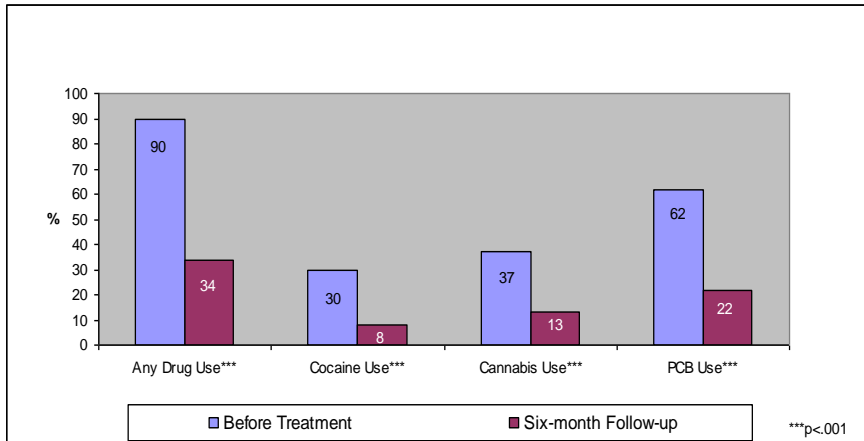
More details about the instruments, data collection protocols, and analysis strategies of the Peru and Thailand studies can be found respectively in Johnson, et al., 2009; Johnson, Young, Suresh, & Browne (2009).

Results

Peru

Change in Illegal Drug Use. To determine significant change in outcomes, we used the Student t test (parametric statistic) using the binomial approximation to the variance instead of a nonparametric statistic. The Student t statistic can be converted to a Cohen D effect size with established qualitative effect sizes of small, medium, and large that we have found policy makers can easily interpret (Cohen, 1988). These effects sizes represent standard deviations from the mean in a normal distribution. We also conducted an intent-to-treat analysis on an expanded sample of 879 former residents that assumed the 370 study dropouts (879- 370 = 509) used illegal drugs.

Figure 1 below presents 30-day use change by substance. We found statistically significant reduction for any illegal drug and specific drugs. The percentage change for any 30-day illegal drug use for the client reported sample was 56%. These are large treatment effects ($d = 1.12$). When examining specific drug use, statistically significant reductions in 30-day use of Coca paste (PCB), cocaine, and cannabis were also found. The magnitude of the treatment effect ranged from medium ($d = .54$) to large ($d = .82$) for the self reported sample. We also conducted an analysis that assumed the 370 former clients not interviewed at follow-up would be using one or more illegal drugs ($n = 879$). This conservative analysis strategy showed positive treatment effects not reported in a table to be medium for illegal use reductions ($d = .68, .46$ respectively).



Note: ***p < .001. Effect Size: Proportions converted to Cohen D statistic with a small effect size equals .20, a medium effect size equals .50, and a large effect size equals .80 (Cohen 1988)

Figure 1: Overall change in 30-day substance use before and six months after treatment.

Thailand

Change in Treatment Outcomes. Group differences among stayers in treatment (n=510) and droppers from treatment (n=259) were analyzed using paired t tests for continuous variables or both residents' characteristics and organizational characteristics. The stayers and droppers were similar in most characteristics with the exception of 'Level of Education' and 'living with family prior to treatment' variables. The 'level of education' and 'lived with family prior to treatment' at admissions was significantly higher for stayers than droppers (p ≤ .001). The organizational variables were not significantly different for both groups.

A contingency table analysis compared the proportion of former residents who indicated using illegal drugs 30 days and six months prior to treatment in comparison to behaviors for the same time period at a six-month follow-up interview. As in the Peru study, a dependent groups t-test was used to determine statistical significance (the binomial approximation to the variance for dichotomous outcomes); and, more importantly, we calculated effect size by converting proportions to a Cohen's D as in the Peru study.

Figures 2 and 3 show that a comparison of before treatment and six months after treatment any 30-day illegal drug use reduced by 63% and for six-month use by 82%.

Cohen D's of 1.21 and 2.04 respectively are considered large treatment effects. The drug of choice for the Thai treatment population was methamphetamines and the magnitude of the reduction in use ranged from 55% for 30-day use to 75% for six-month use; these are also large effects (Figure 2). Marijuana/ hashish was the second drug of choice, with this population reporting pre-treatment 30-day use of 11% and six-month use prior to treatment of 20%. Only 2% reported 30-day use and 3% six-month use of marijuana/hashish six-months after treatment, which are small- to medium-size effects. Use of other drugs in Thailand among this population prior to treatment was small, ranging from 5% for inhalants to less than 1% for heroin. All reductions in drug use were significant at the ***p < .001 level except Heroin use, which was too little use to conduct a significance test.

