

**Evaluation of the Efficacy of a Cognitive Behavioral Program
for Offenders on Probation: *Thinking for a Change***

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EVALUATION OF THE EFFICACY OF A COGNITIVE BEHAVIORAL PROGRAM
FOR OFFENDERS ON PROBATION: *THINKING FOR A CHANGE*

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This study evaluates the efficacy of a National Institute of Corrections developed cognitive behavioral program for adult offenders on probation, *Thinking for a Change*. One hundred male and 42 female medium and high-risk probationers were studied. Probationers assigned to *Thinking for a Change* were matched with a comparison group not assigned to the program. Group completers, group dropouts, and the comparison group were contrasted on the constructs the program is intended to affect: procriminal attitudes, social skills, and interpersonal problem solving skills. These areas were assessed with self-report measures, applied skill tests, and facilitator ratings. The groups were followed for three months to one-year after completion of the program and assessed for recidivism, as measured by new criminal offenses and technical violations of probation. Results show that new criminal offense rates for group completers were 33% lower than that for comparisons. There were no differences in technical violations between completers and comparisons. Group dropouts received a significantly higher number of technical violations than the completers or comparison groups. Being a group dropout, being classified as "high risk," and having poorer interpersonal problem solving

skills were all predictive of technical violations. On attitudinal measures, there were no differences among groups in pro-criminal sentiments. Social skills improved for both completers and dropouts but remained constant for comparisons. Group completers improved significantly in interpersonal problem solving skills after *Thinking for a Change*, while the dropout and comparison groups had no such gains. This study provides some encouragement for cognitive behavioral group treatment for offenders, as positive change was found for social and problem solving skills, and a trend toward reduced criminal activity was observed. However, change findings were not as strong as anticipated and more research in this area is necessary.

CHAPTER 1

INTRODUCTION

The question of how society should respond to and treat those who break its laws is a perplexing problem. There is a growing number of adults in the United States under some sort of correctional supervision: probation, jail, imprisonment, or parole. The U.S. correctional population is approaching six million people, with many repeat offenders among them (Beck & Dilton, 2000). Punitive measures, such as jailing, fining and imposing various sanctions, have most often been employed to manage offenders. These efforts are of dubious utility, as recidivism rates range between 30-60% (Beck & Shipley, 1989; Criminal Justice Policy Council, 2000). In the past several years, there has been an increasing focus on offender rehabilitation, creating rising demands on probation departments and a burgeoning of rehabilitative programs of varying quality. Although there is much literature regarding the treatment of criminals, there is little agreement regarding “what works.” Particularly lacking in the correctional field are empirical studies of interventions that are clinically sound, include a control or comparison group, and utilize solid research methodology. Thus far, the available acceptable research seems to indicate that programs containing a cognitive component and stemming from a cognitive behavioral framework yield the best results in terms of decreasing pro-criminal attitudes and behavior and improving the deficient problem solving and social skills that are linked with criminal activity. However, these studies are relatively few, often have conflicting results, and corrections professionals agree that more research is needed.

The purpose of the present study is to evaluate the efficacy of a structured cognitive behavioral group program, entitled *Thinking for a Change* (Glick, Bush & Taymans, 1997), for probationers in Dallas County. *Thinking for a Change* is a National Institute of Corrections (NIC) developed program and is currently used with probationers nation-wide. However, no outcome data concerning this program have been gathered to date. The program curriculum focuses on cognitive restructuring of the thoughts and attitudes that put one at risk of engaging in harmful or criminal behavior, and on improving social problem solving and social skills. This investigation assessed changes in pro-criminal attitudes, social problem solving and social skills, and tracked recidivism among probationers who completed the program. The study involved comparing group completers on all variables assessed with a matched comparison group and with group dropouts. This study was designed to extend the research literature by providing data on this program's efficacy, by adding to the outcome literature on cognitive behavioral approaches for offenders generally, and by adding to the knowledge concerning "what works" in community supervision and corrections.

To further understand the nature of the current study, the literature review that follows will focus on these areas: 1) criminality and our failed efforts to control and reduce it through punitive measures; 2) functioning of probation departments; 3) a review of the "what works" debate; 4) factors that put one at risk for criminal behavior and promising targets for intervention, with a focus on pro-criminal attitudes, social problem solving, and social skills; 5) the extant research on cognitive behavioral programs for offenders.

CHAPTER 2

LITERATURE REVIEW

Researchers, corrections professionals, and society at large agree that criminal behavior is a serious problem threatening communities. Further, offender recidivism rates are too high (Andrews & Bonta, 1994). The Bureau of Justice Statistics (Beck & Dillon, 2000) indicates that the correctional population is estimated to be about 5,692,500. Of these, 3,266,837 or 57.4% are sentenced to probation, also known as community supervision, giving offenders an opportunity to remain in the larger community provided that they meet certain conditions to prove they are fit to do so. In Texas alone, 600,000 offenders are sentenced to probation each year (Rylander, 2000). The Criminal Justice Policy Council (1996) indicates that 26% to 37% of offenders on probation in Texas recidivate within 3 years. While this is a significant percentage, it is not as high as that in many other states; the recidivism rate for probationers in California, for example, is 56%, and in Pennsylvania is 47.7% (Criminal Justice Policy Council, 2001). With the most recently compiled overall recidivism rate for U.S. criminal offenders at 32.7%, the criminal justice system is not functioning as effectively as it might (Camp & Camp, 2000). The Texas Department of Public Safety indicates that there are over one million crimes reported each year in Texas, and that approximately 1 in 20 persons are victims of criminal activity (Criminal Justice Policy Council, 2001). Clearly, reducing criminal activity is a necessary and worthwhile objective.

The Punishment Philosophy

A long-standing method relied upon to reduce crime is to punish criminals, such as by imprisonment, death, or sanctions like electronic monitoring and fines. However, much evidence suggests that the principle of crime deterrence through punishment is largely ineffective and can even be damaging (Cullen & Gendreau, 2000; McGuire, 1995). Reviews of controlled studies on the effects of criminal penalties do not show consistent effects on recidivism (Andrews & Bonta, 1994). Many suggest that a penalty such as prison time actually increases recidivism (Gendreau et al., 1999; McGuire, 1995). Overall, meta-analytic reviews suggest that punitive measures have a net destructive effect, in that they serve to worsen recidivism rates. In Lipsey's reviews (1992a, 1992b), punishment-based programs, on average, led to a 25% increase in re-offense rates compared to control groups. In Lipsey and Wilson's (1998) study of programs for serious, violent youth, punishment based programs heightened recidivism three percentage points. In Andrews et al. (1990), sanctioning interventions without human service treatment increased recidivism seven percentage points.

Punishment based programs are especially destructive when used with low-risk offenders, as harsher sanctions for low-risk offenders seem to increase recidivism rates compared to employing minimal supervision (Taylor, 1998). This effect appears to hold for treatment/rehabilitative programs aimed at low risk offenders as well (Lipsey, 1995). Much of the correctional literature underscores the importance of using risk/need classification systems to make the degree of service intervention or sanction commensurate with risk/need level for better outcomes (e.g., Andrews, 1989; Andrews,

Bonta, & Hoge, 1990; Taylor, 1998). “Risk” is defined as the offender’s potential for further criminal activity and “need” reflects the offender’s need for services (Texas Department of Criminal Justice Assistance Division, 2000). Specifically, the risk principle asserts that correctional services are most effective when delivered to higher rather than lower risk cases (Andrews, 1995; Gendreau & Ross, 1987). However, even when used with high-risk offenders requiring intensive remediation, punishment does not consistently serve to decrease recidivism rates or deter others from offending (Andrews & Bonta, 1998; Lipsey & Wilson, 1998; McGuire, 1995). Although most offenders are aware that they will be punished if caught, studies of offense motivations and decisions show that this prospect plays little active part in most offenders’ thinking in the moments prior to an offense (e.g., Carroll & Weaver, 1986; Light, Nee, & Ingham, 1993; Mayers, 1980).

