

**Examining Participants' Motivation to Change in Residential Drug Abuse
Program Graduates: Comparing "Stages of Change" Assessment Data
with Post-Release Status.**

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First, I dedicate this dissertation to my wife, Tracy. Without her sacrifice, support and patience this journey would not have been possible, and to my five children, Paul, Molly, Ryan, Timothy, and Andrew, who all sacrificed so that I could grow. The time this journey took away from them and their lives can never be replaced.

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DEDICATION

To God,
My Lord and Savior, Jesus Christ,
and the Faithful

“...as argued by Lipsey (1990), evaluation research is better served by accepting an increased likelihood of Type I error and lowering the probability of a Type II error. Unlike basic research, where it is more desirable to take a conservative approach to making conclusions about relationships between various phenomenon, evaluation research may be better served by decreasing the probability that an effective treatment is falsely found to be ineffective (Type II error).”

~ B. Pelissier and colleagues, *TRIAD Drug Treatment Evaluation Project Final Report of Three-Year Outcomes, Part , 1*, September 20000, p. 132, BOP/ORE

ABSTRACT

This study examined the ability of three instruments designed to measure an individual's motivational readiness to change to predict successful post-incarceration adjustment. It examined the post-release status of a sample of BOP inmates who completed the Residential Drug Abuse Program (RDAP) at a low security federal correctional institution with their post-test RDAP scores on three "stages of change" instruments—the University of Rhode Island Change Assessment (URICA), the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) 8A (Alcohol), and SOCRATES 8D (Drugs). The questions that guided this study were: Do inmates' motivation to change from lifestyles of criminal and addictive behaviors increase or improve through their participation in prison-based treatment programs? If so, how do we know—what are the predictors of post-release rehabilitation? More specifically:

- Can an inmate's score on SOCRATES and URICA "stages of change" instruments, which are designed to measure an individual's motivation to change addictive behaviors, predict post-release rehabilitation, defined as remaining crime- and drug-free, and maintaining stable housing and employment?
- Which, if any, of these instrument scales predict post-release success?
- Do other demographic variables predictive of post-release success emerge from the data?

This study used post-release extant survey data obtained through each former inmate's probation district regarding participants' post-release status in

regards to four factors the literature specifies as indicators of successful rehabilitation—remaining crime-free (recidivism), remaining abstinent from illicit substance use (relapse), maintaining stable employment, and maintaining stable housing. These four factors served as the response (dependent) variables. The individuals' post-treatment instrument scores (SOCRATES & URICA) served as the primary predictor (independent) variables, and various demographic data also served as predictor variables.

Several factors were identified which were predictive of RDAP participants' successes or failure on supervised release (SR). One stages of change measure, the SOCRATES 8D (drug), was associated with criminality and employment instability. Participants' education level was associated with substance use, employment instability, and SR revocation, and participants' race was associated with employment and housing instability. Participants who were placed in RDAP failure status prior to SR (RDAP Failure-Outcome), had greater risk of criminality, substance use, and SR revocation, and they had greater odds of employment and housing instability. As anticipated, these participants performed more poorly on SR. In fact, RDAP failure was the most telling indicator of post-release failure and was found to be associated with every outcome indicator. Several suggestions and recommendations for further research and programming were provided.

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Abbreviations and Acronyms

BOP	Federal Bureau of Prisons
CCC	Community Corrections Center, or halfway house
CJ-DATS	The National Institute on Drug Abuse's National Criminal Justice Drug Abuse Treatment Studies
CMR	Circumstance, Motivation and Readiness Scale
CMRS	Circumstance, Motivation, Readiness and Suitability Scale
DAPs	Drug Abuse Programs
DEP	Drug Education Program
DOC	Department of Corrections (state)
DTS	Drug Treatment Specialist
FS	Follow-up Services (aftercare)
GED	General Educational Development
HR	Hazard ratio
HS	High school
HSD	High School diploma
NARA	Narcotic Addict Rehabilitation Act of 1966
NCDOC-SAAC	North Carolina Department of Corrections Substance Abuse Advisory Council
NIC	National Institute on Corrections
NIDA	National Institute on Drug Abuse
NRDAP	Non-Residential Drug Abuse Treatment Program
OR	Odds ratio

PO	U.S. Probation Officer
RDAP	Residential Drug Abuse Treatment Program
RR	Relative risk
SAMHSA	Substance Abuse and Mental Health Services Administration
SDT	Self-determination theory of motivation
SOC	Stages of change (from addictive behaviors)
SOCRATES	Stages of Change Readiness and Treatment Eagerness Scale
SOCRATES 8A	Alcohol recognition instrument
SOCRATES 8D	Drug recognition instrument
SOCRATES RE	Readiness subscale
SOCRATES AM	Ambivalence subscale
SOCRATES TS	Taking Steps subscale
SR	Supervised Release
TASC	Treatment Accountability for Safer Communities program
TC	Therapeutic community
TCU/CJ CEST	Texas Christian University Criminal Justice Client Evaluation of Self and Treatment measure
TCU-IBR	Texas Christian University's Institute of Behavioral Research
TCUDS	Texas Christian University Drug Screen
TLT	Transformative learning theory
TRAP	Treatment and Rehabilitation of Addicted Parolees program
TRIAD	Treating Inmates' Addiction to Drugs

TTM	Transtheoretical model of self-initiated change
URICA	University of Rhode Island Change Assessment
URICA PC	Pre-contemplation stage subscale
URICA C	Contemplation stage subscale
URICA A	Action stage subscale
URICA M	Maintenance stage subscale
USPO	United States Probation Office
VCCLEA	Violent Crime Control and Law Enforcement Act of 1994

CHAPTER ONE

Introduction

According to a recent study released by The Pew Charitable Trusts titled *One in 100: Behind Bars in America 2008*, the United States incarcerates more people than any country, including nations much more populous, such as China, India or Russia (The Pew Center on the States, 2008). By 2008, the U.S. penal system (state and federal prisons, city and county jails, and so forth) held more than 2.3 million adults. China was second, with 1.5 million people incarcerated, and Russia was third with 890,000 inmates. The U.S. also leads the world in the rate of incarceration. For example, Germany has 93 people in prison for every 100,000 adults and children, while the U.S. rate is approximately eight times that, at 750 per 100,000.

Between 1987 and 2007, the United States state and federal prison population tripled, from approximately 585,084 to 1,596,127, and when added to the approximately 723,131 people in local jails, the total adult inmate count at the beginning of 2008 was over 2,300,000. From the end of 1990 to mid-year 2000, the rate of incarceration rose from one in every 218 U.S. residents to one in every 142. By 2008, with the number of adults in the U.S. being about 230 million, the incarceration rate in the U.S. is now one in every 99.1 adults (The Pew Center on the States, 2008).

The number of inmates in federal prison system reached 201,280 by the end of year 2008, and approximately 52.5 % of these inmates are incarcerated for non-violent drug offenses. In 1994, when the Bureau of Justice Statistics'

Federal Justice Statistics Resource Center, which is maintained through the Urban Institute, began accumulating prison population data sets, the federal prison population was 84,362 (Federal Justice Statistics Resource Center, 2008). In fourteen years, the federal prison (Federal Bureau of Prisons) population increased by 116,918 inmates, an annual rate of about 8350 inmates per year. It has been estimated that about 95% of all those incarcerated will eventually return to the community at a rate of about 1600 offenders per day (Travis, Solomon, & Waul, 2001; Travis & Lawrence, 2002).

Of the 201,280 inmates incarcerated with the Federal Bureau of Prisons (BOP), 188,007 are male (93.4 %), and 13,273 (6.6 %) are female. Racial/ethnic breakdowns are as follows: White, 114,708 (57.0 %); Black, 79,724 (39.6 %); Native American, 3,494 (1.7 %); Asian, 3,354 (1.7 %). Of these, approximately 63,967 are Hispanic (31.8 %). A black male born in 1991 stands an approximate 29% chance of being incarcerated at some point in his life compared to 4% for a white male born that year, and a 16% for a Hispanic male (Travis & Petersilia, 2001). If recent incarceration rates remain unchanged, an estimated one out of every twenty persons (5.1%) will serve a prison or jail sentence during their lifetime. Lifetime chances of a person going to prison are higher for men (9%) than for women (1.1%) and higher for blacks (16.2%) and Hispanics (9.4%) than for whites (2.5%) (Bonczar & Beck, 1997; Beck & Harrison, 2001).

The societal cost of substance abuse, as well as incarceration, continues to rise. In 1995, the estimated societal cost of alcohol and drug abuse was approximately \$276 billion (Cartwright, 1999). This estimate represents \$965 for

every man, woman, and child living in the United States. The study reported that alcohol abuse and alcoholism generated about 60 percent of the estimated costs (\$148 billion), while drug abuse and dependence accounted for the remaining 40 percent (\$98 billion), more than one-half of which was associated with drug-abuse related crime, including drug control and police costs, the costs associated with incarceration, and so forth. Figures on the annual per capita cost estimation of incarceration are approximately \$22, 650, or \$62.05 per day, for state inmates, and \$22,632, or \$62.10 per day, for federal inmates (Stephan, 2004). Joseph A. Califano, Jr., former US Secretary of Health, Education, and Welfare, estimates that by 2007 the cost of drug abuse to America had grown to approximately \$1 trillion dollars per year (Califano, 2007).

Lisa Scheckel (1993), Acting Director of the Center for Substance Abuse Treatment of the Substance Abuse and Mental Health Services Administration (SAMHSA), an agency of the U.S. Department of Health & Human Services, indicates that approximately 80% of offenders, parolees, and probationers have some degree of substance abuse problem related to their criminal activity, and more than half of inmates in prisons and local jails report being under the influence of drugs or alcohol at the time of their arrest—more than 70% of offenders in many metropolitan areas test positive for drugs. According to Scheckel, substance-abusing offenders commit four to eight times more crimes than other criminals. A 1997 survey of inmates in state and federal correctional facilities indicated that 51% reported the use of alcohol or drugs while committing their offense (SAMHSA, 2000). Consider these facts:

- Assault, murder, and sexual assault were most closely tied to alcohol use at the time of offense (Mumola, 1999; Vito, Maahs & Holmes, 2007).
- Nearly 79% of federal inmates and 83% of state inmates had used drugs in the past, and 65% of federal inmates used drugs weekly. Thus, over 75% of all prisoners can be characterized as alcohol- or drug-involved offenders (Mumola & Karberg, 2004).
- About one in six prisoners said they committed their offense to get money for drugs (Mumola, 1999; Spiess & Fallow, 2000).
- Approximately 54% of state inmates and 46% of federal inmates meet the diagnostic criteria for substance abuse or dependence, (Mumola & Karberg, 2006).
- Sixty percent of all prisoners had driven while under the influence of alcohol or drugs (Mumola, 1999).
- Nearly 57% of all state and 47% federal inmates have been treated for substance abuse in the past, and about 33% of state inmates and 28% of federal inmates had participated in either drug treatment or other drug abuse programs since incarceration (Mumola, 1999).
- The scientific literature points out that drugs and alcohol have a multiplying effect on crime (Deitch, Koutsenok, & Ruiz, 2000).
- Epidemiological statistics indicate that 60% to 80% of all crime is drug related (Mumola, 1999).
- Less than one-fifth of alcohol-abusing prisoners participated in treatment while incarcerated (Mumola, 1999).

- A comprehensive recidivism study conducted by the Bureau of Justice Statistics on 272,111 inmates released in 1994 from 15 State facilities and followed for three years indicated that 29.9% were rearrested for a felony or serious misdemeanor within the first three months, which increased to 44.1% after one year, 59.2% after two years, and 67.5% after three years, and involved the commission of 744,480 new crimes of which about 80,000 were for drug possession and about 6,000 for DUI (Langen & Levin, 2002).
- Between 1986 and 1994, 215,263 offenders were released from Federal prison, of which 16% (33,855) returned to federal prison within three years; of those who returned to prison about 20% (6771) were returned solely for submitting urinalysis samples testing positive for illicit substance use (Sabol, Adams, Parthasarathy, & Yuan, 2000).
- The statistics show that untreated addicts recidivate faster than non-addicted controls, and their recidivism usually involves crimes other than simple parole violations (Deitch, et al., 2000).

About 51% of the U.S. population drinks alcohol, with 29% consuming alcohol at least weekly (SAMHSA, 2003). In 2002, an estimated 19.5 million Americans, or 8.3 percent of the population aged 12 or older, were current illicit drug users, meaning they used an illicit drug at least once during the month. About 22 million, or about 9.4% of the total population age 12 or older, were classified with a substance use disorder. Of these, approximately 3.9 million were dependent on or abused illicit drugs but not alcohol, and 14.9 million were dependent on or abused alcohol but not illicit drugs (SAMHSA, 2003).

Approximately 60% to 83% of the U.S.'s correctional population have used drugs at some point in their lives, which is about twice the estimated drug use of the total U.S. population (40%) (Walter, 2001). Considering that approximately 33% of state inmates, and 19% of federal inmates, had been drinking alcohol at the time of the offense (Rand, Sabol, Sinclair, & Snyder, 2010), even social drinking—a common experience for most Americans—can increase anyone's risk of committing a crime and becoming incarcerated.

Background

Drug abuse and crimes associated with it have been major socio-political issues in this country for some time (Hayes & Schimmel, 1993). The “war on drugs” has many fronts, and the enhanced law enforcement response to the proliferation of drugs in this country has resulted in an unprecedented increase of inmates with a drug abuse background in the prison system. The development of significant rehabilitation program initiatives for drug abusers in the federal prison system occurred after the passage of the 1966 Narcotic Addict Rehabilitation Act (NARA), but over the next two decades a reduction in the popularity of a rehabilitation mission led to a reduction in programs, and by 1987 only three programs remained (Hayes and Schimmel, 1993). In 1988, the designation of a BOP national drug abuse program coordinator ushered in a new commitment to rehabilitation of federal offenders with substance abuse programs that has increased in each year since (Hayes & Schimmel, 1993; McCaffrey, 1997; Pelissier, Gaes, Rhodes, Camp, O'Neill, Wallace, & Saylor, 1998).

The BOP offers incarcerated felons with a documented substance use history an array of treatment options. Unfortunately, only a small portion of federal inmates with substance dependence problems report that they participate in substance dependence treatment programs (White, Ackerman, & Caraveo, 2001). Drug abuse programs (DAPs) range in intensity from standardized 500-hour Residential Drug Abuse Treatment Programs (RDAP), to less rigorous Non-Residential Drug Abuse Treatment Programs (NRDAP), to the 15-hour Drug Abuse Education Program (DEP). RDAPs are very staff intensive and are offered at approximately half of the BOP institutions, while NRDAPs and DEPs are available to inmates at all institutions. The main differentiation between DEP and the DAPs (RDAP and NRDAP) is that DEP is an education program while the DAPs are treatment-oriented. DEP and DAPs were established BOP-wide beginning in the late 1980s (Pelissier, et al., 1998).

The Residential Drug Abuse Program.

The most rigorous program is the nine-month, 500-hour RDAP. Inmates are considered for participation when they are within thirty-six months of release. To be eligible an inmate needs to meet the diagnostic criteria for substance abuse and have a documented history of substance use (typically found in their pre-sentence investigation report). They reside on a special unit and are grouped in cohorts of approximately 24 participants with a staff facilitator, a drug treatment specialist (DTS), and they participate in a half-day substance abuse treatment program, five days per week, using a uniform curriculum and theoretical approach. The other half of their day is spent at either their institutional job

assignment, or in educational programs, such as: General Educational Development (GED) classes, vocational training programs, parenting classes, pre-release programs, adult continuing education classes, and so forth. These programs are offered at about 48 of the approximately 95 Federal prisons (Pelissier, et al., 1998).

Inmates determined to be non-violent offenders can receive up to one year off their sentence for RDAP completion, and all inmates who complete RDAP are eligible for the 180-day maximum Community Corrections Center (CCC—also known as halfway house) placement. From the inmates' perspective, by completing RDAP they can leave prison up to eighteen months early. RDAPs are heavily funded and since 1989 they have been the subject of an intense, ongoing study to determine their effectiveness, e.g., improving inmates' institutional adjustment, reducing their relapse/recidivism rates upon release from prison, and so forth (Pelissier, et al., 1998). They have undergone extensive investigation for several reasons, possibly—most importantly— to justify the substantial funding this program receives from Congress, and to demonstrate to the American taxpayer that they are getting positive results from their investment.

Problem Statement

Understanding an inmate's motivation to change addictive and criminal behaviors could provide clinicians and inmate participants with insights into crucial elements of substance abuse education and treatment programs, such as the timely apportioning of curriculum to match the ebb and flow of participant motivation throughout lengthy residential treatment programs, to maximize

program effectiveness and best-practice service delivery. This would help treatment providers better improve these programs in their quest to help participants change, and to prevent substance abuse relapse and recidivism.

The significance of this study centers on several factors, which include the

- escalating social and economic tolls substance abuse, crime, and incarceration are having on our citizenry;
- high correlation between substance use and incarceration and recidivism;
- relatively low availability and utilization rate of substance abuse education and treatment programs by incarcerated offenders; and
- the uncertainty that utilization of these substance abuse education and treatment programs by offenders will increase their motivation for making prosocial lifestyle changes that will result in reduced relapse and recidivism rates.

Purpose of the Study

The purpose of this study was to examine the ability of three instruments designed to measure an individual's motivational readiness to change, known as "stages of change" assessments, to predict successful post-incarceration adjustment. This research examined the post-release status of a sample of BOP inmates who completed the RDAP at a low security federal correctional institution with their pre- and post-test RDAP scores on three "stages of change" instruments—the University of Rhode Island Change Assessment (URICA), the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) 8A (Alcohol), and SOCRATES 8D (Drugs).

Stages of change instruments.

The URICA.

The URICA is a 32-item self-report measure used in treatment and research that assesses motivation for change, primarily at entrance to treatment (Allen & Wilson, 2003). It includes four 8-item subscales that measure four of the “stages of change”: Pre-contemplation, Contemplation, Action and Maintenance. Responses are given on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree (McConaughy, Prochaska, & Velicer, 1983). The subscales are combined (C + A + M – PC) to yield a second order continuous score that can be used to assess readiness to change at entrance to treatment (see Appendix G, p. 231, for reliability coefficients). The URICA is used to assess clinical process and motivational readiness for change, as well as to measure process and outcome variables, for a variety of health and addictive behaviors (McConaughy, DiClemente, Prochaska, & Velicer, 1989; Carbonari, DiClemente, & Zweben, 1994; UMBC, 2005).

The SOCRATES.

The SOCRATES 8A (alcohol) and 8D (drugs) are public domain instruments designed to assess readiness for change in substance abusers (Miller & Tonigan, 1996). Like the URICA, responses are given on a 5-point Likert scale ranging from 1= strongly disagree to 5 = strongly agree. The 19-item scales of SOCRATES version 8A, the original instrument, yields three factorially-derived scale scores with relatively little overlap: Recognition (RE), Ambivalence (AM), and Taking Steps (TS) (Miller & Tonigan, 1996). AM was unrelated to RE ($r = .03$)

and TS ($r = .03$). RE and TS were positively and modestly related ($r = .33$) (CASAA, 1995) (see Appendix G, p. 221, for reliability coefficients).

Previous use of the instruments.

Erik Faust Dietz, a Social Science Research Analyst with the Correctional Program Division, Psychology Service Branch, BOP, analyzed pre- and post-test data collected on ten cohorts (N=216) of RDAP treatment participants at FCI Waseca, Minnesota, who were given both the URICA and SOCRATES (8A & 8D). The results of the analysis did not indicate that either of the instruments showed any significant appreciable changes between pre- and post-test administrations. It did not appear that there were any consistent relationships between participants' SOCRATES and URICA scores and certain demographic characteristics (Dietz, 2005).

The fact that participants' test scores were not significantly influenced by demographic characteristics, and that specific demographic characteristics were not indicative of behavioral change, arguably lends support toward the utility of these instruments. Thus, there are several possible explanations for Dietz's findings, including the unlikely possibility that those participants in these ten RDAP cohorts did not experience any appreciable benefit to participating in drug treatment. It appears just as plausible that these participants did experience a benefit from participating in the program and that their motivation to change was enhanced, but that factors unique to the prison environment (e.g., inmate suspiciousness and general distrust of staff, social pressures among inmates,

impression management and other forms of posturing, and so forth) affected and possibly distorted the results.

The Treating Inmates' Addiction to Drugs (TRIAD) drug treatment evaluation project, an extensive research project conducted on the BOP's RDAPs throughout the 1990s, which is described in greater detail in Chapter Two, generally dispels the likelihood that the RDAP participants failed to benefit from participating in treatment as the TRIAD study revealed that RDAP completers had greater post-release success than inmates who did not participate in RDAP during their incarceration (Innis, 2000; Langan & Pelissier, 2002; Pelissier & McCarthy, 1992; Pelissier, et al., 1998; Pelissier, Rhodes, Saylor, Gaes, Camp, Vanyur, & Wallace, 2000). A second, more cogent explanation to account for the generally non-significant findings is the possibility that the assessment instruments, which were not designed as predictive tools and were not normed with correctional populations, are not appropriate assessment instruments for the RDAP population. This is a plausible assumption, but additional investigation and analysis is necessary to either rule out or to accept this explanation.

A third explanation for why none of the instruments showed any significant appreciable changes between pre- and post-test administrations has to do with the RDAP setting. Treatment in correctional environments, which are necessarily restrictive, do not provide enough opportunities for participants to demonstrate change. The controlled environment of correctional facilities significantly limits

inmates' choices and their ability to demonstrate rehabilitation. As Deitch, et al., succinctly state:

The consideration of context is central to the discussion of treating the criminogenic drug taker, or the drug taker who ends up committing a crime in support of his or her drug dependence. For example, treating clients who are addicted but not necessarily criminogenic in the community (i.e., in an environment with a prosocial atmosphere) is decidedly different from treating the same individual in the context of an antisocial environment with a set of rules, norms and values that support deviance (and also literally physical survival), such as may be found within a penal setting (2000, p. 391).

One or more of the instruments may provide better predictability of RDAP participants' success upon release, as opposed to success in a post-treatment controlled prison environment. Therefore, change opportunities in the community with adequate time and decreased controls might better demonstrate a relationship between one or more of these instruments, as well as certain demographic variables, and successful community adjustment. This study builds on this research and further investigates whether or not any of the three instruments predict RDAP participants demonstrated appreciable lifestyle change upon release as based on four post-release factors traditionally indicative of prison program rehabilitation: avoiding relapse and recidivism, and stability of employment and housing.

Research Questions

The fundamental questions that guided my study were: Do inmates' motivation to change their lifestyles of criminal and addictive behaviors increase through participating in prison-based treatment programs? If so, how do we know—what are the predictors of post-release rehabilitation? More specifically:

- Can an inmate's score on SOCRATES and URICA “stages of change” instruments, which are designed to measure an individual's motivation to change addictive behaviors, predict post-release rehabilitation?
- Which instruments, or subscales, predict post-release success?
- Do other predictor variables emerge from the data?
- Are the SOCRATES and URICA sufficient for predicting post-release success, or is a new instrument, developed specifically for use in a correctional setting, needed?

I anticipated that this study would give us a greater understanding of, and hopefully greater ability to predict, inmate's motivation to change through their participation in prison-based drug abuse treatment programs. At the present time there is no gold standard in measuring stages of change in the drug abuse that has been identified in the literature, and there is a scarcity of research comparing different measurement approaches (Napper, Wood, Jaffe, Fisher, Reynolds, & Klahn, 2008). This study sheds further light and clarification on the efficacy of these instruments' (URICA and SOCRATES) predictive ability in forecasting successful inmate outcomes from RDAP participation and completion as determined by successful community integration, defined as their remaining

crime free, and refraining from illicit or unauthorized substance use, and maintaining stable housing and employment. I also anticipated that this research might provide support for the future development of a stages of change instrument developed for and normed with a correctional population.

Lastly, it is anticipated that these findings might provide information to help prison treatment staff develop and match differing focuses of treatment for inmates with varying motivation (i.e., within different stages of change). I anticipated the results will be useful in tailoring treatment for certain individuals engaged in substance abuse education, treatment, and aftercare programs, both in prison and upon release, to bolster their overall motivation to adopt and maintain a prosocial lifestyle.

Assumptions Behind This Study

An assumption going into this study was that some of the variables under investigation, which are reviewed below, would predict successful post-release adjustment and stability (remaining abstinent and crime-free), and others would predict post release maladjustment (relapse and recidivism).

Review of the Variables

This study used post-release extant survey data obtained through each former inmate's probation district, which will be discussed in greater detail in Chapter Three, regarding participants' post-release status in regards to four factors the literature specifies as indicators of successful rehabilitation—remaining crime-free (recidivism), remaining abstinent from illicit substance use (relapse), maintaining stable employment, and maintaining stable housing. These

four factors served as response (dependent) variables (Figure 1, below). The individuals' post-treatment instrument scores (SOCRATES & URICA) served as the primary predictor (independent) variables, and various demographic data also served as predictor variables.

I. Criminality

- Return to crime/prison (recidivism)
- Intermittent (minor) criminal behavior/legal entanglements
- Crime-free (no criminal behavior)

II. Substance Use

- Return to active/addictive substance use (relapse)
- Occasional use (lapses)
- No illicit/unauthorized substance use

III. Employment

- Unemployed
- Intermittent (sporadic) periods of employment
- Uninterrupted (steady) employment

IV. Housing

- No permanent housing (unstable housing)
- Frequent housing moves (intermittent unstable)
- Stable housing

Figure 1. Four Response Variables Utilized to Determine RDAP Participants' Post-Release Status

Response variables for successful reintegration.

The literature clearly indicates that remaining crime- and drug-free, and stability of employment and housing, are tantamount to society's view of successful community reintegration and rehabilitation. Typically, successful reintegration is declared when the individual had been free from substance abuse and criminality, and has maintained successful employment and housing, for at least two years. However, difficulties maintaining adequate housing and

employment are considered technical violations of supervised release, as is minor substance use, and the more likely consequence would be placement in a halfway house to afford them the assistance and opportunities to secure stable employment and housing, and to obtain substance abuse treatment (or re-treatment). Stated another way, these former inmates were not sentenced to serve time in prison and afforded the opportunity for a substance use treatment program primarily because they were unemployed or homeless. These conditions likely contribute to and/or result from criminal and addictive behaviors and lifestyle choices, which resulted in their incarceration and could result in relapse and recidivism.

Predictor variables for successful reintegration.

The former inmates' extant "stages of change" test scores and non-identifiable demographic (covariate) data served as predictor (independent) variables (Appendix B, p. 206). Those covariates thought most likely to predict post-release status (successful or unsuccessful rehabilitation and reintegration) are reviewed.

Instrumentation variables.

Post-test URICA PC score (pre-contemplation stage).

Individuals who scored high on this subscale are generally unaware of, deny or defiantly resist acknowledging having a substance abuse problem. It is presumed that individuals scoring high on this subscale after completing a 500-hour residential treatment program would have poorer outcomes. A high score on this subscale, as well as a high score on the URICA M subscale (signifying they

are struggling to maintain change), would also predict poorer outcomes.

Conversely, a lower score on this subscale, along with a high score on URICA A subscale (actively pursuing and committed to change), would predict better post-release success.

Post-test URICA C score (contemplation stage).

A high score on this subscale generally indicates an individual is contemplating change, but has not yet committed to making changes. As a note of caution, it is not suggested that the URICA C subscale be used to predict end-of-treatment success (The Health Habits Lab at UMBC, n.d.). However, a low score on this subscale, along with a high score on the URICA PC subscale, points out that the individual is not contemplating change because they do not believe, or have not accepted, they have a problem. In this situation one could presume poorer performance on supervised release. However, a lower score on this subscale, accompanied by a high score on the URICA A subscale, would appear to be predictive of good outcomes. In this case, the individual's low score on URICA C indicates they are no longer contemplating whether they have a problem as their higher URICA A score indicates they are actively addressing the problem.

Post-test URICA A score (action stage).

A high score on this subscale generally indicates an individual is actively pursuing prosocial change and would presumably have better outcomes on supervised release. However, a point of caution is in order. As previously mentioned, these individuals completed a substance abuse treatment program,

and although addressing criminal lifestyle issues was a component of treatment, it was not the primary focal point. These instruments measured stages of change regarding substance abuse, not necessarily or specifically criminality. Thus, an individual can present as motivated to change their addictive behaviors per their assessment scores, but not be equally matched in their commitment to a crime-free lifestyle, or vice versa.

Post-test URICA M score (maintenance stage).

Maintenance items assess the degree that change is integrated into a person's life (DiClemente & Prochaska, 1998). This score is often misconstrued as indicating that a high score on this subscale indicates an individual is successfully maintaining changes and would presumably have better outcomes. However, this is not the case. This subscale actually measures *struggling to maintain change*, which means individuals who strongly endorse these items are having trouble maintaining the behavior change (Napper, et al., 2008). Hence, one might presume high score in this subscale correspond to poorer outcomes.

Post-test URICA total score (sum of four scores).

This subscale produces what is referred to as the readiness to change score. This score is derived by summing the means from the Contemplation, Action, and Maintenance subscales and subtracting the Pre-contemplation mean ($C + A + M - PC = \text{Readiness}$). A cautionary note: it is suggested that the readiness score derived from the URICA can be used prior to treatment to predict outcomes. However, when the scores from the URICA are being used to indicate progress during treatment or as end-of-treatment predictors of outcomes, the A

and M subscale should be used (The Health Habits Lab at UMBC, n.d.). Thus, it is unclear whether or not a higher score on this subscale predicts post-release success, but it appears to indicate an increased readiness to change, which I assume would be a better predictor of successful outcomes than lower scores on this subscale.

Post-test SOCRATES 8A (recognition-alcohol) & 8D (recognition-drug) RE scores.

High scores on these subscales indicate acknowledgment of an alcohol use (8A) or drug use (8D) problem and a desire for change (action stage). Low scores, on the other hand, imply denying an alcohol or other drug use problem and do not express a desire for change (pre-contemplation stage). Although all participants in RDAPs have to meet the diagnostic criteria for a substance use disorder for program admission, not all of them necessarily had a problem with both alcohol and other drugs. For most, another drug, such as cannabis or cocaine, was their substance of dependence. Thus, the 8A RE subscale, and the other 8A subscales, would appear to have greater relevance and predictive applicability to those individuals who had problems with alcohol, or with alcohol plus other drugs. However, future alcohol use could serve as a gateway to their preferred substance, as well as to environments that pose greater relapse and criminality risks, so one could presume that lower scores on either the 8A or 8D subscales would indicate poorer outcomes.

*Post-test SOCRATES 8A (ambivalence-alcohol) & 8D (ambivalence-drug)
AM scores.*

These subscales measure an individual's ambivalence or uncertainty regarding an alcohol or other drug use problem. High scores on these subscales signify openness to reflection and consideration (contemplation stage), whereas a low score points to reluctance. These scores should be interpreted in relation to their RE (recognition) subscale score. Low scores on these subscales coupled with high scores on the RE subscales indicate they are not ambivalent, but are aware and accepting of their problem. These individuals would presumably have better outcomes. Low scores on these subscales along with low score on the RE subscales signify low awareness. These individuals would presumably have poorer outcomes.

*Post-test SOCRATES 8A (taking steps-alcohol) & 8D (taking steps-drug)
TS scores.*

High scores on these subscales signify the individual is already making positive changes in their life (action stage) and would presumably be predictive of successful post-release outcomes. Low scores, conversely, indicate the individual is not actively engaged in change and would presumably experience poorer outcomes.

Demographic Variables.

Age.

It was anticipated that older individuals, who tend to be less impulsive, would perform better while on supervised release. Younger individuals, who tend

to be more impulsive and impressionable, were presumed to have performed more poorly.

Race.

Race was categorized as white (caucasian), black (African or African American,) Asian, or American Indian. It was anticipated race would not be a significant predictor of post-release success.

Ethnicity.

This variable differentiated hispanic and non-Hispanic individuals. It was anticipated that ethnicity would not be a significant predictor of post-release success.

Education.

Participants were categorized in three education groupings: those who had not attained their GED or High School (HS) diploma; those who had attained their GED or HS diploma; and those who had some post-secondary education, whether college, vocational, or otherwise. It was anticipated that better educated individuals, such as those who had completed high school or had attained their GED, would perform better on supervised release as they were presumed to have better employment skills, a more intact work history, and thus have an easier time finding and maintaining gainful employment. Conversely, less educated individuals, such as those who had not attained their high school diploma or GED, generally present with a more sporadic work history, poorer work-related social and performance skills, and have less experience with prosocial employment. These individuals, one might presume, would have

greater difficulty finding and maintaining gainful employment and would be more susceptible to relapse or criminogenic temptations.

Early release status.

This is perhaps the most interesting variable. This variable distinguishes those former inmates who either were or were not eligible for early release consideration of up to one year off their sentence for successful RDAP completion. Individuals who received a sentence reduction of up to one year for successful RDAP completion are assumed to have had a more compelling investment in successful RDAP completion, but do these individuals necessarily maintain their commitment over time (i.e., while on supervised release), after the incentive is removed or has been attained? After all, it could be presumed that these individuals' foremost incentive for treatment participation and completion was not internally-driven, but externally derived from compelling inducements. In other words, it is uncertain that these individual's motivational progression has advanced beyond external regulation to where introjection or identification motivational regulatory styles have been realized.

On the otherhand, former inmates who successfully completed RDAP without this incentive may be presumed to be more invested in change, possess more fully integrated motivation, and be internally induced towards rehabilitation and reintegration into society. Thus, their motivation would presumably be less likely to waver. However, the reason these individuals did not qualify for the sentence reduction incentive had nothing to do with the the severity of their past substance use, but on the perceived severity of their current and past criminal

behavior. These individuals had committed crimes, such as the use or possession of firearms, or other crimes of a real or potentially violent nature, which rendered them ineligible for early release consideration. These are generally the more hardened criminals and are not the typical first-time offender. Because of the extent or duration of these individuals' past criminal lifestyle commitment and involvement, these individuals could be more tempted toward criminogenic opportunities or sentiments. With these intricacies in mind, one could presume that those former inmates who were not eligible for and had not received the early release incentive would perform better on supervised release than those individuals who had received a sentence reduction based solely on their assumed attainment of more fully integrated and internalized motivational styles.

RDAP failure—outcome.

These are former inmates who successfully completed the RDAP, but sometime after program conclusion lost their completion status, either while still in prison or at a transitional halfway house, for major rules violations, such as: fighting or threatening violence, drug or alcohol use or possession, failure to comply with aftercare commitments, and so forth. Because these individuals technically failed treatment prior to supervised release, it was predicted that these former inmates would likewise perform poorly while on supervised release.

Stability of employment and housing.

As previously discussed, a former inmate's employment and housing status on supervised release could serve as both predictor and response

variables. It is presumed that the greater the stability and satisfaction one has with their employment, the less likely they will be to resume criminal behavior. Also, as a lack of gainful employment, or unsatisfactory employment, creates boredom and a sense of a lack of challenge and general frustration, individuals with less stable employment and a lack of legitimate income are more likely to relapse into substance use or to commit new crimes. The same appears true for stability of housing, especially as it relates to an individual's safety and security needs. Stability of employment and housing, therefore, are presumed to correspond to better outcomes, and instability to poorer outcomes.

Substance use (relapse) status.

This variable refers to former inmates' return to substance use and was categorized as no substance use, intermittent/occasional substance use, or return to active addiction (i.e., relapse). These outcomes were compared to the individuals' supervised release status—those who successfully completed and discharged from their term of supervised release, were unsuccessfully discharged from supervised release (i.e., re-incarceration), or successfully remained on supervised release. It was anticipated that those individuals who experienced no substance use had a greater likelihood of successfully completing their term or successfully remaining on supervised release (i.e., were less likely to return to prison), and that those who experienced intermittent substance use or return to active addiction were more likely to return to prison (i.e., less likely to successfully complete or remain on supervised release).

Criminal behavior (recidivism) status.