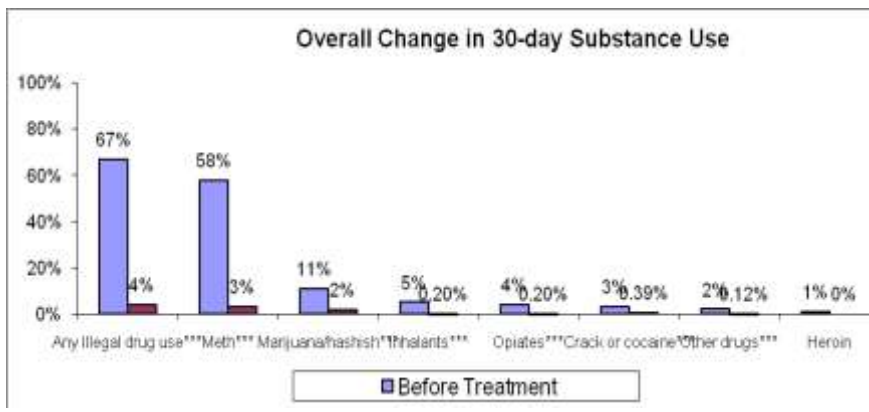


Figure 2. Overall change in 30-day substance use.

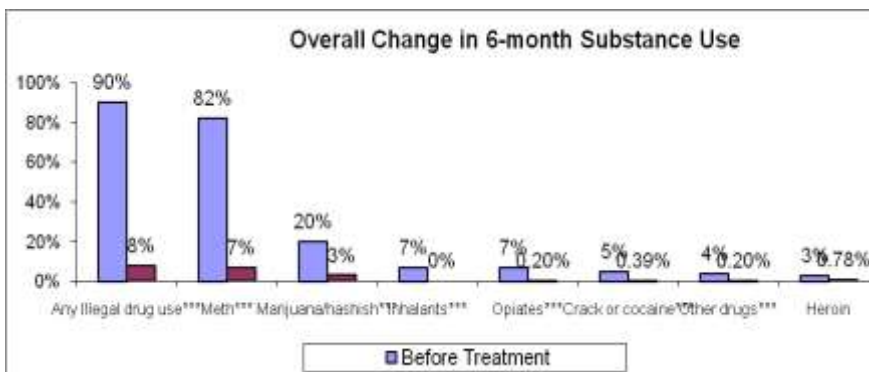


Figure 3. Overall change in 6-month substance use.

Predicting Treatment success in Peru and Thailand

This paper also presents results concerning the extent to which implementation quality of the TC model predicts treatment success.

In Peru and Thailand, a level of implementation fidelity was a scale in which five to seven questions are asked about five important TC tools to ascertain the correctness of implementation. These tools were morning meetings, encounter groups, static groups, learning experiences (sanctions targeting a behavior or attitude change), and vocational skills. An aggregated total score based on subscales scores for the fidelity of the five tools was $\text{Alpha} = 0.65$ for Peru and 0.71 for Thailand. Daytop International assisted in constructing this scale. Melnick and De Leon (1999) research developed a survey of essential elements questionnaire (SEEQ) that taps congruence with the ideal TC model. However, the validated TC essential elements instrument was too long for the Peru and Thai TC treatment studies. In the Thai study we also constructed a dichotomous variable to capture whether or the T.C. model had been modified in its implementation.

In both the Peru and Thailand studies, a Hierarchical Generalized Linear Modeling (HGLM) analysis procedure was used to examine the extent to which TC model implementation fidelity predicted TC treatment success. HGLM is appropriate in this study because data are, in nature, nested: the individuals (former residents) are nested in the DAT organizations. HGLM adjusts for variation of dependent variable (treatment success) at the organization level when controlling for individual and organizational characteristics. Thus, a more precise estimate of statistical coefficients is provided for client or resident level reductions in drug use. This model technique is explained in detail in Bryk, Raudenbush, and Congdon, 2002.

In this analysis we examined TC treatment fidelity as an important predictor of treatment success as measured by favorable change in 30-day illegal drug use before treatment and six months after treatment. The analysis included a set of treatment and capacity-building training variables as well as TC facility, director, and client/resident characteristics as controlled variables.