Given the findings of behavioral research on punishment, it is not surprising that punishment, as it is meted out in criminal justice system, is ineffective (McGuire, 1995). Punishment can be an effective method of behavior change, but only when a series of conditions are met. For best results, punishment should inevitably follow the undesired behavior, should occur immediately after the undesired behavior, should be understood in relation to the behavior that brought the punishment about, should be at maximum intensity, and other responses, in place of the unwanted behavior, should be reinforced (Barker, 1994; Grant & Evans, 1994). As McGuire (1995) points out, none of the conditions that foster behavior change through punishment are adequately met in the criminal justice system. Many crimes go undetected and some law-breakers are not

punished. When punishment does occur, it is typically weeks or months after the offending behavior. To many offenders, responses of the criminal justice system are hardly comprehensible. For obvious reasons, punishment cannot be used at its utmost severity in every case. And for many offenders, society provides and the offender him/herself can conceive of few alternative behaviors that can secure the rewards for which their offending behavior is committed.

Incarceration is a form of punishment that yields particularly high recidivism rates, with large numbers of released prisoners re-offending. The United States Department of Justice conducted one of the most ambitious and comprehensive recidivism studies (Beck & Shipley, 1989). The Department followed 108,580 persons released from prisons in 11 states and found that, within 3 years, 62.5% had been rearrested, 46.8% were re-convicted, and 41.4% had been returned to jail. In Texas, the re-incarceration rate 3 years post release varies from 30.7% to 48.7% (Criminal Justice Policy Council, 2000). A recent meta-analysis by Gendreau, Goggin, and Cullen (1999) indicates that even when the risk level of offenders is taken into account, those sent to prison have a higher rate of recidivism than those given community sanctions. Further, it appears that longer prison sentences are associated with greater criminal involvement and higher recidivism rates, as offenders in Gendreau and colleagues' (1999) "more imprisonment" category had a recidivism rate three percentage points higher than those in the "less imprisonment" category.

Besides its seeming ineffectiveness in reducing recidivism, keeping offenders in prison is expensive and conditions are overcrowded (Bonta & Motiuk, 1992). The prison

population has increased six-fold in three decades without adequate new prison construction to keep pace with this population increase (Gilliard, 1999; Petersilia, 1990). Maintaining a prisoner costs about \$20,000 per year per prisoner, and the federal prison system budget has grown 144.9% just since 1989 (Probation & Parole, 2000). In addition to the staggering drain of monetary resources, criminal acts dismantle social and individual welfare, resulting in destruction of property, proliferation of drug use, lost productivity, loss of life, and immeasurable pain and suffering for victims and their families.

Community Supervision Approaches

As costs escalate to maintain offenders in jails and prisons, and as it is becoming clear that incarceration is ineffective in reducing offense behavior (Beck & Shipley, 1983; Gendreau et al., 1999, McGuire, 1995), the criminal justice system is turning to community supervision (probation) when possible (Rylander, 2000). Indeed, the probation population is growing at about 3% per year (Bureau of Justice Statistics, 1997). Community supervision is far less expensive than incarceration, and thus is being relied upon more often, increasing the demands on probation departments (Rylander, 2000). The goal of probation is to provide an alternative to traditional prison incarceration by supervising criminal offenders in their communities, with the objectives to protect the community, to enforce the order of the court, and to provide rehabilitation services (Dallas County Community Supervision and Corrections Department, 2001). Some states largely use punitive measures with probationers to protect and enforce, such as electronic monitoring, curfews, restitution centers, boot camp, and fines (Petersilia,

1990). Other states may use these measures less frequently and to a lesser extent, and also focus on rehabilitative efforts such as vocational training, education, and substance abuse treatment.

The early 1990s witnessed a trend toward stricter sanctions and more intensive supervision (Gendreau, Paparozzi, Little & Goddard, 1993). Although some research and support for rehabilitative programs, especially cognitive-behavioral oriented programs, has emerged over the past ten years (Taymans & Jurich, 2000), the U.S. continues to spend money to increase community sanctions for probationers. In hopes of relieving prison overcrowding, many jurisdictions have developed “intensive supervision programs,” largely punitive in nature (Petersilia, 1990). The expectation is that more intensive and retributive probation conditions will affect pro-social conformity (Gendreau, Goggin, & Fulton, 1994). In fact, the opposite is occurring. Harsher sanctions can increase the number of technical violations (violations of probation conditions that do not involve breaking the law) and lead to higher rates of incarceration (Gendreau, Cullen & Bonta, 1994; Gendreau et al., 1993). A study by Petersilia and Turner (1993) evaluated the implementation of intensive supervision programs in 14 jurisdictions across 9 states and found no evidence that intensive supervision had an impact on any aspect of recidivism. The only significant relationship between intervention and recidivism was between levels of participation in drug or alcohol counseling and employment and restitution programs, with a 10-20% reduction in recidivism. Thus, the only positive finding was linked to some form of *treatment* for offenders, not to punishment. Although rehabilitative programming, when offered,

provides offenders with some additional skills, it does not consistently focus on changing the attitudes and thinking that have been demonstrated to foster criminal behavior (e.g., Gendreau, Andrews, Goggin & Chanteloupe, 1992; Granic & Butler, 1998; Simourd & Andrews, 1994). When programs do contain a “cognitive” component, there is markedly reduced recidivism compared to those that do not (Izzo & Ross, 1990; Ross, Fabiano, & Ewles, 1988). Still, such programs are not a routine part of offender services. A recent report by the Reinventing Probation Council (1999) states that the current probation system is failing to ensure public safety, and that more comprehensive programs should be offered. Certainly, there is a great need for non-punitive, empirically validated treatments and strategies to reduce criminal activity and keep communities safe.

The Measurement of Recidivism

Recidivism incidence and rates are consistently used as markers of success or failure in managing and rehabilitating offenders. Recidivism is measured in many different ways, but is basically an indicator of continued law-breaking, ranging from committing a new offense to non-compliance with probation or parole conditions. Canadian research shows that 33%-45% of probationers are re-convicted within 2 years (Andrews & Bonta 1994), and available U.S. estimates reveal similar recidivism rates among probationers of about 30% to 50% (Criminal Justice Policy Council, 2001). Statistics on recidivism rates vary considerably because the absolute level of recidivism within any sample depends upon the specific measure of recidivism employed: new offense charges, conviction, incarceration, or technical violation (Andrews & Bonta, 1994). Further variation in, and confusion about, recidivism rates is created by the fact

that some numbers cited refer to system rates, such as probation and parole violation rates and community crime rates, while others refer to specific changes in criminal behavior, such as free time in the community, reduction in minor arrests, and seriousness of offense committed (Lipton et al., 1975). However recidivism is measured, developing and implementing strategies to successfully rehabilitate offenders is a fledgling and controversial enterprise that has always been difficult.