This variable refers to former inmates' return to criminal behavior and was categorized as no new criminal behavior, intermittent/occasional less serious (minor or petty) criminal behavior, or return to active criminality/new (major or serious) criminal behavior. These outcomes were compared to the individuals' supervised release status, as previously described. It was anticipated that those individuals who experienced no new criminal behavior had a greater likelihood of successfully completing their term or successfully remaining on supervised release (i.e., were less likely to return to prison), and that individuals who experienced intermittent/occasional or serious criminal behavior/return to active criminality were more likely to recidivate (i.e., less likely to successfully complete or remain on supervised release).

Crime and substance use.

It was predicted that those individuals who experienced no new criminal behavior had a greater likelihood of maintaining abstinence from substance use (i.e., were less likely to have experienced occasional substance use or return to active addiction). Conversely, individuals who experienced intermittent/occasional, less serious criminal behavior, or returned to active criminality/serious criminal behavior, would be less likely to maintain abstinence from substance use (i.e., more likely to have experienced relapse).

Substance use and crime.

It was predicted that those individuals who remained abstinent had a greater likelihood of remaining crime-free (i.e., less likely to recidivate), and those

individuals who experienced occasional/intermittent substance use or returned to active addiction (relapse) had a greater likelihood of new criminal conduct and recidivism.

Qualifications of Researcher

I have undergraduate degrees in Political Science and Psychology, and I received my Masters of Science degree in Counselor Education, Community Counseling, in 1991 from Winona State University in Winona, Minnesota. I started working for the Federal Bureau of Prisons in 1989, and I have been a Drug Treatment Specialist with the federal prison system since 1991, working in residential and non-residential treatment and drug abuse education in both male and female adult federal correctional institutions. In the above section on the previous use of the stages of change instruments at FCI Waseca, I collected the original pre- and post-assessment data on the ten RDAP cohorts. Throughout my professional career, I have been an avid proponent of the stages of change and transformative learning theories as ways to understand how people change their addictive behavior.

Summary

This study used archival motivational assessment and demographic data on 216 former inmates who had completed prison-based residential substance abuse treatment. These scores were compared to extent data received from surveys sent to their respective U.S. probation officers (PO) on their success while on supervised released. It provides insights into factors that predict post-release success and failure, as well as suggestions for further consideration.

As a society, we cannot overstate the importance of effective treatment for substance abusing offenders as good public policy (Senay, 1984; Jaggar, 1996; Taxman, 1998). The staggering social and economic costs of substance abuse and crime demand action and create urgency for effective solutions. What we do know is that effective, comprehensive treatment is necessary to reduce recidivism and promote prosocial behavior (Deitch, et al., 2000). Recently, the BOP's longitudinal evaluation of their RDAPs show promise for reducing inmates' resumption of substance use and criminality after release (Pelissier, Wallace, O'Neil, Gaes, Camp, Rhodes, & Saylor (2001b).

There is a significant amount of attention currently focused on offenders leaving prison (Nelson & Trone, 2000; Lynch & Sabol, 2001), and on understanding successful reentry, especially the relationship between reentry initiatives and what Lehman and colleagues term "pre-entry" initiatives (Lehman, Beatty, Maloney, Russell, Seymore, & Shapiro, 2002, p. 1). My research contributes to our knowledge about the indicators of successful rehabilitation and takes a small, positive step in helping us understand how inmates' motivation in treatment corresponds to their commitment to change and achieve post-release success. In the following chapter, the relevant literature and foundational theoretical perspectives supporting this study are reviewed.

CHAPTER TWO

Literature Review

This review focuses on three main areas tied into my area of study. First, I review the history and development of evaluation in educational and substance abuse programs in correctional settings to understand the underpinnings of correctional education and treatment program development and evaluation, and of determinants of successful rehabilitation and reintegration. Second, the history and development of the concepts of motivation and readiness to change are explored to present a more useful understanding and application of motivation as it applies to participants in prison-based programs, who have myriad and often conflicting contingencies that both enhance and bolster, and at the same time undermine and hinder, participants' motivation to change. Third, I examine conceptual elements or procedures of self-initiated change, and I present theoretical perspectives that I believe best help us understand how people proceed to change, or become mired in and eventually abandon the change process, which in this study relates to the commitment to an abstinent and crime-free lifestyle upon release from incarceration and on to community supervision.

Evaluation in Corrections

The advent of drug treatment programs in American correctional institutions, and their research and evaluation, is a relatively recent development. The Narcotics Addict Rehabilitation Act (NARA) of 1966 is generally credited with providing the legislative impetus for creating prison-based drug treatment programs within the federal prison system, the Federal Bureau of Prisons (BOP)

(Simrell, 1970; Murray, 1992). This act specified drug addiction as an illness and began federal support for the treatment of addiction as an alternative to incarceration. Addicts charged with federal offenses were eligible for civil commitment in lieu of criminal prosecution. Those accepted into diversion were committed to the custody of the Surgeon General for a period not to exceed 36 months. They were treated at Public Health Service hospitals in Fort Worth, Texas, and Lexington, Kentucky, which were first opened in 1938 as narcotics farms, or at BOP correctional institutions.

NARA also called for the creation and expansion of prison-based drug treatment programs (Innes, 2000; Leukefeld & Tims, 1992; Murray, 1992). From 1966 through about 1988, several types, models, and iterations of drug treatment programs were designed and disjointedly implemented throughout the BOP. Although comprehensive evaluations of these programs were never undertaken, the efficacy of the various programs was thought to be meager (Murray, 1992). By the 1980s an attitude of 'nothing works' was commonplace among correctional administrators (Tims & Leukefeld, 1992).

Varieties of research and evaluations.

A summative evaluation is an evaluation implemented "for the purpose of determining...a final evaluative judgment" (Russ-Eft and Preskill, 2001, p. 22). Summative evaluations can be used for a number of purposes, such as: monitoring and auditing programs, obtaining an outcome or output measure, assessing the impact of an intervention or program, and assessing or comparing the performance of a program or organization, particularly in the non-profit

sector, to specific benchmarks or standards. Formative evaluations, on the other hand, are typically conducted during or throughout a program with the objective of improving the evaluand (that which is being evaluated) (Russ-Eft & Preskill, 2001). Patton (2002) uses the term process evaluation to describe a type of formative evaluation that aims at “elucidating and understanding the internal dynamics of how a program, organization, or relationship operates” (p. 159).

Correctional program evaluation.

Correctional drug treatment program evaluation results are often contrasted or linked with larger initiatives and studies, such as community or state crime and drug use reduction initiatives, in which case treatment results (e.g., participant success and program effectiveness) are judged primarily by relapse and recidivism rates (Taxman, 2001). Thus, when we talk about “what works” in prison-based treatment, we need to examine the larger context—from what or whose perspective, and toward what end? For instance, are the treatment program evaluation dependent variables political, economic, or community objectives (e.g., reduce crime, increase public safety), or institutional or system objectives (e.g., reduce offender recidivism) that “treatment” can reasonably impact? Is it a specific program’s objective for the treatment program (e.g., participant admissions or completions, or success/failure rates); a specific program’s objective for their participants (e.g., reduce or eliminate illicit drug use, learn specific skills, increase commitment to prosocial lifestyle upon release); or the participant’s *own* objective (e.g., gain information, change or eliminate a behavior, receive a perceived benefit or avoid a perceived punishment)?

For many treatment programs what defines success are simplistic measures, such as treatment completion or attendance rates, or patient satisfaction reports. Successful participant rehabilitation is often determined equally simplistically by various dichotomous indicators, such as completed versus failed, abstinent versus relapsed, and so forth. Another program evaluation concern is what is measured, and when, to determine program effectiveness. The ideal would be formative evaluations throughout the treatment program to examine components and processes for purposes of improvement, and a summative evaluation upon program completion to examine outcomes.

The majority of prison-based drug treatment studies are of a longitudinal, summative design. Formative evaluations built-in as established components are a recent development in correctional programs. Most prison-based drug treatment programs consist of a series of components, such as pre-treatment educational programs, a formal treatment program of varying length and intensity, and a post-treatment component often termed "aftercare." Thus, determining "completion" can be somewhat arbitrary. How do we know if or when treatment has taken hold; meaning, have the participants internalized the programs' philosophy and values and successfully incorporated these into their lives? From a formative evaluation context of prison-based drug treatment, which applies to and reflects upon both the program and the participants, how are participants' motivation and readiness to change gauged throughout the treatment process and thereafter? Where did the participant start, and where did

they end up? Did they change, and if so, how much? Will that commitment transfer to the community?

Prison drug treatment program evaluation.

The majority of studies on the effectiveness of prison-based drug treatment programs are of two varieties: surveys and outcome evaluations. Surveys—of a specific system, or on a state or on a national level—are commonly designed to gain information about drug treatment programs. These surveys attempt to elicit information about such features or aspects as current practices, program availability, participants served, frequency of drug use and scope of diagnosed substance abusers, program design or content (processes), funding issues, staffing, and so forth. Examples of these studies are widely available (Brown, 1992; Leukefeld & Tims, 1992; Lipton, Falkin, & Wexler 1992; L.I.S.I., 1989; Mumola, 1999; Pelissier & McCarthy, 1992; Tims & Leukefeld, 1992).

Longitudinal outcome evaluations of a specific program, or programs within a state or system, typically attempt to collect data on program effectiveness (Fletcher & Tims, 1992; Murray, 1992; Pelissier, Gaes, Rhodes, Camp, O'Neil, Wallace, & Saylor, 1998; Pelissier, Rhodes, Saylor, Gaes, Camp, Vanyur & Wallace, 2000a; Peters & May, 1992; Porporino, Robinson, Millson, & Weekes, 2002; Scheckel, 1993; Solomon, Gouvis, & Waul, 2001; Weinman, 1992; Wexler, Falkin, Lipton, & Rosenblum, 1992; Winett, Mullen, Lowe, & Missaklan, 1992). Most of these studies rely on recidivism rates (and more recently relapse rates) as the benchmark of participant and program success.

For example, a reduction in overall recidivism rates within a state might be shown to be linked to an increase in prison-based drug treatment program availability.

Or, a specific participant not returning to prison within a specific time frame, which is usually two to three years after release, might be considered a treatment success (Pelissier, et al., 2000a).

Other outcome evaluation criteria include: treatment completion rates, attitude toward drug use, recidivism and stable employment (Bell, Mitchell, Bevino, Darabi, & Nimer, 1992); perception of drug use and other program participation, such as vocational or recreational programs (Pelissier & McCarthy, 1992), and the effect of drug treatment on inmate misconduct while in prison (Innes, 2000; Langan & Pelissier, 2002). Taxman (2001), in her review of several meta-analyses on prison program effectiveness for reducing recidivism, found the following programs show the greatest promise for success: Adult Basic Education, vocational education, correctional industrial programs, in-prison therapeutic communities with aftercare, and drug treatment combined with urine testing. Mears and colleagues recently completed a meta-analysis on the effectiveness of prison-based drug treatment programs taken in conjunction with vocational training and job placement programs, and they found the most common outcome indicators utilized were resumed drug use (relapse), re-arrest (recidivism), and post-release employment longevity (Antonowicz & Ross, 1994; Mears, Winterfield, Hunsaker, Moore, & White, 2003; Mears, Moore, Travis, Winterfield, 2003; Moore & Mears, 2003). These studies also pose as a prospective key question for future research: How, or to what extent, do factors

such as race, sex, family structure, neighborhood conditions, and other contextual factors influence the effectiveness of post-release drug treatment services? How, and to what extent, can professionals assist with these services?

Brief examination of the evaluation of adult correctional education programs.

The majority of studies and evaluations on correctional programs—whether in prison or community-based, drug treatment related or otherwise—rely primarily on participants' short-term success/failure rates as an indication of program effectiveness, and on recidivism, relapse rates, or employment longevity for long-term confirmation of program efficacy and participant success. A review of some studies from the field of adult correctional education support this tendency. Harer (1995), for example, analyzed prison education program participation and recidivism. He argued that prison-based education (e.g., Adult Basic Education, General Educational Development, Adult Continuing Education, and Post Secondary Education) and vocational programs fall into a category he called "normalizing programs." These programs serve to reduce the experience of "prisonization" (i.e., assorted deprivations, isolation, reduced autonomy, etc.) for participants, increase prison safety, and decrease recidivism. His study demonstrated "that the greater the educational program participation, the lower the recidivism rate," and helped validate the utility of prison education efforts (Harer, 1995, p. 11).

Western, Schiraldi, and Ziedenberg (2003) examined the effects that a lack of education and a decline in prison-based education programs has on

overall incarceration and recidivism. Because of low overall educational attainment and a decline in correctional educational program growth, releasing inmates have difficulty re-entering the economy when they re-enter the community, which leads to re-incarceration and recidivism. Western, et al., criticized the states' increased correctional spending at the expense of funding education by reporting that between 1977 and 1999 total state and local expenditures on corrections increased by 946%, which is about 2.5 times the rate of increase of spending on all levels of education (370%).

Fine and colleagues, along with her graduate students at the Graduate Center of the City University of New York, conducted a longitudinal analysis of post-release re-incarceration (i.e., recidivism) data (Fine, & Associates, 2001). In combination with a project they implemented through the Leslie Glass Foundation offering college courses to female inmates at the Bedford Hills Correctional Facility, a maximum security prison with the New York State Department of Corrections, Fine and her colleagues demonstrated the financial benefit of college programs, such as reduced disciplinary problems while incarcerated, personal transformation, continued educational pursuits and civic involvement upon release, and significantly reduced re-incarceration rates overall.

Consultants with the Correctional Education Association, in conjunction with the Office of Correctional Education, U.S. Department of Education, carried out a three-state (Minnesota, Ohio, and Maryland) longitudinal study to see if educational participation while incarcerated, and independent of other programs,

could impact the post-release behavior (recidivism and employment) of inmate participants (Steurer, Smith & Tracy, 2001). The results, released in September 2001, did in fact indicate that inmates who participated in education programs while incarcerated showed lower recidivism rates after three years.

Common links in these evaluation studies are that they utilize an outcome-based, summative design with minimal formative data, which stems from a need for programs to demonstrate acceptable outcomes to justify their continued existence, with recidivism and employment longevity being primary indicators of program effectiveness and participant post-release success. Although these studies yield impressive data about the effectiveness of prison-based educational programs on offender post-release behavior, they do not indicate precisely how these programs helped the offenders accomplish this. Information of this type could be useful for program duplication and diffusion. Summative data also does not provide information or recommendations on how these programs might be made even more effective, nor do they indicate how much the offenders changed or precise processes utilized when specific changes occurred.

Review of studies on the effectiveness of prison-based drug treatment programs in the U.S.

The early years.

Unfortunately, there tends to be a lingering belief among interested parties (e.g., mental health and addictions professionals, criminal justice professionals, politicians) that, when it comes to prison-based treatment and rehabilitation programs, nothing seems to work, and that nothing has proven to be dramatically

effective so as to satisfy the nay-sayers (Tims & Leukefeld, 1992). The earliest reported comprehensive survey of prison-based drug treatment programs occurred in 1979 and revealed that throughout the U.S., about 160 prison-based treatment programs were serving about 10,000 inmates (about 4% of the adult prison population throughout the U.S. at that time). By 1992, however, little research evidence existed to support the effectiveness of the majority of program models: self-help group programs such as Alcoholics and Narcotics Anonymous, drug information and education programs, individual counseling sessions, and group counseling programs (Lipton, Falkin & Wexler, 1992). "Compared with other areas of drug abuse treatment research, relatively little research has been carried out in jails and prisons" (Fletcher & Tims, 1992, p. 255). Therapeutic Communities (TC), though, had been studied since the 1970s—somewhat extensively since about 1980—and outcome research studies within the New York State Department of Corrections TC programs (e.g., the Stay'n Out programs) had yielded mixed to impressive results in reducing recidivism (Lipton, Falkin & Wexler, 1992; Czuchry & Dansereau, 2000). Correctional administrators, however, still doubted the "evaluability" of prison-based drug treatment. What they were interested in, specifically, was hard evidence on the impact of these programs on reducing recidivism (Pelissier & McCarthy, 1992). Tims and Leukefeld (1992) considered "the development of viable and evaluable programs to be a major challenge to those charged with the responsibility for treating drug abusers" (p. 2). They advised:

Evaluation is essential, and resources must be made available. This is a policy need (accountability) and a programmatic need (treatment improvement). It also is needed because treatment improvement calls for better understanding of the elements that contribute to treatment outcome. Thus...the development of drug abuse treatment programs must include evaluation designs that allow for methodologically adequate assessment of effectiveness and analysis of process" (Ibid, p. 5).

There have been a few particularly large-scale evaluation programs, or programs with large-scale evaluation components, which have attempted to provide evaluative data on prison-based drug treatment programs. Unfortunately, formative, process-oriented evaluations were not part of these early evaluation efforts, and the primary measures of effectiveness were outcome-oriented results, such as reduction in recidivism and future drug use. The CONSAD Research Corporation, which had been evaluating the NARA programs, released an outcome study in 1974 on the effectiveness of these prison-based drug treatment programs (Murray, 1992). General findings indicated post-release reductions in drug use, 20-30% reduction in recidivism rates, and that participants who were more involved in programming were more successful in terms of decreased criminal behavior and drug use after release (CONSAD Research Corporation, 1974, as reported in Murray, 1992). Additionally, this was one of the first prison-based drug program evaluations that included participant perceptions in the overall outcome findings, which were very positive, and included outcome data on female participants.

Projects TRAP and TASC.

The last 35 years witnessed an increase in drug treatment services for criminal justice offenders (Taxman, Perdoni, & Harrison, 2007), ushered in by programs such as Projects TRAP (Treatment and Rehabilitation of Addicted Parolees) and TASC (Treatment Accountability for Safer Communities), which are other early examples of nationally implemented programs with extensive evaluation components. TASC was created in 1972 as a result of the Drug Abuse and Treatment Act and linked legal sanctions of the criminal justice system with therapeutic interventions of drug treatment programs (Gist, 1995; Walters, 2001). TASC model programs identified drug-involved offenders, assessed their drug use, referred non-violent offenders to diversion programs and others to prison-based treatment programs, and provided continuous case management and follow-up to ensure compliance. A system of evaluation, primarily data collection by the Bureau of Justice Assistance, was instrumental in providing data on treatment effectiveness, including data from formative as well as summative evaluations. Farabee and his colleagues, who have monitored TASC, commented that “much of the ‘nothing works’ sentiment of the 1970s and 1980s could have been avoided had prior research included more long-term, well-funded programs that were developed in conjunction with formative evaluations” (Farabee, Pendergast, Cartier, Wexler, Knight, & Anglin, 1999, p. 160).

TRAP grants provided through the Law Enforcement Assistance Administration, U.S. Department of Justice, funded many of the first prison-based therapeutic community programs in state prison systems (Tims & Leukefeld,

1992). Process and outcome evaluations, such as in Florida's Department of Corrections (DOC), demonstrated the effectiveness of these programs and has led to the expansion and institutionalization of treatment programs within its prison system prisons (Bell, et al., 1992). During the 1980s and early 1990s, several states implemented and institutionalized prison-based research initiatives which have served as models in this field (BJA, 2005). Inciardi and his colleagues (1992) have noted that Wisconsin, California, New York, and Florida DOCs, along with the Federal prison system, have strong histories of funding and conducting research and evaluation within their prison systems. Other states have significantly lagged behind. For example, as late as the early 1990s, the Delaware DOC had no research staff employed within their prison system, and they had never conducted impact or evaluation research within their correctional system (Inciardi, Martin, Lockwood, Hooper, & Wald, 1992).

Early trends and limitations.

What is significant about these early evaluation projects is there were large gaps in research and evaluation efforts within the U.S. criminal justice systems, with some states and systems pioneering prison-based program evaluations, while others lagged significantly behind. The principal mode of evaluation was summative, distal outcome-based formats, with the primary determination of program effectiveness and participant success being future drug use and recidivism. Formative, process-oriented evaluations focusing on more immediate or proximal outcomes were beginning to be employed to enhance program quality and bolster overall evaluation efforts. Factors deeming indicative

of effectiveness and success were also expanding, such as participant admission, participation, and completion rates. The consideration of participant perceptions, such as their attitudes about future drug use and program satisfaction, and the assessment of participants' overall lifestyle improvement efforts (e.g., participation in vocational programs, GED and education courses, and recreational activities), were becoming foundational aspects of both formative and summative evaluation efforts as these were slowly incorporated into the operational definitions of participant success and program effectiveness (Brown, 1992; Leukefeld & Tims, 1992; Tims & Leukefeld, 1992; NCDOC-SAAC, 2002).

Leading up and into the 1990s.

The next large-scale, prison-based drug treatment evaluation program effort took place in the 1990s within the federal prison system. The development of significant rehabilitation program initiatives for drug abusers in the BOP occurred after the passage of NARA in 1966, but over the next two decades a reduction in the popularity of a rehabilitation mission led to a reduction in programs, and by 1987 only three programs remained (Hayes and Schimmel, 1993). Although the BOP continued to provide drug treatment in various forms since the mid-1960s, stemming from the passage of NARA, the Anti-Drug Abuse Acts of 1986 and 1988, which arose from the "war" on drugs, placed an increased emphasis on drug treatment programs within that system. These acts also provided funding for new treatment initiatives and set the stage for the current program structure (Hayes and Schimmel, 1993; Murray, 1992; Pelissier,

et al., 2000a). In 1988, the designation of a BOP National Drug Abuse Program Coordinator ushered in a new commitment to rehabilitation of federal offenders with substance abuse programs, which has increased in each year since (Hayes & Schimmel, 1993; Murray, 1992; McCaffrey, 1997; Pelissier, et al., 1998).

The BOP implemented a multi-tiered drug treatment programming approach consisting of drug abuse education programs (least intensive, psycho-education course); non-residential (outpatient) drug abuse counseling services; comprehensive, unit-based treatment programs (most intensive); and transitional services to assist in community reentry and reintegration (Murray, 1992). These components have become known as: 1) Drug Education Program (DEP); 2) Non-Residential Drug Abuse Program (NRDAP); 3) Residential Drug Abuse Program (RDAP); and 4) Follow-up Services (FS), an aftercare component of the RDAP previously referred to as Transitional Services.

Evaluation of BOP residential programs.

The most intensive program alternative, and the only BOP drug program that has been rigorously evaluated, is the nine-month, 500-hour RDAP, which has the FS component attached. It is offered to inmates during the last 36 months of their sentences and includes them residing on a residential drug abuse program unit. To be eligible an inmate needs to meet the diagnostic criteria for substance abuse and have a documented history of substance use (typically found in their pre-sentence investigation report). They work in groups of approximately 24 participants with a staff facilitator, a drug treatment specialist (DTS), and they participate in a half-day substance abuse treatment program,

five days per week, using a uniform curriculum and theoretical approach. The other half of their day is spent at either their institutional job assignment, or in educational programs such as: GED classes, vocational training programs, parenting classes, pre-release programs, adult continuing education classes, and so forth (Innes, 2000; Pelissier, et al., 1998; Pelissier, et al., 2000a;).

In 1994, the Violent Crime Control and Law Enforcement Act (VCCLEA) contained provisions which required the BOP to make available residential programming to all inmates in need of such treatment, and to afford an incentive, a sentence reduction of up to one-year, for non-violent program completers. By the end of 1999 there were 45 institutions that had fully operational RDAPs with a combined capacity of over 10,000 participants (Innes, 2000). Additionally, all inmates who complete RDAP are eligible for the 180-day maximum Community Corrections Center (CCC, also known as halfway house) placement, where they participate in FS aftercare programming. From the inmates' perspective, particularly those deemed non-violent and, thus, eligible for the sentence reduction incentive, RDAP completion could result in their leaving prison eighteen months early. As an aside, this could also serve as a disincentive for treatment participation for inmates embittered at not being deemed eligible for sentence reduction consideration (Pelissier, et al., 2000a).

The TRIAD evaluation initiative.

In 1990, the BOP, in conjunction with the National Institute on Drug Abuse (NIDA), initiated an evaluation project of the RDAPs, which became known as the Treating Inmates' Addiction to Drugs (TRIAD) drug treatment evaluation

project (Pelissier, et al., 1998). At the time it was the most ambitious, extensive, and comprehensive, longitudinal prison-based program evaluation project ever conducted with correctional populations (Murray, 1992). A six-month interim report on TRIAD findings was released on January 31, 1998 (Pelissier, et al., 1998), and a final report of three-year outcomes was released in September 2000 (Pelissier, et al, 2000a). Samples of 2,315 treatment participants—1,842 men and 473 women—were taken from 20 institutions (three-fourths of the programs operating at that time), and included all security levels of both male and female offender populations within all BOP regions across the U.S.

TRIAD researchers evaluated the in-prison treatment component, RDAP, and the transitional services component, FS. The two primary outcome findings, as reported in the final report, were that the BOP RDAP post-release outcomes of drug use (relapse) and recidivism (as measured by arrests or revocations) were positive and statistically significant for men, but not for women. Post-release employment success, which was the third outcome measure, revealed positive effects for women, but not for men. A fourth outcome, successful completion of halfway house placements, revealed no positive effects for either men or women (Pelissier, et al., 2000a; Pelissier, Camp, Gaes, Rhodes, & Saylor, 2000b). Additionally, the study revealed a 97% in-prison program completion rate for treatment participants (Innes, 2000).

This impressive evaluation project, although the most comprehensive and extensive of its kind, utilized a summative, outcome-based design that revealed minimal formative data on the process of treatment for program improvement.

The outcomes that defined success and effectiveness were defined solely from a behavioral orientation. Program effectiveness was primarily tied to what was deemed participant success, which was defined by their either avoiding (or failing to avoid) or participating (or failing to participate) in a future behavior (relapse, recidivism, employment, and halfway house completion). However, these future behaviors, often occurring long after program completion, may have resulted from factors not specifically related to their prior RDAP and FS participation. A main concern is that the study revealed little information about changes the participants made during the program itself. As Innes (2000) points out:

A substantial amount of research has been carried out over the last decade regarding the impact of participation in a Drug Abuse Program on recidivism or misconduct. These studies have shown that participation in a program within the BOP does influence subsequent behavior. There has, however, been only limited attention paid to the issue of the correlates or predictors of program success. That is, the factors that influence the likelihood that an inmate will complete the program, or having completed it, will experience success during the post-program follow-up phase and the transition to the community. ...these are issues which are unique to the delivery of treatment services in correctional settings (p. 5).

Instrumentation concerns and relevancy of TRIAD.

The TRIAD study obtained pre-post change scores on instruments measuring perceptions about drug use, as well as assessments to attempt to measure participants' commitment to change (Pelissier, et al., 2000a). They

administered the Change Assessment Scale, a much earlier piece of the now well-established University of Rhode Island Change Assessment (URICA), to BOP RDAP participants. The assumed limitation of this instrument is it was not designed as an outcome measure, but as a baseline indicator for clients in community-based, outpatient settings for assessing the stages of change clients are in, or readiness, when entering therapy (McConaughy, et al., 1983; McConaughy, DiClemente, Prochaska, Velicer, 1989; William R. W Miller, personal communication, July 26, 2002). Additionally, these measures assume recent drug use, and many participants in prison-based treatment programs like the BOP RDAPs employ back-end programs (i.e., treatment is provided near the end of offenders' sentences as they prepare for release) and the majority of offenders have been drug-free for several years while incarcerated, as determined through random Breathalyzer and urinalysis testing performed throughout incarceration.

Another problem with these instruments, as in general with base-line measures, is that when given at two fixed points (i.e., pre/post) they only provide a snapshot of motivation level at those moments. They do not provide a thorough analysis of *how* motivation changes throughout treatment (Dan Kunic, personal conversation, January 28, 2004). Other assessments have recently been developed to measure process-oriented variables that may be linked with motivation and commitment to change, such as therapeutic alliance (Working Alliance Inventory), client satisfaction with treatment (Treatment Services

Review), and improved psychosocial functioning (Psych-Social Functioning Indices) (J. Scott Tonigan, personal communication, July 2002).

Pelissier and colleagues report that both male and female offenders with high pre-contemplation scores (e.g., they do not recognize problems they want or need to change) were less likely to enter and complete treatment, whereas offenders with high maintenance scores (e.g., struggling to maintain a changed behavior) were more likely to enter and complete treatment (Pelissier, et al., 2001a). They conclude that motivation to change, which they refer to as internal motivation and distinct from external motivation (e.g., motivated by perceived rewards/punishments), was positively correlated with the entry into and completion of treatment. The problem with the relevancy of these findings from a formative perspective is they provide us with long-range or distal outcome data, but tell us nothing about treatment itself and have minimal usefulness in providing proximal outcome information.

Most researchers would intuitively predict that offenders who haven't identified a problem and do not want to change (e.g., those in the pre-contemplation stage—before one contemplates change) would have poorer results than offenders who have already made changes but were struggling to maintain them prior to entering treatment. The only way to make Pelissier, et al.'s argument would be to randomly assign a sample of maintenance stage offender population to treatment or control groups and analyze the outcomes of that population. To associate program participation and completion with an offender's post-release behavior (e.g., maintaining abstinence, prosocial behavior, and

employment) seems to make a potentially erroneous association when the offender, although struggling, had already made changes prior to participating in the program, and it might improperly credit treatment with the positive outcome. It also suggests the unproven use of assessment and formative evaluation data for a summative capacity.

Prison-based drug treatment program evaluation in the new millennium—2000s and beyond.

Several smaller scale studies have evaluated participant perceptions of prison-based drug treatment programs. Raney and colleagues administered a questionnaire using a 7-point, Likert-style rating system, as well as written responses to open-ended questions with qualitative content analysis, to assess RDAP participants' perception of the helpfulness of drug programs and their overall level of satisfaction of RDAP at the Federal Prison Camp, Leavenworth, Kansas (Raney, Magaletta, & Hubbert, 2005). DeLeon and associates assessed motivation and readiness at the Amity Prison Therapeutic Community at the R.J. Donovan Medium Security Correctional facility in San Diego, California (DeLeon, Melnick, Thomas, Kressel, & Wexler, 2000). Their study was designed to answer three questions: What are the motivational levels among substance abusers entering a prison-based TC? Is there a relationship between motivation and treatment status (entry into aftercare)? What is the relation among motivation, treatment status, and post-prison outcomes? Of the 715 inmates who entered the TC and volunteered for the study, 658 completed a motivational assessment. They administered the 18-item Circumstance, Motivation and Readiness Scale

(CMR) Intake Version of the 42-item Circumstance, Motivation, Readiness and Suitability (CMRS) Scale, a self-administered assessment using Likert-style items rated on a 5-point scale from “strongly agree” to “strongly disagree,” designed to assess the individual’s overall potential or willingness to enter and stay in treatment. The two treatment outcome variables assessed at one-year post-prison follow-up were recidivism, defined as time to first re-incarceration, and relapse, which they defined as self-reported drug use (DeLeon, et al., 2000).

NIDA and the National Criminal Justice Drug Abuse Treatment Studies.

Although significant advances have occurred within the correctional field’s comprehension of drug abuse treatment processes and services that can positively impact key outcomes among offenders, there have been few national studies on the treatment practices within the correctional system (Taxman, et al., 2007). Currently, a new nation-wide, prison-based, longitudinal drug treatment program evaluation initiative is underway to address, at least in part, this deficit. In September 2002, the National Institute of Drug Abuse (NIDA), an affiliate of the Department of Health and Human Services, National Institutes of Health, initiated a five-year collaborative research project with the Department of Justice, known as the National Criminal Justice Drug Abuse Treatment Studies (CJ-DATS). The purpose of this initiative is to address critical services-related questions about treatment access, availability, and utilization, and treatment processes and types of treatment for substance abuse throughout the U.S. criminal justice system. Fletcher (2004), NIDA’s collaborating scientist on the project, refers to the objective of improving offender outcomes as a main

objective of the initiative. He refers to the urgent need to determine the best options for offenders with substance use disorders who are reentering communities and reencountering situations that can put them at high risk for relapse to drug use and return to criminal activity (Fletcher, 2004).

The Client Evaluation of Self and Treatment (CEST) measure.

Researchers at Texas Christian University's Institute of Behavioral Research (TCU IBR), in a cooperative agreement between the BOP and the National Institute of Corrections (NIC), initiated the Treatment Process Evaluation using BOP RDAP participants to design and evaluate an assessment instrument to measure treatment process and outcome over time. The resulting instrument, the Client Evaluation of Self and Treatment (TCU/CJ CEST), is a self-administered assessment that includes short scales for treatment motivation, psychological and social functioning, hostility, and satisfaction with treatment, and the scales also provide a baseline for monitoring client performance and psychosocial changes during treatment.

The instrument consists of two sections with a total of 186 items, and uses a 5-point Likert-style format that asks participants to indicate how strongly they agree or disagree with the questions presented. Part I of the instrument consists of treatment needs/motivation scales (Desire for Help, Treatment Readiness, Treatment Needs, and External Pressures); psychological functioning scales (Self-Esteem, Depression, Anxiety, Decision Making, and Self-Efficacy); social functioning scales (Hostility, Risk Taking, and Social Consciousness); and treatment process domains (Treatment Participation, Treatment Satisfaction,

Counseling Rapport, Peer Support, and Social Support). Part II consists of the following criminal thinking scales: Personal Irresponsibility, Criminal Rationalization, Street Values, Cold Heartedness, Power Orientation, Entitlement, and Mollification. The TCU/CJ CEST, along with the TCU Drug Screen (TCUDS), a screening instrument developed to assess the prevalence of inmates with substance use disorders, will be administered to inmates at selected BOP RDAPs to be integrated with the NIDA CJ-DATS. This marks an important development in formative, process-oriented evaluation of these programs, and particularly of the clients' progress throughout treatment.

Summary of prison-based drug treatment evaluation.

Common themes.

The studies conducted from the field of adult education and within social science frameworks (psychology, sociology and criminal justice) used common evaluation design and criteria for determining program/participant success, including:

- Longitudinal, summative evaluation/research design focusing primarily on post-release adjustment;
- Focus on behavioral outcomes (e.g., recidivism, employment) to determine if the program/participants were effective;
- Deficit framing, in that participants were defined more from what they lacked (e.g., education, opportunities) than by their strengths;
- Potentially punitive consequences for perceived failure (re-incarceration for participants, and possible loss of funding or cancellation of programs);

- “Blame the victim” mindset that attributes the majority of responsibility for program success and effectiveness—so-called outcome failure behaviors of resumed drug use, unemployment, or continued criminal behavior—on the program participants, who are the least powerful within the system;
- Failure to examine institutional factors, such as faulty communities and systems (e.g., criminal justice, political, economic, governmental) as outcomes or in sharing responsibility for success and effectiveness determinations.
- Relapse for released offenders has been criminalized and linked directly with recidivism, whereas relapse or substance use in general would not automatically result in punishment or incarceration for free citizens.
- Focus on distal outcomes and a lack of proximal outcome data.
- Lack of process-oriented evaluations to provide specific information for continuous program improvement or data on offender participation dynamics.

The primary thrust for improving prison-based drug treatment programs, including the new CJ-DATS initiative, is *recidivism*—the fact that so many offenders (between 40% and 50%) return to prison (Ekstrand & Burton, 2001; Fletcher, 2004). The overall end-goal for prison-based drug treatment programs—their reason for being—is to return to the community fully functioning, well-adjusted, law-abiding, prosocial, rehabilitated community members. It is unclear, however, if the offenders share these same goals. Extrinsic motivation might supersede intrinsic motivation and internalization as the offenders may view treatment participation and completion as the quickest way out of prison. Pelissier and colleagues acknowledge selection bias in the male samples

stemming from the sentence reduction concerning benefit (Pelissier, et al, 1998; Pelissier, et al., 2000a).

Current trends.