We found in the Peru study that as the fidelity of use of TC tools increased, the greater the treatment success ($\beta=0.14$; $t=3.03$). Further, more treatment success (i.e., reduced prevalence of 30 day illegal drug use) occurred among younger former clients who were in TC facilities with higher implementation fidelity ($\beta= -0.12$; $t=2.53$). This is a positive outcome in that among younger clients higher fidelity enhances the overall effect of

implementation fidelity on treatment success. These effects, although statistically significant, are considered small size effects (Cohen, 1988).

In the Thai study we found that the level of implementation fidelity as measured in the Peru study produced a different result. That is, the lower the level of implementation fidelity the more treatment success among its former residents ($\beta = -0.09$; $t = 2.00$). We also found that TC treatment program that had modified the TC model as design had slightly more treatment success ($\beta = 0.08$; $t = 1.73$). This latter result is consistent with the former one.

Summary and Conclusions

These results show that the TC drug abuse treatment approach produced positive effects on drug use among clients and residents of TC programs in Peru and Thailand six months after treatment, regardless of the length of stay in the program. The Peru study found that former clients who received drug abuse treatment (DAT) in facilities using the TC model reported substantial reduction in the use of illegal drugs at a six-month follow-up. This positive outcome is greater than has been reported in other drug treatment six-month evaluations, for example the National Treatment Outcome Research Study (Gossop, 1997).

We also found that high implementation fidelity produced more treatment success in Peru. These results support the meta-analysis of Prendergast, Podus, and Chang (2000), who found that well-implemented TC drug abuse treatment and outpatient drug-free programs correlated with more positive behavioral outcomes. In the Peru research we also found that the importance of implementation fidelity in predicting treatment success was enhanced among younger clients. That is, while older clients tend to achieve better treatment success, higher fidelity produced even better treatment success among the younger population.

In the Thai treatment study we did not find level of implementation fidelity of the T.C. model to predict treatment success. Rather, we found that TC treatment programs whose director had made modifications in the T.C. model did have slightly higher treatment success among its former residents. Although we cannot offer an empirical based explanation for the different result in the Peru and Thailand study, it may be because of the differences in the length of stay of residents in the two countries. That is, a large majority of the residents in Peru TC facilities stay 12 months whereas residents in the Thai TC program stayed on average only 4 months. Modification of the Thailand-implemented TC model may be important when the length of stay is shorter. In the prevention field, some

experts argue that a few modifications are inevitable, and even desirable, to meet the differing needs of implementers, participants, or their social, cultural, or environmental contexts (e.g., Domitrovich & Greenberg, 2000). Supporting this view, some studies suggest that lack of fidelity may not always threaten the integrity of an intervention (e. g., Dane & Schneider, 1998) and that some degree of adaptation is indeed normative (e. g., Ringwalt, et al.,2003).

In conclusion, there are several unique contributions of these studies. First, the Peru and Thailand drug abuse treatment studies demonstrate that TC treatment programs in developing countries are producing positive outcomes, possibly greater success than in the U.S.A. Second, these studies suggest that while it may be important to implement the TC drug abuse treatment model with high fidelity in some settings, modification of the TC model may yield better treatment results in other settings. Third, these studies show that DAT organizations in developing countries can conduct good outcome evaluation in partnership within international research teams.

References

- Raudenbush SW, Bryk AS: *Hierarchical linear models: applications and data analysis methods*. 2nd edn. Thousand Oaks, CA: Sage; 2002.
- Cohen J: *Statistical power analysis for the behavioral sciences*. 2nd edn. Hillsdale, N.J.: L. Erlbaum Associates; 1988.
- Condelli W, Hubbard R: Client outcomes from therapeutic communities. In *Therapeutic Community: Advances in Research and Application*. Volume NIH Publication No. 94-3633. Edited by Tims F, DeLeon G, Jainchill N. Washington, DC: U.S. Government Printing Office; 1994: 80-98: *National Institute on Drug Abuse Research Monograph Series #144*].
- Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: are implementation effects out of control? *Clin Psychol Rev*, 18(1), 23-45.
- Domitrovich, C.E. & Greenberg, M.T. (2000). The study of implementation: Current findings from effective programs that prevent mental disorders in school-aged children. *Journal of Educational and Psychological Consultation*, 11, 193-221