The treatment of offender populations, and the efficacy research thereof, has been fraught with methodological confusion and divisive debate. Kirby (1954) classified “treatment” of offenders as follows: probation and parole, institution-based, capital punishment, psychotherapy, and non-institutional. As Andrews and Bonta (1994) point out, these are merely broad descriptions of the structures within which services are delivered, as opposed to descriptions of the content and processes of service. Thus, the stage was set for a continuing problem in the literature on the effectiveness of correctional treatment. Historically, there has been little distinction between the setting variables and the clinical aspects of service that occur within those settings. When clinical aspects of service are addressed, the “programs” are ill-defined, often described in loose, overlapping, and incompatible ways (McGuire, 2000). The same program can be conceptualized in different terms depending on which aspect of it is highlighted. Also, reviewers develop their own classification systems when grouping programs together to compare effect sizes (quantifying the difference between two groups), making it difficult to sort out results. Further, the findings can be very complex, showing reduced recidivism under some circumstances but not others, such that providing answers about

what works is a daunting task. Moreover, the fact that corrections strategies involve both punitive and rehabilitative measures, often in ideological opposition, has fostered some broad-brushed approaches and has thwarted research in the past.

The “What Works” Debate

Before the 1970s, the notion of rehabilitation for offenders was widely accepted and reigned as the dominant correctional philosophy (McGuire, 1995). Then, in the early 1970s, the notion of offender rehabilitation fell precipitously out of favor. As Cullen and Gendreau (2000) explain, the larger disruptions in American society in this era prompted a general critique of “State run” criminal justice. Rehabilitation was blamed by liberals for allowing the State to act coercively against offenders and was alternately censured by conservatives for allowing the state to act too leniently. In a much publicized and influential article by Robert Martinson in 1974, the conclusion was drawn that “nothing works” to rehabilitate criminal offenders. He believed there was a “radical flaw in our present strategies—that education at its best, or that psychotherapy at its best, cannot overcome, or even appreciably reduce, the powerful tendency for offenders to continue in criminal behavior” (Martinson, 1974, p. 49). Writing at about the same time, Lipton and colleagues (1975) in the United States, and Brody (1976) in the United Kingdom reached a similar consensus of pessimism. Their message was welcomed by a receptive audience of politicians and policy makers, and the 1970s and 1980s saw a return to hard sentencing and the predominance of punishment (Andrews, Zinger, Hoge, Bonta, & Gendreau, 1990).

As many have proposed, conclusions that “nothing works” certainly may be drawn from studies of sanctioned punishment, but not from the effects of rehabilitative services (Andrews & Bonta, 1994; Andrews et al., 1990, Gendreau & Ross, 1987). Gendreau and Ross (1980) compiled a ‘bibliotherapy for cynics’ that reported positive outcomes with methods such as behavioral and skills training sessions, family crisis intervention strategies, interpersonal problem-solving skills training, behavioral role playing, “anti-criminal modeling,” cognitively-oriented youth counseling programs, and various system diversion programs, among others. Further, many of the studies indicating that “nothing works” were methodologically flawed (McGuire, 1995). For example, a study by Thorton (1987) reinvestigated the selection of studies by Lipton and colleagues (1975), and discovered that almost 50% of the results demonstrated positive advantage for therapeutic intervention. Through meta-analyses of adequately designed studies, investigations suggest that unequivocal evidence exists that rehabilitative programs do have a positive effect in reducing recidivism (McGuire, 1995). One of the largest of such investigations, involving 397 outcome studies, was by Lipsey (1992a), who showed that 64.5% of the experiments he examined showed positive effects of “treatment” in reducing recidivism by 10%-12%. In fact, every meta-analysis of offender treatment indicates that treatment programs, in the aggregate, reduce problem behavior (Cullen & Gendreau, 2001). Effect sizes are small, but appreciable. Since the early 1990s, armed with such findings, there has been a resurgence of the “rehabilitative ideal,” though it has been met with some resistance and pessimism (e.g., Pitts, 1992; Whitehead & Lab, 1989). Despite an accumulation of evidence that contradicts it, the belief that

intervention is unlikely to be effective is still at the core of thinking among many in the criminal justice field (Taymans & Parese, 1997). Nevertheless, many have labored to turn the “nothing works” argument into a “what works” debate.

There has long been a “soft-hard” polarity in the criminal justice debate, with those in the “soft” camp characterized as liberal, idealistic and lenient, while those “hard” on crime are depicted as tough, realistic, and just, constructs that have great public appeal (McGuire, 1995). While this perceived dichotomy raises philosophical questions concerning the nature of justice and social order that are beyond the scope of this paper, research suggests that the “soft-hard” dimension is simply not a useful conceptualization of criminal justice. The dispute remains contentious and continuous, however, because it reflects deeply felt political ideologies about what *should* be done to those who commit crimes, rather than what is most efficacious (Cullen & Gendreau, 2001). Regardless of one’s ethics, values, or political persuasion, if the ultimate goal is to reduce criminal behavior, then the evidence thus far demonstrates that strategy should focus on neither punishment nor leniency, but on taking constructive action of specific kinds (McGuire, 1995).

To date, the most promising interventions involve the use of behavioral, cognitive, and social learning principles of interpersonal influence, skill enhancement, and cognitive change (Andrews et al., 1990; Andrews & Bonta, 1994). An oft cited meta-analytic review by Andrews, Zinger, Hoge, Bonta, Gendreau and Cullen (1990) reports that, specifically, approaches that focus on changing antisocial attitudes, feelings, and peer associations, promoting identification with anti-criminal role models, and skills

training in self-control and self management have been helpful in reducing criminality. They also offer that pro-social skills training, taught through role-playing, rehearsal, and reinforcement, to replace antisocial skills (lying, stealing, aggression) is effective. Teaching and practicing problem-solving skills, evaluating maladaptive thoughts and replacing them with more adaptive and accurate ones are also approaches that seem to positively impact offender populations. The above listed interventions are also touted by many other reviewers and investigators (e.g., Fabiano, Porporino, & Ross, 1991; Kirkpatrick, 1996; Proportion, Fabian, & Robinson, 2000; Taymans & Jurich, 2000; Taymans & Parese, 1997; Wilson, 2000). It is noteworthy that the majority of such research has been conducted with juveniles; although research suggests that these approaches are effective with adults, there are far fewer studies investigating interventions with adult offenders.

Human Service Based Interventions

The evidence is overwhelming—human service-based interventions reduce criminal recidivism; punishment does not (Andrews et al., 1990; Brown, 2001). Recently synthesized findings based on over 500 hundred studies spanning 50 years indicate that any kind of human service based treatment reduces recidivism on average about 10% (Andrews, Dowden, & Gendreau, 2000; Losel, 1995). Moreover, treatment approaches that follow empirically validated principles of effective intervention yield substantially higher reductions ranging from 26% to 40% (Brown, 2000). Those programs that achieve the greatest reductions in recidivism use cognitive-behavioral treatments, target

known predictors of crime for change, and intervene mainly with high-risk offenders (Cullen & Gendreau, 2000).

Human service-based interventions are also less expensive in the long run than punitive measures. A recent meta-analytic review analyzed 108 correctional treatment outcome studies from a cost-benefit perspective (Aos, Phipps, Barnoski, & Lieb, 1999). The review demonstrated that every dollar spent on human service oriented interventions such as education, skills training, and counseling programs save taxpayers and victims \$5.00 to \$7.00, on average, while punishment-oriented interventions yield returns of only .50 to .75 cents for every program dollar spent. The efficiency literature reports that adult cognitive-behavioral treatment programs can be particularly cost-effective, generating economic returns ranging from \$2.54 to \$11.48 for every invested program dollar (*ibid*).