Current evaluation initiatives, such as NIDA's CJ-DATS, are paying more attention to formative, process-oriented focuses as part of longitudinal evaluation efforts. The CJ-DATS includes three levels of emphasis—the client, treatment program, and community systems levels—that will be considered. At the client level, for example, researchers are considering whether treatment services are available, appropriate, effective, and of adequate quality. They also examine the individual participant's own attributes and context, including attitudes, beliefs and behaviors, as well as medical and mental disorders, vocational deficits, family or social problems, and social networks (Fletcher, 2004). This is a piece that has been neglected in the vast majority of evaluative studies. The TCU/CJ CEST, which is currently being administered in some BOP RDAPs as part of the CJ-DATS initiative, monitors client performance and psychosocial change during treatment. This may prove useful in helping researchers and clinicians evaluate specific treatment processes and components. It lacks a diagnostic component, however, which could be useful from a clinical perspective. The TCU/CJ CEST, for example, does not provide specific information on the participant's commitment to change, nor does it suggest what stage of change the participant is in so processes and components can be matched to compliment the participant's level of motivation and readiness for change.

The road ahead: Embracing formative, process-oriented evaluations and assessment.

Process evaluations often ask *what* and *how* sorts of questions (Patton, 2002). They also provide insights into proximal outcomes. In the field of prison-based drug treatment programs, one might ask a question like: What aspects of a program lead people to become motivated to change? Or, how do participants change as they progress through a program? Does a participant's commitment and motivation for lifestyle change advance through predictable stages as the participant proceeds through treatment and into the community? If we can measure participants' motivation and commitment to change addictive behaviors as they proceed through a program and beyond, we may then be able to further explicate what influences a participant's motivation and commitment, and how their motivation and commitment changes. This could lead to new developments in the design and implementation of prison-based drug treatment programs, theories on what drives effective programs, and insights into specific processes and components to match stages of change.

Measuring participant's change.

So few prison-based program evaluation initiatives have traditionally employed formative and process-focused evaluation designs that little is actually known about the particulars of treatment effectiveness. What treatment components and processes are most effective, and for whom? How do we know or gauge if or when people change? My experience in correctional treatment has revealed that many participants had already begun making pro-social changes

prior to treatment, which we falsely attribute to the program. The TRIAD study bears this out as well (Pelissier, et al., 1998; Pelissier, et al., 2000a).

Summary.

Understanding and enhancing, as well as measuring and eventually predicting, participants' commitment to change as a result of their treatment participation is, in my opinion, a more telling indication of program effectiveness, and specifically process or component efficacy, than solely focusing on outcome behaviors which may be unrelated to the program. Some participants just don't get it the first time through, and it is unreasonable to expect participation in one program to change all participants. They may need remediation, re-treatment, or refresher classes and booster sessions. Being able to adequately measure a participant's commitment to change might enable correctional staff to reasonably predict which participants are at greater risk to resume drug use or criminal behavior so additional resources could be channeled to them (Taxman, 2000). Although the potential barriers are many, very little is understood about an offender's challenges to reintegration once released from prison (Taxman, Young, & Byrne, 2002). The question that drives my interest is: How can we effectively measure and predict commitment to change in participants engaged in the prison-based treatment to gauge community reintegration?

Motivation and Readiness

Etymologically, the word *motivation* comes from the word *motive*, which is derived from Latin *motus*, past participle of *movere* 'to move,' and *ation*, which means 'an action or process...the result of an action or process' (Harper, 2001;

“Motivation,” 2004). Thus, *motivation* means to move as the result of an action or process. Princeton University Cognitive Science Laboratory's WordNet®, a premiere lexical database of the English language, defines motivation as “the psychological feature that arouses an organism to action toward a desired goal; the reason for the action; that which gives purpose and direction to behavior” (“Motivation,” n.d.).

Cognitive scientists Clark Dorman and Paolo Gaudiano (1995) define motivation as “the internal force that produces actions on the basis of the momentary balance between our needs and the demands of our environment” (p. 591). Motivation, like other psychological constructs such as intelligence, cannot be directly observed, but motivation can be inferred by observing behavior (Gay, Mills & Airasian, 2005). In this sense, motivation is thought of as a performance variable; when enough motivation is present, behavior is performed; when it is absent, so is behavior (Petri, 1986). The demonstration of learned behavior depends on adequate motivation.

Various theories have been put forth to try to explain motivation, which recognize that both internal factors—physiological (i.e., states or drives) and psychological (i.e., needs or desires), and external factors—incentives, which are primarily environmental, jointly determine behavior and account for what is termed motivation (Toates, 1986). Motivation arising internally is typically referred to as intrinsic motivation, and motivation arising externally is termed extrinsic motivation (Peters, 1958). The concept of intrinsic motivation involves internal factors, such as personal gratification, or satisfying felt needs or desires, and

extrinsic motivation involves tangible or intangible rewards, reinforcements, and incentives located externally to the person, which provide incentives to act.

While instinct- and drive-based theories of motivation support the belief that the cause of motivational responses are primarily internal and physiological in nature, incentive-based theory of motivation focuses on both internal, psychological factors, such as the satisfaction of felt needs, and external, environment factors, in the form of positive and negative incentives—along with the fluctuating value these incentives hold at any particular time—as the motivational causation of behaviors (Deci & Ryan, 1985; Weiner, 1985). Incentives are goal-oriented, and when a goal is present, the individual attempts to achieve that goal. Incentives may be tangible or intangible. Intangible incentives are also known as intrinsic rewards, while tangible incentives are also known as extrinsic rewards.

Incentive theories view motivation in humans as arising in one of two sources: within the individual or from others, including their environment. From this perspective, individuals are attracted to behaviors that offer positive incentives (e.g., pleasure), and they are discouraged from behaviors they associate with negative consequences (e.g., pain). The value of an incentive, a positive motivational influence, is influenced by both cognitive and biological factors. In fact, Hull (1943; 1952) later recognized that incentives and drives interact to jointly determine motivation.

Similar to Hull, Dalbir Bindra (1978) expounded upon the interaction between drives and incentives, describing motivation as a synergistic relationship

between external stimuli and internal states. Bindra theorized that “incentive and physiological state conjointly determine the central motivational state” and “in doing so, behavior is given a direction, a goal, towards the incentive in question” (Toates, 1986, p. 19).

For example, drug-taking behavior might be motivated by both biological addiction, such as physiological craving, and cognitive evaluations, such as recalling that previous drug use occurrences produced pleasure and anticipating or expecting likewise positive consequences. The concept of psychological anticipation of rewards or punishment, *expectancy*, recognizes a person’s “ability to label an environment in terms of its incentive yield, and, later, to employ such a representation in performing goal-directed behaviors” (Toates, 1986, p. 33).

Building toward an integrated theory of human motivation.

Albert Bandura (1977a; 1977b; 1986; 1994) was instrumental in bridging the behavioral-cognitive gap in psychology and the development of the social-cognitive theory of human motivation and behavior. Building on Rotter’s concepts of contingency expectations, Bandura added the concept of *efficacy expectations*, which refers to whether one believes one can competently perform the required actions to obtain the reinforcer. He described motivation as *activation to action*, reflected in the choice of the person’s course of actions, and the intensity and persistence of their effort (Bandura, 1994). The amount and kind of effort a person puts into any course of action is determined by their perceived *self-efficacy*, their beliefs about their capabilities to produce effects and exercise influence over events that affect their lives, which is demonstrated

through their *self-regulation*, the influence an individual exercises over their own motivation, thought processes, emotional states, and patterns of behavior.

The theory of self-efficacy.

Self-efficacy is an appraisal of one's competencies, confidence, and capabilities to accomplish a task or pursue and achieve a goal (Bandura, 1977b; 1994). A strong sense of efficacy enhances individual accomplishments and personal well-being. The stronger a person's perceived self-efficacy, the greater their confidence, and, thus, their effort in pursuing a goal. They will heighten and increase effort in the face of challenges, failures, or set-backs, and attribute reversals or difficulties to insufficient effort, knowledge or skills, which are acquirable (Bandura, 1986).

Self-efficacy beliefs play a primary role in the self-regulation of motivation. A person's motivation is regulated by their expectation that a given course of action will produce valued outcomes. A resilient sense of efficacy requires successful experiences in overcoming obstacles through persistent effort. A person's capacity to exercise self-influence and attain goals provides a major cognitive dimension of motivation, and in this way a high efficacy outlook fosters intrinsic interest and motivation (Bandura, 1986; 1994).

Conversely, lower self-efficacy is marked by personal doubts in a one's capabilities and competencies to successfully produce an effect. This leads a person to avoid difficult tasks and results in a weak commitment to goal pursuit. Set-backs and failures will be attributed to personal shortcomings and task difficulty, from which they are slow to recover, and even small degrees of failure

or discouragement might lead them to abandon their goal. They will tend to have lower self-confidence and be more vulnerable to depression and stress (Ibid., 1994).

Self-determination theory—an integrated theory of motivation.

In short, a comprehensive psychological theory must address the multi-determination of human motivation and action beyond the simple notion that if a behavior occurs there must be some kind of reinforcement for it somewhere (Bandura, 1991, p. 161).

Edward Deci and Richard Ryan outlined an integrated theory for understanding motivation and how it impacts treatment outcomes, referred to as self-determination theory (SDT). They postulate that motivation results from innate psychological needs necessary for ongoing psychological growth, integrity and well-being, such as our needs for competence, relatedness and autonomy.

Rather than viewing intrinsic and extrinsic motivation as binary constructs, Deci and Ryan (1985, 2000) posit a fluid model of motivation that depicts the interaction between internal and external sources of motivation as occurring along a continuum. SDT describes the process of *how* an individual's motivation becomes more fully integrated and internalized as they become more invested in intentionally pursuing a course of action.

Motivation across a spectrum.

Rather than viewing intrinsic and extrinsic motivation as two distinctly opposite constructs, Deci and Ryan (1985, 2000) describe motivation as occurring along a spectrum of six categories defined from amotivation to intrinsic

motivation. *Amotivation* is the state of lacking any intention to act. When a person is amotivated, his or her behavior lacks intentionality and a sense of personal causation, urgency, competence or confidence, or she or he does not value the behavior and does not believe it will produce a desired outcome (Ryan & Deci, 2000).

Extrinsic motivation, or motivation from external sources, refers to the performance of an activity in order to obtain some separable outcome (Ryan & Deci, 2000a). SDT posits that people behave to attain a desired consequence, such as a tangible reward, or to avoid an undesirable consequence, such as a threatened punishment; however, externally regulated behaviors, which are by definition dependent on existing, perceived, or anticipated contingencies, demonstrate poor maintenance and transfer when contingencies are withdrawn (Deci & Ryan, 2000). Extrinsic motivation is often required to promote engagement in activities perceived to be unimportant or unpleasant by the individual, but necessary for the socialization the individual needs to function acceptably in society (Deci & Ryan, 1985). This is often the case with substance abuse treatment and the development of an abstinent-based lifestyle. One of the key postulates of SDT is that motivation varies in kind, and the most self-determined types of motivation lead to the most adaptive outcomes (Vallerand, Pelletier & Koestner, 2008).

In SDT, extrinsic motivation is conceptualized along a 4-point continuum characterized by increasing degrees of autonomy and self-regulation, and, to some degree, self-determination (Ryan & Deci, 2000a, Ryan & Deci, 2000b, Deci

& Ryan 2008). *External regulation*, the least autonomous form of extrinsic motivation, is motivation through external contingencies such as punishments and rewards. Behavior is experienced as coerced and determined by external pressures of forces and is manifested by an externally perceived locus of control. Thus, the reasons for performing the behavior have not been internalized at all (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Markland, Ryan, Tobin, & Rollnick, 2005; Vansteenkiste & Sheldon, 2006).

Introjected regulation, whereby the individual engages in a particular contingency to comply with internal pressures, is motivation through self-esteem-related contingencies, such as shame or guilt. Regulation of the behavior has been partially internalized, and thus is within the person, but the person has not yet accepted it as her or his own (Vansteenkista, et al., 2004). As with external regulation, introjected regulation of behavior is viewed through an external locus of causality (Ibid., 2004).

Identification refers to the process of identifying with the value of the activity, and accepting the regulation of the activity as one's own; it is a more autonomous form of extrinsic motivation and includes a conscious acceptance of a behavior as personally important (Britton, Williams & Conner, 2008). Identification represents a fuller form of internalization characterized by an internally perceived locus of control, and although extrinsic in nature, the behavior has become relatively volitional and, thus, approximates internal motivation (Vansteenkista, et al., 2004). For example, a prison-based treatment program participant, whose treatment engagement progresses to where she or

he has accepted the importance of the goal of adopting an abstinent lifestyle, and pursues this goal for her or his larger self-interest of maintaining freedom upon release from incarceration, will be regulating her or his engagement in the therapeutic process through identification.

Integrated regulation, the most autonomous form of extrinsic motivation, is motivation for a particular goal that is consistent with the individual's core values and beliefs and has been fully integrated to the self (Ryan & Deci, 2000a). It is the most autonomous variety of extrinsic motivation and is therefore the type most similar to intrinsic motivation (Britton, et al., 2008).

The more one internalizes the reasons for an action and assimilates them to the self, the more one's extrinsically motivated actions become self-determined. Integrated forms of motivation share many qualities with intrinsic motivation, both being autonomous and unconflicted. However, they are still extrinsic because behavior motivated by integrated regulation is done for its presumed instrumental value with respect to some outcome that is separate from the behavior, even though it is volitional and valued by the self. (Ryan & Deci, 2000a, p. 62).

With integrated regulation behavior is internalized; the person's engaging in the activity occurs through volition and self-determination, and is approaching full autonomy. Autonomous motivation, or full intrinsic motivation, involves volition and free choice, whereas controlled motivation involves being pressured or coerced. Intrinsically motivated behaviors are those that are freely engaged in out of personal interest and without the necessity of consequences to be

maintained, but require satisfaction of the needs for autonomy and competence (Deci & Ryan, 2000). Intrinsic motivation, and well-internalized forms of extrinsic motivation, are considered autonomous; poorly internalized forms of extrinsic motivation are considered controlled or coerced (Vansteenkiste, et al., 2004). When extrinsic rewards are introduced for doing an intrinsically interesting activity, people tend to feel controlled by rewards, which prompts a shift in their perceived locus of causality.

Intrinsic motivation.

Intrinsic motivation is defined as the doing of an activity for its inherent satisfactions, whether for fun or challenge, rather than for some separable consequence, such as by external prodding, pressure or anticipated reward (Ryan & Deci, 2000a; Ryan & Deci, 2000b; Rigby, Deci, Patrick, & Ryan, 1992). Intrinsic motivation is typically thought of as fully volitional, free-choice activity, and is affected by three psychological needs: competence, autonomy, and relatedness (Ryan & Deci 2000c; Deci & Ryan, 2000). People rely on intrinsic motivation when they perceive that their fundamental needs for autonomy—the need to perceive oneself as the source of one’s behavior, competency—the need to feel capable of obtaining one’s goals, and relatedness—the need for frequent and persistent caring, are met. Many activities, especially those involving substance abuse education and treatment, are not designed by staff, or anticipated by participants, to be intrinsically interesting.

Internalization and integration.

Self-determination theory is based on human needs, as opposed to human drives, which holds that a person's motivation stems from their desire to satisfy internal needs or voids. In SDT, a basic need, whether physiological or psychological, is an energizing state that, if satisfied, conduces toward health and well-being, but, if not satisfied, contributes to pathology and ill-being (Ryan & Deci, 2000a). Needs, then, can be understood as physiological or psychological deficits that disturb the person's equilibrium and push the person to act in ways they have learned will satisfy the need and return the person to an internal state of psychological stability. SDT assumes people are innately motivated to engage in activities that promote health and growth. It posits that people are more likely to rely on their innate motivation when their social environment meets their fundamental needs for autonomy, competence, and relatedness (Britton, Williams, & Connor, 2008). This natural human tendency does not operate automatically, however, but instead requires ongoing inputs and supports from one's social environment in order to function at an optimal level. One's social context can either support or prevent the natural tendencies toward active engagement and psychological growth. Thus, it is the dialectic between the active human organism and the social context that is the basis for SDT's predictions about behavior, experience, and development (Britton, et al., 2008; Deci & Ryan, 2000).

Edward Deci and Richard Ryan recognize that a central question for treatment and education staff is how to motivate students/participants to value

and internalize new information and change activities, without pressure, and to carry out new behaviors of their own volition—to make the transfer from external to internal regulation (Ryan & Deci, 2000). *Internalization* is the process of taking in a value or regulation, and *integration* is the process by which individuals more fully transform the regulation into their own self-concept so it flows from their own sense of self (ibid., 2000). Deci and Ryan outlined a model for understanding the interaction between internal and external sources of motivation and how these impact treatment outcomes (Figure 2, p. 68).

Locus of control versus locus of causality.

Locus of control is a concept introduced by Rotter and refers to the extent to which individuals believe they can control events that affect them (Rotter, 1954). An individual's perceived locus of control, whether internal or external, refers to whether one believes outcomes can be reliably attained. It refers to a contingency expectation, with efficacy expectations implicit within them (Deci & Ryan, 1990). Locus of control refers to a person's perceived influence over attaining reinforcements for a behavior, and locus of causality refers to person's perception of what motivated a course of action; internal causality corresponding to intrinsic motivation and more integrated forms of extrinsic motivation, and external causality corresponds to more external and introjected forms of extrinsic motivation.

Regulatory Style	1. Amotivation			
Associated Processes	Perceived non-contingency; low perceived competence; non-relevance; non-Intentionality			
Perceived Locus of Causality	Impersonal			
Regulatory Style	2. Extrinsic Motivation			
Associated Processes	External Regulation	Introjection	Identification	Integration
	Saliency of extrinsic rewards or punishments; Compliance/ reactance	Ego involvement; Focus on approval From self or others	Conscious valuing of activity; Self-endorsement of goals	Hierarchical synthesis of goals; Congruence
Perceived Locus of Causality	External	Somewhat external	Somewhat internal	Internal
Regulatory Style	3. Intrinsic Motivation			
Associated Processes	Interest/enjoyment; inherent satisfaction			
Perceived Locus of Causality	Internal			

Figure 2. A taxonomy of human motivation as posited by self-determination theory. Adapted from Ryan, R. M. & Deci, E. L. (2000, January). Self-determination theory and the facilitation of intrinsic motivation; social development, and well-being. *American Psychologist*, 55(1), 68-78. Copyright 2000 by the American Psychological Association, Inc.

Perceived locus of causality, on the other hand, is a concept introduced by Heider (1958), and furthered by DeCharms (1968; 1976), and refers to a person's perception of the cause of their motivation, whether attributed as internal produced, where the individual recognizes their intention and perceived

autonomy, or derived from external sources and influences (Weiner, 1985; Ryan & Connell, 1989). Locus of causality, whether internal or external, refers to whether the experienced locus of initiation for a motivated (intended) action is internal or external to one's self (Deci & Ryan, 1990; Ryan & Connell, 1989).

Summary.

Motivation has long been regarded as an important factor in the treatment of addictive behaviors (Miller & Tonigan, 1996). It is frequently described as a necessary prerequisite, and lack of proper motivation has been used to explain the failure of individuals to enter, continue in, comply with, and succeed in treatment (George, Joe, Simpson, & Broome, 1998; Simpson & Joe, 1993). Researchers have suggested that motivation for drug abuse treatment is multidimensional and includes how clients perceive intrinsic and extrinsic pressures and rewards, readiness for treatment, and suitability of the treatment program (Broome, Simpson, & Joe, 1999; George, Simpson, & Broome, 1999; Simpson & Joe, 1993).

Researchers in the field of adult education recognize distinct processes are involved in adults' motivation to learn. For instance, Wlodkowski notes: "There appear to be at least six major factors that are supported by numerous theories of psychology and their related research as having a substantial impact on learner motivation—attitude, need, stimulation, affect, competence, and reinforcement" (Wlodkowski, 1993, p. 45). Wlodkowski also recognizes adult motivation operates on integrated levels, the first of which is an expectation for success and a sense of volition, and that it is critical for adults to feel willing to

learn what they expect they can successfully master. SDT informs us as to how adult motivation operates on the integrated levels to which Wlodkowski refers, across a spectrum that takes into consideration the extent to which motivation extends from the individual (Ryan & Deci, 2000a; Ryan & Deci, 2000c), and describes the sequential journey through which adults move, or become entrenched, on their change journey.

Models of Self-Initiated Change

The Transtheoretical Model.

The theoretical foundation that guides the instruments utilized in this study to measure the stages of change in attitude and motivation of prison-based drug treatment program participants is known as the Transtheoretical Model (TTM), or simply the *stages of change*. Since the mid-1970s, Prochaska and associates have been studying the structure of how people intentionally change health-related behaviors, whether self-initiated or professionally facilitated (Prochaska, DiClemente, & Norcross, 1992). They have identified key constructs describing the stages and processes of change, which help us understand how people change addictive behaviors, that they termed the transtheoretical model (TTM). TTM provides the theoretical underpinning for both the URICA and SOCRATES “stages of change” instruments.

Prochaska started his investigation into the processes and stages of change as a result of Lester Luborsky’s hallmark 1975 study which concluded all legitimate psychological therapies (i.e., psychoanalytic, behavioral, humanistic/existential, cognitive, and so forth) produce favorable results and nearly

equivalent outcomes. Prochaska and colleagues' (1994) work began with the question: Was there a way to fully exploit and integrate all of these philosophically distinct schools of psychotherapy, which could result in an eclectic approach to psychotherapy that took advantage of the strengths and limitations of these diverse disciplines? (Prochaska, Norcross, & DiClemente, 1994; Prochaska & DiClemente, 1986).

Prochaska and colleagues began their investigation with an analysis of a large sample of self-changers and concluded that unguided efforts of all self-changers with any kind of problem fail at about the same rate (Prochaska, et al., 1994). Also, data suggests that as high as 31.4% of people using a wide array of addictive substances experience spontaneous remission, meaning they overcome their substance abuse problems without the benefit of treatment or formal intervention, which is three to four times higher than the rate of change achieved through formal treatment interventions (Walters, 2000). Because there are a much larger percentage of smokers in our population than drug or alcohol abusers, and thus there being a larger sample of smokers who had successfully quit smoking, Prochaska and colleagues began their investigations with that population (Prochaska, et al., 1994). They noted that not long ago almost 50% of adult Americans smoked, and that figure is now down below 25%—about 30 million Americans had successfully quit smoking, most of them on their own (Prochaska, et al., 1994).

Prochaska and colleagues discovered that individuals modifying addictive behaviors move through a series of six stages, from pre-contemplation to

termination, that they employ specific processes at specific times by choosing a different approach whenever the situation demanded, and these specific times remained constant from one person to the next regardless of what problem they were attempting to change (Prochaska, et al., 1992; Prochaska, et al., 1994).

The TTM may be thought of as a cycle of distinct cognitive-behavioral indicators that describe six distinct stages of change with ten general process of intentional change. The American Heritage Dictionary (2000) defines processes as “a series of actions, changes, or functions bringing about a result.” Starting with the simple definition that any activity an individual initiates to help modify their thinking, feeling or behavior is a change process, Prochaska and colleagues isolated the ten most common and powerful approaches to change used by professionals and successful self-changers (Prochaska, et al., 1992; Prochaska, et al., 1994).

The ten processes for change.

Prochaska and his colleagues' work of identifying the common components of the major therapies led them to a few essential principles which they describe as the processes of change. From a comparative analysis of the major systems of psychotherapy, they isolated the ten most common and powerful approaches to change used by professionals and successful self-changers.

The processes for change are covert and overt activities and experiences individuals engage in when they attempt change. These processes are experiential—consciousness-raising (increasing awareness), dramatic relief

(emotional arousal), environmental reevaluation (social reappraisal), social liberation (environmental opportunities), and self-reevaluation (self-reappraisal)—and behavioral—stimulus control (re-engineering), helping relationships (supporting), counter conditioning (substituting), reinforcement management (rewarding), and self-liberation (committing) (Prochaska & DiClemente, 1992; Prochaska, et al., 1992; Velicer, Prochaska, Fava, Norman, & Redding, 1998).

The six stages of change.

Prochaska and colleagues' exhaustive qualitative and quantitative analyses of the processes people utilize to change led to a surprising discovery: they discovered that individuals modifying addictive behaviors move through a series of stages (Prochaska, et al., 1992; Prochaska, et al., 1994). Successful changers use the processes of change only at specific times, choosing a different approach whenever the situation demanded, and they discovered these specific times remained constant from one person to the next regardless of their problem. Certain processes of change match the corresponding stage of change the individual is in, with some overlap (Figure 3, p. 74).

1. Pre-contemplation Stage	2. Contemplation Stage	3. Preparation/ Determination Stage
Unaware of or Resistant to Recognize or Modify a Problem	Consciousness Raising; Dramatic Relief; Environmental Reevaluation; Self-Reevaluation	Social Reevaluation Self-Reevaluation; Self-Liberation
4. Action Stage	5. Maintenance Stage	6. Termination Stage
Reinforcement Management; Helping Relationships; Counter-Conditioning; Stimulus Control	Reinforcement Management; Helping Relationships; Counter-Conditioning; Stimulus Control	Full Stabilization and Integration Has Been Achieved

Figure 3. The Transtheoretical Model's Stages and Processes of Change.

The stages of intentional change are pre-contemplation, contemplation, preparation/ determination, action, maintenance, and termination (Figure 4, p. 75). Each stage does not automatically lead to the next—it is possible to get stuck in one stage or another. Individuals often experience set-backs and regress to a previous stage of change; in fact, most individuals attempt change several times, and move back and forth through the stages of change several times, before they are successful. Prochaska and colleagues estimate the average individual makes four to six iterations through the stages of change before achieving permanent success (Prochaska, et al., 1992; 1994). By understanding these stages, and the processes that are most useful within each stage, an individual can become more empowered and gain greater control over their change journey. Hopefully, this will help them move through the stages more quickly and efficiently, and with less pain (Prochaska, et al., 1994; Miller & Rollnick, 1991).

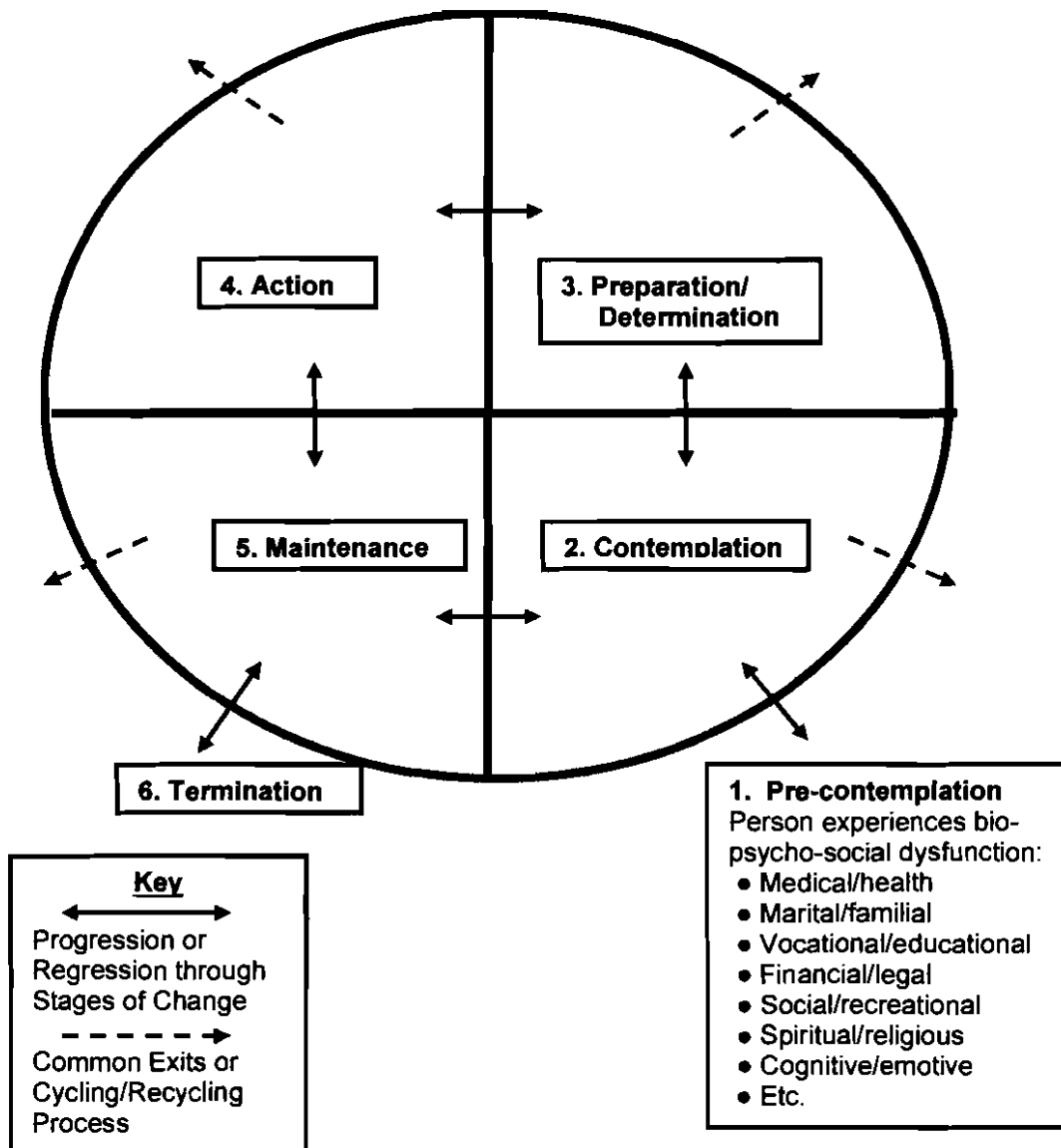


Figure 4. The Stages of Change from Addictive Behaviors.

Pre-contemplation stage.

The initial stage in the course of change is pre-contemplation. This is the stage when the individual has no intention of changing behavior in the foreseeable future. Resistance or ambivalence toward recognizing or modifying a problem is the hallmark of pre-contemplation. Others may even demonstrate

change as long as real or perceived external pressure is placed upon them; once pressure is removed, however, they typically quickly return to their old behavior patterns. The pressures that eventually lead a person to contemplate change typically result from manifested bio-psycho-social dysfunction in areas of: medical/health; marital/familial; vocational/educational; financial/legal; social/leisure/recreational; spiritual/religious; cognitive/emotive, and so forth.

Contemplation stage.

The second stage is the stage in which people are aware a problem exists and are seriously thinking about overcoming it, but have not yet made a commitment to take action. This is the stage where the individual considers changing and is bolstering their intention of changing at some point in the future, typically within the next three months (Prochaska, et al., 1992, Prochaska, et al., 1994). At this stage, decisional balance is a key task. The individual is becoming aware of the negative impact of maintaining the status quo and the potential payoff of changing, but they must weigh the perceived benefits of change against the perceived costs and barriers. As decisional balance shifts in favor of the perceived benefits of initiating change, the person's self-efficacy, defined as a person's beliefs about their capabilities to produce designated levels of performance which exercise influence over events that affect their lives, mounts (Bandura, 1994). While the benefits may be obvious, the barriers may be prohibitive and may vary significantly from one individual to the next.

Preparation/determination stage.

This stage combines intention with behavioral criteria. Individuals in this stage tend to be focused on pursuing a change of behavior in the immediate future, defined as within the next 30 days. They may or may not have made previous attempts to make this change. This is the stage where the person is most ready for change. The tasks of this stage are for the person to bolster their determination, to continue to increase their self-efficacy and commitment, develop a preliminary plan of action, and to prepare for upcoming action.

Action stage.

This is the stage in which the individual modifies their behavior, experiences, or environment in order to overcome their problem(s) (Prochaska, et al., 1992; Prochaska, et al., 1994). The time frame is typically about six months and involves the individual achieving sufficient lifestyle modification (e.g., reducing, quitting, or replacing a behavior). At this stage of change the individual should display a consistent pattern of cognitive, emotional, and/or behavior change, which is typically visible to others.

Maintenance stage.

In this the stage, the individual works to prevent retrogressing to pre-existing patterns (sometime called a "relapse"), and they continue consolidating gains attained during the action stage. Avoiding regressing, and consistently engaging in a new, incompatible behavior for more than six months (more typically for approximately one year), is criteria for realizing successful maintenance (Prochaska, et al. 1992; Prochaska, et al., 1994). This stage

typically begins approximately six months after the action stage begins, and typically extends for at least another six months. For some behaviors (e.g., addictive behaviors, such as alcoholism), maintenance can be considered to last a lifetime. Maintenance is a continuation, not an absence, of change. Since the TTM is cyclical, the individual may recycle several times before achieving long-term changes.

Termination stage.

The final phase in the change process is reached when the individual has permanently achieved lifestyle change—they have permanently ceased a self-defeating behavior and replaced it with a more desirable, healthier lifestyle choice. This stage is defined by 100% self-efficacy for maintaining their changed lifestyle with absolutely no temptations for retrogression. For some conditions, such as addictive behaviors, a more realistic goal may be to obtain lifelong maintenance, since acquiring 100% self-efficacy and no temptation to relapse may be unrealistic. When change becomes completely integrated into a new lifestyle, with no recycling or relapse, the individual can successfully exit from or terminate the overall change process (DiClemente & Prochaska, 1998).

Five levels of change.

“The concept of levels of change incorporates the realization that individuals are in different stages of change with respect to problem areas” (DiClemente & Prochaska, 1998, p. 4). The five levels of change identified in the TTM are: symptom/situational, maladaptive cognitions, interpersonal problems, systems/family problems, and intra-personal conflicts. The reality of multiple,

complicating problems is more likely the norm, as opposed to a person addressing a solitary issue. Gradations of problems, and their intermingled nature, can complicate an individual's change experience. The levels of change are the least studied of TTM's three basic constructs, but it is thought that these constructs can help guide interventions, especially when compound problems are being confronted, or multiple changes are being attempted (Ibid, 1998).

Movement through the stages of change.

A linear schema was initially identified whereby people are perceived as progressing in succession from pre-contemplation to contemplation, from contemplation to preparation/ determination, and so forth, or regressing in a similar fashion, although other patterns are more likely (Prochaska & DiClemente, 1982). In reality, this process is not linear, and people progress and regress among the stages (Figure 5, p. 80).

Some individuals stall, regress, or relapse while engaging in change, which led Prochaska and colleagues to envision the change process as more of a revolving or cyclical schema (Prochaska, et al., 1992; Prochaska, et al., 1994). Transition among stages results from experiential processes and each stage is characterized by changes in decisional balance—the balance between the perceived costs and benefits associated with engaging in a particular behavior. Decisional balance and a person's perceived self-efficacy changes as an individual progresses, regresses, or recycles, through the stages.