- Gossop, M., Marsden, J., Stewart, D., Edwards, C., Lehmann, P., Wilson, A., & Segar, G. (1997). The National Treatment Outcome Research Study in the United Kingdom: six-month follow-up outcomes. *Psychology of Addictive Behaviors*, 11, 324-337.
- Howard, G. S., Ralph, K. M., Gulanick, N. A., Maxwell, S. E., & Gerber, S. K. (1979). Internal validity in pretest-posttest self-report evaluations and a re-evaluation of retrospective pretests. *Applied Psychological Measurement*, 3, 1-23.
- Hubbard, R. L., Marsden, M. E., Rachal, J. V., Harwood, H. J., Cavanaugh, E. R., & Ginzburg, H. M. (1989) *Drug abuse treatment: A national study of effectiveness*. Chapel Hill, NC: University of North Carolina Press.
- Johnson, K. W., Young, L. C., Suresh, G., & Berbaum, M. L. (2002). Drug abuse treatment training in Peru: A social policy experiment. *Evaluation Review*, 26, 480-519.
- Johnson, K.W., Pan, Z., Young, L., Vanderhoff, J., Shamblen, S., Browne, T., Linfield, K., & Suresh G. (2009). Therapeutic Community Drug Treatment Success In Peru: A Follow-Up Outcome Study, Submitted to *Substance Abuse Treatment, Prevention and Policy* (In-press).
- Johnson, K.W., Young, L.A., Suresh, G., & Browne, T. (2009). Therapeutic Community Drug Treatment Success in Thailand: A follow-up Outcome Study. Special Issue: *Substance Use and Misuse* (Forthcoming).
- Melnick G, De Leon G. (1999). Clarifying the nature of therapeutic community treatment: The survey of essential elements questionnaire (SEEQ). *Journal of Substance Abuse Treatment* 1999, 16:307-313.
- Navarro, R. (1978). Terapia y modificación de la conducta adictiva: tratamiento y seguimiento de 2 casos de adicción a la pasta básica de cocaína. *Anales del Quinto Congreso Nacional de Psiquiatría*, 226-231.
- Navarro, R. (1978). Modificación de la conducta adictiva: Tratamiento y seguimiento de 2 casos de adicción a PBC. *Rev Neuro-Psiquiatr*, 41, 83-91.
- Navarro, R. (1983). Terapia de la conducta en el comportamiento dependiente a drogas: tratamiento y seguimiento de 26 casos clínicos. *Rev Peruana Psiquiatr "Hermilio Valdizan."* 1, 29-38.
- Navarro, R. (1992). Development of a program of behavior modification directed to the rehabilitation of drug-dependent patients: treatment and follow-up of 223 cases. *The International Journal of the Addictions*, 27, 391-408.

Con formato: Español (España, internacional)

Nimon, K., & Allen, J. (2005). *A review of the retrospective pretest: Implications for performance improvement evaluation and research [Electronic Version]*. University of North Texas. Retrieved January 16, 2009 from http://voc.ed.psu.edu/projects/publications/books/Spring2007/WEF_spring2007.3.html

NTORS. (2000). Bulletin 4. In *Two year outcomes of the National Treatment Outcome Research Study*.

Prendergast, M. L., Podus, D., & Chang E. (2000). Program factors and treatment outcomes in drug dependence treatment: An examination using meta-analysis. *Substance Use & Misuse*, 35, 1931-1965.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: applications and data analysis methods*. 2nd ed. Thousand Oaks, CA: Sage; 2002.

Ringwalt, C.L., Ennett, S. T., Johnson, R., Rohrbach, L.A., Simons-Rudolph, A., Vincus, A., & Thorne, J. (2003). Factors associated with fidelity to substance use prevention curriculum guides in the nation's middle schools. *Health Education & Behavior*, 30(3), 375-391.

Con formato: Español (España, internacional)

Sanchez, E. (1980). Sistemas de tratamiento y rehabilitacion de farmacodependencia. *Anales del Sexto Congreso Nacional de Psiquiatria*, 80-93.

Simpson D. D., & Sells S. B. (1990). *Opioid addiction and treatment: a 12 year follow-up*. Malabar, FL: Robert E. Krieger.

Simpson D. D., & Sells, S. B. (1982). (1982). Effectiveness of treatment for drug abuse: An overview of the DARP research program. *Advanced Alcohol Substance Abuse*, 2, 7-29.

Simpson, D. D., & Brown, B. S. (1999). Special issue: treatment process and outcome studies from DATOS. *Drug and Alcohol Dependence*, 57, 81-174.

UNAFEI. (2005). *Research on the trends in drug abuse and effective measures for the treatment of the drug abusers in Asian countries: An analysis of innovative measures for the treatment of drug abusers*. Tokyo, Japan: The United Nations Asia and Far East Institute for the Prevention of Crime and the Treatment of Offenders (UNAFEI).

Verachai, V., Punjawatnun, J., & Perfas, F. (2003). The results of drug dependence treatment by therapeutic community in Thanyarak Institute on Drug Abuse. *Journal of the Medical Association of Thailand*, 86, 407-414.

Con formato: Español (España, internacional)