Despite the evidence for effective rehabilitative services, punishment-based strategies prevail and “get tough” mantras proliferate, irrespective of spiraling costs and the demonstrated ineffectiveness of punitive approaches (Gendreau, Goggin, Cullen, & Andrews, 2001). Punishment-based strategies are what the public supports. As Billie J. Erwin (1986) so emphatically put it when referring to Georgia’s intensive supervision programming, considered by many to be a model for the United States: “...We are in the business of increasing the heat on probationers...satisfying the public’s demand for just punishment...Criminals must be punished for their misdeeds.” Partly because of such sentiments driving public policy and the allocation of government funds, there is a paucity of research in the U.S. on non-punitive offender treatments. However, surveys

demonstrate that Americans do not want a correctional system whose only aim is to mete out punishment or to warehouse offenders (Applegate, Cullen, & Fisher, 1997).

Criminal Risk Factors

As it is clear that treatment reduces recidivism more effectively than does punishment, the logical next questions are who can profit most from treatment, what are the appropriate targets for change, and how should treatment be delivered? Services should target those factors that put one at risk for criminal behavior and are predictive of recidivism (Andrews, 1995). The “risk principle” suggests that higher levels of service should be allocated to the higher risk cases. Indeed, there is much evidence to suggest that higher risk cases respond better to treatment than do lower risk cases; more intensive supervision actually increases recidivism with lower-risk cases (Andrews, 1989; Gendreau, Goggin & Fulton, 2000). Longitudinal studies suggest several risk factors for criminal behavior. In fact, the largest body of well-established research findings in criminology is that devoted to the prediction of criminal behavior (Andrews, 1989). There is consensus in the research literature that individuals vary in their criminal past and their criminal future on a number of situational, circumstantial, personal, interpersonal, familial, cultural, and economic factors (Andrews, 1989). The best established risk factors may be assigned to a major set and a minor set of contributors, according to the magnitude of their correlation with criminal behavior (Andrews & Bonta, 1994). Listed in order of significance, the major set includes:

- 1) Antisocial/pro-criminal attitudes, values, beliefs, and cognitive-emotional states
(i.e., personal cognitive supports for crime)

- 2) Pro-criminal associates and isolation from anti-criminal others (i.e. interpersonal supports for crime)
- 3) Temperamental and personality factors conducive to criminal activity (including psychopathy, weak socialization, impulsivity, restless aggressive energy, egocentrism, below average verbal intelligence, a taste for risk, and weak problem-solving/self regulation skills)
- 4) A history of antisocial behavior evident at an early age, in a variety of settings and involving a number and variety of different acts
- 5) Familial factors that include criminality and a variety of psychological problems in the family of origin including: low levels of affection, caring and cohesiveness, poor parental supervision and discipline practices, outright neglect and abuse
- 6) Low levels of personal educational, vocational, or financial achievement and, in particular, an unstable employment record.

The minor set of risk/need factors include the following: 1) Lower class origins as assessed by adverse neighborhood conditions and indices of parental education/occupation/income; 2) Personal distress; 3) biological/neuropsychological indicators (Andrews & Bonta, 1994).

Criminogenic Needs

Also important in implementing effective treatment is the “need principle,” asserting that treatment services best target those characteristics of higher risk individuals and their circumstances that, when changed, actually link with variation in criminal conduct (Andrews, 1995). In other words, the criminogenic needs of offenders should be

targeted. For example, as Don Andrews (1989, p.8) suggests, “If recidivism reflects antisocial thinking, don’t target self-esteem, target antisocial thinking; if recidivism reflects difficulties in keeping a job, don’t target getting a job, target keeping a job.” The quality and depth of the research regarding criminogenic need factors is not as impressive as that of criminogenic risk factors. Nevertheless, some promising intermediate targets for rehabilitative programming have emerged (Andrews, 1989; Andrews & Bonta, 1994). These include the following: changing antisocial attitudes; changing antisocial feelings; reducing antisocial peer associations; promoting identification/association with anti-criminal role models; promoting familial affection/communication; promoting familial monitoring and supervision; increasing self-control and self-management skills; increasing problem-solving skills; teaching pro-social alternatives to antisocial behaviors; reducing chemical dependencies; providing the chronically psychiatrically ill with supportive living arrangements; shifting the density of the personal, interpersonal, and other rewards and costs for criminal and non-criminal activities such that non-criminal activities are favored; ensuring that the offender is able to recognize risky situations and has a concrete and well rehearsed plan for dealing with those situations. Treatment programs tend to fare better when addressing the above listed factors, and some have suggested that failure to alter criminal behavior results when offenders are not properly matched to the treatment utilized (Gendreau & Ross, 1980).

Pro-Criminal Attitudes

Research consistently finds that pro-criminal attitudes are a major predictor of future criminal behavior (Andrews, 1995). A content and meta-analysis of 372 studies

indicates that pro-criminal attitudes are one of the strongest correlates (.22) of criminal risk, slightly stronger than temperament/personality factors and parental/family factors, and much stronger than educational/vocational achievement or degree of personal distress (Gendreau, Andrews, Goggin & Chanteloupe, 1992). Using similar procedures, Simourd and Andrews (1994) reviewed the correlates of criminal conduct among juveniles and found antisocial peers/attitudes to be the highest correlate of criminal activity (.39). It should be noted that both reviews found no significant gender differences on either the ranking or the magnitude of the association across risk domains. Gendreau, Little, and Groggin (1996) also evaluated the contribution of antisocial attitudes to criminal behavior by conducting a meta-analysis of 133 criminal prediction studies. They found that criminogenic need, which includes antisocial attitudes, was the most useful predictor of recidivism. Overall, the results provide compelling evidence of the centrality of criminal attitudes to criminal conduct.

Attitudes are also productive targets for intervention, with changes in values and beliefs resulting in marked changes in behavior (Krosnick, 1988). A study by Wormith (1983) found a reduction in the endorsement of criminal sentiments following a 10-week group program giving offenders an opportunity to identify with community volunteers. A recent meta-analysis by Dowden (1998) found that when antisocial attitudes were targeted for change in treatment, there was a positive correlation with reduction in recidivism ($r = .23$). Often, however, offender attitude change is not translated into appropriate behavior change. Social inadequacy, impulsivity, limited self-control and problem solving skills may sabotage an offender's pro-social intentions, making attitude

change alone an insufficient treatment goal (Wormith, 1984). Still, there is much evidence that criminal attitudes play a large role in deviant behavior. Despite this, in general, pro-social and antisocial attitudinal constructs have not been used consistently in the mainstream assessment and treatment of offenders. (Law, 1998). Some argue that one reason for this is a relative lack of suitable assessment instruments to measure criminal attitudes (Simourd & Van de Ven, 1999).

Just what is meant by “antisocial attitudes,” “criminal attitudes,” and “pro-criminal sentiments?” In the literature, these terms are used interchangeably, and generally connote the attitudes, values, beliefs, and rationalizations supportive of criminal conduct. More broadly, Allport’s (1935) definition of attitudes is generally accepted, and describes attitudes as a relatively stable pattern of beliefs, feelings, and behavior tendencies toward an object. Antisocial attitudes, specifically, are those beliefs and values conducive to criminal behavior and rejecting of pro-social values. Criminal sentiments have also been explained as the internalization of pro-criminal norms and the failure to internalize the rules and values basic to socialization (Wormith & Andrews, 1984). Pro-criminal attitudes and antisocial beliefs have been characterized by distrust of authority figures (e.g., police, judges), perceptions of the world as hostile and unsafe, endorsement of aggressive solutions, and identification with criminal peers (Granic & Butler, 1998). In young offenders, antisocial attitudes have been shown to be characterized by tolerance of deviant acts (Jurkovic, 1980), rejection of the validity of laws (Andrews, Leschied & Hoge, 1992), and a belief that deviant behavior will be materially rewarded (Perry, Perry & Rasmussen, 1986). Bush (1995) suggests that there

is an “antisocial logic” commonly found among offenders that is based on thinking of oneself as a victim, leading to an accusatory and entitled stance toward whoever is responsible, giving oneself license to do as one pleases. As offenders give themselves the right to do as they please, any interference (e.g., law enforcement, social controls) is by definition unfair and victimizing, warranting further defiance.