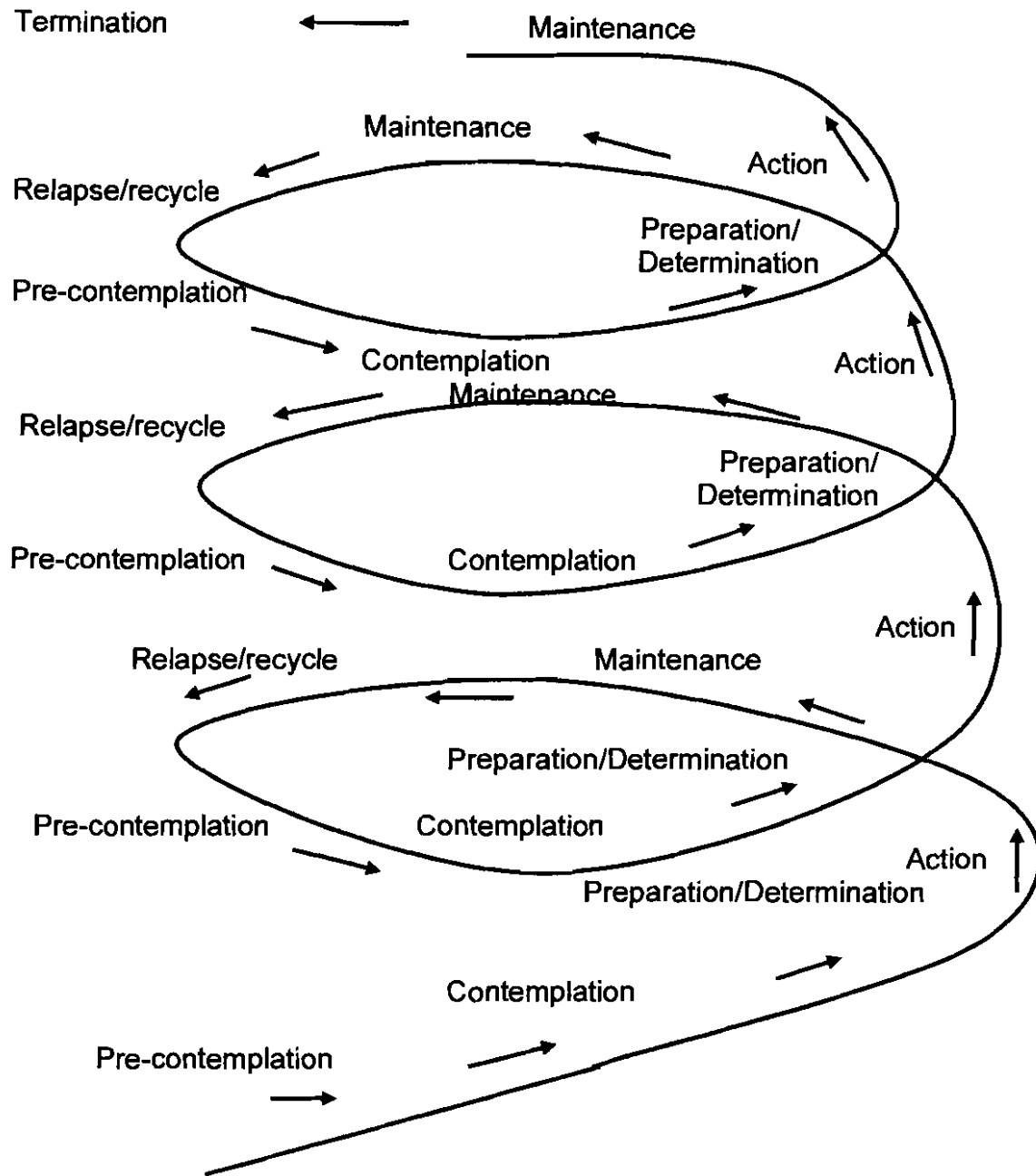


Figure 5. Cyclical patterns of the stages of change. Adapted from Prochaska, J.O., Norcross, J.C., & DiClemente, C.C. (1994), Changing for Good: A Revolutionary Six-Stage Program for Overcoming Bad Habits and Moving Your Life Positively Forward. New York: Avon Books.

As a person travels through these stages, decisional balance shifts and, theoretically, self-efficacy strengthens. When the perceived benefits of behavior change begin to outweigh the perceived costs, maintaining one's focus and commitment becomes less problematic. Maintaining decisional balance weighted in favor of the perceived benefits of change is essential for progressing through the change process and to prevent recycling, or relapse (i.e., regressing to a prior change stage, or abandoning the change attempt and exiting altogether).

Summary of the transtheoretical model (TTM).

Effective change depends on doing the right things (processes) at the right time (stages) (Keller & McGowan, 2001; Prochaska, et al., 1992). Prochaska and his colleagues' research indicates that self-changers utilize the same processes, progress through the same stages, and have comparable success as those who seek professional assistance (i.e., enter into therapeutic relationships, such as individual or group counseling) (Prochaska, et al., 1994). Most people, however, will recycle several times through the stages before achieving long-term maintenance (Prochaska, et al., 1992). As people move through the stages of change—whether progressing, regressing, or recycling—their motivation to change fluctuates from amotivation to more fully integrated and internalized styles of extrinsic motivation, and with these fluctuations their perceived locus of causality and control varies as well.

TTM is best considered as a cycle of distinct cognitive-behavioral indicators that describe six distinct stages of change, from pre-contemplation to termination. Transition among stages results from experiential processes, and each stage is characterized by changes in decisional balance, the balance between the comparative perceived costs and anticipated benefits associated with engaging in a particular behavior, and one's perceived self-efficacy, an appraisal of one's competence, capabilities and confidence to accomplish a task. The balance between the perceived costs and anticipated benefits, as well as their self-efficacy appraisal, varies depending on which stage of change the individual is in. Decisional balance changes as the individual makes their way through the stages. In reality, the process through the stages is not linear but cyclical, and people may progress, regress or recycle through and among the stages.

Transformative Learning Theory

Another theoretical perspective to help us better how adults change, which comes from the field of adult education and is complementary to the TTM, is transformative learning theory (TLT). Jack Mezirow (1991) described a process of reflective transformation, known popularly as transformative learning theory (TLT) that examines how people interpret their life experiences, critically examine the assumptions and beliefs that have structured how those experiences have been interpreted, and revise their assumptions until the very structure of their assumptions has been transformed. At the center of Mezirow's

theory is the individual's structuring of meaning from his or her experience (Clark, 1993).

Transformational learning.

Mezirow (2000) defines learning as “the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one’s experience as a guide to future action” (p. 5). He differentiates between the education of children, a formative process of assimilation through socialization, and adult learning, conceptualized as a transformative process involving our becoming alienated from our formative roles and understandings, reframing new perspectives, and achieving a greater degree of self-determination.

Transformational learning is learning that results in a fundamental shift in our worldview, which in turn leads to profound changes in our thoughts, feelings and actions. It is a shift of perception and consciousness that dramatically and permanently alters our way of being in the world (Turner, 2004, p. 1).

Transformative learning, sometimes referred to as reflective or emancipatory learning, comprises the assessment and reassessment of our presuppositions whenever our assumptions or premises are found to be distorted, inauthentic, or otherwise invalid (Mezirow, 1991). It involves reflectively transforming the beliefs, attitudes, opinions, and emotional reactions that constitute our meaning schemes, or transforming our meaning perspectives (sets of related meaning schemes) to more superior ones. “Transformational learning

is learning through action, and the beginning of the action learning process is deciding to appropriate a different meaning perspective" (Mezirow, 1991, p. 56).

Meaning making: Meaning schemes and meaning perspectives.

Making meaning is central to learning, which "involves making a new experience explicit and schematizing, appropriating, and acting upon it" (Mezirow, 1991, p. 11). A meaning is an interpretation, our construing experience in a way that makes it coherent.

Meaning schemes.

Mezirow differentiates between meaning schemes and meaning perspectives. "A meaning scheme is the particular knowledge, beliefs, value judgments, and feelings that become articulated in an interpretation" (1991, p. 44). They are the concrete manifestations of our habitual orientation and expectations (our meaning perspectives), and we translate these general expectations into specific ones that guide our actions. Meaning perspectives, on the other hand, "refer to the structure of assumptions within which one's past experience assimilates and transforms new experience" (Mezirow, 1991, p. 42). Transformation theory focuses on the way habitual expectations influence our learning and the way they become transformed through reflection (Imel, 1998; Mezirow, 1991).

Meaning perspectives.

Meaning perspectives are our overall frames of reference, our clusters of meaning schemes that forms our world view, which Mezirow describes as our "generalized sets of habitual expectation" (1991, p. 34). He identified three

types of meaning perspectives: epistemic, which entail what we know and how we use knowledge; sociolinguistic, our learned cultural, social, and communicative structures and processes; and psychological, our self-concept, character or personality make-up and attitudinal orientations. Meaning schemes, which make up our meaning perspectives, are much more likely, thus, to be examined and transformed through critical reflection than are our encompassing perspectives.

Perspective transformation.

The goals of TLT are to achieve self-emancipation through self-knowledge, overcome systematically induced distortions of perception and communication, and strengthen one's autonomy through rational discourse. A central tenet of TLT is *perspective transformation*, the process reappraising and changing one's meaning schemes and habitual life orientation and expectations, which occurs in 10 distinct phases, typically set in motion by a disorienting dilemma—a life event or incident a person experiences as a crisis that cannot be resolved by applying previous problem-solving strategies.

Perspective transformation explains how the meaning structures that adults have acquired over a lifetime become transformed (Imel, 1998). Helping an individual advance developmentally by becoming more critically reflective, questioning their meaning schemes and perspectives, and integrating new meaning perspectives from their change experience is a main goal of adult education and any rehabilitation effort (Imel, 1998). Transformational dimensions of adult learning involve reflectively transforming the beliefs,

attitudes, opinions, and emotional reactions that constitute our meaning schemes, or transforming our underlying meaning perspectives, or sets of interrelated meaning schemes (Mezirow, 1991).

The process of perspective transformation.

Mezirow describes a process of perspective transformation that considers how people interpret their life experiences, critically examine the assumptions and beliefs that have structured how those experiences have been interpreted, and revise their assumptions until the very structure of their assumptions has been transformed. At the center of Mezirow's theory is the individual's structuring of meaning from his or her experience (Clark, 1993). Mezirow differentiates this process of perspective transformation, also known as transformative learning, from reflective learning (assessment or reassessment of assumptions) whenever assumptions or premises are found to be distorting, inauthentic, or otherwise invalid (Mezirow, 1991).

A superior perspective has several features: it is more inclusive, discriminating and integrative of experience; is based upon a wider scope of information available; is freer from coercion and distortion, and is less restricted by self-deception; is more open to other perspectives, and to the points of view of others; is more rational in assessing competing arguments and substantiation; is more critically reflective; and is more willing to accept an informed and rational consensus of authority for adjudicating conflicting validity claims (Mezirow, 1989).

The phases of perspective transformation.

Mezirow describes the process of transformative learning “as a conscious and intentional one that begins with a dilemma and moves forward as distorted assumptions in meaning structures become transformed through critical reflection” (Mezirow, 1991, p. 148). The progression of transformative learning occurs in ten distinct phases, which are typically set in motion by a *disorienting dilemma*—a life event or incident that a person experiences as a crisis that cannot be resolved by applying previous problem-solving strategies. As a result, the person engages in *self-examination*, often accompanied by unpleasant or undesirable emotions, that leads to a *critical assessment of assumptions*. Mezirow characterizes this process as critical reflection. “Reflection is the process of critically assessing the content, process, or premise(s) of our efforts to interpret and give meaning to an experience” (Mezirow, 1991, p. 104).

Although painful or uncomfortable, the individual *recognizes their discontent* and that others have had similar experiences and have undergone a similar process. Typically, this leads the individual to consider and *explore options* for forming new roles, relationships, or actions, followed by a *plan of action*. They *initiate the course of action*, which consists of *acquiring knowledge and skills*, trying out new roles, renegotiating relationships, and building competence and self-confidence. The individual *provisionally tries new roles* that seem to best fit. Finally, the reintegration process is completed when the individual fully incorporates the new learning—new attitudes, beliefs, and

behaviors—into her or his life, which develops into a new, transformed perspective.

Patterns of perspective transformation.

In Mezirow's (1991) conception of perspective transformation, when the process is complete it is irreversible; that "once our understanding is clarified and we have committed ourselves fully to taking the action it suggests, we do not regress to levels of less understanding. Reaching this point of full understanding and commitment can be extremely difficult, however, and many people do regress before they reach this point" (p. 152). Mezirow (1991) terms this regression as backsliding:

Backsliding in the process of transformation may be explained by the learner acquiring an insight that results in transformation in a meaning scheme that may contribute over time toward a change in meaning perspective and is overwhelmed by it. The learner then becomes unable to act upon his or her new insights. The power of the threat presented by actions inspired by a new meaning perspective depends upon the nature of the threat, how pressing the disorienting dilemma was that initiated the process, and how effectively the learner has personalized and integrated into his or her experience what has been learned about the epistemic, sociocultural, or psychic forces that affect his or her way of understanding (p. 171).

Taylor (1997), in his review of studies on perspective transformation, concludes that several significant questions remain regarding the nature of

perspective transformation, including whether a person's perspective continues to change, regress, or remain static.

Summary of transformative learning theory (TLT).

At the center of Mezirow's theory of transformative learning is the individual's structuring of meaning from his or her experience (Clark, 1993). Mezirow differentiates this process of perspective transformation from reflective learning (assessment or reassessment of assumptions) whenever assumptions or premises are found to be distorting, inauthentic, or otherwise invalid (Mezirow, 1991). Transformative learning involves reflectively transforming the beliefs, attitudes, opinions, and emotional reactions that constitute our meaning schemes, or transforming our meaning perspectives (sets of related meaning schemes) (Mezirow, 1991). Perspective transformation explains how the meaning structures that adults have acquired over a lifetime become transformed (Imel, 1998). A main goal of adult education, as seen by Mezirow (1991), is helping the individual advance developmentally by becoming more critically reflective and integrating meaning perspectives from one's experience.

Comparing and contrasting the transtheoretical model (TTM) and transformative learning theory (TLT).

Prochaska and his colleagues (1994) consider consciousness-raising to be the most universal change process. They did not limit it to uncovering hidden thoughts and feelings, but utilized the term to describe any increase in self-knowledge, self-awareness, or problem-oriented knowledge that raises one's consciousness. It supports the process of self-reevaluation. Mezirow (1991)

likewise confers much importance to the process of developing internal awareness and becoming critically self-reflective. Although reflectively arriving at or encountering awareness occurs individually within each person's reality (i.e., from personal experience), it can occur socially through consciousness-raising groups, such as a substance abuse treatment program, and can propel collective transformations as well.

Prochaska recently recollected that "someone has said that the most pressing questions today occur at the intersection of disciplines" (personal communication, January 13, 2005). A promising approach to helping people change is to match particular interventions from a variety of theoretical perspectives, at the precise juncture, to key client characteristics. The TTM, understood through process of TLT, offers a promising framework. By integrating the stages, processes, and levels of change, with the phases of perspective transformation and the processes of transformative learning, we can achieve a better understanding of transformational change. TLT informs TTM (Figure 6, p. 91) and provides a complementary model for understanding the processes and stages of self-initiated change.

Summary

As late as 1993, Lightfoot & Hodgins noted:

Despite the high prevalence of substance abuse problems in incarcerated offenders, the development and evaluation of treatment programs for the group is very rudimentary and lags behind current thinking and research activities in the substance abuse field (p. 239).

	1. Pre-Contemplation Stage	2. Contemplation Stage	3. Preparation/ Determination Stage
Mezirow's Process of Transformative Learning	Failure of Normal Problem Solving	Disorienting Dilemma; Self-Examination; Critical Assessment; Recognize Discontent	Self- Examination; Critical Assessment; Recognize Discontent; Explore Options
Prochaska & Colleagues' Processes of Change	Unaware of or Resistant to Recognize or Modify a Problem; Bio-psycho-social Lifestyle Dysfunction	Consciousness Raising; Dramatic Relief; Environmental Reevaluation; Self-Reevaluation	Social Reevaluation Self-Reevaluation; Self-Liberation
	4. Action Stage	5. Maintenance Stage	6. Termination Stage
Mezirow's Process of Transformative Learning	Plan a Course of Action; Acquire Knowledge, Skills, & Competencies; Try New Roles; Build Self-Confidence & Competence	Reintegration of New Perspective (Assimilation and Transformed Perspective)	Transformed Perspective
Prochaska & Colleagues' Processes of Change	Reinforcement Management; Helping Relationships; Counter-conditioning; Stimulus Control	Reinforcement Management; Helping Relationships; Counter-conditioning; Stimulus Control	Full Stabilization & Integration Has Been Achieved

Figure 6. Comparing the process of TTM and the phases of TLM through the stages of change.

Assessing participants' commitment to change throughout treatment should be a 'best practices' core component of program evaluation efforts in order to determine program effectiveness, facilitate program improvement, and to gauge the participants' internalization of the treatment values and tools to best predict their immediate and long-term success (Taxman, 2000). TTM provides the theoretical foundation for the stage of change instruments traditionally used to measure participants' motivation and readiness to change, but they have not

been thoroughly studied for their predictive abilities to determine treatment success, especially with correctional populations. This study takes a small step toward this end.

Mezirow (TLT), Prochaska (TTM), Deci and Ryan (SDT), and their respective colleagues, recognize that people utilize a variety of processes at different times as they transform or change their lives. An individual's awareness of a problem and recognition of their need to change, and their subsequent preparation and evolving readiness (i.e., motivation and commitment) to change, are crucial to transformation and change. TLT and SDT inform TTM by helping us understand the stages, phases, processes and fluidity of intentional change. Programs are made more effective and efficient when clinicians know what components and processes affect aspects of change.

Measuring desire and commitment to change can help offenders transform and change their lives. It stands to reason that an offender's return to substance abuse and other maladaptive behaviors has obvious negative consequences, and committing one's self to an abstinent and prosocial lifestyle will most likely benefit the offender, their family and community, and society as a whole (Hayes & Schimmel, 1993). Understanding and facilitating motivation and movement along the phases or stages of transformation and change can help program staff, the participant, and the participant's peers more effectively engage the individual in change. It can more efficiently initiate transformative learning and the change processes appropriate for that individual's level of

motivation and commitment, which could help move the participant more successfully through the stages of change.

For the purpose of this study, these models (TTM, TLT and SDT) provide a most useful understanding of the intrapersonal shifts that define “change” from a treatment program context, which impacts and ultimately determines treatment outcomes. For incarcerated program participants an affirmative outcome, or successful rehabilitation, is traditionally defined as successful reintegration into the community and the adoption of a prosocial lifestyle. All three of these theories provide useful, complementary models and components for understanding how and why (or why not) the process of self-initiated change occurs. I believe these three theories synthesize to produce a comprehensive meta-model for understanding motivation and change that informs our understanding of the human change journey (Figure 7, p.94). The TTM model of motivation for self-initiated change, which is informed by TLT and SDT, provides the theoretical underpinning for both the URICA and SOCRATES “stages of change” instruments. The RDAP participants’ post-treatment scores on these instruments served as my primary predictor (independent) variable, and their post-release success served as my response (dependent) variables.

In the following chapter I discuss the research purpose and questions, the design of the study, and the methodology used to collect and analyze the participants’ post-release status indicators with their instrument scores and other demographic data.

TTM Stages of Change Theoretical Perspective	1. Pre-contemplation Stage	2. Contemplation Stage	3. Preparation/ Determination Stage	Levels of Awareness, Knowledge, & Agency for Change
TLT Phases of Perspective Transformation	Failure of Normal Problem Solving	Disorienting Dilemma; Self-Examination; Critical Assessment; Recognize Discontent	Self- Examination; Critical Assessment; Recognize Discontent; Explore Options	Symptom/Situational Maladaptive Cognitions Interpersonal Problems Systems/Family Problems Intra-personal Conflicts
TTM Processes of Change	Unaware of or Resistant to Recognize or Modify a Problem; Growing Bio-psycho-social Lifestyle Dysfunction	Consciousness Raising; Dramatic Relief; Environmental Reevaluation; Self-Reevaluation	Social Reevaluation Self-Reevaluation; Self-Liberation	Instrumental/Technical (prediction; explanation) Practical (understanding; interpretation) Emancipatory (criticism; liberation; reflection)
SDT Regulatory Styles of Motivation	Amotivation (Lack of intention to pursue a course of action)	External Regulation towards Introjection	Introjection towards Integration	Perceived Locus of Causality Perceived Locus of Control
TTM Stages of Change Theoretical Perspective	4. Action Stage	5. Maintenance Stage	6. Termination Stage	Levels of Awareness, Knowledge, & Agency for Change
TLT Phases of Perspective Transformation	Plan a Course of Action; Acquire Knowledge, Skills, & Competencies; Try New Roles; Build Self- Confidence & Competence	Reintegration of New Perspective (Assimilation) and Transformed Perspective)	Transformed Perspective	Symptom/Situational Maladaptive Cognitions Interpersonal Problems Systems/Family Problems Intra-personal Conflicts
TTM Processes of Change	Reinforcement Management; Helping Relationships; Counter-conditioning; Stimulus Control	Reinforcement Management; Helping Relationships; Counter-conditioning; Stimulus Control	Full Stabilization & Integration Has Been Achieved	Instrumental/Technical (prediction; explanation) Practical (understanding; interpretation) Emancipatory (criticism; liberation; reflection)
SDT Regulatory Styles of Motivation	Identification towards Integration	Integration Towards Full Integration	Full Integration (Internalization) Has Been Achieved (Resembles Intrinsic motivation)	Perceived Locus of Causality Perceived Locus of Control

Figure 7. Comparing TTM, TLT & SDT using the stages of change

CHAPTER THREE

Methods

This chapter describes the research methodology used in this study and includes a review of the research purpose, questions and design, to include the development of the data collection instrument, how the data was collected, and the statistical methods used to analyze the data.

Research Purpose and Questions

The purpose of this study, and the fundamental questions that guided it, were: Do inmates' motivation to change from lifestyles of criminal and addictive behaviors increase or improve through their participation in prison-based treatment programs? If so, how do we know—what are the predictors of post-release rehabilitation? More specifically:

1. Can an inmate's score on SOCRATES and URICA "stages of change" instruments, which are designed to measure an individual's motivation to change addictive behaviors, predict post-release rehabilitation?
2. Which, if any, of these instrument scales predict post-release success?
3. Do other demographic variables predictive of post-release success emerge from the data?

Research Design

Survey construction and data collection procedures.

Data was collected using a simple data collection form (survey questionnaire, Appendix C, p. 207) I specifically designed for this study.

A supervising probation officer with the United States Probation Office (USPO), District of Minnesota, expressed a keen interest in this study and served as consult in the design of the data collection instrument. U.S. Probation Officers (POs) have very demanding jobs, with large client caseloads and related time constraints. The form was developed for maximum efficiency and ease of use, and to minimize the demand from each PO, as recommended by the consultant. The projected time required from each respondent was estimated to be about five minutes per survey, which was anticipated to maximize the rate of return of the survey. Thus, delimitations were necessary to assure ease-of-use and to maximize return rate. For example, certain data, when applicable, would have been useful to have collected and could have broadened the scope of my analysis, such as substances used by participants, dates when housing or employment became unstable, and so forth. However, it was determined that increasing the data to be collected to this magnitude would be burdensome and would likely overwhelm the POs. Thus, data collection was delimited to what was determined to be minimally necessary to answer the research questions.

I anticipated that employment and housing would likely be the more unstable of the four outcome measures (response or dependent variables) as these are typically deemed to be less serious factors and would not, by themselves, have necessitated their term of supervised release being revoked. At the time of data collection, I anticipated a wide dispersion of scores for these two response variables, that the scores would have fluctuated throughout many

of the participants' term of supervision, and that they would be too time-consuming for the POs to collect. Thus, they were asked to rate a general impression only of the participants' employment and housing status, utilizing the rating of:

- 1 – Signifying unemployed,
- 2 – Indicating intermittent or sporadic employment, and
- 3 – Denoting steady employment.

This was likewise with the participants' housing status, with:

- 1 – Signifying unstable housing,
- 2 – Indicating intermittent unstable housing, and
- 3 – Denoting stable housing.

New criminal behavior (recidivism) and substance use (relapse), on the other hand, are more significant indicators of post-release success and deemed more serious violations of supervised release if they occur. They were rated as:

- 1 – Signifying resumed substance use (relapse) or return to criminality (recidivism),
- 2 – Indicating occasional or intermittent substance use, or intermittent and/or minor criminal behavior, and
- 3 – Denoting drug-free or crime-free.

Both variables—relapse and recidivism—were expected to start off as "no" (3), as these behaviors are typically considered more serious probation violations and would be more likely to result in a return to confinement if scores 2 or 1 are

obtained. Thus, I collected the date (month) of the incident (violation) and used time-to-event methodology (i.e., survival analysis) to evaluate whether the instrument scores and demographic variables were associated with the time to recidivism or relapse.

The survey questionnaire asked ten questions, four of which—the former inmate's (supervisee) register number, the judicial district the individual was supervised within, the date RDAP completed, and the date the supervisee's supervised release began—were completed by this writer ahead of time and obtained from archival data from the BOP's secured data base, known as Sentry. A cover letter (Appendix D, p. 209), copies of IRB approval letters (Appendix A, p. 203), a survey for each supervisee from that district, and a stamped, return envelope was sent to the Chief Probation Officer of each U.S. judicial district where each of the 216 former inmates were being, or had been, supervised. The Chief PO was respectfully asked to distribute the forms to the corresponding PO, or designee, and to return the forms through the most convenient method—mailed to me in the enclosed envelopes, faxed over secured phone lines, or scanned and e-mailed through secured servers.

The PO (respondent) was first asked to provide four demographic datum. These included the date the respondent completed the form, and the supervisee's supervised release (SR) status, which were categorized as follows:

- 1 – remains on SR,
- 2 – successfully discharged from SR, and

3 – unsuccessfully terminated from SR.

The PO also documented the date the supervisee's SR ended (if applicable), and the total months the supervisee was, or is, on SR to date.

The respondent was then asked to check the box corresponding with the supervisee's status on four response variables: employment (unemployed, intermittent/sporadic employment, or steady employment), housing (unstable housing, intermittent/unstable housing, or stable housing), recidivism (return to crime and prison, intermittent criminal behavior or minor legal problems, or crime-free), and relapse (return to active substance use, occasional use, or abstinence), as previously described. Room was provided on the back of the form for any comments, which was rarely utilized.

Pilot testing the instrument.

In late March 2008, shortly after receiving final IRB approval, a PO with the Minneapolis United States Probation Office volunteered to pilot test the instrument by collecting the data on former inmates from the District of Minnesota. Incidentally, Minnesota was the district with the most supervisees (n=30, of which 28 were returned), while several districts had only one or two supervisees. Thus, the USPO in the District of Minnesota also had the potentially greatest time demand total, calculated to be between 90 and 300 minutes. We found that each survey took approximately three to five minutes to complete, and it took about ten minutes per survey for archived (closed) cases.

Collecting the data.

Data collection surveys were sent out to the USPOs in the respective judicial districts in early April 2008, and they were returned between May and July 2008. The response rate was a pleasantly surprising 198 of 216 surveys (91.7%), a response rate much greater than anticipated. However, three of the surveys had significantly incomplete data, which reduced the total usable surveys to 195 (90.3%). I believe this unusually high response rate can be attributed to the importance the federal probation system places on prison-based treatment and other “pre-entry” initiatives.

Number of subjects and time required from each.

The sample population (Table 1, p. 101) consists of 195 former inmates sentenced out of 43 judicial districts in the United States who completed the RDAP at FCI Waseca between about August 2002 and December 2005 (for population sample by U.S. Probation district see Appendix F, p. 218.) The projected time requirement was anticipated to be between three and ten minutes per survey, depending on the supervisee’s status.

Consent, risks and discomfort, data security, confidentiality, and anticipated benefits.

This project consisted of reviewing archival and extant data, and obtaining public domain information, which did not require the informed consent or permission of the prior RDAP participants. There was no anticipated or

foreseeable risk of harm to the former inmate RDAP participants whose data was used in this study as identifiable information (i.e., names and register numbers) are not included in this study. Deceptive practices were not utilized.

Table 1

Population Sample

N=195

Demographic Characteristic		Demographic Characteristic	
Drug Relapse Status	N %	HSD/GED	N %
Drug Relapse	51 (26%)	Yes	176 (90%)
Intermittent Use	47 (24%)	No	19 (10%)
Drug Free	97 (50%)	Post Second.	N %
Recidivism Status	N %	Yes	54 (28%)
Return to Crime	48 (25%)	No	141 (72%)
Intermit./Minor Crime	40 (20%)	Substance Use	N %
No New Crime	107 (55%)	Drug Free	97 (50%)
Employment Status	N %	Some Use	98 (50%)
Unemployed	24 (12%)	Criminality	N %
Intermit. Employ.	62 (32%)	Crime/Incident Free	107 (55%)
Steady Employ.	109 (56%)	Some Crime/Incident	88 (45%)
Housing Status	N %	Employment	N %
Unstable Housing	11 (6%)	Stable	109 (56%)
Intermittent Housing	52 (27%)	Unstable	86 (44%)
Stable Housing	132 (68%)	Housing	N %
Age	Years	Stable	132 (68%)
Mean (SD)	34.4 (8.66)	Unstable	63 (32%)
Median	33.0	Early Release	N %
Range	(20.0-59.0)	Yes	154 (79%)
RDAPFailO	N %	No	41 (21%)
Did Not Fail	165 (85%)	SR Status	N %
Failed	30 (15%)	Still on SR	69 (35%)
Race	N %	Successfully Released	50 (26%)
White	117 (60%)	Unsuccessfully Released	76 (39%)
Other	78 (40%)	On SR	N %
Ethnicity	N %	Yes	69 (35%)
Not Hispanic	169 (87%)	No	126 (65%)
Hispanic	26 (13%)	SR Success	N %
Education	N %	Yes	119 (61%)
Less HS/GED	19 (10%)	No	76 (39%)
HS/GED	122 (63%)		
Post Second	54 (28%)		

All data was appropriately secured as mandated by federal law. Again, no identifiable information is, nor will be, included in any reports or publications. The applicable provisions and regulations of the Privacy Act of 1974 were strictly adhered to. The data that included identifiers was maintained on secure BOP computers and in locked, fireproof cabinets. Again, no individual former inmates were, nor will they be, identified in any analysis or publication.

Data Analysis

Statistical methods.

All response variables were dichotomized for analysis purposes. This conversion did not contaminate the results as all of the response variables were already categorical. In all cases, dichotomization was done so participants with any level of negative behavior (event) were pooled together. For example, participants with intermittent unstable housing status were grouped with the participants with unstable housing to form the unstable group (see Appendix B, p. 206).

Time to event analyses.

Two of the response variables (substance use and criminality) were collected in a way so that the time to the participant's event—substance use or new criminal conduct—was known. These variables lend themselves to a branch of statistics known as survival analysis. In survival analysis the response variable is binary so each participant can be labeled as an event or a censor. An event is something easily definable, and, in the case of this study, refers to participants

who experienced substance use or criminality. Alternatively, a participant was labeled a censor if, at last contact, they could not be considered an event. It is important to note that identifying a participant as a censor does not imply that they will or will not necessarily become an event. Rather, this is the classification that is known at last contact, and in these cases is indicated the individuals' had remained drug- and crime-free.

Survival analysis.

Survival analysis, less commonly referred to as event-history analysis, examines and models the relationships between the time it takes for an event (hazard) to occur (e.g., supervised release violation or substance abuse relapse) and one or more predictors, usually termed covariates or response variables (Fox, 2002). Two survival analysis tools were utilized in this study: univariate Cox proportional hazards regression and Kaplan-Meier survival curves.

Cox proportional hazards models were used to identify associations between substance use or criminality and any of the predictor variables. One of the outcomes produced by this model is a hazard ratio (HR), which is an estimation of the ratio of risks between participants with different levels of the predictor variable (Cox, 1972). The term hazard generally refers to a negative outcome or failure, whereas *censor* typically refers to a positive outcome or success. The hazard ratio is an estimate of the ratio of the hazard rate in the event group versus the censors (Spruance, Reid, Grace, & Samore, 2004). Less technically, the hazard ratio is an estimate of relative risk of the occurrence of an

event, such as relapse or recidivism. The hazard rate is the probability that if the event in question has not already occurred, it will occur in the next time interval, divided by the length of that interval (Fox, 2002). The baseline survivor function is always between 0 and 1, at the 95% confidence interval. A hazard ratio of 1 or less signifies there is no difference in survival between the two groups. A hazard ratio of greater than 1 indicates survival was better in one of the groups. Thus, the effect of a variable with a positive coefficient is to decrease the survival function relative to the baseline. For example, one of the models in the current study showed a HR of 1.74 ($p=0.024$) when comparing post-secondary education status to substance use (relapse). This ratio signifies that participants who did not have any post-secondary education experienced a 75% increased risk of having a drug relapse than those who attained some level of post-secondary education.

Kaplan-Meier survival curves are graphical representations which display the percent of participants who are event free on the y-axis and time on the x-axis (Kaplan & Meier, 1958). These plots were used to compare the likelihood of substance use or criminality across various levels of predictor variables.

Logistic regression and odds ratios.

The other two response variables, stability of housing and employment, are also presented as dichotomous variables. However, these two variables have no time component associated with them in the scope of this study. As such, univariate logistic regression models were constructed to identify associations

between these variables and any of the predictor variables. One outcome of a logistic regression model is an odds ratio, which is an estimation of the ratio of the odds between participants with different levels of the predictor variable (Devore & Peck, 1986; Field, 2005; Griffith, 2007). Stated another way, an odds ratio $[p/(1-p)]$ is the ratio of the odds of an event, such as unstable housing, occurring in one group (e.g., RDAP failures) to the odds of it occurring in another group (e.g., RDAP successors).

It is important to differentiate between odds and risks (Case, Kimmick, Paskett, Lohman, & Tucker, 2002). For example, in the current study, 13 out of 19 participants who did not have a high school degree or GED had unstable employment, which corresponds to an odds ratio of 13:6 (or 2.17:1) and a risk of 13/19 (68%). On the other hand, only 73 out of 176 participants with a high school degree or GED had unstable housing, which corresponds to an odds ratio of 73:103 (0.71:1) and a risk of 73/176 (41%). The odds ratio for this example is simply the ratio of the respective odds, or $2.17/0.71=3.06$, which should be interpreted to mean that participants without a high school degree or GED have more than 3 times greater odds of having unstable employment. It would be inappropriate to assume, however, that their risk of unstable employment is 3 times greater for those without a high school degree or GED.

Logistic regression models can also be constructed when the predictor variable is continuous in nature, such as the stage of change instrument subscale scores. In the current study, a comparison of employment status and

the Socrates 8 Drug Recognition subscale (SOC8DRE) score showed an odds ratio of 1.05, which should be interpreted to mean that for each one-point increase in SOC8DRE score, the odds of unstable employment increased by 5%. Odds ratios are also presented to compare each of the response variables to each other.

P-values.

P-values are presented throughout to show the significance of a result. P-value, a probability with a value ranging from 0 to 1, is a measure of how much evidence we have against the null hypothesis (Devore & Peck, 1986). The smaller the p-value, the more evidence there is against null hypothesis, typically signified as H_0 . In other words, the lower the p-value, the less likely the result is accurate if the H_0 is true, and the more likely the result is correct in the sense of statistical significance.

For example, in Cox proportional hazards modeling, a hypothesis test is performed to determine if the $HR = 1$ (i.e., there is no association between the predictor variable and the response variable) versus the alternative that the $HR \neq 1$. A p-value in this case is the probability of obtaining a sample HR if the true population $HR = 1$. Again, consider the example from this study comparing substance use to post-secondary education status. In this example, the $HR = 1.743$ and the $p\text{-value} = 0.024$. This means that if the true population $HR = 1$, there is a 2.5% chance of obtaining a random sample that produces a $HR = 1.743$ or greater. Thus, as the p-value gets closer to 0, the greater the possibility of

error, and less believable is the hypothesis that the true HR=1. In this study, as is common statistical practice, a p-value < 0.05 will be considered a statistically significant result. In other words, when the p-value < 0.05 we will reject the null hypothesis and conclude there is an association between the predictor and response variables.

Summary.

My hypothesis was that the three instruments utilized, which were designed to measure an individual's current motivation to change—the URICA, SOCRATES 8A and SOCRATES 8D—would predict post-release status, and one or two of the instruments, or their subscales, might be more predictive than the others. The TRIAD national evaluation initiative of the BOP's RDAPs revealed two primary outcome findings: post-release outcomes of drug use (relapse) and recidivism (as measured by re-arrests or revocations) were positively and statistically significant for male offenders who completed RDAP (Pelissier, Rhodes, Saylor, Gaes, Camp, Vanyur, & Wallace, 2000). Similar findings were anticipated for the FCI Waseca RDAP participants. Post-release success, it was predicted, would be positively correlated to at least some of the post-treatment instrument scores.

It was anticipated that this study would provide a greater understanding of, and hopefully greater ability to predict, inmates' motivation to change through their participation in prison-based drug abuse treatment programs. Furthermore, that it would help shed additional light and clarification on the efficacy of these

instruments' (URICA and SOCRATES) predictive ability in forecasting successful inmate outcomes from RDAP participation and completion, as determined by successful community adjustment and integration (defined as their maintaining stable employment, remaining crime free, and refraining from illicit or unauthorized substance use). I anticipated this research might provide further support for the future development of a stages of change instrument developed for and normed with a correctional population. Lastly, I anticipated these findings might provide information to help prison treatment staff develop and match differing focuses of treatment for inmates with varying motivation (i.e., within different stages of change).