Persons with antisocial attitudes facilely justify the crimes they commit by employing such criminal logic, allowing them to believe their actions are right and justifiable and absolving them from responsibility for their behavior (Taymons & Parese, 1997). Bandura, Barbaranelli, Caprara, and Pastorelli (1996) describe four types of moral disengagement mechanisms commonly employed to justify harmful behaviors: reconstructing harmful conduct to make it seem justified, misrepresenting injurious consequences, vilifying victims, and obscuring personal responsibility. Gibbs, Potter and Goldstein (1995) demonstrate that criminal attitudes routinely contain four categories of thinking errors: egocentrism, assuming the worst, externalization, and minimizing/mislabeling. Several studies have demonstrated that delinquent and aggressive youth demonstrate a hostile attributional bias. That is, they tend to attribute hostile intent to others, especially when social cues are ambiguous (e.g., Dodge, Price Bachorowski & Newman, 1990; Dodge & Coie, 1987).

Yochelson and Samenow (1976, 1977) were among the first to recognize that offenders and non-offenders differ in their thinking style. They argued that there are 52 specific thoughts that distinguish the two groups, and that intervention should focus on changing these deviant cognitions. Although there is little empirical evidence to support

their claim, their work was instrumental in the development of other cognitive interventions that do show empirical links between criminal thinking and criminal behavior (e.g., Bush & Bilodeau, 1993; Henning & Frueh, 1996; Ross, Fabiano, & Ewles, 1998). While it is clear that criminal attitudes play a proximal role in criminal behavior, debate exists over the causal mechanisms of this relationship (Simourd, 1997). One of the more recent theoretical specifications of this relationship is the theory of reasoned action (Ajzen & Fishbein, 1980). This theory assumes that people are rational, information-processing beings who usually consider the implications of their actions before deciding whether or not to engage in a behavior. It contends that behavioral “intention,” the subjective estimate of the probability of engaging in a behavior, is the most immediate antecedent to behavior. Embedded within the theory of reasoned action, criminal attitudes may be functionally represented as the “attitude toward behavior” and “subjective norm” components that are the immediate antecedents to behavioral intention. Thus, criminal attitudes represent a combination of the individual’s favorable/unfavorable evaluation of performing a criminal act and his or her perception of the relevant social pressures to perform or not perform the act (Simourd, 1997). Therefore, helping an offender evaluate and change his/her thinking about, and evaluation of, deviancy theoretically may impact his/her behavioral intention and, therefore, action. Approaches aimed to change delinquent behaviors must then focus on changing attitudes and beliefs about effective behaviors and on developing skills that can actually elicit and sustain socially acceptable behaviors (Taymans & Jurich, 2000).

Social Problem-Solving Skills

Another deficit in many offenders, and a known risk factor for criminal behavior is lack of adequate problem-solving skills, particularly interpersonal/social problem solving skills. The term *social problem solving* refers to problem solving as it occurs in the real world, and is a basic skill needed to resolve conflict and negotiate problematic situations to a safe and satisfactory end (D’Zurilla & Maydeau-Olivares, 1995). A *problem*, as defined by D’Zurilla and Maydeu-Olivares (1995), is a life situation in which no effective or adaptive coping response is immediately apparent or available to the individual, thus requiring problem-solving behavior. Problem solving is a multi-step process involving self-instruction for systematically approaching, assessing, and solving problems (D’Zurilla & Goldfried, 1971; Goldstein, 1988; Spivak & Shure, 1972, Taymans & Parese, 1997). In this framework, social incompetence and misbehavior is conceptualized primarily as a cognitive deficit that can be remedied through emphasis on the process of problem solving. The individual is expected to learn a generic sequence of problem-solving steps and then apply this sequence to a variety of social situations (Coleman et al., 1993).

The problem-solving process is a well-studied cognitive-behavioral skill. Successful problem solving is generally described in a series of steps, summarized by Taymans and Parese (1997). First, one must recognize that a problem exists, either through external cues (e.g., others’ facial expressions, tone of voice) or internal cues (one’s thoughts, emotions). Larsen (1988) reported that juvenile offenders do not attend to internal cues efficiently, leading to trouble. Taymans and Parese (1997) suggest teaching offenders to recognize and use internal and external warning signs as stimuli for

self-talk. In this way, they can better manage their negative thoughts and emotions in order to engage in the other problem-solving steps. Secondly, one must define the problem in objective terms and identify a realistic goal. Then, one should attempt to generate a variety of solutions, a step that some argue is the most critical problem-solving skill (e.g. Spiback & Shure, 1974). Some groups may have particular difficulty generating viable pro-social options (Taymans & Parese, 1997). Once solutions have been generated, each must be evaluated and a solution selected that both will not make the problem worse and that the problem solver has the competence to enact. One then makes a plan to enact the solution and, finally, evaluate the outcome. As Taymans and Parese advocate (1997), whether the solution works or not, evaluating the outcome is potentially a powerful learning tool for self-reflection, if one is taught how to do so. Thus, in interpersonal problem-solving training, the *process* of solving problems is emphasized (Coleman, Wheeler, & Webber, 1993).

Research suggests that aggressive and withdrawn individuals of all ages often lack the ability to think through events and find socially acceptable behaviors to choose before acting (Brochin & Wasik, 1992; D’Zurilla & Sheedy, 1992; Joffe, Dobson, Fine, Marriage, & Haley, 1990; Yoman & Edelstein, 1993). Offenders have been found to be less skillful in social problem solving than non-adjudicated persons, and many offenders have difficulty with most components of successful problem solving (Larsen, 1988; Ross & Ross, 1989). For example, poor problem solvers perceive fewer options available to them and tend to engage in rigid thinking (Taymons & Parese, 1997). Other skills that offenders lack or use ineffectively have been found to be: recognizing the potential for

problems in various interactions, controlling first impulses, taking another's perspective, clarifying the problem, setting appropriate goals, conceptualizing the means to reach their goals, generating alternative solutions, anticipating the cause-effect relationship between their actions and other people's behavior, and adjusting behavior by using feedback (Larsen, 1983; Ross & Fabiano, 1985; Ross et al, 1988; Spivack, Platt, & Shure, 1976). These deficiencies increase the likelihood of producing unsuccessful, inappropriate, or frankly antisocial solutions in problem situations and is associated with career criminal behavior and recidivism (Kennedy, 1984; Ross & Fabiano, 1985). Platt (1987) reported that interpersonal problem-solving scores, specifically means-end thinking and alternative thinking, related significantly to parole success or failure following discharge from a correctional facility. Andrews and Bonta (1994) maintain that it is how the offender problem solves and self-regulates, not just what he or she thinks (i.e., having antisocial attitudes) that crucially sways criminal behavior. Some have even suggested that offenders "don't think," in that many tend to be action-oriented, non-reflective and impulsive, suggesting a deficit or relative lack of a problem solving process, rather than a faulty one (Ross, Fabiano, & Ross, 1988). Some argue that many offenders persist in criminal behavior not because of psychopathology, but because they have not acquired an adequate repertoire of the reasoning and problem-solving skills (Ross, Fabiano, & Ross, 1988).