CHAPTER FOUR

Results

Post-release status data from the ten inmate FCI Waseca RDAP cohorts were compared with their archival URICA and SOCRATES 8A & 8D assessment data and various demographic data and analyzed using SAS/STAT® Version 9 and SPSS® Version 16 for correlative and predictive ability. All of the predictor variables are presented using basic summary statistics (Appendix E, p. 211).

Criminality and Relapse

The median time on supervision for all participants was 36 months. For those who committed new criminal conduct, their median time on supervision was 12.5 months. The median time on supervision for those who resumed substance use was 8 months.

Approximately one half of the participants violated their abstinence while on supervised release, while slightly less than one half of the participants (45%) committed new criminal behavior of either a minor or serious nature. Slightly more than one-half of the substance users resumed active substance use (relapsers), and slightly less than one-half of those committing new criminal behavior or SR violations were returned to prison (recidivists). The relationship between substance use and criminal behavior was striking in that nearly two-thirds of the participants who violated their abstinence while on supervision also committed new criminal behavior or serious misconduct (Table 2, p. 110). On the other hand, about three-fourths of the participants who remained drug-free did not commit new criminal conduct. It is not surprising that many of the same

factors are associated with both substance use and criminality because these two variables are highly associated.

Table 2

Comparison of Frequency of Substance Use and Criminality

	<u>Return To Crime</u>		<u>Total</u>
	<u>Yes</u>	<u>No</u>	
Drug Relapse	63	35	98
No Drug Relapse	25	72	97
Total	88	107	

(Fisher's exact $p < 0.001$) N=195

New Criminal Conduct

Only one stages of change assessment, the SOCRATES 8D (drug), was predictive of post-release success. None of the SOCRATES 8A (alcohol) subscales or URICA subscales were found to be significantly related to criminality, nor were they associated with any of the other post-release success factors. All three of the SOCRATES 8D subscales—SOC8DRE (recognition), SOC8DAM (ambivalence), and SOC8DTS (taking steps)—were significantly associated with new criminal conduct (Table 3, p. 111).

One demographic factor, RDAPFailO, was found to be significantly associated with new criminality. Participants who completed RDAP but were later placed in failed status (RDAPFailO) because of significant rules infractions, either while either still incarcerated or after being transferred to a CCC, had twice the risk of new criminal behavior as those who remained in successful RDAP completion status up to supervised release.

Table 3

Analysis for factors Affecting Criminality Using the Univariate Cox Proportional Hazards Model

Variable	Hazards ratio (95% CI)	p Value (*p≤0.05)	N=195
PostURICA	1.040 (0.918 to 1.181)	.532	
PostPC	0.964 (0.641 to 1.448)	.858	
PostC	1.189 (0.773 to 1.828)	.430	
PostA	1.019 (0.640 to 1.623)	.935	
PostM	1.716 (0.841 to 1.645)	.343	
SOC8ARE	0.998 (0.957 to 1.022)	.871	
SOC8AAM	0.993 (0.946 to 1.042)	.771	
SOC8ATS	0.997 (0.997 to 1.018)	.786	
SOC8DRE	1.034 (1.001 to 1.068)	.045*	
SOC8DAM	1.056 (1.005 to 1.110)	.030*	
SOC8DTS	1.040 (1.000 to 1.081)	.050*	
Age	0.972 (0.952 to 1.002)	.072	
RDAPFailO	2.004 (1.188 to 3.382)	.009*	
Race	1.377 (0.904 to 2.098)	.136	
Ethnicity	0.749 (0.375 to 1.493)	.411	
HSD-GED	1.307 (0.694 to 2.465)	.407	
PostSec	0.950 (0.600 to 1.504)	.826	
EarlyRel	1.289 (0.781 to 2.127)	.321	

SOCRATES 8D subscales and criminality.

All three SOCRATES 8D subscales were related to criminality. The univariate Cox proportional hazards model showed that for every one-point increase on these subscales, the participants' risk of recidivism increased by 3% on the RE, 6% on the AM, and 4% on the TS. As the bivariate scatterplots illustrate (Figure 8, p. 112; Figure 9, p. 114; & Figure 10, p. 115), the participants who remained crime-free have lower scores overall on these subscales than participants who engaged in some level of criminality, although this is less evident with the AM (ambivalence) subscale.

SOCRATES 8D RE (recognition-drug) subscale scores.

As discussed in Chapter One, a lower score on this subscale indicates denial of a drug use problem and the absence of an expressed desire to change; conversely, high scores indicate awareness of a drug use problem and a desire to change. Interestingly, the results of this study showed that participants with lower RE subscale scores were less likely to engage in criminality or other serious misconduct (Figure 8, below).

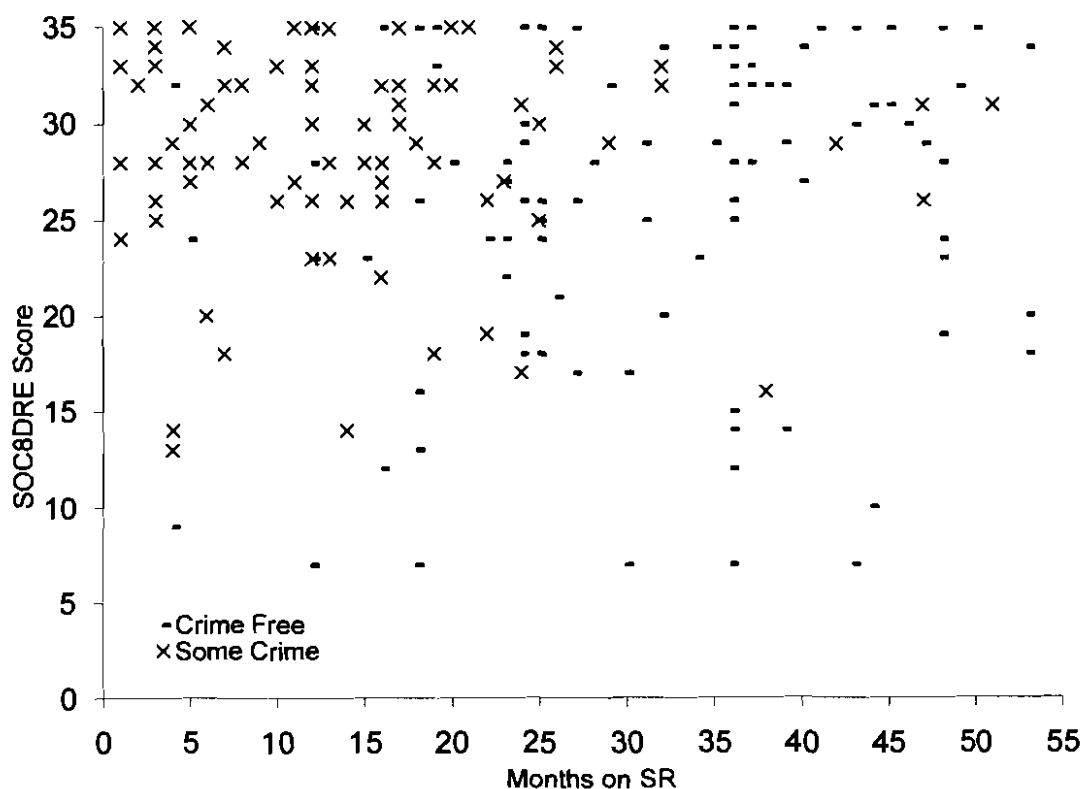


Figure 8. Distribution of SOC8DRE scores for crime-free and some crime participants in relation to months on SR. N=195.

SOCRATES 8D AM (ambivalence) subscale scores.

A lower score on this subscale indicates a participant is not ambivalent about their drug use and does not have uncertainty as to whether they have a problem with drugs. This is because they know and readily accept their drug problem (high recognition), or they do not believe they have a drug problem and, thus, do not have cause to wonder (low recognition). Therefore, the AM score has to be interpreted in relation to the participant's RE score. A high score on this subscale indicates a participant is ambivalent or uncertain about their drug use and what they can or should do to address it, but that they are open to reflection, contemplation, and consideration.

Similar to SOCRATES 8D RE scores, participants with lower AM scores were less likely to engage in criminality or other serious misconduct, but the results were less distinct (Figure 9, p. 114). The AM scores were more evenly distributed between high and low scores for both the criminality and crime-free groups, although crime-free participants had lower scores overall. Again, this could reflect a general propensity of either high- or low-recognition for these participants for the same reasons previously discussed. Another similarity with RE is that participants who experienced some level of criminality have higher AM scores overall, and they clustered on the near side of the plot, which again indicates a tendency for lower median time on SR.

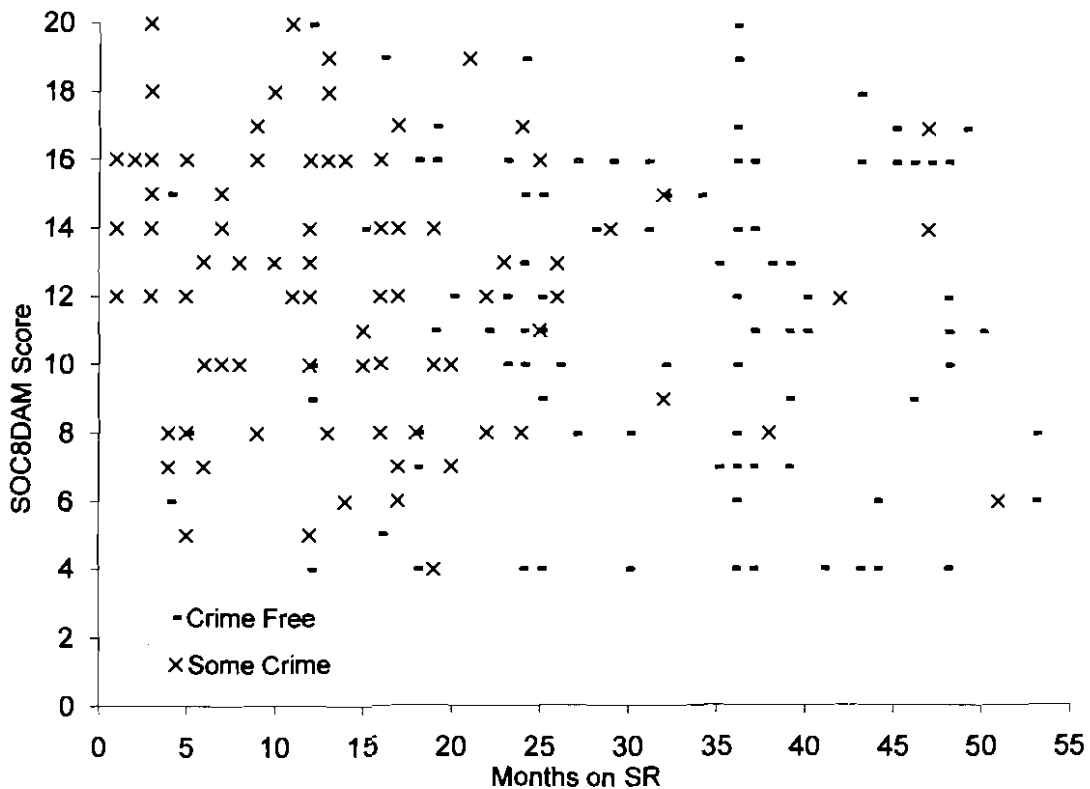


Figure 9. Distribution of SOC8DAM scores for crime-free and some crime participants in relation to months on SR. N=195.

SOCRATES 8D TS (taking steps) subscale scores.

A lower score on this subscale indicates a participant endorsed items that indicated they were not currently doing things to change their drug use and they have not made such recent changes in their life. Higher scores indicate they are making positive changes in their drug use and may have experienced some success. High scores on this subscale have been found to be predictive of successful change (Miller & Tonigan, 1996). Participants' scores on the TS subscale were much higher than those on the RE or AM, although participants

who engaged in criminality had no low scores on this subscale, with one mid-range score (Figure 10, p. below). Scores for participants who engaged in some level of criminality or serious misconduct are even more concentrated towards the top of the plot and clustered more to the left side, which indicates less median time on SR.

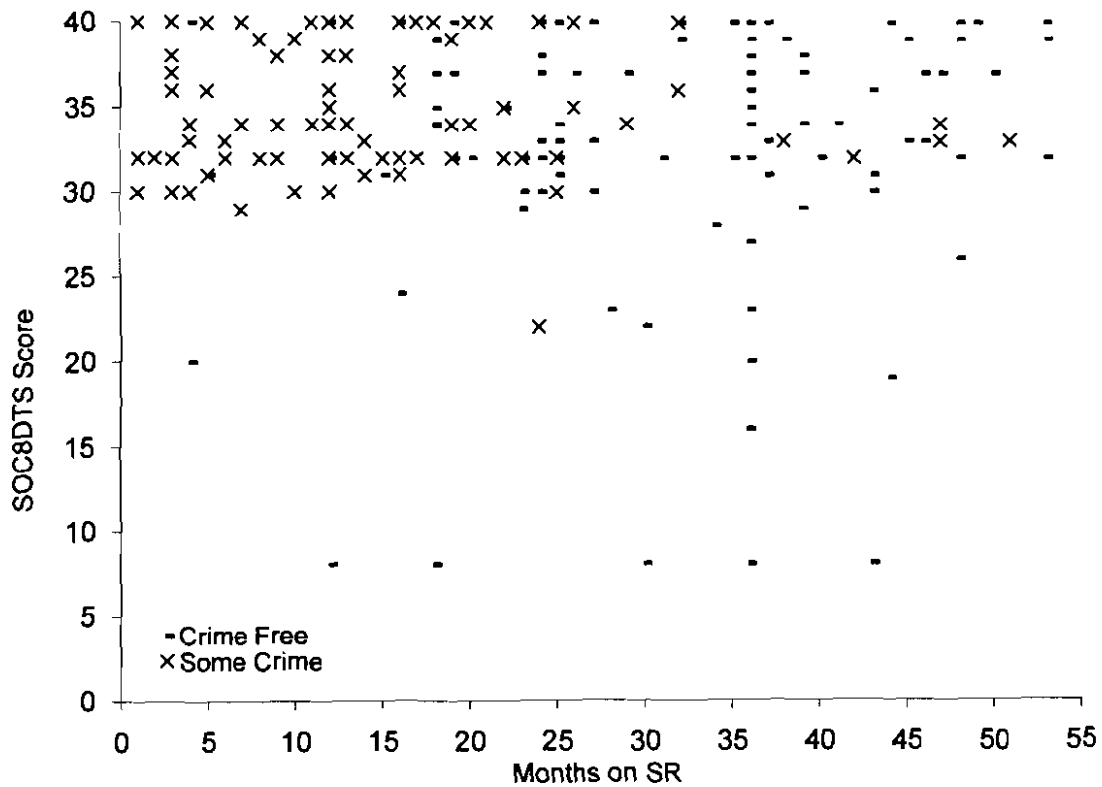


Figure 10. Distribution of SOC8DTS scores for crime-free and some crime participants in relation to months on SR. N=195.

RDAP status and criminality.

This study found a strong association between a participant’s RDAP status and their propensity for criminality or serious misconduct. In fact, 60% of

RDAP failures engaged in some level of criminality on SR. The univariate Cox proportional hazards model showed that RDAP failures had twice the risk of engaging in criminality as RDAP successes at all times points during SR (to approximately 48 months) (Table 3, p. 111). The Kaplan-Meier survival curve comparing successful RDAP participants with RDAP Fail-Outcome participants showing time to first criminal activity while on SR provides a clear depiction of this disparity (Figure 11, below).

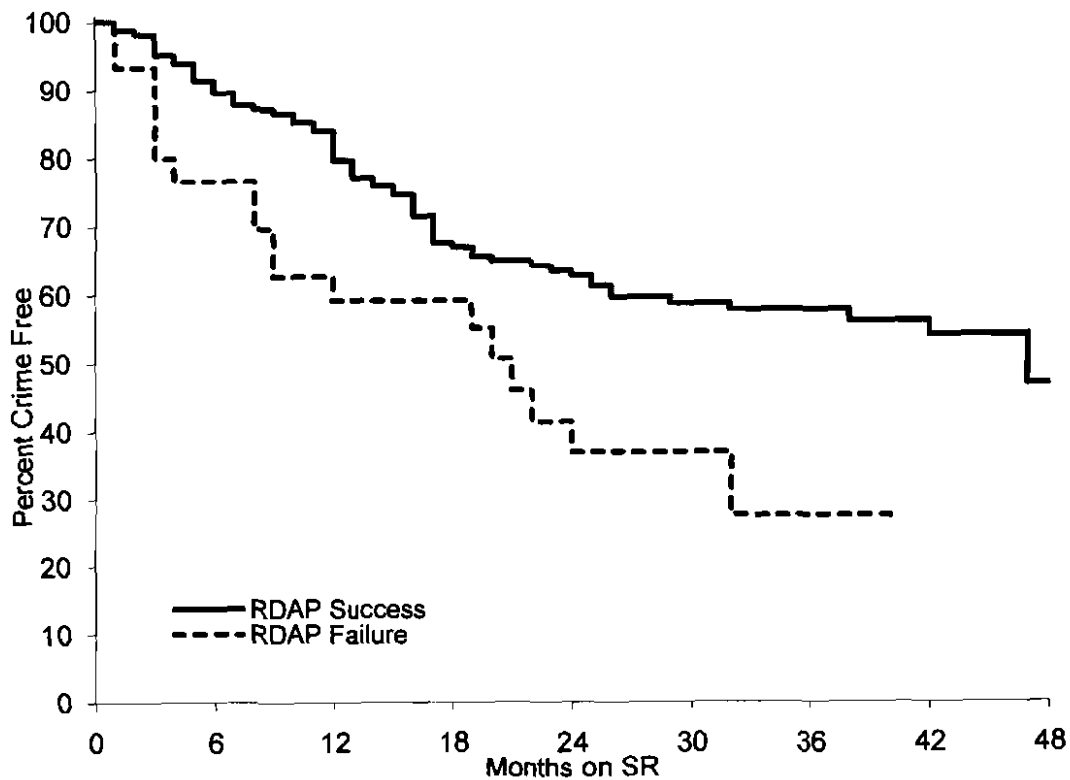


Figure 11. Estimated survival curve for criminality on SR for successful RDAP Success and RDAP Fail-Outcome participants. A participant's probability of surviving to any point is estimated from cumulative probability of surviving each of the preceding time intervals (calculated as the product of preceding probabilities). N=195.

Resuming Substance Use

None of the stages of change assessments and their respective subscales was associated with substance use; however, two demographic variables, RDAPFailO and PostSec, were found to be predictive of substance use (Table 4, below). This study found there was a very strong association between participants' RDAP status and some level of substance use on SR. Participants' level of educational attainment was also strongly linked with substance use.

Table 4

Analysis of Factors Affecting Relapse Using the Univariate Cox Proportional Hazards Model

Variable	Hazards ratio (95% CI)	p Value (* p _≤ 0.05) N=195
PostURICA	1.039 (0.921 to 1.171)	.536
PostPC	0.909 (0.627 to 1.317)	.613
PostC	1.033 (0.686 to 1.554)	.877
PostA	0.919 (0.588 to 1.435)	.709
PostM	1.264 (0.908 to 1.761)	.165
SOC8ARE	1.008 (0.985 to 1.031)	.500
SOC8AAM	1.031 (0.986 to 1.078)	.176
SOC8ATS	1.000 (0.980 to 1.020)	.977
SOC8DRE	1.017 (0.987 to 1.046)	.270
SOC8DAM	1.040 (0.993 to 1.090)	.097
SOC8DTS	1.017 (0.985 to 1.051)	.294
Age	0.985 (0.963 to 1.008)	.200
RDAPFailO	3.827 (2.418 to 6.056)	.001*
Race	1.054 (0.705 to 1.575)	.796
Ethnicity	0.683 (0.344 to 1.356)	.275
HSD-GED	1.586 (0.862 to 2.919)	.138
PostSec	1.743 (1.074 to 2.830)	.024*
EarlyRel	1.394 (0.872 to 2.223)	.164

RDAP status and substance use.

Nearly 85% of RDAP failures experienced some level of substance use on SR. The univariate Cox proportional hazards model showed that RDAP failures had nearly four times the risk of engaging in some level of substance use than did RDAP successes at all time points during SR (Figure 12, below). Many of the participants lost their RDAP completion status due to substance use after program completion, either while still incarcerated or after being transferred to a CCC.

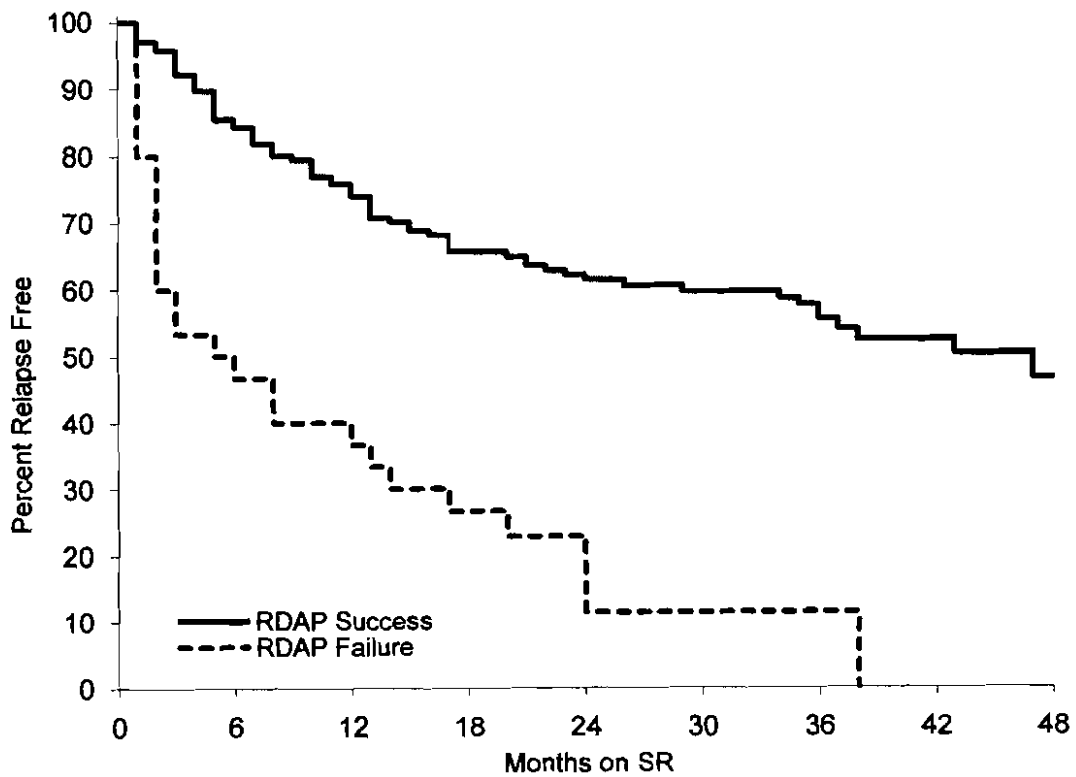


Figure 12. Estimated survival curve for substance use on SR for successful RDAP Success and RDAP Fail-Outcome participants. N=195.

Education level and substance use.

One education variable, PostSec, was significantly associated with substance use on SR. The univariate Cox proportional hazards model showed that those who did not have any post-secondary education had about 75% greater risk of substance use at all times points during SR (Figure 13, below).

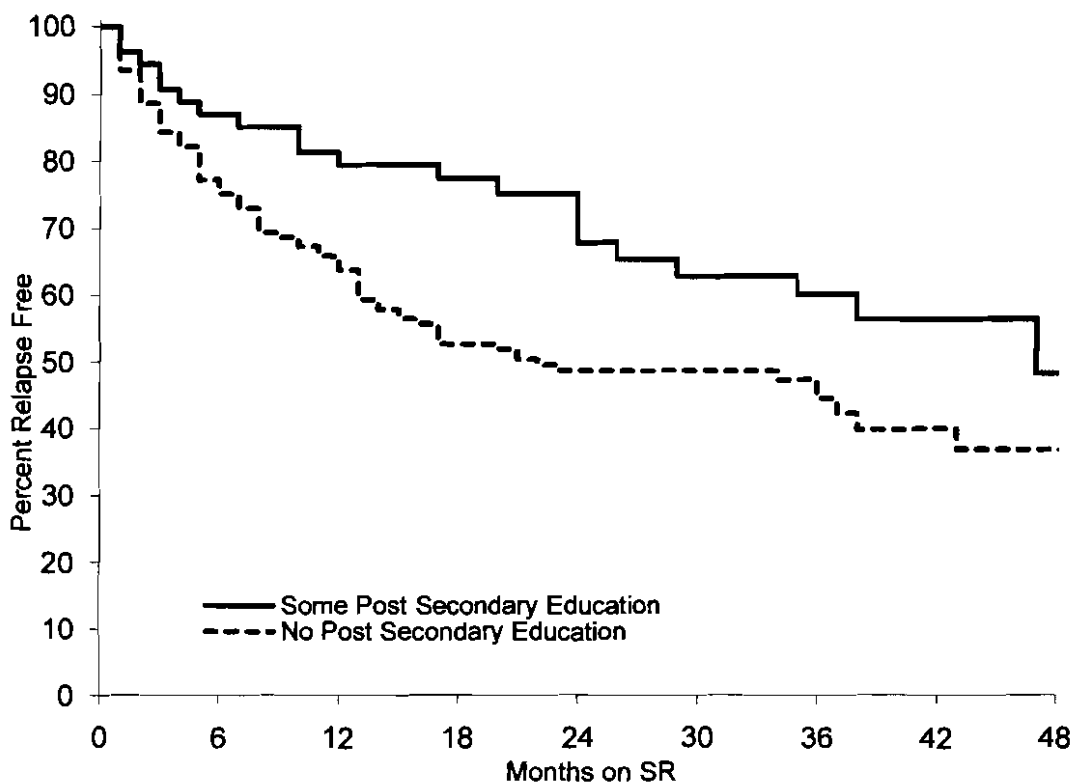


Figure 13. The estimated survival curve for resumed substance use on SR for two levels of educational attainment. N=195.

Almost two-thirds of participants with some post-secondary education maintained their abstinence while on supervised release. Lack of post-secondary education was not significantly associated with any increased risk of criminality as nearly

half of the participants with some post-secondary education committed some new criminal conduct.

Education level appears to play an important role in reducing participants' substance use rates on SR. In fact, increases in education level decreased overall rate of substance use on SR, but not for criminality. Approximately 63% of participants with less than HSD/GED resumed some level of substance use, and 58% engaged in some level of criminality or serious misconduct, while on SR. For those who had obtained their HSD/GED about 53% resumed substance use and 42% engaged in criminality, and for those with some post-secondary education approximately 39% resumed substance use and 48% engaged in criminality. Again, the rate of substance use for all participants in this study was about 50% and about 45% for criminality.

Substance Use, Criminality and Ethnicity

Although participants with Hispanic ethnicity (n=26) only made up approximately 13% of this study's sample, slightly less than one-third resumed substance use or committed new criminal conduct; conversely, over half of non-Hispanic participants resumed substance use or criminality. However, this relationship was not found to be statistically significant most likely due, in part, to low sample size. It appears that the same Hispanic participants who engaged in substance use also engaged in new criminality, which might indicate a relationship between drug use with crime, but again, the relationship was not found to be statistically significant in this study. Substance use and race showed far less disparity as approximately 49% of Caucasian participants engaged in

some level of substance use on SR compared to 52% of non-Caucasian participants.

Stability of Employment

Only one of the stages of change assessments, the SOC8DRE, was associated with employment (Table 5, below). The logistic regression model showed that for every one point increase on this subscale, a participant's odds of experiencing unstable employment increased by 5%. Three demographic variables, RDAPFailO, Race, and HSD-GED, were found to be associated with employment.

Table 5

Analysis of Factors Affecting Stability of Employment Using Univariate Logistic Regression Models

Variable	Odds ratio (95% CI)	p Value (* p \leq 0.05) N=195
PostURICA	1.018 (0.859 to 1.207)	.837
PostPC	0.883 (0.518 to 1.503)	.646
PostC	1.030 (0.582 to 1.824)	.919
PostA	1.028 (0.540 to 1.958)	.933
PostM	1.001 (0.633 to 1.584)	.996
SOC8ARE	1.025 (0.993 to 1.058)	.112
SOC8AAM	1.036 (0.973 to 1.103)	.271
SOC8ATS	1.017 (0.989 to 1.046)	.236
SOC8DRE	1.048 (1.005 to 1.093)	.028*
SOC8DAM	1.046 (0.978 to 1.118)	.191
SOC8DTS	1.036 (0.989 to 1.086)	.140
Age	0.976 (0.944 to 1.096)	.158
RDAPFailO	4.240 (1.822 to 10.335)	.001*
Race	2.767 (1.532 to 4.998)	.001*
Ethnicity	0.765 (0.328 to 1.783)	.534
HSD-GED	3.057 (1.110 to 8.416)	.030*
PostSec	1.088 (0.578 to 2.050)	.793
EarlyRel	1.121 (0.562 to 2.239)	.745

SOCRATES 8D RE (recognition) and employment.

Similar to the relationship between SOC8DRE and criminality, participants who maintained stable employment had lower scores overall than participants who experienced some level of employment instability (Figure 14, below).

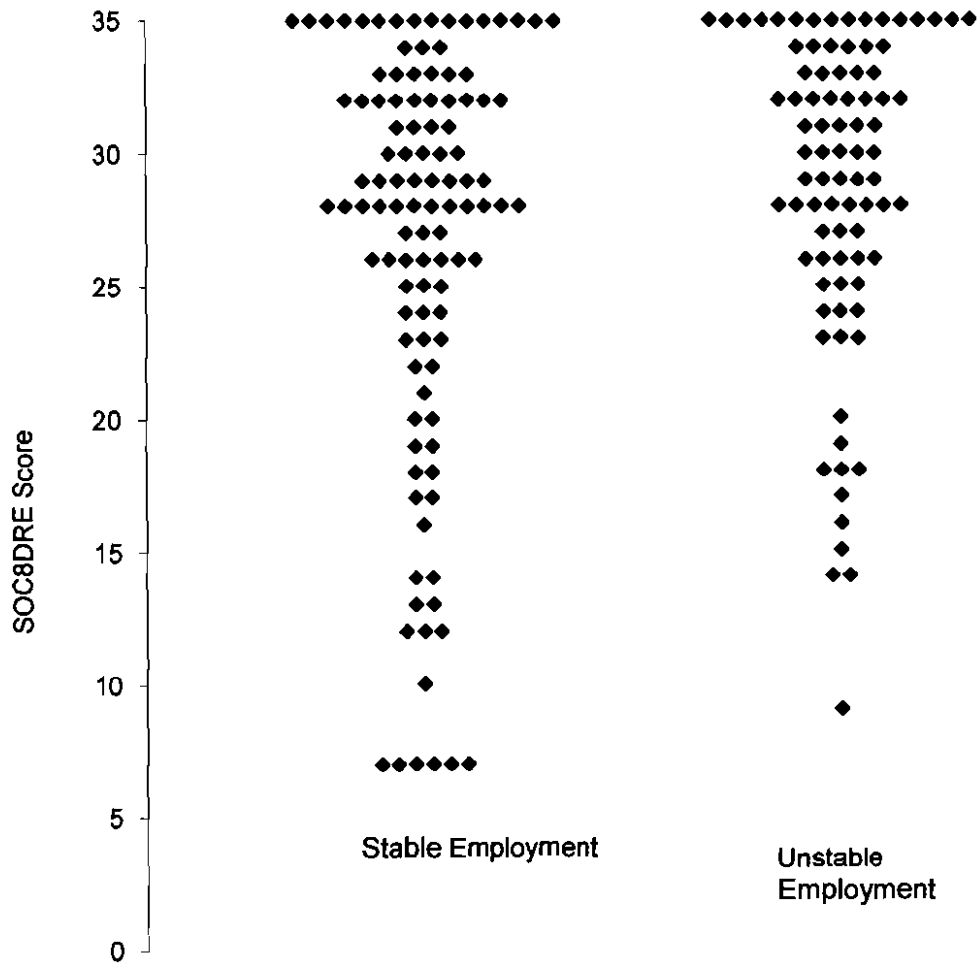


Figure 14: Distribution of SOC8DRE scores comparing those with stable employment to those who experienced unstable employment while on SR. N=195.

RDAP status and employment.

About 56% of participants maintained stable employment on SR; consequently, 44% experienced some degree of employment instability, either intermittent/sporadic employment or unemployed. Stability of employment was much more evident for RDAP success participants (Figure 15, below). The logistic regression model showed that participants who failed RDAP after program completion (RDAPFailO) had more than four times greater odds of having some degree of employment instability compared to those participants who remained in successful RDAP completion status up to SR (Table 5, p. 121).

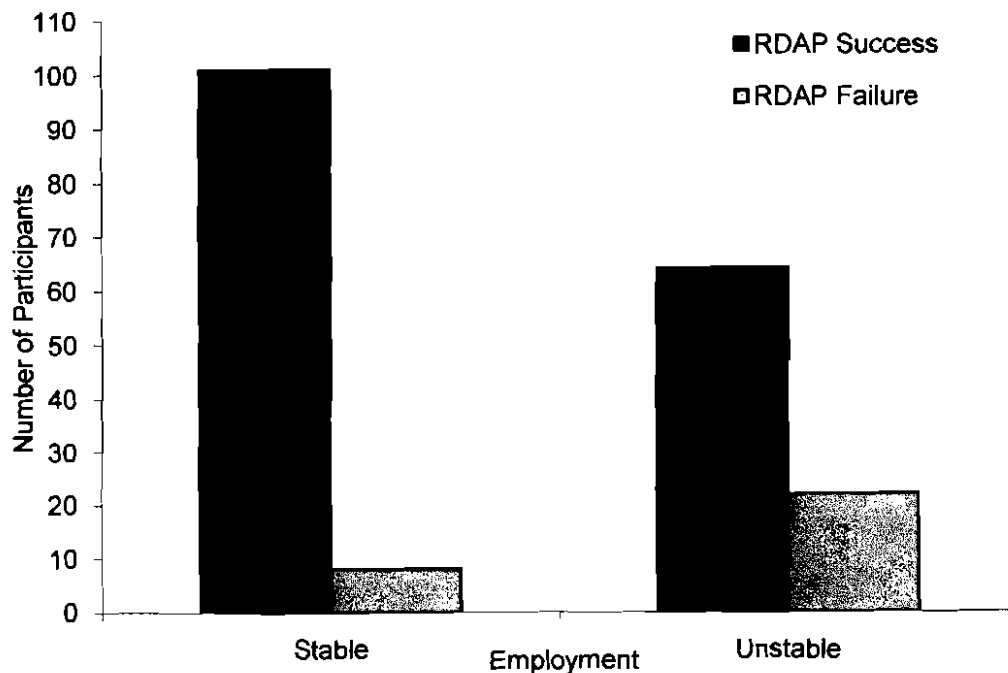


Figure 15. Comparison of employment stability on SR for successful RDAP Success and RDAP Fail-Outcome participants. N=195.

Race and employment.

Participants' race was also found to be associated with employment stability. The logistic regression model found that non-Caucasian participants had nearly three times greater odds of employment instability (Figure 16, below).

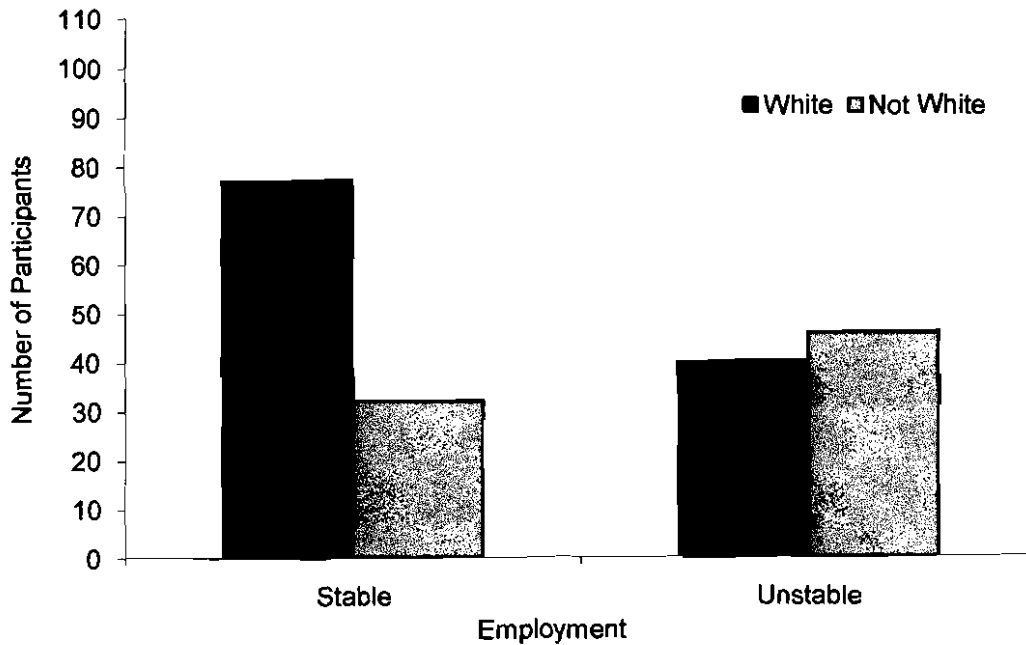


Figure 16. Comparison of employment stability on SR with participants' race. N=195.

Education level and employment.

The logistic regression model found that participants who had not yet obtained their GED or HSD had slightly more than three times greater odds of experiencing some level of employment instability (Figure 17, p. 125).



Figure 17. Comparison of employment stability on SR with education level. N=195.

Criminality, substance use, and employment.

Nearly 70% of the participants who experienced some level of employment instability engaged in some degree criminality or serious misconduct while on SR. About three of four participants who experienced stable employment refrained from criminality on SR (Table 6, p. 126).

Table 6

Comparison of Frequency of Employment and Criminality

	<u>Return To Crime</u>		<u>Total</u>
	<u>Yes</u>	<u>No</u>	
Unstable Employ	60	26	86
Stable Employ	28	81	109
Total	88	107	
(Fisher's exact $p < 0.001$)			N=195

Slightly more than two-thirds of the participants who experienced stable employment maintained their abstinence from substance use on SR, as compared to less than one-third of those experiencing some level of employment instability. Nearly three out of four participants who experienced some level of employment instability returned to some level of substance use (Table 7, below). As with criminality, the order of occurrence is not known. However, only about one-third of participants who maintained stable employment engaged in some level of substance use.

Table 7

Comparison of Frequency of Employment and Substance Use

	<u>Return To Drugs</u>		<u>Total</u>
	<u>Yes</u>	<u>No</u>	
Unstable Employ	62	24	86
Stable Employ	36	73	109
Total	98	97	
(Fisher's exact $p < 0.001$)			N=195

Stability of Housing

None of the stages of change instruments were associated with stability of housing. Two demographic variables, RDAPFailO and Race, were found to be associated with housing stability (Table 8, below). Overall, two-thirds of participants in this study maintained stable housing while on SR. Nearly three-quarters of the participants who experienced some level of housing instability engaged in some degree of criminality or serious misconduct while on SR (Table 9, p. 128).

Table 8

Analysis of Factors Affecting Stability of Housing Using Univariate Logistic Regression Models

Variable	Odds ratio (95% CI)	p Value (* p \leq 0.05) N=195
PostURICA	0.970 (0.809 to 1.162)	.739
PostPC	0.854 (0.484 to 1.508)	.586
PostC	0.734 (0.402 to 1.342)	.315
PostA	0.809 (0.408 to 1.607)	.545
PostM	1.004 (0.616 to 1.634)	.988
SOC8ARE	1.008 (0.975 to 1.042)	.650
SOC8AAM	1.023 (0.957 to 1.093)	.504
SOC8ATS	1.001 (0.973 to 1.031)	.926
SOC8DRE	1.016 (0.974 to 1.061)	.456
SOC8DAM	1.010 (0.941 to 1.083)	.787
SOC8DTS	0.995 (0.950 to 1.042)	.832
Age	0.969 (0.934 to 1.005)	.091
RDAPFailO	3.383 (1.523 to 7.516)	.003*
Race	2.345 (1.269 to 4.330)	.006*
Ethnicity	0.743 (0.295 to 1.873)	.529
HSD-GED	2.033 (0.782 to 5.289)	.145
PostSec	0.937 (0.481 to 1.827)	.849
EarlyRel	1.111 (0.536 to 2.304)	.777

Table 9

Comparison of Frequency of Housing and Criminality

	<u>Return To Crime</u>		<u>Total</u>
	<u>Yes</u>	<u>No</u>	
Unstable Housing	45	18	63
Stable Housing	43	89	132
Total	88	107	
(Fisher's exact $p < 0.001$)			N=195

Slightly more than three-quarters of the participants who experienced some level of housing instability engaged in substance use (Table 10, below). About two-thirds of participants who maintained stable housing refrained from both criminality and substance use.

Table 10

Comparison of Frequency of Housing and Substance Use

	<u>Return To Drugs</u>		<u>Total</u>
	<u>Yes</u>	<u>No</u>	
Unstable Housing	48	15	63
Stable Housing	50	82	132
Total	98	97	
(Fisher's exact $p < 0.001$)			N=195

RDAP status and housing.

The logistic regression model showed that RDAP failure participants had more than three times greater odds of experiencing some degree of housing instability on SR than successful participants (Figure 18, p. 129).

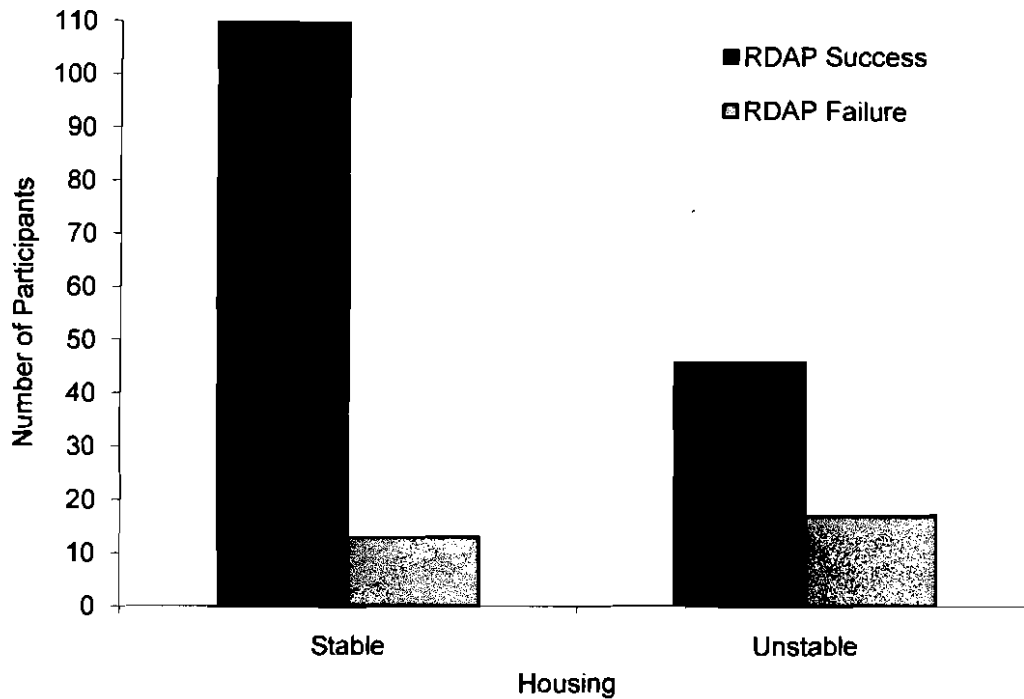


Figure 18. Comparison of housing stability on SR with RDAP status. N=195.

Race and housing.

Non-Caucasian participants were only slightly more likely to maintain stable housing than they were apt to experience housing instability (Figure 19, p. 130). The logistic regression model showed that non-Caucasian participants had more than twice greater odds of experiencing unstable housing (Table 8, p. 127). Participants who had not yet obtained their HSD or GED had more than twice greater odds of experiencing some degree of housing instability, although this was not a statistically significant finding. Neither ethnicity nor age was indicative of housing instability.

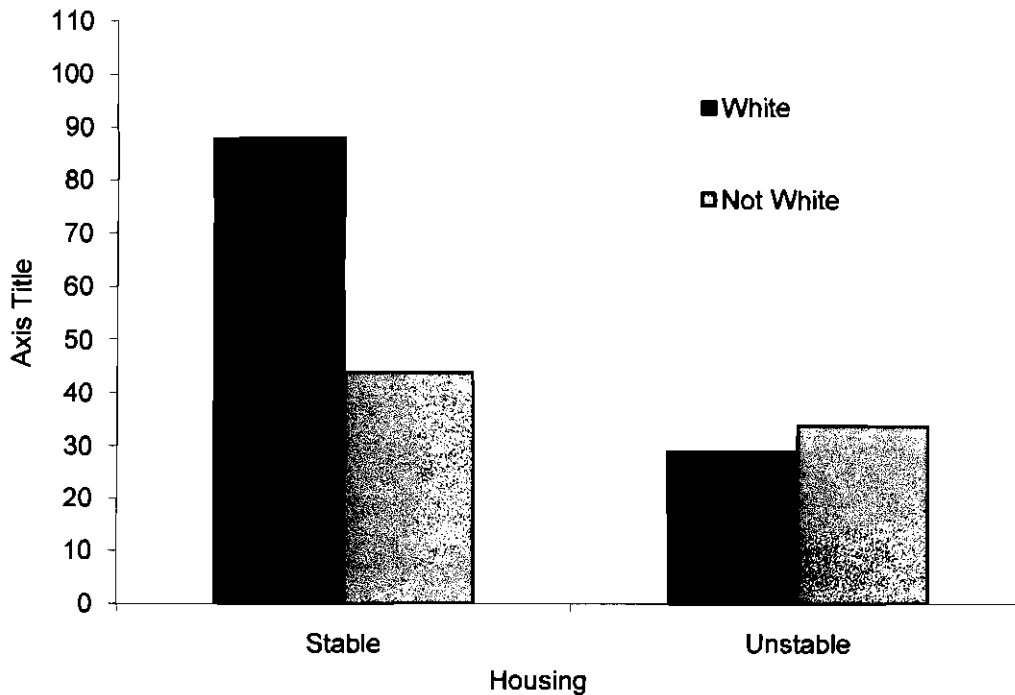


Figure 19. Comparison of housing stability on SR with RDAP participants' race. N=195.

Housing Stability and Employment Stability

The relationship between employment instability and housing instability is also worth noting (Table 11, p.131). About 60% of the participants who experienced less than stable employment also experienced difficulties maintaining stable housing. Conversely, nearly nine out of ten participants who maintained stable housing were able to maintain stable employment.

Table 11

Comparison of Frequency of Housing and Employment

	<u>Unstable Employment</u>		<u>Total</u>
	<u>Yes</u>	<u>No</u>	
Unstable Housing	52	11	63
Stable Housing	34	98	132
Total	86	109	
(Fisher's exact p<0.001)			N=195

Success on Supervised Release (SR Status)

A former inmate's ability to remain on SR, or to successfully complete their term of supervision, is also an obvious indicator of post-release success. For this reason, SR status was added as a fifth response (dependent) variable. None of the stages of change instruments were associated specifically with SR status. However, two demographic variables, RDAPFailO and HSD-GED, were found to be associated (Table 12, p. 132).

Table 12

Analysis of Factors Affecting SR Failure Using the Univariate Cox Proportional Hazards Model

Variable	Hazards ratio (95% CI)	p Value (*p<0.05)	N=195
PostURICA	1.021 (0.892 to 1.169)	.764	
PostPC	1.142 (0.748 to 1.743)	.539	
PostC	0.986 (0.631 to 1.540)	.950	
PostA	1.142 (0.691 to 1.142)	.604	
PostM	1.166 (0.804 to 1.692)	.418	
SOC8ARE	0.994 (0.969 to 1.019)	.632	
SOC8AAM	0.998 (0.949 to 1.050)	.945	
SOC8ATS	1.002 (0.980 to 1.025)	.840	
SOC8DRE	1.024 (0.989 to 1.061)	.174	
SOC8DAM	1.044 (0.989 to 1.101)	.117	
SOC8DTS	1.022 (0.983 to 1.063)	.269	
Age	0.987 (0.961 to 1.013)	.334	
RDAPFailO	3.501 (2.084 to 5.883)	.001*	
Race	1.319 (0.840 to 2.073)	.229	
Ethnicity	0.832 (0.399 to 1.733)	.623	
HSD-GED	2.464 (1.375 to 4.416)	.002*	
PostSec	1.381 (0.804 to 2.370)	.242	
EarlyRel	1.554 (0.921 to 2.619)	.098	

RDAP status and SR status.

The univariate Cox proportional hazards model showed that RDAP failures had 3.5 times greater risk of being unsuccessfully terminated from SR and returning to prison than did those participants who remained in successful RDAP completion status up to SR (Figure 20, p. 133).

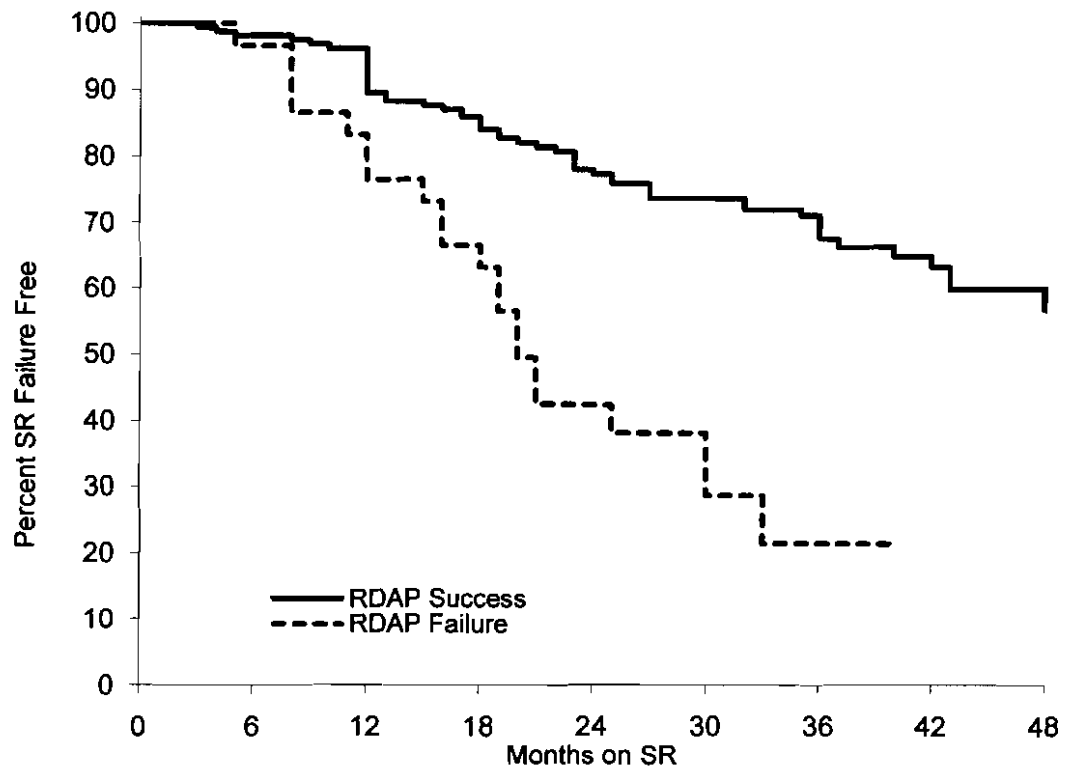


Figure 20. The estimated survival curve for SR revocation for successful RDAP participants and RDAP Fail-Outcome participants. N=195.

Education level and SR status.

The univariate Cox proportional hazards model showed that participants who had not received their GED or high school diploma (HSD) had about 2.5 times greater risk of unsuccessful SR termination and reincarceration (Figure 21, p. 134). Since participants' education level was also associated with employment stability (i.e., participants who had not yet obtained their GED-HSD experienced less employment stability), and because stable employment is an essential aspect of supervision, employment might have a compounding or intervening effect on the relationship between education level and SR status.

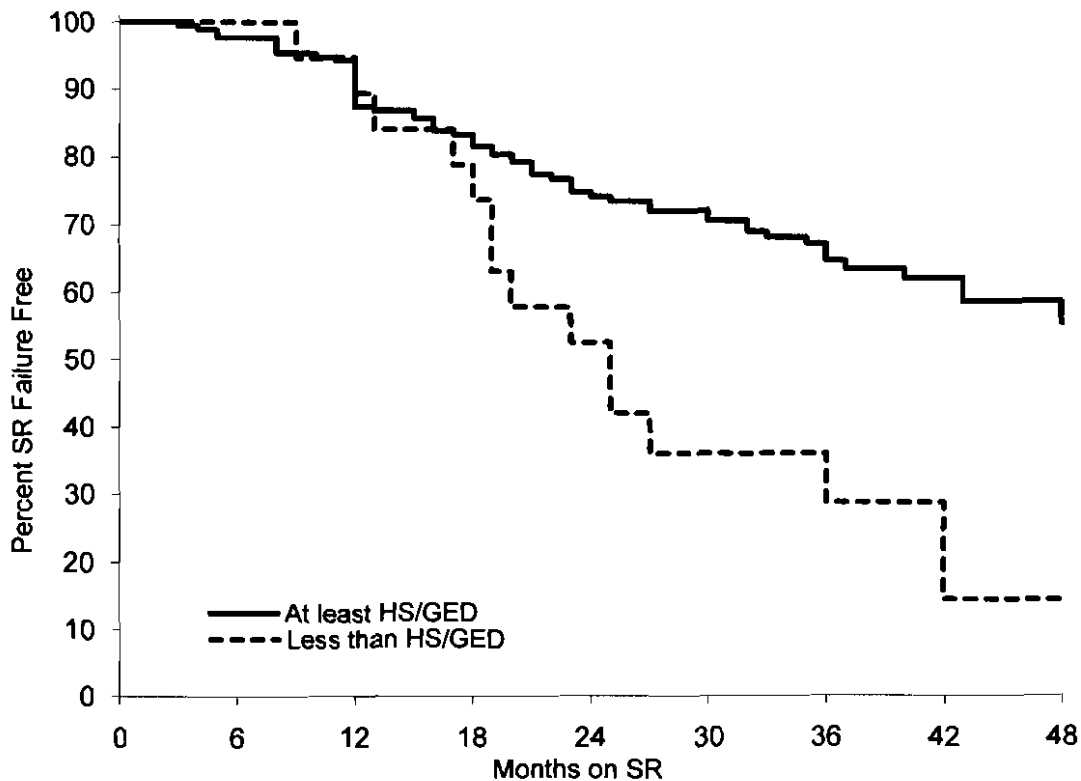


Figure 21. The estimated survival curve for SR revocation for two levels of educational attainment. N=195.

Criminality, substance use, and SR status.

Approximately 70% of the participants who engaged in new criminality, or who partook in intermittent criminal behavior or misconduct, had their term of SR revoked and were returned to prison (recidivists) (Table 13, p. 135). The balance of the participants (about 30%) who engaged in some level of criminality were permitted to remain on SR, or they were able to successfully complete their term of supervision. Their level of criminality or misconduct more than likely involved technical probation violations or less serious transgressions, such as petty misdemeanor offenses.

Table 13

Comparison of Frequency of SR Status and Criminality

	<u>Returned to Crime</u>		<u>Total</u>
	<u>Yes</u>	<u>No</u>	
Did Not Fail SR	26	93	119
Failed SR	62	14	76
Total	88	107	
(Fisher's exact p<0.001)			N=195

Similarly, nearly 60% of the participants who resumed some level of substance use (relapse) had their term of SR revoked and were returned to prison (Table 14, p. below). The remaining 40% of participants, who experienced some level of substance use, did not have their term of supervision revoked. Those individuals who were afforded an opportunity to resume abstinence from illicit drug use were successful in their endeavor.

Table 14

Comparison of Frequency of SR Status and Substance Use

	<u>Returned to Drugs</u>		<u>Total</u>
	<u>Yes</u>	<u>No</u>	
Did Not Fail SR	38	81	119
Failed SR	60	16	76
Total	98	97	
(Fisher's exact p<0.001)			N=195

Criminality and SR status.

Of the 195 participants in this study, 50 remained on SR and 126 had been released from their term of SR at the time the data was collected (Appendix F, p. 218). Seventy-six participants were discharged unsuccessfully from SR, and

50 were discharged successfully; 69 participants remained on SR. Sixty-two of the unsuccessfully discharged participants were categorized as having committed some level of criminality; consequently, 14 had their SR revoked for reasons other than criminality (e.g., for technical violations of their terms of supervision, such as failing to maintain adequate housing or employment).

Substance use and SR status.

Ninety-eight participants in this study engaged in substance use while on SR. Twenty-five remained on SR, 13 were successfully discharged, and 60 were re-incarcerated (Appendix E, p. 211). Fifty-one of the participants who partook in substance use were classified as engaging in significant substance use (relapse), which eventually led to them being returned to prison. Forty-eight participants who engaged in substance use were classified as engaging in occasional/intermittent substance use.

Employment and SR status.

Approximately two out of three participants who experienced some level of unstable employment also had their term of supervision revoked (Table 15, p. 137). Conversely, four out of five participants who maintained stable employment successfully remained on or completed their term of SR. Similar to illicit substance use, failure to maintain adequate employment is a violation of the participants' conditions of supervision and is a revocable offense.

As with substance use, POs assist their supervisees with finding employment and refer hard to place individuals to job skills programs. In fact, workforce development initiatives, both prison-based and through the USPOs,

have become increased focal points of prisoner re-entry initiatives (Taxman & Bouffard, 2000; Cadigan & Pelissier, 2003). Slightly more than one-third of the participants who experienced some level of employment instability did not have their SR revoked (Table 15, below).

Table 15

Comparison of Frequency of SR Status and Employment

	<u>Unstable Employment</u>		<u>Total</u>
	<u>Yes</u>	<u>No</u>	
Did Not Fail SR	30	89	119
Failed SR	56	20	76
Total	86	109	
(Fisher's exact p<0.001)			N=195

Housing and SR status.

Housing is another major facet of a participant's supervision. Knowing where a supervisee resides, and with whom, is a chief concern for a PO. Approximately three out of four participants who experienced unstable housing had their term of SR revoked (Table 16, p. 138). Similar to employment, maintaining a permanent residence is also a condition of supervision. Supervisees who are not able to find or maintain stable housing are assisted by their PO; however, this assistance is often not to the supervisee's liking, such as return to a CCC until suitable housing can be obtained.

Table 16

Comparison of Frequency of SR Status and Housing

	<u>Unstable Housing</u>		<u>Total</u>
	<u>Yes</u>	<u>No</u>	
Did Not Fail SR	17	102	119
Failed SR	46	30	76
Total	63	132	
(Fisher's exact p<0.001)			N=195

Summary

The results of this study found that one stages of change instrument was predictive of post-release status. One or more subscales of the SOCRATES 8D (drug) was associated with criminality/serious misconduct and employment instability. However, the SOCRATES 8D was not associated with resumed substance use on SR. Several demographic variables were also associated with post-release status and were reviewed, to include:

- Participants who did not have any post-secondary education were at greater risk of substance use on SR.
- Participants who had not achieved their HSD-GED were at greater risk of SR revocation and had greater odds of employment instability.
- Race was an associated factor in that non-Caucasian participants had greater odds of employment and housing instability.
- RDAP Failure-Outcome was found to be associated with every outcome indicator. These participants had greater risk of criminality, substance use, and

SR revocation, and they had greater odds of employment and housing instability.

In the following chapter I discuss the results of this study and make suggestions regarding areas of interest and concern that were revealed from this research. The limitations of this study are also discussed, as well as recommendations for further research.

CHAPTER FIVE

Discussion and Conclusions

The questions that guided this study were: Do inmates' motivation to change from lifestyles of criminal and addictive behaviors increase or improve through their participation in prison-based treatment programs? If so, how do we know—what are the predictors of post-release rehabilitation? More specifically:

- Can an inmate's score on SOCRATES and URICA "stages of change" instruments, which are designed to measure an individual's motivation to change addictive behaviors, predict post-release rehabilitation, defined as remaining crime- and drug-free, and maintaining stable housing and employment?
- Which, if any, of these instrument scales predict post-release success?
- Do other demographic variables predictive of post-release success emerge from the data?

Review and Discussion of Results

Predictive ability of the SOCRATES and URICA.

I expected some of the instruments' subscales would be associated with participants' post-release status. However, only one stage of change assessment, the SOCRATES 8D (drug), was predictive of post-release success. All three of the SOCRATES 8D subscales—SOC8DRE (recognition), SOC8DAM (ambivalence), and SOC8DTS (taking steps)—were significantly associated with new criminality; however, none of the subscales were predictive of substance use (relapse). The SOC8DRE was also predictive of employment stability.

Neither the SOCRATES 8A (alcohol) nor the URICA were found to be significantly related to any post-release outcome measure. Additionally, none of the measures were predictive of housing stability.

There are several possible reasons for these results. Participant mean and median scores on all SOCRATES 8A subscales were consistently lower than their scores on the 8D (Dietz, 2005). The 8D specifically inquires as to participants' drug use, whereas the 8A specifically refers to participants' alcohol use. The URICA does not specify a particular substance, but broadly refers to "problem," which is rather ambiguous. Although diagnostic data was not available, in my twenty years of experience as a DTS with the BOP, I have found the majority of federal inmates acknowledge problematic substance use that is drug-specific, such as cocaine, methamphetamine, or opiates. Far fewer inmates endorse problematic use of alcohol only, or even alcohol and other drugs. Thus, a higher proportion of participants endorsed a broader range of responses to the SOCRATES 8D than they did to the other assessments as this instrument best corresponded to their substance use pattern.

SOCRATES 8D subscales, criminality, and post-release status.

The SOCRATES 8D is a measure of substance abuse and not criminal tendencies. Because of the strong association this study found between substance use and criminality, participants who strongly endorsed recognition of a drug problem (SOC8DRE subscale) might have had a more extensive and severe addiction history, and, thus, had greater susceptibility to relapse and recidivism. Participants who scored lower on this subscale might have had less

severe addiction histories and less extensive histories of criminality, hence, lower problem recognition and a weaker propensity to relapse and recidivism.

It is also possible that participants scoring high on all three subscales might have employed impression management tactics and over-endorsed assessment items as a way to present themselves in a more favorable light to prison treatment staff. Increasing this likelihood is the fact that eight out of ten participants were eligible for sentence reduction of up to one year off their sentences for successful treatment completion. Thus, all of the SOCRATES 8D results should be interpreted with these concerns in mind.

Another discernable feature of the SOC8DRE subscale scores is that participants who experienced some level of criminality had higher subscale scores overall (Figure 8, p. 112), and they clustered toward the near side of the plot, which shows a tendency for less median time on SR than did the overall sample. The few non-crime participants showing early SR termination could have resulted from several factors, such as a shorter terms of supervision, or if their SR was revoked for non-crime reasons (such as drug relapse, failure to maintain employment, and so forth).

Similar to the relationship between SOC8DRE and criminality, participants who maintained stable employment had lower scores overall than participants who experienced some level of employment instability. Again, this lower level of problem recognition could be due to several factors, such as less extensive criminal histories, which made finding employment less burdensome, or less severe substance use histories, which rendered them less likely to lose a job due

to drug use issues. It also could indicate these participants were more honest in their self-appraisal, and therefore more honest overall, and more likely to adjust to mainstream societal norms, or any number of additional explanations.

Participants' scores on the SOC8DTS subscale were much higher than those on the SOC8DRE or SOC8DAM. Again, as with the SOC8DRE scores, this could be due to the same reasons previously discussed. All of the participants who engaged in some criminality endorsed items indicating they were taking positive actions to address their substance use. It is counter-intuitive to believe a prison treatment program participant, at the end of their time in treatment and anticipating early release from incarceration, would endorse items indicating they are not fully engaged in the therapeutic process.

Several other explanations for the participants' high SOC8DTS subscale scores are probable. These participants might have been sincere in their self-appraisal, but they overestimated their ability to remain abstinent and resist crime in the community, and found it more difficult than they had expected. They might have consciously discontinued their commitment to an abstinent and prosocial lifestyle once they returned home. Or, they might have simply responded to the questions in a way they anticipated the prison treatment staff expected them to respond (i.e., telling the staff what they believed the staff wanted to hear).

Resumed substance use (relapse) and criminality (recidivism).

This study found that 88 participants (45%) were either arrested for a new offense or otherwise had their SR revoked. Of these 88 participants, 48 were classified as returned to criminality and were returned to prison, and 40 were

categorized as committing intermittent or less serious offense, most likely SR violations, and were not re-incarcerated. For comparison, the TRIAD study (Pelissier, Rhodes, Saylor, Gaes, Camp, Vanyur, & Wallace, 2000a) found that 55% of males who were released to a term of SR were either arrested for a new offense or otherwise had their SR revoked.

Approximately 50% of the participants in this study violated their abstinence while on SR. This is consistent with the TRIAD study, which found a similar relapse rate (Pelissier, et al., 2000a). Resumption of substance use, in and of itself, is a violation of the participants' condition of SR and is a revokable offense. Most POs, however, afford their supervisees several opportunities to resume abstinence prior to revoking their supervision. Thus, it is most likely that, for participants' whose SR was revoked for substance use, their substance use occurred in connection with new criminality, or they were unwilling or unable to adopt or resume an abstinent lifestyle.

Criminality, substance use, employment, and housing.

Slightly more than two-thirds of the participants who experienced some level of employment instability engaged in some degree criminality or serious misconduct while on SR. Nearly two-thirds of the participants who experienced less than stable employment also experienced difficulties maintaining stable housing. The relationship between these factors is unclear; whether criminality or substance use led up to or resulted from employment instability for these participants one can only surmise. For example, a participant's criminality or serious misconduct might have led to their job loss or difficulty finding

employment, or being unmotivated to find legitimate employment may have led them to criminality as an illegitimate way to generate income. Any combination of these factors might lead to, or result from, housing instability as well.

The same issue presents itself with substance use. Substance use may have either led to or resulted from employment instability. Difficulty finding legitimate employment could have produced frustration which lead to resumed substance use as a way to cope, or an individual's lack of motivation to find gainful employment may have led them to resume substance use as a way to deal with boredom. What this study revealed, however, was four out of five participants who maintained stable employment refrained from criminality or serious misconduct, two-thirds of participants who maintained stable employment abstained from substance use, and nine out of ten participants who maintained stable housing were able to maintain stable employment.

Employment, Housing and SR status.

About two-thirds of the participants who maintained stable employment did not have their SR revoked (Table 15, p. 137). There are many coinciding or intertwining factors that could be involved with unstable employment and SR revocation. Probation officers (PO) assist their supervisees with finding employment and refer hard to place individuals to job skills programs. In fact, workforce development initiatives, both prison-based and through the USPOs, have become increased focal points of prisoner re-entry initiatives (Taxman & Bouffard, 2000; Cadigan & Pelissier, 2003). For an individual's unstable employment to be the sole cause for their term of SR being revoked is quite

unlikely unless it was a matter of an unwillingness to work on the participants' behalf.

Employment is a major aspect of a participant's supervision. Supervisees are mandated to inform their PO of where they are employed and if they are dismissed from their job, and they need to inform their PO if they switch employment. They must also report income and major purchase to their PO, and they are required to turn in their pay stubs and other proof of earned income to their PO during their monthly report session. Many participants have court-ordered financial obligations, such as fines, restitution, and court fees for which they must make mandated, scheduled payments on while on supervision. It is quite possible that any number of financial or employment situations or deceitfulness could result in a participant's revocation of supervision.

For a participant to have had their supervision revoked for unstable housing, as with employment, it would most likely have involved multiple factors, and moreover, might have been a matter of unwillingness or deceptiveness on the participant's part. To point, about one-quarter of the participants who experienced some level of housing instability did not have their SR revoked. Nearly four out of five participants who maintained stable housing also successfully remained on or completed their term of SR.

Differentiating degrees of substance use, criminality, and consequences.

Quite often the term "relapse" does not distinguish the amount or frequency of return to a prohibited act (Marlatt, 1985; Witkiewitz & Marlatt, 2004).

It is important to distinguish a single episode of substance use (a lapse), from recurrent (episodic or occasional) substance use (re-lapse), from a return to a routinized use pattern (collapse, or full-blown relapse). Also, for some individuals a lapse becomes a “teachable moment” (prolapse) that results in them putting more effort and commitment into their recovery program (.Chaiuzzi, 1991; Marlatt, Parks & Witkiewitz, 2002; Witkiewitz & Marlatt, 2007). Pelissier and colleagues acknowledged in the TRIAD study report that their study failed to provide a measure of severity of drug use, and “does not distinguish those who had a lapse from those who had a relapse, that is, returned to regular drug use” (Pelissier, et al., 2000a, p. 159). Their study also did not identify those who might have prolapsed.

This study attempted to address some of these concerns by having the PO classify the participants’ use into three categories: no use, occasional or intermittent use, and a return to active, addictive substance use. Of the 98 participants who violated their abstinence, 51 were classified as intermittent use, and 47 were categorized as drug relapse (addictive use). In relation to return to criminality, 63 of those who violated their abstinence were categorized as “returned to criminality,” which indicates they were returned to incarceration (recidivists), and 35 were not. For criminality, a similar classification was used—no crime, intermittent/minor crime or misconduct, and return to active crime. Of the 88 participants who engaged in some criminality or misconduct, 48 were categorized as returned to crime, and 40 were classified as intermittent/minor crime.

Normally, individuals on SR are not “violated” (i.e., having their SR revoked and returned to incarceration) for a single or even occasional violation of their abstinence (Mark Mills, USPO, District of Minnesota, personal communication). They are more likely afforded an opportunity, or several opportunities, depending on the participant’s willingness, to return to abstinence and re-establish their recovery program. Those who provide a urine sample testing positive for illicit substance use, or who otherwise acknowledge substance use to their PO, are referred for some level of assistance. Depending on the severity of their use and other mitigating factors, such as additional “technical” (less serious) SR violations (e.g., losing or quitting a job or changing their housing without notifying their PO), this programming could range from inpatient treatment to self-group meeting attendance.

If the participant’s substance use occurred in relation to more serious SR violations, such as an arrest for new criminal conduct, they may not be afforded this opportunity and are more likely to be returned to incarceration expeditiously. Of the 63 individuals who violated their abstinence and had their supervision revoked, it is because their substance use occurred with more serious SR violations, or they did not respond to re-treatment initiatives while on SR, that they were returned to prison. We do know 35 substance users did respond to their PO’s intervention and were able to remain on SR.

Variability between U.S. Probation districts.

As the TRIAD study (Pelissier, et al., 2000a) discovered, revocation decisions vary from one district to another due to differences in treatment and

supervision philosophies. Each of the 94 jurisdictions are autonomous and set guidelines within discretionary limits of the law. A revocation may also reflect a PO's discretionary decision that an offender's behavior pattern is unacceptable and not up to community standards, or that they are performing otherwise unsatisfactorily on SR. As Pelissier and colleagues (2000a) rightly suggest:

Some judicial districts have set policies that dictate revocation after a certain number of positive urine tests, while others have no set policies. While we do not yet have a clear mechanism for increasing the precision of our measures of recidivism [and relapse] we must recognize the limitations of our measure (p. 159).

This variability and lack of consistencies between districts presents definite limitations to this study. It is impossible to generalize from this study what a former inmate's likelihood of return to incarceration (recidivism) is in any specific district. Further analysis and clarification of the variability between districts as a topic of future research is suggested.

Demographic variables predictive of post-release status.

Demographic variables predictive of post-release status were RDAP failure-outcome, post-secondary education, education level less than GED/HSD, and race. A somewhat surprising finding was neither age nor early release eligibility was associated with any of the outcome status indicators. Each of these demographic predictor (independent) variables are briefly reviewed.