There is evidence that the deficient problem-solving skills observed in offenders can be remediated, resulting in less problematic behavior. Hains and Hains (1987) found that teaching social problem solving and self-evaluation skills to institutionalized

delinquent adolescents yielded improved problem solving ability, generalization of the acquired problem solving strategies to situations outside the lab, and maintenance of skills at a three-week follow-up. A study by Larsen and Gerber (1987) tested the efficacy of teaching social problem solving skills to youthful incarcerated offenders. Those receiving the problem solving training showed significant improvements in quantity of negative behavior reports, staff ratings, and institutional living phase promotions compared to a no treatment control group and to a group receiving employability/values clarification training. However, the longevity and generalizability of social problem solving training effects are more equivocal. As Lochman (1992) found at a three-year follow-up evaluation of a cognitive behavioral intervention with aggressive boys, many of the gains achieved by problem-solving instruction were not found long-term. A meta-analysis of interpersonal problem-solving programs indicates that researchers are more successful in demonstrating gains with lengthier treatments and younger subjects (Denham & Almeida, 1987). Further, a review article of interpersonal problem-solving training in educational settings (Coleman, Wheeler, & Webber, 1993) indicates that although researchers are successful in demonstrating cognitive gains, they are less successful in demonstrating that these gains are subsequently applied to behavior or that they generalize to other social behavior. Some do provide positive findings, however, particularly with offenders, such as Larsen's (1987) study. This investigation compared matched pairs of parolees randomly assigned to receive problem solving classes or no treatment control and found that 30% of those receiving the training were recommitted compared to 80% of the control group.

Social Skills

An interrelated construct and prerequisite for adequate social problem solving, according to a number of researchers, is basic social skills (Foster & Ritchey, 1979; Spivack & Shure, 1974). Indeed, research clearly indicates that youth who are not socially competent have demonstrated deficiencies in various interpersonal problem-solving skills compared to socially competent peers (Larsen, 1988; Rickel & Burgio, 1982). Spivack, Platt and Shure (1976) report that, compared to normal peers and when IQ and verbal fluency are held constant, socially maladjusted populations of all ages are consistently found to be deficient in social problem solving skills. The professional literature provides a variety of overlapping definitions of social skills, but typically describe them as socially accepted behaviors that enable one to interact with others to obtain desirable outcomes and avoid undesirable ones (Riggio, 1986; Verduyn, Lord, & Forrest, 1990). In order to enact these socially acceptable behaviors, one must be able to recognize and respond to others' needs, feelings, and ideas (Bush, Glick & Taymans, 1997). Cartledge and Milburn (1996) define some common elements of most social skills definitions: that social skills are learned, acceptable, goal-directed, situation-specific behaviors to elicit positive, desirable responses from others. A number of different social skills "typologies" have been identified. For example, Elliott and Gresham (1993) partition social skills into types of response classes: cooperation, assertion, responsibility, empathy, and self-control. Goldstein (1987) and Goldstein and Glick (1988) have developed a well-recognized list of social skills organized into six groups: beginning social skills; advanced social skills; skills for dealing with feelings; skill alternatives to

aggression; skills for dealing with stress; and planning skills. Among children and adolescents, Goldstein and Glick (1987) note that social skill performance represents one reliable dimension that distinguishes delinquents from non-delinquents. Research also suggests that many offenders of all ages lack an adequate repertoire of socially acceptable responses, and it supports that pro-social skill deficiencies are an antecedent to and correlate of antisocial behavior (Freedman, Rosenthal, Donahoe, Schlundt & McFall, 1979; Taymans & Parese, 1997).

As described by Ross et al. (1988), many offenders have not progressed beyond an ego-centric stage of development; they do not readily distinguish between their own emotional states and the thoughts, feelings, and views of others. Lacking the ability to take the perspective of others, they misread social expectations and misinterpret the actions and intentions of others. That aggressive and delinquent individuals harbor a hostile attributional bias has been well documented (e.g., Dodge, Price, Bachorowski, & Newman, 1990; Steinberg & Dodge, 1983). Such misunderstanding and lack of awareness of others in some offenders impairs their ability to form good relationships and prevents them from developing appropriate means to deal with interpersonal problems. Indeed, delinquency has been associated with a lack of perspective-taking of others (Hogan & Jones, 1983; Claster, 1967). For some offenders, improving the ability to put oneself in another's shoes (referred to as empathy training), is often seen as a key to reducing the likelihood of offending against others (Mulloy, Smiley, & Mawson, 2000).

Although there are few studies specifically investigating social skills in offenders, there is some evidence that interventions designed to enhance interpersonal effectiveness

and empathy improve social skills and have some preventative impact on delinquency. Caplan, Weissberg, Grober, Sivo, Grady, and Jacoby (1992) found that a 20-session, structured psychoeducational program providing training in social competence improved conflict resolution ability, problem-solving efficacy, and decreased substance abuse compared to a control group who did not receive the intervention. Intensive empathy training with violent offenders (Motiuk, Smiley, & Blanchette, 1996) and with sex offenders (Mulloy & Smiley, 1996) is associated with a reduced incidence of offenses at follow-up. In fact, social skills training is one of the most frequently included and essential components of successful treatment for sex offenders (McFall, 1990). Social skills training also may decrease recidivism rates for violent offenders. Pre-prison release courses based mainly on social skills training have yielded reduced rates of subsequent reconviction for violence (Priestly, McGuire, Flegg, Hemsley, Welham & Barnitt, 1984).

Most social skills training programs conceptualize behavioral problems as a skills deficit (with less focus on cognitive deficits), and they attempt to remedy it through teaching a number of behaviorally defined social skills through social learning techniques (Coleman et al., 1993; Goldstein, Glick, Reiner, Zimmerman, Coultry & Gold, 1986). Research supports direct and explicit instruction, modeling, teacher-guided practice, role-playing, rehearsal, and extensive feedback as effective methods for social skills training (Taymans & Parese, 1997; Verduyn, Lord, & Forrest, 1990; McGuire, 1995). With offender populations, social skills training often focuses on how to handle problematic or “risky” situations, such as responding to the complaints, anger, demands, or accusations

of others (Goldstein et al., 1986). Most developers of social skills training programs suggest that a specific skill should be introduced, modeled by the trainer, practiced in role-plays until it becomes well-rehearsed and “over-learned” with the trainee receiving feedback, re-instruction, and reinforcements and undertaking assignments to transfer the skill to real-world situations (Suagi, & Lewis, 1996; Goldstein et al. 1986; Taymans & Parese, 1997).

The “Responsivity Principle”

As antisocial attitudes, poor problem solving, and lack of pro-social skills clearly are associated with, and constitute risk factors for, criminal behavior, the next question involves one of treatment approach. Which human service based approach is most efficacious? Despite much concern about criminal behavior, the literature describing effective treatment efforts is relatively small. Most researchers in the corrections field argue for use of the “responsivity principle:” using only those modes of service that work for offender populations in particular, and matching treatment modality and delivery to the client’s needs. Thus, offenders should be assigned to those interventions that are most able to meet *their* needs and styles of learning, rather than to treatments that seem to work with other populations or that simply suit the systems providing the treatment (Andrews, 1989; Andrews, Bonta, & Hoge, 1990; Van Vorrhis & Spencer).