RDAP Failure—Outcome.

RDAP participants who completed RDAP, but who were later placed in failed status because of significant rules infractions, are categorized as RDAP Failure—Outcome (RDAPFailO). These inmates' program failures occurred either while remaining at FCI Waseca and waiting transfer to a CCC, or while at the CCC, and were due to serious incidences misconduct, such as: fights or assaults, illicit drug or alcohol use or possession, possession of drug paraphrenalia, misuse of prescribed medications or use of a medication not prescribed to them, failure to adequately attend and participate in either institutional or CCC follow-up services ("aftercare" programming), absconding from the CCC, and so forth.

RDAP failure and SR status.

As anticipated, these participants performed more poorly on SR. In fact, this was the most telling indicator of post-release failure. It is reasonable to presume a participant's substance use after treatment completion, but in controlled settings, would be associated with additional episodes of substance use or significant rule breaking while on SR and under less scrutiny. These participants were found to have twice the risk of new criminal behavior (HR=2.0), and were nearly four times as likely to violate their abstinence and return to substance use (HR=3.8), as were those who remained in successful RDAP completion status up to supervised release. They also had more than four times greater odds of employment instability (OR=4.2), and more than three times greater odds for housing instability (OR=3.3). Not surprisingly, these individuals

had more than three times greater risk for having their supervision revoked (HR=3.5) than did the RDAP completion participants.

Success on SR is reflective of many factors, of which criminality and substance use are foremost, as significant levels or degrees of either of these behaviors can lead to a revocation of supervision. However, SR status involves other factors as well, and a participant might have had their supervision revoked for failing to maintain stable housing or employment, or for any other combination of technical violations of their conditions of supervision, and RDAP failures performed more poorly overall on all of these factors.

Education level.

Post-secondary education.

It was anticipated that participants' level of educational attainment would predict post-release success in that higher educational attainment would predict better success. This study found that post-secondary education was associated with substance use on SR. Participants who did not have any post-secondary education had about 75% greater risk of substance use on SR (HR=1.74). Interestingly, participants with some post-secondary education had slightly higher incidence of criminality or misconduct (48%) than did the overall sample (45%). Sadly, inmates' access to higher education has been greatly reduced in the last twenty years. In the early 1990s, Congress began introducing legislation to prohibit federal tuition assistance, such as the Pell grant, to incarcerated offenders (Tewksbury & Taylor, 1996). The results of this study suggest this

policy needs to be reconsidered and financial aid for higher education for inmates should be reinstated in some capacity.

Currently, federal inmates earn between 12¢ and 40¢ per hour at institutional job assignments. An estimated 18% of the BOP's inmate work force is employed through federal prisons industries (UNICOR,) and these inmates earn between 23¢ and \$1.15 per hour (BOP, 2011). Reinstating financial aid, in some form, will be necessary to provide increased access to college programs. The technology currently exists to make on-line learning opportunities available to inmates, although capacities may need to be expanded. Increasing vocation training and apprenticeship programs should also be considered, as previous BOP research has demonstrated the efficacy of these programs in reducing recidivism (Saylor & Gaes, 1997; Gaes, 2008).

High school degree or GED.

HSD/GED attainment was a significant factor for employment status and SR status, as anticipated. Participants who had not yet achieved their HSD-GED had three times greater odds of employment instability (OR=3.0), and more than twice the risk of having their supervision revoked (HR=2.4). These results support BOP initiatives that mandate GED classes for inmates who have not yet attained their high school diploma or GED.

Race.

Participants' race was not anticipated to be a significant predictor of post-release success. However, race was significantly associated with housing and employment. Non-Caucasian participants had nearly three times greater odds of

employment instability (OR=2.7), and more than two times greater odds of housing instability (OR=2.3). Whether these results were due to institutionalized barriers, such as the longer-term effects of racism in society, or volitional choices made by participants is unknown. One factor which might account for some of the association between race and instability of housing and employment is that for those participants who had not yet achieved their HSD-GED, 60% were non-Caucasian, whereas the population sample of this study as a whole was 40% non-Caucasian. This gives further support to speculation about the reciprocal nature among many of these variables.

Age.

It was anticipated that age would be predictive of criminality in that older individuals, who tend to be less impulsive, would perform better while on supervised release. Younger individuals, who tend to be more impulsive and impressionable, were presumed to have performed more poorly. The age of the participant was not significantly associated with any post-release factor.

Early release eligibility.

It was anticipated that early release eligibility might be a significant demographic factor in predicting participants' post-release success; however, this was a difficult variable to predict. Approximately 154 participants (79% of the sample) were eligible for, and presumably received, some sentence reduction, which could have been as much as one year off their sentence, for successful program completion. However, some of the RDAP failure participants, who would have been preliminarily eligible to receive this reduction, forfeited this award due

to their later program failure. Participants who were not eligible for this incentive had criminal histories that included violence, weapons possession, robberies, and so forth. Thus, these individuals could be attracted to more criminogenic opportunities or sentiments. On the other hand, these participants completed the treatment program without any expectation of an external incentive; thus, a more fully integrated and internalized motivational style was suggested which might lead to better post-release outcomes. For those participants who were eligible for the sentence reduction incentive, by the time they started their term of SR they would have already received the benefit; hence, the extrinsic incentive's influence to deter future behavior theoretically would have been exhausted.

Early release eligibility was not found to be significantly associated with any of the post-release indicators. Participants who were eligible for sentence reduction experienced outcomes on SR similar to the population sample. Approximately 44% of these participants engaged in criminality or misconduct, and about 49% resumed some level of substance use. This compares to the overall sample of about 45% for criminality and approximately 50% for substance use. For participants who were ineligible for sentence reduction, their rate of criminality was approximately 49% and about substance use was 56%, which was higher than the sample average. Thus, their post-release success outcomes were slightly below average, but the results were not statistically significant.

Recommendations

Suggestions for measuring offenders' motivation to change.

Three rich and diverse theories—the transtheoretical model (TTM), self-determination theory (SDT), and transformative learning theory (TLT)—explain how an individual's evolving readiness (i.e., motivation) and commitment to change are discussed. These complementary models help us understand the stages, phases, processes and fluidity of intentional change, and they provide rich and diverse concepts and constructs from which targeted assessment instruments can be developed.

TTM as a theoretical foundation for a motivational assessment tool.

Although the SOCRATES 8D demonstrated some predictive ability of post-release outcomes, primarily for recidivism, the results failed to confirm predictive ability for relapse. The results support the development of a new instrument to measure an inmate's motivation to change, developed specifically for use with an incarcerated population in a correctional setting, to predict post-release success. The theoretical foundation girding the current instruments is the transtheoretical model of the stages of change (TTM), and as suggested in Chapter One, these instruments were not designed as predictive tools and were not normed with correctional populations. This study found these were not the most fruitful instruments for measuring a treatment participant's stage of self-initiated change in a correctional environment.

Likewise, knowing a treatment participant's stage of change provides only limited insight into their desire or intention to change. Perhaps more important

than identifying a participant's stage of change is identifying their level of motivation. A model complimentary to TTM, but focused more specifically on an individual's motivational status, is self-determination theory (SDT), which could provide a stronger theoretical underpinning for such an instrument.

SDT as a theoretical foundation for a motivational assessment tool.

Most psychological theories of motivation present extrinsic and intrinsic motivation as mutually exclusive, dichotomous psychological constructs— intrinsic *versus* extrinsic motivation. This view is not challenged through TTM. Alternatively, SDT views an individual's motivation as existing on a non-dichotomous spectrum and presents a six-part motivational continuum from amotivation, through four levels or degrees of extrinsic motivation, to intrinsic motivation (Ryan & Deci, 2000). SDT posits extrinsic motivation as a gradual shift from completely externally regulated motivation, such as viewing and presenting oneself as a bystander in treatment (e.g., "I'm just taking this treatment program for the year off" or "I'm doing this to get my PO off my back"), to a more integrated and internally focused investment. The individual slowly experiences buy-in to the program's philosophies and values.

Over time, the individual more fully views and presents him or herself as a participant in the program, and the participant begins to recognize and appreciate personal benefits from change. They gradually begin to view change as being in their best interest (e.g., "I can visualize a fuller life without drugs" or "the short-term pay-offs for criminal behavior are not worth the long-term harm it brings to me and my family"). This does not, however, suggest a stable, linear flow from

amotivation to intrinsically-located motivation. TTM suggests an individual is more likely experience variations of movement—progression, regression, stalling and coming to a standstill, plateauing or becoming complacent, and so forth—and they are perhaps more likely to cycle, or recycle, through these motivational levels (Prochaska, DiClemente & Norcross, 1992; Prochaska, Norcross & DiClemente, 1994).

Constructing an instrument to detect these shifts in motivational impetus would help treatment staff identify, develop and/or design treatment curriculum, mechanisms, and modalities targeted to specific motivational levels, and match these to a participant's level of motivation. A key to treatment program success, and a prime indicator or sign of treatment transfer, occurs when the participants willfully take part, buy in to, and adopt the program's philosophies and values on their own volition—to make the transfer from external to internal regulation (Ryan & Deci, 2000). To be able to identify when or if this transference occurs, and to target strategies to build towards this end, would be a further step toward improving program quality and successfulness.

TLT as a theoretical foundation for a motivational assessment tool.

Transformative learning theory (TLT) compliments SDT on a visceral level by describing the internal psychological process and external social phenomena which compose the experiential journey of transformation and change. In a correctional treatment setting, perhaps TLT best informs SDT at the margins of the identification and integrated regulation levels of extrinsic motivation. This is when an individual starts to identify with the proposed change in lifestyle and

begins internalizing it into their value system. The new lifestyle becomes fully integrated by the individual at the level of intrinsic motivation and is fused with or synthesized into the individual's knowledge set or personal ethics.

TLT's phases and patterns of perspective transformation, as described in Chapter Two (see Figure 7, p. 94), provide a fuller clarification of this course of events and it further informs the processes enabling this motivational transformation to occur. The results of this study allude to the usefulness of developing an instrument developed specifically for use with a correctional population in an institutional setting, which identifies the phases of perspective transformation that correspond to specific levels or phases of motivation. This information could provide correctional administrators and treatment staff with insights into where to best apply targeted treatment mechanisms and strategies that best fit with participants' specific motivational status of transformational phase.

Summary.

The results of this study suggest the need for the continued development of a wide range of instruments to measure participants' motivation to change in treatment to predict post-release success. As Tims and Hollands (1984) discovered,

Some previous investigators have found relatively low correlations among post-treatment outcome behaviors (e.g., drug use, employment, criminality). This finding suggests that treatment procedures may cause positive changes in some behaviors and not others (p. 168).

One of their suggestions is the increased use of standardized instrumentation in treatment evaluation. A small but important aspect of this recommendation is the continued development of specialty instruments designed for the explicit purposes and specific conditions discussed, and intended for targeted populations in a correctional treatment setting. The instruments suggested take a small step in this direction.

Structural Adjustments and Design Reconsideration.

For the purposes of enhancing delivery of treatment services and to improve treatment outcomes, the BOP and USPOs, both individually and collectively, should reconsider aspects of their current treatment systems that impede treatment effectiveness and efficiency (Pelissier & Cadigan, 2004). This should include a mechanism to link their efforts for a more fluid continuum of treatment from the prison to supervision.

Enhanced treatment on SR.

Cadigan & Pelissier (2003) point out in a study of 704 RDAP failures, who failed treatment either in prison or at the CCC, only 472 (67%) received re-treatment through their respective USPOs while on SR. Why approximately one-third of these individuals received no re-treatment was unclear. Given the financial investment already made by the federal government in putting inmates through RDAP, Cadigan and Pelissier (2003) question whether, as a matter of policy, all RDAP graduates and failures should be systematically provided additional treatment upon transfer to supervision. They found that 44% of RDAP graduates received no additional treatment paid for by the government while on

supervision. Seventeen districts paid for no treatment for about two-third or more of these individuals, while 30 districts paid for treatment for about two-thirds or more, and 46 districts were evenly split (Cadigan & Pelissier, 2003). The results of this study suggest that, considering the costs of re-confinement, perhaps this added investment might further improve outcomes on SR and save money and lives in the long-term.

Provide enhanced re-treatment opportunities for program failures.

The increased likelihood of RDAP Fail-Outcome participants to resume drug use and recidivate suggests paying particular attention to these inmates, including developing programs re-tooled for high-probability reoffenders, could be quite valuable in reducing relapse and recidivism. Current BOP RDAP treatment configuration, however, inhibits such specialty-focused re-treatment opportunities due to institutionalized barriers and systems design. For example, current RDAP treatment design and modality focuses on placing inmates in RDAP toward the end of their terms of incarceration, as opposed to the beginning of their sentences. The rationale for this back-end versus front-end program implementation is for an efficient continuum of treatment from the institution and into the community via a CCC placement, with follow-up services, and on to supervised release (Pelissier, et al., 2000a). Per program policies, inmates are not allowed to apply for RDAP until they are within approximately 36 months of their projected release date. Therefore, by the time a program graduate fails due to either voluntary attrition or disciplinary infractions, whether in

the institution or at the CCC, they most likely do not have enough time left on their sentence for full re-treatment.

Consider a front-end system.

This dilemma suggests a possible advantage to re-structuring RDAP to a front-end process. There are several possible advantages to such a design change. As indicated, it would increase the opportunity to identify prospective reoffenders by affording transgressors an opportunity for focused re-treatment—both inmates who fail after program completion, and those who fail to complete the program due to expulsion or withdrawing voluntarily during treatment.

In general, RDAP has very low attrition rates. The FCI Waseca RDAP study experienced an 88.5% program retention rate in that 216 of 244 inmates who started RDAP successfully completed the program (Dietz, 2005). Overall, the BOP has an approximate 84% rate of treatment retention across RDAPs, with 10% being discharged for disciplinary reasons, and 6% voluntarily dropping out of treatment (Pelissier, Camp and Motivans, 2003). This represents a sizable pool of re-treatment candidates.

Helping inmates change sooner rather than later.

Lastly, studies indicate treatment leads to an overall reduction in institutional misconduct (Innes, 1997; Langan & Pelissier, 2001). Langan and Pelisser (2001) found that RDAP graduates were 74% less likely to engage in misconduct over a 14-month period than a comparison group. They concluded that the substantial magnitude of the effect demonstrated that prison-based substance abuse treatment programs provide an effective management tool for

correctional administrators. It could be beneficial for correctional institutions and society at large to take advantage of changed inmates earlier on in their incarceration, as opposed to waiting until the end of inmates' sentences to capitalize on these rehabilitation efforts.

Placing inmates in treatment at the beginning of their sentences, while the negative consequences of their behaviors on them and their families are still apparent and unresolved, may be a more efficacious strategy from a therapeutic perspective. By the time inmates reach the end of their sentences, these adverse impacts are likely to be largely forgotten, and the inmates are more likely focused on their pending release. It could be advantageous to capitalize on these dynamic vulnerabilities in a therapeutic setting, which might also result in a more positive resolution of these entanglements, earlier in an inmate's incarceration. More importantly, knowing RDAP participation and completion changes inmates' live for the better, as their reduction in misconduct appears to indicate, and the TRIAD study determined (Pelissier, Wallace, O'Neil, Gaes, Camp, Rhodes, & Saylor, 2001b), the most ethical alternative would be to afford inmates treatment and the relief it provides sooner rather than later.

Sentence reduction incentive.

It appears the BOP's sentence reduction incentive for successful RDAP completion functions primarily as a recruitment tool to entice potential candidates to volunteer for treatment, and to induce participants to remain in and complete the program. Participants leave treatment primarily through one of three avenues: they complete the program, voluntarily resign and drop out, or are

expelled for lack of progress or disciplinary infractions (Pelissier, Camp & and Motivans, 2003). This incentive appears to be an effective instrument for reducing attrition and misconduct in treatment and for enticing participants to remain actively engaged in the therapeutic process. The effect of improved treatment completion rates on post-release success is unclear, and this study could not shed further light on this dilemma. Likewise, the transferability of the RDAPs' philosophy, values, and objectives from the program and into the community, as evidenced by post-release success, is also a suggested focus for future research.

What is 'success'?

The disparity between treatment retention rate (88.5%) and relapse (50%) and recidivism (45%) rates of the participants in this study points out the need to focus on measuring and increasing inmates' motivation to change, identifying and fixing institution barriers to effective program participation and completion, and to continuously obtain both proximal and distal outcomes to measure and improve treatment effectiveness. The TRIAD study found that male inmates who entered, received, and completed residential drug abuse treatment were 16% less likely to be re-arrested or to have their supervision revoked and be returned to prison, and 15% less likely to resume drug use, as compared with inmates who did not receive such treatment (Pelissier, et al., 2000a; Pelissier, et al., 2001b). In calculating the estimate of inmate failure (i.e., relapse and/or

recidivism) on release, Pelissier and colleagues discovered that 59% of untreated men resumed some degree of drug use after incarceration compared with 50% of treated men (Pelissier, et al., 2000a). Although these reflect significant and appreciable reductions, are the results satisfactory?

According to Elizabeth Dodd (2005) of the Criminal Justice Policy Foundation, the Office of National Drug Control Policy's (ONDCP) 2004 budget estimated the BOP spent approximately \$47 million on drug treatment for prisoners. By 2011, the ONDCP reported the BOP requested \$108.5 million for FY 2012 for its drug treatment efforts, a \$15 million increase from FY 2011 (\$93.5 million), which amounted to about 1.4% of the BOP's \$6.7 billion budget for that year (ONDCP, 2011). The BOP reported the objectives of these programs are to reduce the likelihood of inmates relapsing to drug use and criminal activity (ONDCP, 2011). The purported rationale for this increase in expenditure was that since approximately 40 percent of new inmates entering BOP custody have a diagnosis of a drug use disorder, coupled with a strong demand for treatment services, the additional resources requested in the FY 2012 budget are vital to allow expansion of drug treatment capacity.

The BOP currently offers RDAPs at 62 of its facilities, and in FY 2011 and they estimated 23,400 inmates would participate in the program, an average of 377 participants per institution (Federal Bureau of Prisons, 2010). Considering FY 2010 treatment funding at \$93.5 million, this averages out to about \$4000 per participant (treatment costs only). The projected annual cost of incarceration per inmate is an additional \$22,632, for a total cost of approximately \$26, 600 per

inmate in treatment. An investment of this magnitude demands the American taxpayers receive the best return on their treatment investment.

Assessing and addressing both institutional and participant factors.

Pelissier, Camp and Motivans (2003) note that, for the most part, research has failed to demonstrate large effects of client-level “fixed” or immutable predictors, characteristics such as age, race, gender, education, criminal history, and so forth, on treatment outcomes. Thus, research attention has shifted to dynamic client-level variables, of which motivation is the most common factor, because motivation is associated with higher levels of treatment volunteerism, retention and completion (Simpson & Joe, 1993; Pelissier, Rhodes, Saylor, Gaes, Camp, Vanyur, & Wallace, 2000a; Pelissier, Camp, & Motivans, 2003).

Cadigan and Pelissier (2003) note that recent literature has called for criminal justice organizations to focus on systems and systems thinking. The results of this study supports the call for correctional program administrators to give as much consideration to the shortcomings of current treatment methods and designs as a way to improve treatment outcomes, rather than placing the greater part of the focus on the “lack of motivation” of the offenders they treat (Taxman & Bouffard, 2000).

Rather than becoming sidetracked in the “blame the participant, blame the program” debate, successful treatment necessitates a mutual focus. Quality programs are committed to continuous improvement strategies that enhance participants’ opportunity to change and provide them the tools to accomplish this complex task. At the same time, measuring and enhancing participants’

motivation and commitment to pro-social change is crucial to focusing the right treatment strategies at the right time in each participant's treatment. Without this, large organizations like the BOP run the danger of operating cookie-cutter programs that graduate high numbers of participants, but they have no way of discerning the efficacy of any of the program components on participants' motivation to change, or to the overall effectiveness of the program in rehabilitating offenders. Whether or not any of the program's philosophies, values, and objectives are internalized by the participants and transferred beyond the prison walls, or for how long, remains largely anyone's guess.

As public servants, treatment providers and program administrators have a strong responsibility to respond to America's endorsement of prison-based rehabilitation opportunities by holding high standards and dedicating themselves to this end. As stewards of the public trust, and to preserve the public's support going forward, it is critical that the BOP continues to develop, adopt and implement best program practices, utilize evidence-based treatment protocols and mechanisms, and implement continuous program improvement and evaluation methods,

Necessity of Ongoing Evaluation Initiatives.

The BOP's TRIAD study was a ground-breaking research effort and a seminal outcome evaluation in the field of correctional program evaluation. It is now a decade old, however, and the BOP has not undertaken an evaluation project of this magnitude since then. The BOP has yet to fully instill a "culture of evaluation" aimed at continuous, incremental program improvement to support

their national RDAP initiative, a treatment effort that continues to expand to this day. This study confirms the need for what Pelissier and colleagues (2001a) noted was a paucity of knowledge about the intervening treatment mechanisms that makes treatment successful for some participants. They noted that although their effort concluded RDAP had an overall positive effect, their study lacked the “programmatically specificity” to identify which factors contributed to these outcomes (Pelissier, et al., 2001b, p. 161). This study, likewise, was unable to make such distinctions.

Assessing for both proximal and distal outcomes.

In the TRIAD study report, in discussing their program evaluation efforts, Pelissier and colleagues acknowledge:

A dimension of outcome not included in this report, but important in and of itself, concerns proximal outcomes. These proximal outcomes represent the intervening mechanism through which the treatment program affects the ultimate outcomes (i.e., “distal outcome”) such as recidivism and drug use. ... Beyond the theoretical grounding, there is a methodological rationale for examining proximal outcomes. The causal link between treatment and outcomes is strengthened when a strong association between treatment and proximal outcomes predicted by theory exists, as well as a strong association between the proximal outcomes and the distal outcome [citing Mohr, 1992] (Pelissier, et al., 2001b, p. 161-162).

Identification of proximal outcomes is strongly suggested by this study, as by the TRIAD study, to link specific treatment practices to short- and long-term treatment results (Simpson, 2004).

Shortly after the TRIAD project, the BOP looked at various approaches to this complex task. They partnered with Texas Christian University's Institute of Behavioral Research, through a cooperative agreement with the National Institute of Corrections, to "implement a comprehensive assessment system" (Knight & Simpson, 2004). The objectives were to identify existing key BOP data points relevant to treatment process, prepare a psychometrically sound assessment instrument that tracks changes in inmate attitudes and cognitive processes over time as they progress through DAP programs (the TCU/CJ CEST—Client Evaluation of Self and Treatment measure), and to evaluate the assessment instrument at six BOP RDAP sites (Knight, Simpson & Morey, 2002; Knight & Simpson, 2004). The BOP should consider amplifying their effort to develop instruments designed to identify program-specific and client-specific factors to improve treatment processes and outcomes, and to continue evaluation partnerships, such as the NIDA funded Criminal Justice Drug Abuse Treatment Studies (CJ-DATS) project.

Formative evaluation.

A formative evaluation is one way to collect proximal outcome data. They are typically conducted during the program and conducted for the intended users, such as program staff, for the intent of program improvement (Russ-Eft & Presskill, 2001). Caffarella (1994) describes several approaches of evaluation

that could be integrated into an evaluation framework, and implemented into the treatment system, such as objectives-based review, systems evaluation, and “levels of evaluation” (p. 127), which measure four areas: participant reactions, learning, behavior change, and results or outcomes. Patton (1997; 2002) described a kind of formative evaluation, utilization-focused evaluation, which he describes as a process designed for the specific purpose of generating results that will be used by the intended users. These efforts might focus on process improvement, quality control, or formative evaluations. However, to fully implement such a formalized system of evaluation would require the BOP to build an evaluation mechanism into the RDAPs, although not necessarily at every facility, for the purpose of continuous program improvement and linking processes to outcomes.

Summative evaluation.

Summative evaluation is implemented for determining the merit or worth of a program that lead to final evaluative judgments (Russ-Eft & Preskill, 2001). Summative evaluations produce distal outcome data. They help document and track program inputs (e.g., financial and human resources, facilities, program design, and constraints), processes or activities (e.g., treatment strategies, curriculum, techniques, and methodologies) and outputs (e.g., results or outcomes), and they investigate whether the program accomplished its intended objectives, or distal outcomes (United Way of America, 1996).

An impact evaluation is a specific type of summative evaluation that “assesses the changes in well-being of individuals, households, communities or firms that can be attributed to a particular project, program or policy” (The World Bank, p. 1). Impact evaluations appraise the specific outcomes attributed to a particular intervention or program. They do this by comparing outcomes where the treatment or intervention is applied against outcomes where the intervention does not exist, or where the treatment was not implemented (The World Bank). Impact evaluations consider both intended and unintended consequences. They typically focus on long-term effects, they tend to answer cause-and-effect questions, and they look for specific changes in outcomes directly and indirectly credited to a program or initiative. Impact evaluations normally employ a controlled experimental design, and they require a great deal of human and financial resources and sustained support from the sponsoring agency. An impact analysis, a form of impact evaluation, specifically evaluates the costs and benefits of pursuing a program in light of its positive and negative consequences or the change that might result. Only an evaluation of this magnitude will provide the distal outcome data to discover the specific, long-ranging effects RDAP has on long-term outcomes.

In this study, the distal outcomes were the participants’ ability to remaining drug-free and crime-free, and, secondarily, to maintain stable housing and employment. This study found several factors that were associated with these outcomes. However, other than for a participants’ ability to do so (i.e., to remain in or maintain a status variable), it did not focus on *how* the participants’

succeeded or failed, or *how* their success or failure impacted them, their families, or their communities. An effort of this scale presents many hurdles, but this is clearly the next step for correctional program evaluation. These are the sort of distal outcomes that future summative evaluation projects will need to measure.

Summary.

The results of this study further confirm the need to begin the process of what Pelissier describes as disentangling the relationships between recidivism, drug use, housing and employment, which are likely to be reciprocal in nature (Pelissier, et al., 2000a). This will require an ongoing and systemic formative and summative evaluation strategy to locate the intervening treatment mechanisms that make RDAPs successful, and to identify which program factors lead to which short- and long-term outcomes.

Limitations

The population sample of this study were from a population of low security male inmates who participated in a residential drug treatment program at a federal correctional institution and the findings are not necessarily generalizable beyond these demographic parameters. As with much human subject research, this study did not employ an experimental design and was impacted by selection bias in that the participants were generated from a convenience sample of RDAP participants, and their placement in treatment did not employ random selection. This is compounded by the fact that some participants who complete treatment are provided a powerful external incentive of a sentence reduction of up to one year. Also, comparison groups of non-treated offenders were not available. The

study was also limited to available archival, extant data provided by USPOs from 34 judicial districts across the U.S.

Summary

This study identified several factors predictive of RDAP participants' successes or failure on SR. One stages of change measure, the SOCRATES 8D (drug), was associated with criminality and employment instability. Participants' education level was associated with substance use, employment instability, and SR revocation, and participants' race was associated with employment and housing instability. Participants who were placed in RDAP failure status prior to SR (RDAP Failure-Outcome), had greater risk of criminality, substance use, and SR revocation, and they had greater odds of employment and housing instability. As anticipated, these participants performed more poorly on SR. In fact, RDAP failure was the most telling indicator of post-release failure and was found to be associated with every outcome indicator.

Several suggestions and recommendations for further research and programming were made. These include:

- Develop motivation assessment instruments designed for use with a correctional population in an institutional setting for the explicit purpose of predicting post-release outcomes.
- Utilize additional theoretical perspectives on human motivation and change, namely TLT and SDT, which are complimentary to TTM, to provide the theoretical underpinning for developing instruments to assess treatment participants' motivation to change.

- Develop improved linkages between the BOP and USPOs for a better continuum of treatment from prison to the community.
- Consider RDAP system re-designs to enhance re-treatment of RDAP failures.
- Assess and address institutional factors, such as program linkages and barriers for treatment, and participant factors, such as continually assessing and enhancing motivation to change, which effects program outcomes.
- Increase higher education opportunities and funding for inmates, to include college, certificate, vocational training, and apprenticeship courses and programs, and continue to support current GED initiatives.
- Develop a coherent and comprehensive 'culture of evaluation' within RDAP, to include both formative and summative evaluation strategies, to measure proximal and distal treatment outcomes.

The variables predicting post-release success among participants who complete prison-based programs are multifaceted and often mutually reciprocal, as this study confirmed. The intermingling of participant dynamics, such as motivation and readiness to change, and institutional factors, such as program design and implementation, funding, and linkage between agencies, add to the complexities of understanding the challenges of inmates' rehabilitation and reintegration into society upon release from incarceration. As with most evaluation efforts, this study produced more questions than answers. How, specifically, is participants' race associated with employment and housing instability? Why is post-secondary education attainment related to lower levels of resumed substance use on supervised release but not to new criminality? What

are the programmatic components that best effectuate participants' motivation and commitment to change during the treatment process? The list is seemingly inexhaustible.

Multidisciplinary research and evaluation in corrections, still in its infancy in many respects, has only recently begun to ask these questions and search for insights. For most Americans, our culture of incarceration is a mystifying curiosity—mostly out of sight, out of mind, and a spectacle for cable TV entertainment. The time has come, however, to take notice. America has 4.5% of the globe's inhabitants, but approximately 23.5% of the world's incarcerated population. On many levels—socially, financially, morally—this is undesirable, untenable, unconscionable, and unsustainable; and extricating ourselves from this quagmire will be a gradual process. On the one hand, fundamental shifts in American social, economic, and political priorities and policies will need to take place; on the other, conversions in individuals, who recognize that the adoption of prosocial norms of behaviors, attitudes, values, and lifestyles are in their long-term best interest, and who are willing to develop the skills and aptitudes to effectuate these adaptations, will need to occur. Continued research and evaluation in correctional treatment programming will be pivotal in helping to effectuate these transformations for the betterment of individuals and society.

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APPENDICES

APPENDIX A
IRB Approval Letters

UNIVERSITY OF MINNESOTA

Twin Cities Campus
03/20/2008

Mitchell J Moore
614 Wooddale Ct. NW
Rochester, MN 55901

Research Subjects' Protection Programs
(RSPP)
Office of the Vice President for Research

D-528 Mayo Memorial Building
420 Delaware Street S.E.
Minneapolis, MN 55455
Office: 612-626-5654
Fax: 612-626-6061
www.research.umn.edu/subjects
Email: irb@umn.edu or
lacuc@umn.edu or ibc@umn.edu

RE: "Examining Motivation to Change in Residential Drug Abuse Program Graduates: Comparing
"Stages of Change" Assessment Data with Post-Release Success Status"
IRB Code Number: **0802P27221**

Dear Mr. Moore

The referenced study was reviewed by expedited review procedures and approved on March 19, 2008. If you have applied for a grant, this date is required for certification purposes as well as the Assurance of Compliance number which is FWA00000312 (Fairview Health Systems Research FWA00000325, Gillette Children's Specialty Healthcare FWA 00004003). Approval for the study will expire one year from that date. A report form will be sent out two months before the expiration date.


A prisoner advocate reviewed the above-referenced application in accord with 45CFR46; Subpart C regulations.

The IRB would like to stress that subjects who go through the consent process are considered enrolled participants and are counted toward the total number of subjects, even if they have no further participation in the study. Please keep this in mind when calculating the number of subjects you request. This study is currently approved for 216 subjects. If you desire an increase in the number of approved subjects, you will need to make a formal request to the IRB.

The code number above is assigned to your research. That number and the title of your study must be used in all communication with the IRB office.

As the Principal Investigator of this project, you are required by federal regulations to inform the IRB of any proposed changes in your research that will affect human subjects. Changes should not be initiated until written IRB approval is received. Unanticipated problems and adverse events should be reported to the IRB as they occur. Research projects are subject to continuing review and renewal. If you have any questions, call the IRB office at 612-626-5654.

On behalf of the IRB, I wish you success with your research.

Sincerely,

Felicia Mroczkowski, CIP
Research Compliance Supervisor
FM/egk
CC: Rosemarie Park

Driven to DiscoverSM



U.S. Department of Justice

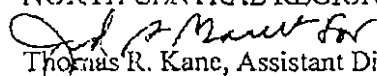
Federal Bureau of Prisons

Washington, DC 20534

October 31, 2007

MEMORANDUM FOR MICHAEL K. NALLEY, REGIONAL DIRECTOR
NORTH CENTRAL REGION

FROM:


Thomas R. Kane, Assistant Director
Information, Policy, and Public Affairs Division

SUBJECT:

Research Proposal from Mr. Mitchell Moore

This is in response to a request by Bureau of Prisons Drug Treatment Specialist, Mr. Mitchell Moore, to conduct a study to examine the ability of three instruments designed to measure an individual's motivation readiness to change. The working title of the research is "Examining Motivation to Change in Residential Drug Abuse Program Graduates: Comparing 'Stages of Change' Assessment Data with Post-Release Status."

I concur with your recommendation for approval, with the caveat that the researcher will collaborate his research with the Bureau of Prisons Office of Research and Evaluation (ORE). Since ORE has a mutual interest in this project, it would be most efficient for ORE to collaborate with the researcher on the data collection. The researcher is authorized to proceed with the study subject to the capability of FCI Waseca to accommodate him and with the understanding that ORE will be working with him. Mr. Moore should contact Dr. Jody Klein-Saffran, at 202-305-4110 for further information regarding the joint effort. This approval expires one year from the date of this memorandum.

cc: Carol Holinka, Warden, FCI Waseca
Mary Frenzel, Ph.D., Chief Psychologist, Chair of Review Board, FCI Waseca, MN

APPENDIX B

Description of Predictor and Response Variables

Variable Type	Variable Code Name	Variable Description
Response	RelStat	Relapse Status 1=resumed use/relapsed, 2=occasional/intermittent use, or 3=drug-free/no use
Response	RecStatus	Recidivism Status 1=return to crime/prison, 2= intermittent/ minor criminal behavior, or 3=crime-free
Response & Predictor	EmpStatus	Employment Status 1=unemployed, 2=intermittent/sporadic employment, or 3=uninterrupted/steady employment
Response & Predictor	HouStatus	Housing Status 1=unstable housing, 2=intermittent unstable housing, 3=stable housing
Predictor	PostURICA	Post-Test URICA Total Score (sum of 4 score)
Predictor	PostPC	Post-Test URICA PC Score (pre-contemplation stage)
Predictor	PostC	Post-Test URICA C Score (contemplation stage)
Predictor	PostA	Post-Test URICA A Score (action stage)
Predictor	PostM	Post-Test URICA M Score (maintenance stage)
Predictor	SOC8ARE	Post-Test SOCRATES 8A RE Score (recognition-alcohol)
Predictor	SOC8AAM	Post-Test SOCRATES 8A AM Score (ambivalence-alcohol)
Predictor	SOC8ATS	Post-Test SOCRATES 8A TS Score (taking steps-alcohol)
Predictor	SOC8DRE	Post-Test SOCRATES 8D RE Score (recognition-drug)
Predictor	SOC8DAM	Post-Test SOCRATES 8D AM Score (ambivalence-drug)
Predictor	SOC8DTS	Post-Test SOCRATES 8D TS Score (taking steps-drug)
Predictor	Age	Age in years
Predictor	RDAPFailO	RDAP Failure Outcome—failure after treatment but prior to supervised release (failed either while in prison or halfway house)
Predictor	Race	White or Other
Predictor	Ethnicity	Hispanic or non-Hispanic
Predictor	Education	Education 1=no GED/HSD, 2=GED/HSD, 3=some post-secondary
Predictor	HSD-GED	1=No GED/HSD Versus 2=GED/HSD and 3=some post-secondary
Predictor	PostSec	1=No GED/HSD and 2=GED/HSD Versus 3=some post-secondary
Predictor	EarlyRel	Early Release Eligibility (eligible for sentence reduction for successful treatment completion, or not)
Predictor	Employment	1=unemployed and 2=intermittent/sporadic employment Versus 3=uninterrupted/steady employment
Predictor	Housing	1=unstable housing and 2=intermittent unstable housing Versus 3=stable housing
Predictor	SR Status	Current SR Status 1=successfully discharged, 2=remains on SR, or 3=unsuccessfully discharged
Predictor	On SR	1=successfully discharged or 2=remains on SR Versus 3=unsuccessfully discharged
Predictor	SR Success	1=successfully discharged Versus 2=remains on SR or 3=unsuccessfully discharged

APPENDIX C

RDAP Participant Post-Release Status Data Collection Form

Follow-up telephone contact with former RDAP participants' United States Probation Officer (USPO) to gauge former FCI Waseca, MN, RDAP participant's post-release status on four factors—employment (maintaining a legitimate job), housing (maintained stable housing), recidivism (remaining crime-free), and relapse (maintaining abstinence from substance use)—after release from the BOP to a pre-determined term of supervised release (SR).

Today's Date: _____ **Reg. #:** _____
Judicial District(s): _____

RDAP Completion Date: _____ **Date SR Started:** _____ **Date SR Ended*:** _____ **SR Status**:** _____
SR Months Total: _____

* If applicable ** 1= remains on SR 2= successfully discharged from SR 3= unsuccessfully discharged from SR

Place an X in the appropriate boxes, as applicable, to signify post-release status for each factor:

EMPLOYMENT

Unemployed	
Intermittent periods (sporadic) employment	
Uninterrupted (steady) employment	

HOUSING

Unstable housing	
Intermittent periods of unstable housing	
Uninterrupted (steady) stable housing	

RECIDIVISM

Return to crime/prison (recidivism)	
Intermittent criminal behavior/legal problems	
Crime-free (no criminal behavior)	

Month/year of 1st criminal/arrest incident while on SR: ____/____

RELAPSE

Return to addictive substance use (relapse)	
Occasional use (lapses)	
No substance use	

Month/year of 1st substance abuse incident while on SR: ____/____

APPENDIX D
Sample USPO Cover Letters



**U.S. Department of Justice
Federal Bureau of Prisons**

Mitchell J. Moore, M.S., DTS
Federal Correctional Institution
Psychology Services Department
P.O. Box 1731
Waseca, Minnesota 56093-0741

April 14, 2008

Jane Doe, Chief Probation Officer
United States Probation 1064
Judge Isaac C. Parker Federal Building
30 South Sixth Street
Fort Smith, AR 72901

Dear Ms. Doe,

My name is Mitch Moore and I am a Drug Treatment Specialist with the Federal Bureau of Prisons (BOP) at the Federal Correctional Institution, in Waseca, Minnesota, and I am also completing my PhD dissertation at the University of Minnesota. I am writing to solicit the assistance of your staff in helping me gather some basic data on a small sample of former FCI Waseca inmates currently, or previously, on supervised release in your jurisdiction.

This project examines the post-release status of former FCI Waseca Residential Drug Abuse Program (RDAP) graduates. These former inmates' post-release status will be compared with their pre- and post-test scores on three "stages of change" instruments, which they completed while participating in RDAP, to predict successful post-incarceration adjustment.

I have enclosed data collection forms for the sample of RDAP graduates from your District. There are just a few dates to fill in, and a few boxes to check to indicate how the individual is currently doing (or how they did, if they are no longer on supervision) in four areas: housing, employment, relapse (illicit substance use) and recidivism (new criminal behavior).

I would greatly appreciate it if you would forward them to one of your probation officers (or whomever you designate) to complete. The completed forms may be returned to me in whatever way is most convenient: they can be mailed to me in the enclosed envelopes, faxed back to me at (507) 837-4594, or they can be scanned as PDF documents and returned via e-mail to mjmoore@bop.gov.

Your assistance with this project would be greatly appreciated. If you have any questions or concerns, I can be reached at (507) 835-8972 ext. 2409, and my direct supervisor, Dr. Amy Boncher, Chief Psychologist, can be reached at ext. 2400. You can also contact Dr. Jody Klein-Saffran at the BOP's Office of Research & Evaluation at 202-305-4110, or Dr. Rosemarie Park, my doctoral advisor, at (612) 625-6267.

Respectfully,

Mitch Moore, M.S., DTS

Please note: None of the names or identities of these former or current BOP inmates will be used in my dissertation. The Federal Bureau of Prisons has approved of my project, as has the Institutional Review Board of the University of Minnesota, which included a prisoner advocate review (see enclosed documentation).



**U.S. Department of Justice
Federal Bureau of Prisons**

Mitchell J. Moore, M.S., DTS
Federal Correctional Institution
Psychology Services Department
P.O. Box 1731
Waseca, Minnesota 56093-0741

May 27, 2008

Jane Doe, Chief Probation Officer
United States Probation
1234 Federal Building
10 South Sixth Street
Fort Smith, AR 72901

Dear Ms. Doe,

My name is Mitch Moore and I am a Drug Treatment Specialist with the Federal Bureau of Prisons (BOP) at the Federal Correctional Institution, in Waseca, Minnesota. You should have received an envelope from me a few weeks ago concerning a study we are conducting on the RDAP at FCI Waseca, MN. I have enclosed an additional form(s) on an individual who was sentenced out of the Western District of Missouri, but whose supervision was transferred to the District of Arkansas. If you could have your staff complete the enclosed form(s) we would greatly appreciate it.

Again, the completed form(s) may be returned to me in whatever way is most convenient: they can be mailed to me in the enclosed envelopes, faxed back to me at (507) 837-4594, or they can be scanned as PDF documents and returned via e-mail to mjmoore@bop.gov.

Your assistance with this project would be greatly appreciated. If you have any questions or concerns, I can be reached at (507) 835-8972 ext. 2409, and my direct supervisor, Dr. Amy Boncher, Chief Psychologist, can be reached at ext. 2400. You can also contact Dr. Jody Klein-Saffran at the BOP's Office of Research & Evaluation at 202-305-4110, or Dr. Rosemarie Park, my doctoral advisor, at (612) 625-6267.

Respectfully,

Mitch Moore, M.S., DTS

Please note: None of the names or identities of these former or current BOP inmates will be used in my dissertation. The Federal Bureau of Prisons has approved of my project, as has the Institutional Review Board of the University of Minnesota, which included a prisoner advocate review (see enclosed documentation).

APPENDIX E
Predictor Variable Tables

Characteristics by Recidivism Status

	<u>No New Crime</u> (N=107)	<u>Some New Crime</u> (N=88)	<u>Total</u> (N=195)
Drug Relapse Status			
Drug Relapse	17 (16%)	34 (39%)	51 (26%)
Intermittent Use	18 (17%)	29 (33%)	47 (24%)
Drug Free	72 (67%)	25 (28%)	97 (50%)
Recidivism Status			
Return to Crime	0 (0%)	48 (55%)	48 (25%)
Intermittent/Minor Crime	0 (0%)	40 (45%)	40 (20%)
No New Crime	107 (100%)	0 (0%)	107 (55%)
Employment Status			
Unemployed	6 (6%)	18 (20%)	24 (12%)
Intermittent Employment	20 (19%)	42 (48%)	62 (32%)
Steady Employment	81 (76%)	28 (32%)	109 (56%)
Housing Status			
Unstable Housing	4 (4%)	7 (8%)	11 (6%)
Intermittent Housing	14 (13%)	38 (43%)	52 (27%)
Stable Housing	89 (83%)	43 (49%)	132 (68%)
PostURICA			
Mean (SD)	10.2 (1.78)	10.3 (1.52)	10.3 (1.66)
Median	9.9	10.2	10.0
Range	(5.3-13.7)	(6.5-14.0)	(5.3-14.0)
PostPC			
Mean (SD)	1.8 (0.54)	1.8 (0.53)	1.8 (0.53)
Median	2.0	1.7	1.9
Range	(1.0-3.1)	(1.0-3.6)	(1.0-3.6)
PostC			
Mean (SD)	4.2 (0.48)	4.2 (0.51)	4.2 (0.50)
Median	4.1	4.1	4.1
Range	(2.6-5.0)	(2.3-5.0)	(2.3-5.0)
PostA			
Mean (SD)	4.3 (0.45)	4.3 (0.43)	4.3 (0.44)
Median	4.1	4.1	4.1
Range	(3.0-5.0)	(3.1-5.0)	(3.0-5.0)

	<u>No New Crime</u> <u>(N=107)</u>	<u>Some New Crime</u> <u>(N=88)</u>	<u>Total</u> <u>(N=195)</u>
PostM			
Mean (SD)	3.5 (0.70)	3.6 (0.51)	3.5 (0.62)
Median	3.7	3.7	3.7
Range	(1.3-4.9)	(2.0-5.0)	(1.3-5.0)
SOC8ARE			
Mean (SD)	20.1 (9.28)	19.8 (8.79)	20.0 (9.04)
Median	20.0	19.0	19.0
Range	(7.0-35.0)	(7.0-35.0)	(7.0-35.0)
SOC8AAM			
Mean (SD)	10.1 (4.54)	9.7 (4.54)	9.9 (4.53)
Median	10.0	9.0	10.0
Range	(1.0-20.0)	(4.0-20.0)	(1.0-20.0)
SOC8ATS			
Mean (SD)	28.8 (10.54)	28.4 (10.21)	28.6 (10.37)
Median	32.0	32.0	32.0
Range	(8.0-40.0)	(8.0-40.0)	(8.0-40.0)
SOC8DRE			
Mean (SD)	26.2 (8.28)	28.8 (5.34)	27.4 (7.21)
Median	28.0	29.0	29.0
Range	(7.0-35.0)	(13.0-35.0)	(7.0-35.0)
SOC8DAM			
Mean (SD)	11.2 (4.57)	12.4 (3.82)	11.8 (4.28)
Median	11.0	13.0	12.0
Range	(4.0-20.0)	(4.0-20.0)	(4.0-20.0)
SOC8DTS			
Mean (SD)	32.4 (7.93)	34.8 (3.78)	33.5 (6.50)
Median	33.0	34.0	34.0
Range	(8.0-40.0)	(22.0-40.0)	(8.0-40.0)
Age			
Mean (SD)	35.4 (8.90)	33.2 (8.25)	34.4 (8.66)
Median	33.0	32.0	33.0
Range	(21.0-59.0)	(20.0-54.0)	(20.0-59.0)

	<u>No New Crime</u> <u>(N=107)</u>	<u>Some New Crime</u> <u>(N=88)</u>	<u>Total</u> <u>(N=195)</u>
RDAPFailO			
Did Not Fail	95 (89%)	70 (80%)	165 (85%)
Failed	12 (11%)	18 (20%)	30 (15%)
Race			
White	69 (64%)	48 (55%)	117 (60%)
Other	38 (36%)	40 (45%)	78 (40%)
Ethnicity			
Not Hispanic	90 (84%)	79 (90%)	169 (87%)
Hispanic	17 (16%)	9 (10%)	26 (13%)
Education			
Less than HS/GED	8 (7%)	11 (13%)	19 (10%)
HS/GED	71 (66%)	51 (58%)	122 (63%)
Post Secondary	28 (26%)	26 (30%)	54 (28%)
HSD/GED			
Yes	99 (93%)	77 (88%)	176 (90%)
No	8 (7%)	11 (13%)	19 (10%)
Post Secondary			
Yes	28 (26%)	26 (30%)	54 (28%)
No	79 (74%)	62 (70%)	141 (72%)
Early Release			
Yes	86 (80%)	68 (77%)	154 (79%)
No	21 (20%)	20 (23%)	41 (21%)
Employment			
Stable	81 (76%)	28 (32%)	109 (56%)
Unstable	26 (24%)	60 (68%)	86 (44%)
Housing			
Stable	89 (83%)	43 (49%)	132 (68%)
Unstable	18 (17%)	45 (51%)	63 (32%)

	<u>No New Crime</u> (N=107)	<u>Some New Crime</u> (N=88)	<u>Total</u> (N=195)
SR Status			
Still on SR	52 (49%)	17 (19%)	69 (35%)
Successfully Released	41 (38%)	9 (11%)	50 (26%)
Unsuccessfully Released	14 (13%)	62 (70%)	76 (39%)
On SR			
Yes	52 (49%)	17 (19%)	69 (35%)
No	55 (51%)	71 (81%)	126 (65%)
SR Success			
Yes	93 (87%)	26 (30%)	119 (61%)
No	14 (13%)	62 (70%)	76 (39%)

Characteristics by Drug Relapse Status

	<u>Drug Free</u> (N=97)	<u>Some Drug Use</u> (N=98)	<u>Total</u> (N=195)
Drug Relapse Status			
Drug Relapse	0 (0%)	51 (52%)	51 (26.2%)
Intermittent Use	0 (0%)	47 (48%)	47 (24.1%)
Drug Free	97 (100%)	0 (0%)	97 (49.7%)
Recidivism Status			
Return to Crime	13 (13%)	35 (36%)	48 (25%)
Intermittent/Minor Crime	12 (12%)	28 (29%)	40 (21%)
No New Crime	72 (74%)	35 (36%)	107 (55%)
Employment Status			
Unemployed	9 (9%)	15 (15%)	24 (12%)
Intermittent Employment	15 (15%)	47 (48%)	62 (32%)
Steady Employment	73 (75%)	36 (37%)	109 (56%)
Housing Status			
Unstable Housing	1 (1%)	10 (10%)	11 (6%)
Intermittent Housing	14 (14%)	38 (39%)	52 (27%)
Stable Housing	82 (85%)	50 (51%)	132 (68%)
PostURICA			
Mean (SD)	10.2 (1.57)	10.3 (1.76)	10.3 (1.66)
Median	10.0	10.1	10.0
Range	(5.3-13.7)	(5.4-14.0)	(5.3-14.0)
PostPC			
Mean (SD)	1.8 (0.52)	1.8 (0.55)	1.8 (0.53)
Median	1.9	1.8	1.9
Range	(1.0-3.1)	(1.0-3.6)	(1.0-3.6)
PostC			
Mean (SD)	4.2 (0.48)	4.2 (0.52)	4.2 (0.50)
Median	4.1	4.1	4.1
Range	(2.6-5.0)	(2.3-5.0)	(2.3-5.0)
PostA			
Mean (SD)	4.3 (0.42)	4.3 (0.46)	4.3 (0.44)
Median	4.3	4.1	4.1
Range	(3.3-5.0)	(3.0-5.0)	(3.0-5.0)

	<u>Drug Free</u> (N=97)	<u>Some Drug Use</u> (N=98)	<u>Total</u> (N=195)
PostM			
Mean (SD)	3.5 (0.64)	3.6 (0.59)	3.5 (0.62)
Median	3.6	3.7	3.7
Range	(1.3-4.9)	(1.7-5.0)	(1.3-5.0)
SOC8ARE			
Mean (SD)	19.6 (8.86)	20.4 (9.24)	20.0 (9.04)
Median	19.0	21.0	19.0
Range	(7.0-35.0)	(7.0-35.0)	(7.0-35.0)
SOC8AAM			
Mean (SD)	9.5 (4.44)	10.2 (4.61)	9.9 (4.53)
Median	9.0	11.0	10.0
Range	(1.0-20.0)	(4.0-20.0)	(1.0-20.0)
SOC8ATS			
Mean (SD)	28.7 (9.99)	28.6 (10.77)	28.6 (10.37)
Median	32.0	32.0	32.0
Range	(8.0-40.0)	(8.0-40.0)	(8.0-40.0)
SOC8DRE			
Mean (SD)	26.8 (7.76)	28.0 (6.59)	27.4 (7.21)
Median	29.0	29.0	29.0
Range	(7.0-35.0)	(9.0-35.0)	(7.0-35.0)
SOC8DAM			
Mean (SD)	11.3 (4.52)	12.2 (4.00)	11.8 (4.28)
Median	11.0	13.0	12.0
Range	(4.0-20.0)	(4.0-20.0)	(4.0-20.0)
SOC8DTS			
Mean (SD)	32.9 (7.89)	34.1 (4.71)	33.5 (6.50)
Median	34.0	33.5	34.0
Range	(8.0-40.0)	(19.0-40.0)	(8.0-40.0)
Age			
Mean (SD)	35.3 (9.52)	33.5 (7.65)	34.4 (8.66)
Median	33.0	33.0	33.0
Range	(22.0-59.0)	(20.0-54.0)	(20.0-59.0)

	<u>Drug Free</u> <u>(N=97)</u>	<u>Some Drug Use</u> <u>(N=98)</u>	<u>Total</u> <u>(N=195)</u>
RDAPFail0			
Did Not Fail	93 (96%)	72 (73%)	165 (85%)
Failed	4 (4%)	26 (27%)	30 (15%)
Race			
White	60 (62%)	57 (58%)	117 (60%)
Other	37 (38%)	41 (42%)	78 (40%)
Ethnicity			
Not Hispanic	80 (82%)	89 (91%)	169 (87%)
Hispanic	17 (18%)	9 (9%)	26 (13%)
Education			
Less than HS/GED	7 (7%)	12 (12%)	19 (10%)
HS/GED	57 (59%)	65 (66%)	122 (63%)
Post Secondary	33 (34%)	21 (21%)	54 (28%)
HSD/GED			
Yes	90 (93%)	86 (88%)	176 (90%)
No	7 (7%)	12 (12%)	19 (10%)
Post Secondary			
Yes	33 (34%)	21 (21%)	54 (28%)
No	64 (66%)	77 (79%)	141 (72%)
Early Release			
Yes	79 (81%)	75 (77%)	154 (79%)
No	18 (19%)	23 (23%)	41 (21%)
Employment			
Stable	73 (75%)	36 (37%)	109 (56%)
Unstable	24 (25%)	62 (63%)	86 (44%)
Housing			
Stable	82 (85%)	50 (51%)	132 (68%)
Unstable	15 (15%)	48 (49%)	63 (32%)

	<u>Drug Free</u> <u>(N=97)</u>	<u>Some Drug Use</u> <u>(N=98)</u>	<u>Total</u> <u>(N=195)</u>
SR Status			
Still on SR	44 (45%)	25 (26%)	69 (35%)
Successfully Released	37 (38%)	13 (13%)	50 (26%)
Unsuccessfully Released	16 (16%)	60 (61%)	76 (39%)
On SR			
Yes	44 (45%)	25 (26%)	69 (35%)
No	53 (55%)	73 (74%)	126 (65%)
SR Success			
Yes	81 (84%)	38 (39%)	119 (61%)
No	16 (17%)	60 (61%)	76 (39%)

APPENDIX F

Population Sample by U.S. Probation District

Judicial District	Sample Size	Actual	%	Rank
Alaska	1	2	.010	19
Arizona	2	2	.010	19
Arkansas, Western	1	1	.005	25
California, Central	1	0	.000	-
California, Southern	5	5	.026	12
Colorado	6	7	.038	10
Florida, Middle	1	0	.000	-
Georgia, Northern	2	1	.005	25
Georgia, Southern	2	0	.000	-
Hawaii	1	0	.000	-
Illinois, Southern	6	5	.026	12
Illinois, Central	11	10	.051	6
Illinois, Northern	8	13	.067	5
Indiana, Northern	3	5	.026	12
Indiana, Southern	2	1	.005	25
Iowa, Northern	18	14	.072	4
Iowa, Southern	10	9	.046	7
Kansas	13	9(8)**	.041	9
Kentucky, Eastern	1	0	.000	-
Maryland	1	0	.000	-
Michigan, Eastern	2	4	.021	16
Michigan, Western	2	2(1)**	.005	25
Minnesota	30	28	.144	1
Mississippi, Northern	1	1	.005	25
Missouri, Eastern	9	9	.046	7
Missouri, Western	20	25	.128	2
Montana	2	0	.000	-
Nebraska	20	15	.077	3
Nevada	1	2	.010	19
New Mexico	1	1	.005	25
New York, Western	1	0	.000	-
New York, Northern	1	2	.010	19
North Dakota	3	3	.015	17
Pennsylvania, Middle	1	1(0)**	.000	-
South Carolina	-	1	.005	25
South Dakota	6	6	.031	11
Texas, Southern	2	0	.000	-
Texas, Western	3	3	.015	17
Texas, Northern	-	1	.005	25
Utah	1	2	.010	19
Wisconsin, Eastern	8	5	.026	12
Wisconsin, Western	5	2	.010	19
Wyoming	2	1	.005	2
N=43	N=216*	N=198(195)	100%	

*The sample originally included 216 RDAP graduates from 10 RDAP cohorts over an approximate 3.25 year period. Of the 216 surveys that were sent out to respective USPOs, 198 surveys were returned (91.66% response rate), of which 195 were complete and usable for this study (90.3%).

**These each included one subject that had to be excluded from the study due to incomplete or erroneous data. Thus, the true N=195.

APPENDIX G

Stages of Change Assessment Instruments and Scoring Instructions

(SOCRATES 8A, 8D & URICA)

These instruments are public use documents available through the University of New Mexico, Center on Alcoholism, Substance Abuse and Addictions (CASAA), (defunct) developed, in part, with funding provided through a grant from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) for Project MATCH (Matching Alcoholism Treatments to Client Heterogeneity). They are available on-line at:

Socrates Version 8A & 8D

<http://casaa.unm.edu/inst/SOCRATESv8.pdf>

URICA

[http://casaa.unm.edu/inst/University%20of%20Rhode%20Island%20Change%20Assessment%20\(URICA\).pdf](http://casaa.unm.edu/inst/University%20of%20Rhode%20Island%20Change%20Assessment%20(URICA).pdf)

SOCRATES

The Stages of Change Readiness and Treatment Eagerness Scale

SOCRATES is an experimental instrument designed to assess readiness for change in alcohol abusers. The instrument yields three factorially-derived scale scores: Recognition (Re), Ambivalence (Am), and Taking Steps (Ts). It is a public domain instrument and may be used without special permission.

Answers are to be recorded directly on the questionnaire form. Scoring is accomplished by transferring to the SOCRATES Scoring Form the numbers circled by the respondent for each item. The sum of each column yields the three scale scores. Data entry screens and scoring routines are available.

These instruments are provided for research uses only. Version 8 is a reduced 19-item scale based on factor analyses with prior versions. The shorter form was developed using the items that most strongly marked each factor. The 19-item scale scores are highly related to the longer (39 item) scale for Recognition ($r = .96$), Taking Steps (.94), and Ambivalence (.88). We therefore currently recommend using the 19-item Version 8 instrument.

Psychometric analyses revealed the following psychometric characteristics of the 19-item SOCRATES:

	Cronbach Alpha	Test-retest Reliability	
		Intraclass	Pearson
Ambivalence	.60 - .88	.82	.83
Recognition	.85 - .95	.88	.94
Taking Steps	.83 - .96	.91	.93

Various other forms of the SOCRATES have been developed. These will be migrated into shorter 8.0 versions as psychometric studies are completed. They are:

8D	19-item drug/alcohol questionnaire for clients
7A-SO-M	32-item alcohol questionnaire for significant others of males
7A-SO-F	32-item alcohol questionnaire for SOs of females
7D-SO-F	32-item drug/alcohol questionnaire for SOs of females
7D-SO-M	32-item drug/alcohol questionnaire for SOs of males

The parallel SO forms are designed to assess the motivation for change of significant others (not collateral estimates of clients' motivation). The SO forms lack a Maintenance scale, and therefore are 32 items in length.

Prochaska and DiClemente have developed a more general stages of change measure known as the University of Rhode Island Change Assessment (URICA). The SOCRATES differs from the URICA in that SOCRATES poses questions specifically about alcohol or other drug use, whereas URICA asks about the client's "problem" and change in a more general manner.

Source Citation:

Miller, W. R., & Tonigan, J. S. (1996). Assessing drinkers' motivation for change: The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). *Psychology of Addictive Behaviors* 10, 81-89.

**Personal Drinking Questionnaire
(SOCRATES 8A)**

INSTRUCTIONS: Please read the following statements carefully. Each one describes a way that you might (or might not) feel about your *drinking*. For each statement, circle one number from 1 to 5, to indicate how much you agree or disagree with it *right now*. Please circle one and only one number for every statement.

	NO! Strongly Disagree	No Disagree	? Undecided or Unsure	Yes Agree	YES! Strongly Agree
1. I really want to make changes in my drinking.	1	2	3	4	5
2. Sometimes I wonder if I am an alcoholic.	1	2	3	4	5
3. If I don't change my drinking soon, my problems are going to get worse.	1	2	3	4	5
4. I have already started making some changes in my drinking.	1	2	3	4	5
5. I was drinking too much at one time, but I've managed to change my drinking.	1	2	3	4	5
6. Sometimes I wonder if my drinking is hurting other people.	1	2	3	4	5
7. I am a problem drinker.	1	2	3	4	5
8. I'm not just thinking about changing my drinking, I'm already doing something about it.	1	2	3	4	5
9. I have already changed my drinking, and I am looking for ways to keep from slipping back to my old pattern.	1	2	3	4	5
10. I have serious problems with drinking.	1	2	3	4	5
11. Sometimes I wonder if I am in control of my drinking.	1	2	3	4	5
12. My drinking is causing a lot of harm.	1	2	3	4	5
13. I am actively doing things now to cut down or stop drinking.	1	2	3	4	5
14. I want help to keep from going back to the drinking problems that I had before.	1	2	3	4	5
15. I know that I have a drinking problem.	1	2	3	4	5
16. There are times when I wonder if I drink too much.	1	2	3	4	5
17. I am an alcoholic.	1	2	3	4	5
18. I am working hard to change my drinking.	1	2	3	4	5
19. I have made some changes in my drinking, and I want some help to keep from going back to the way I used to drink.	1	2	3	4	5

Personal Drug Use Questionnaire
(SOCRATES 8D)

INSTRUCTIONS: Please read the following statements carefully. Each one describes a way that you might (or might not) feel about *your drug use*. For each statement, circle one number from 1 to 5, to indicate how much you agree or disagree with it *right now*. Please circle one and only one number for every statement.

	NO! Strongly Disagree	No Disagree	? Undecided or Unsure	Yes Agree	YES! Strongly Agree
1. I really want to make changes in my use of drugs.	1	2	3	4	5
2. Sometimes I wonder if I am an addict.	1	2	3	4	5
3. If I don't change my drug use soon, my problems are going to get worse.	1	2	3	4	5
4. I have already started making some changes in my use of drugs.	1	2	3	4	5
5. I was using drugs too much at one time, but I've managed to change that.	1	2	3	4	5
6. Sometimes I wonder if my drug use is hurting other people.	1	2	3	4	5
7. I have a drug problem.	1	2	3	4	5
8. I'm not just thinking about changing my drug use, I'm already doing something about it.	1	2	3	4	5
9. I have already changed my drug use, and I am looking for ways to keep from slipping back to my old pattern.	1	2	3	4	5
10. I have serious problems with drugs.	1	2	3	4	5
11. Sometimes I wonder if I am in control of my drug use.	1	2	3	4	5
12. My drug use is causing a lot of harm.	1	2	3	4	5
13. I am actively doing things now to cut down or stop my use of drugs.	1	2	3	4	5
14. I want help to keep from going back to the drug problems that I had before.	1	2	3	4	5
15. I know that I have a drug problem.	1	2	3	4	5
16. There are times when I wonder if I use drugs too much.	1	2	3	4	5
17. I am a drug addict.	1	2	3	4	5
18. I am working hard to change my drug use.	1	2	3	4	5
19. I have made some changes in my drug use, and I want some help to keep from going back to the way I used before.	1	2	3	4	5

SOCRATES Scoring Form - 19-Item Versions 8.0

Transfer the client's answers from questionnaire (see note below):

	Recognition	Ambivalence	Taking Steps
	1 _____	2 _____	
	3 _____		4 _____
			5 _____
		6 _____	
	7 _____		8 _____
			9 _____
	10 _____	11 _____	
	12 _____		13 _____
			14 _____
	15 _____	16 _____	
	17 _____		18 _____
			19 _____
TOTALS	Re _____	Am _____	Ts _____
Possible Range:	7-35	4-20	8-40

SOCRATES Profile Sheet (19-Item Version 8A)

INSTRUCTIONS: From the SOCRATES Scoring Form (19-Item Version) transfer the total scale scores into the empty boxes at the bottom of the Profile Sheet. Then for each scale, CIRCLE the same value above it to determine the decile range.

DECILE SCORES	Recognition	Ambivalence	Taking Steps
90 Very High		19-20	39-40
80		18	37-38
70 High	35	17	36
60	34	16	34-35
50 Medium	32-33	15	33
40	31	14	31-32
30 Low	29-30	12-13	30
20	27-28	9-11	26-29
10 Very Low	7-26	4-8	8-25
RAW SCORES (from Scoring Sheet)	Re=	Am=	Ts=

These interpretive ranges are based on a sample of 1,726 adult men and women presenting for treatment of alcohol problems through Project MATCH. Note that individual scores are therefore being ranked as low, medium, or high relative to people already presenting for alcohol treatment.

Guidelines for Interpretation of SOCRATES-8 Scores

Using the SOCRATES Profile Sheet, circle the client's raw score within each of the three scale columns. This provides information as to whether the client's scores are low, average, or high *relative to people already seeking treatment for alcohol problems*. The following are provided as general guidelines for interpretation of scores, but it is wise in an individual case also to examine individual item responses for additional information.

RECOGNITION

HIGH scorers directly acknowledge that they are having problems related to their drinking, tending to express a desire for change and to perceive that harm will continue if they do not change.

LOW scorers deny that alcohol is causing them serious problems, reject diagnostic labels such as "problem drinker" and "alcoholic," and do not express a desire for change.

AMBIVALENCE

HIGH scorers say that they sometimes wonder if they are in control of their drinking, are drinking too much, are hurting other people, and/or are alcoholic. Thus a high score reflects ambivalence or uncertainty. A high score here reflects some openness to reflection, as might be particularly expected in the contemplation stage of change.

LOW scorers say that they do not wonder whether they drink too much, are in control, are hurting others, or are alcoholic. Note that a person may score low on ambivalence *either* because they "know" their drinking is causing problems (high Recognition), or because they "know" that they do not have drinking problems (low Recognition). Thus a low Ambivalence score should be interpreted in relation to the Recognition score.

TAKING STEPS

HIGH scorers report that they are already doing things to make a positive change in their drinking, and may have experienced some success in this regard. Change is underway, and they may want help to persist or to prevent backsliding. A high score on this scale has been found to be predictive of successful change.

LOW scorers report that they are not currently doing things to change their drinking, and have not made such changes recently.

**UNIVERSITY OF RHODE ISLAND CHANGE
ASSESSMENT (URICA) SCALE**

FOR OFFICE USE ONLY	
_____	Study
_____	ID
_____	Point
_____	Date
_____	Raid
<small>UCA000 - Revised 2/25/96 3 Pages</small>	

PROBLEM: _____

This questionnaire is to help us improve our services. Each statement describes how a person might feel when starting therapy. Please indicate the extent to which you tend to agree or disagree with each statement. In each case, make your choice in terms of how you feel right now, not what you have felt in the past or would like to feel. For all the statements that refer to your "problem", answer in terms of the problem you have written at the top. And "here" refers to the place of treatment.

There are FIVE possible responses to each of the items in the questionnaire: Strongly disagree, disagree, undecided, agree, and strongly agree. Circle the number that best describes how much you agree or disagree with each statement.

There are FIVE possible responses:	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. As far as I'm concerned, I don't have any problems that need changing.	1	2	3	4	5
2. I think I might be ready for some self-improvement.	1	2	3	4	5
3. I am doing something about the problems that had been bothering me.	1	2	3	4	5
4. It might be worthwhile to work on my problem	1	2	3	4	5
5. I'm not the problem one. It doesn't make much sense for me to be here.	1	2	3	4	5
6. It worries me that I might slip back on a problem I have already changed, so I am here to seek help.	1	2	3	4	5
7. I am finally doing some work on my problem.	1	2	3	4	5
8. I've been thinking that I might want to change something about myself.	1	2	3	4	5

There are FIVE possible responses:	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
9. I have been successful in working on my problem, but I'm not sure I can keep up the effort on my own.	1	2	3	4	5
10. At times my problem is difficult, but I'm working on it.	1	2	3	4	5
11. Being here is pretty much of a waste of time for me because the problem doesn't have to do with me.	1	2	3	4	5
12. I'm hoping this place will help me to better understand myself.	1	2	3	4	5
13. I guess I have faults, but there's nothing that I really need to change.	1	2	3	4	5
14. I am really working hard to change.	1	2	3	4	5
15. I have a problem and I really think I should work on it.	1	2	3	4	5
16. I'm not following through with what I had already changed as well as I had hoped, and I'm here to prevent a relapse of the problem.	1	2	3	4	5
17. Even though I'm not always successful in changing, I am at least working on my problem.	1	2	3	4	5
18. I thought once I had resolved the problem I would be free of it, but sometimes I still find myself struggling with it.	1	2	3	4	5
19. I wish I had more ideas on how to solve my problem.	1	2	3	4	5
20. I have started working on my problems but I would like help.	1	2	3	4	5

There are FIVE possible responses:	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
21. Maybe this place will be able to help me.	1	2	3	4	5
22. I may need a boost right now to help me maintain the changes I've already made.	1	2	3	4	5
23. I may be part of the problem, but I don't really think I am.	1	2	3	4	5
24. I hope that someone here will have some good advice for me.	1	2	3	4	5
25. Anyone can talk about changing; I'm actually doing something about it.	1	2	3	4	5
26. All this talk about psychology is boring. Why can't people just forget about their problems?	1	2	3	4	5
27. I'm here to prevent myself from having a relapse of my problem.	1	2	3	4	5
28. It is frustrating, but I feel I might be having a recurrence of a problem I thought I had resolved.	1	2	3	4	5
29. I have worries but so does the next guy. Why spend time thinking about them?	1	2	3	4	5
30. I am actively working on my problem.	1	2	3	4	5
31. I would rather cope with my faults then try to change them.	1	2	3	4	5
32. After all I had done to try and change my problem, every now and again it comes back to haunt me.	1	2	3	4	5

UCA000- Revised 3/25/96

Computation of a "single continuum readiness to change" score using the URICA

1. Obtain the average score per subscale using the following grid:

<u>Precontemplation</u> (PC)	<u>Contemplation</u> (C)	<u>Action</u> (A)	<u>Maintenance</u> (M)
1. _____	2. _____	3. _____	6. _____
5. _____	4. <u>N/A</u>	7. _____	9. <u>N/A</u>
11. _____	8. _____	10. _____	16. _____
13. _____	12. _____	14. _____	18. _____
23. _____	15. _____	17. _____	22. _____
26. _____	19. _____	20. <u>N/A</u>	27. _____
29. _____	21. _____	25. _____	28. _____
31. <u>N/A</u>	24. _____	30. _____	32. _____
TOTAL _____	TOTAL _____	TOTAL _____	TOTAL _____
+ 7 = _____(avg.)	+ 7 = _____(avg.)	+ 7 = _____(avg.)	+ 7 = _____(avg.)

2. Compute the "Readiness for Change" score via the following formula:

$$(\text{Avg. C} + \text{Avg. A} + \text{Avg. M}) - \text{Avg. PC} = \underline{\hspace{2cm}}$$

3. Compare the Readiness for change score to the following group means. Choose the stage whose group average is closest to the computed Readiness Score:

STAGE	CLIENT'S SCORE	NORM GROUP AVG.
Precontemplation		9.3
Contemplation		11.0
Participation (Action)		12.6
Maintenance		(Not available)

Psychometric analysis of the URICA yielded the following coefficient alpha reliabilities (UMBC):

SOCRATES 8D:

- Precontemplation (.79)
- Contemplation (.83)
- Action (.85)
- Maintenance (.76)

As reported in: Siegal, H. A., Li L., Rapp, R. C., Saha, P. (2001). Measuring readiness for change among crack cocaine users: A descriptive analysis. *Substance Use and Misuse*, 36, 687-700.

SOCRATES 8A:

- Precontemplation (.69)
- Contemplation (.75)
- Action (.82)
- Maintenance (.80)

As reported in: DiClemente, C. C. and Hughes, S. O. (1990). Stages of change profiles in outpatient alcoholism treatment. *Journal of Substance Abuse*, 2, 217-235.

<http://www.umbc.edu/psyc/habits/Downloads/URICA%20Grid.pdf>