There is stronger consensus in the literature concerning which approaches do not work with offenders, rather than those that do. Traditional psychodynamic and nondirective client-centered modes of psychotherapy and social casework have not proved effective at reducing antisocial behavior or decreasing criminality (Serin &

Preston, 2001; Andrews, Bonta & Hoge, 1990). Also ineffective in reducing recidivism rates are treatments aimed at increasing self-esteem without addressing antisocial propensity, increasing the cohesiveness of antisocial peer groups, improving neighborhood living conditions without focused work with high-risk families, and attempts to focus on vague personal and emotional problems (Andrews et al. 1990). Approaches that are relationship-dependent or rely on self-reflection are also ineffective (Andrews, 1995).

There is growing consensus among researchers that most offenders require active, participatory methods of treatment, rather than either a didactic or unstructured experiential mode (McGuire, 1995). There is a trend toward standardization and manualization of the procedures to be followed in programs for offenders (McGuire, 2000). Further, more effective interventions are characterized as multi-modal (addressing a variety of offenders' problems), skills-oriented (i.e., designed to teach offenders problem-solving, social interaction or other coping skills), and drawn from behavioral, cognitive, or cognitive behavioral sources (McGuire, 1995). Antonowicz and Ross (1993) found that the following six factors are related to efficacy in offender rehabilitation: 1) a sound conceptual model; 2) multifaceted programming; 3) the targeting of criminogenic risks/needs; 4) the "responsivity principle;" 5) role playing and modeling; 6) social cognitive skill training. To date, the most rigorous investigations suggest that structured cognitive-behavioral programs show the most promise in remediating offender behavior (Wilson, Allen, & MacKenzie, 2000).

Cognitive Behavior Therapy

Cognitive behavioral therapies represent a broad category of clinical intervention that target an individual's thinking, as they are informed by the assumption that cognitions govern mood and behavior, with changes in thinking leading to changes in behavior, feelings, and the underlying beliefs upon which they are based (Beck, 1976; Ellis, 1962). According to Dobson and Khatri (2000), the common element of cognitive behavioral approaches is, "...an emphasis on broad human change, but with a clear emphasis on demonstrable, behavioral outcomes achieved primarily through changes in the way an individual perceives, reflects upon, and, in general, thinks about his/her life circumstances" (p.908). Cognitive behavioral approaches are designed to help people become aware of and positively change those thought process that lead to maladaptive behaviors and interfere with successful attainment of personal goals (Meichenbaum, 1977).

Cognitive behavioral therapies used with correctional populations have been conceptualized as cognitive restructuring, coping-skills, or problem-solving therapies (Wilson et al., 2000), and some (e.g., Taymans & Parese, 1997) include the latter two under the rubric of cognitive skills training. Cognitive restructuring therapies view problems in living as a consequence of maladaptive, dysfunctional thought processes. These include cognitive distortions, misperceptions of interpersonal interactions, and faulty logic. Cognitive restructuring, also referred to as cognitive self-change, addresses the content of offenders' thinking to change the underlying attitudes and beliefs that lead to criminal acts (Taymans & Parese, 1997). These are usually thoughts and values that justify antisocial activities (Gendrea & Cullen, 2000). For example, offenders may

justify the crimes they commit by seeing themselves as a victims and crime as a reasonable response to the perceived injustices. Through cognitive restructuring, an offender would examine this thought, connect it to related emotions and actions, and learn how to intervene and change such risk-related thinking patterns. The coping-skills approach focuses on improving deficits in one's ability to adapt to stressful situations, such as improving interpersonal skills, critical reasoning and planning (Wilson et al., 2000). Skills training techniques tend to focus on identifying and teaching specific behavioral skills (Coleman et al., 1993). Problem-solving approaches teach offenders how to think, problem-solve, and act pro-socially and in a manner that will keep them out of trouble in stressful situations. Most cognitive-behavioral programs for offenders involve some combination of the above-described approaches.

Several studies have examined the efficacy of cognitive behavioral interventions for adult offenders. Wilson and colleagues (2000) reviewed structured cognitive-behavioral programs delivered in a group format in correctional settings. After an exhaustive search, they found that only 20 studies met their criteria of being delivered in a group, following a multi-modal (i.e., addressing several problems) cognitive-behavioral approach, having a control group, excluding sex offenders, reporting a post-program measure, and being reported in English. Sixty-five percent of the studies reviewed were conducted in the late 1990s, increasing their applicability to the current correctional context and offender population. Taken as a whole, the collection of evaluations supports that group cognitive-behavioral treatment approaches are effective at reducing future criminal behavior among offenders, with a mean effect-size for the higher quality studies

at 0.32, considered a moderate size effect (Wilson et al., 2000). Only 2 of the 20 studies observed negative overall effect sizes, both of which were near 0 and of lower quality studies. The practical significance of this is that there was an 8 to 16 percent difference in recidivism rates between treated and untreated groups (Wilson et al., 2000). Lipsey (1992) has argued that even small effects can lead to meaningful reductions in community level criminal behavior when programs are implemented on a large scale. Although the various programs reviewed have different names and place emphasis on different areas (e.g., some on cognitive distortions, others on problem solving skills, others on moral reasoning), all encourage offenders to become more aware of the thought processes that allow or sustain their choice for criminal behavior. What is not yet determinable is the specific element or combination of elements critical for producing the positive effects on reducing criminality (Wilson et al., 2000).

Ross, Fabiano, and Ross (1988) report that a component analysis and meta-analyses reveal that effective programs differ significantly from ineffective programs in terms of their inclusion of techniques that foster the development of the offender's thinking and reasoning skills, their social comprehension, and their problem-solving skills. Another evaluation of effective programs suggests that it is the inclusion of a cognitive component that greatly increases the likelihood of a favorable outcome for deviant populations (Izzo & Ross, 1990). Ross and colleagues (1988) report that, in general, effective programs have emphasized teaching offenders the following: to attend to and critically assess their own thinking; to stop, think and analyze consequences before acting; to reason in a means-end fashion; to understand other people's values; to

recognize how their behavior will affect others; and to develop alternative pro-social ways of reacting to interpersonal conflicts. A synthesis and comparison of various meta-analyses of offender treatment by Losel (1995) offers the more general guidance that cognitive behavioral, skill-oriented, and multi-modal programs seem to yield the best effects, though the best effects are only 0.10 to 0.16.

Individual cognitive-behavioral programs boast some impressive results, however. A program that Ross and Fabiano (1985) developed, *Reasoning and Rehabilitation*, focused on the aforementioned areas and yielded a re-offense rate of only 18.1% among program completers, compared to a 69.5% re-offense rate for untreated offenders at a 9-month follow-up, according to their program evaluation (Ross, Fabiano, & Ewles, 1988). A cognitive behavioral program entitled *Strategies for Thinking Productively* evaluated by Baro (1999) focused on helping the offender “identify key thinking patterns that have led to criminal behavior” and finding “realistic alternatives.” Participants were adult incarcerated offenders and were compared to participants in other prison-based self-help programs such as alcoholics anonymous, religious and cultural programs, and education programs. The difference in 12-month follow-up rates for the number of assaults and misconducts while incarcerated favored the *Strategies for Thinking Productively* participants (effect sizes of 0.45 and 0.24). A cognitive-behavioral approach called *Moral Reconnection Therapy* (MRT), developed by Little and Robinson (1988), aims to improve social, moral, and behavioral deficits in offenders by drawing on Kohlberg’s theory of moral development, and helps participants draw a connection between thought processes and behavior. An evaluation of this approach was conducted

by Little, Robinson, and Burnette (1994). This study allowed for random assignment to treatment and control conditions, and evaluated the effects of MRT for the general offender population in the Shelby County Correctional facility in Memphis, Tennessee. The 5-year recidivism rate for the MRT condition was 41%, compared to 56% for the comparison offenders. Another reportedly successful program is the *Cognitive Self-Change* program (Bush, 1997) instituted in prisons, probation, and parole offices throughout Vermont. The program targets the attitudes, beliefs and thinking patterns that are associated with criminal behavior and teaches offenders to develop skills to control risk-laden thoughts (Bush, 1995). Bush (1995) reported that previously incarcerated offenders who received the *Cognitive Self-Change* program had been tracked and compared with offenders who did not. The 3-year recidivism rates for offenders who participated in the program was 45.5%, compared to a 76.7% recidivism rate for those not exposed to the program (Bush, 1995). The above-described findings are “rosy” indeed. In fact, reviews of the literature have led some to “...the inescapable conclusion that, when it comes to reducing individual offender recidivism, the only game in town is appropriate cognitive-behavioral treatments which embody known principles of effective intervention” (Gendreau et al, 2001).

Variability of Evidence Across Programs

The evidence across programs warrants more moderate enthusiasm, however, as outcomes are encouraging but not compelling, and much more research in the area is still needed. Effective programs are outnumbered by programs that have failed, as Ross and Ross (1989) point out. Even programs deemed a success by some are interpreted as

failures by others. For example, a variation of the *Reasoning and Rehabilitation* program described above, called *Straight Thinking on Probation* (Mid Galmorgan Probation Service, 1991), has been touted by some as having positive effects (e.g., Knott, 1995), but by others who apply stricter evaluative criteria, to have a slightly negative program effect (Wilson et al., 2000). The available differential findings on offender treatment are only partially consistent, and they contain various problems. The categories of analysis are too undifferentiated in some studies, and are often organized in very different ways, such as when measurements of deterrence are included under the rubric of “treatment” in some analyses (e.g., Andrews et al., 1990; Lipsey, 1992), or when the components of a “cognitive” or “cognitive behavioral” intervention are not clearly described or defined. Also, in many studies there are not clear empirical indicators, such as indicators of treatment integrity. As Losel (1995) points out, some of the larger effects in offender treatment may be due to weaker designs or “softer” effect criteria. In methodologically-strong designs, with recidivism outcome measures and long follow-up periods, one generally finds smaller effects. Another limitation is that the majority of the cognitive-behavioral studies reported and assessed refer to *juvenile* delinquency, raising the likelihood that results may be inappropriately generalized to adults. The literature on how adult offender groups respond to cognitive-behaviorally based intervention is quite scanty. Further, outcome studies conducted in prison settings far outnumber those conducted in community settings (Wilson et al., 2000), and results may not be generalizable from one setting or offender group to the next. Moreover, many studies do not use a comparison or control group, making it difficult to evaluate the effects of

treatment. Rendering the efficacy of cognitive-behavioral programs for offenders further in question is that the positive gains obtained on self-report measures and behavioral ratings on post-tests do not always translate into reduced recidivism rates, as some studies have demonstrated (e.g. Hughes, 1993; Guerra & Slaby, 1990). The research on cognitive behavioral rehabilitation programs for offender populations is a young, controversial, and often murky enterprise; more methodologically sound studies are still needed to add to the evidence for or against the efficacy of this approach.

CHAPTER 3

STUDY PURPOSE AND MAJOR AIMS

Study Purpose

The purpose of the present study is to evaluate the efficacy of a cognitive behavioral group program, entitled *Thinking for a Change*, for probationers in a large urban area. This investigation assesses changes in social problem solving, social skills, and pro-criminal attitudes, and tracks recidivism rates among probationers who complete the program. The study includes contrasting group completers on all variables with a matched comparison group and with group dropouts. *Thinking for a Change* is a National Institute of Corrections (NIC) developed program, and it is currently utilized with probationers nationwide. However, no outcome data have been gathered to date and the efficacy of this program has not been systematically investigated. This study's primary aim is to provide data about the *Thinking for a Change* program's efficacy, both in terms of its impact on recidivism and its impact on the criminal thoughts and skills deficits it targets for change. A broader study aim is to assess how adult offenders on probation fare with a cognitive behavioral approach to their rehabilitation, thereby extending the knowledge concerning "what works" in community supervision and corrections.

Major Aims

Overall, it was hypothesized that group completers would have lower recidivism rates and more favorable scores on study measures than either group dropouts or the

comparison group. Specifically, on the basis of the earlier reviewed literature, this study formally tested the following expected findings:

1. Group completers will have lower recidivism rates (probation violations and new offenses) than either the comparison group or dropouts.
2. There will be a significant change in scores on attitudinal measures for group completers between Time 1 (before group) and Time 2 (after group), such that pro-criminal sentiments decrease.
3. There will be a significant change in attitudinal and performance measures for group completers, such that scores reflecting interpersonal problem-solving and social skills improve.
4. There will be no significant change in the study scores between Time 1 and Time 2 for the comparison group.
5. There will be a significant difference in pro-criminal sentiments between group completers and comparisons at Time 2, with the treatment group having lower pro-criminal sentiments than comparisons.
6. There will be a significant difference in interpersonal problem solving and social skills between group completers and comparisons at Time 2, with completers having superior scores.

CHAPTER 4

METHOD

Participants

Participants consisted of 142 male and female probationers who were at least 18 years of age or older, were classified as “medium risk,” “high risk,” or “high need” by their probation officer, and consented to participate in this study. The risk/need classification (low, medium, or high) was objectively determined by a structured assessment process, yielding a risk score (0-15+) and a need score (0-30+). Risk level indicated the offender’s potential for further criminal activity, taking into account prior criminal history, stability of employment and residence, and drug use. Need level indicates the severity of the offender’s rehabilitation needs, taking into account academic/vocational skills and mental ability, employment, financial management, alcohol/drug use, health, and mental and social adjustment (Texas Department of Criminal Justice Community Justice Assistance Division, 2000). Participants in the experimental group also had been assigned to a *Thinking for a Change* group, either by a probation officer referral or a court order.

Admission criteria for *Thinking for a Change* included: 1) medium or high risk classification; 2) no more than one missed report in the last six months; 3) probation not scheduled to expire in the next six months; 4) English speaking; 5) needing special programs as determined by probation officer’s assessment; 6) no active substance abuse problem; 7) no unstable mental illness; 8) no sex offenders. Those referred by probation officers, rather than court-ordered, received 64 community service hours (thereby

fulfilling a condition of probation) or a reduction in probation fees for participation in *Thinking for a Change*. Participants in the comparison group consisted of those subjects who met admission criteria for *Thinking for a Change* but who had not yet been referred. Typically, probationers were not yet referred because probation officers had not had a chance to offer them the program, or because program spots were filled for that cycle. Additionally, scheduling and other logistical problems may have delayed a referral at that time, as when a probationer could not attend group meetings offered because of work schedules, transportation problems, or child-care duties. In addition to meeting *Thinking for a Change* admission criteria, participants in this study had at least a sixth-grade reading level to ensure adequate comprehension of study measures. Reading levels were determined by the Adult Placement Indicator, a reading test routinely administered at the Community Supervision and Corrections Department (CSCD).

To determine sample size, a power analysis for a two-tailed Student *t*-test was conducted, with $\alpha = .05$, power = .80, the minimum detectable difference in recidivism rates set at .24, and standard deviation = .37 (based on the average effect size and standard deviation of cognitive behavioral therapy with offenders reported by Garret, 1985). By the above described measure, estimated sample size was determined to be 80 participants: 40 participants in the experimental group and 40 in the comparison group. Dropouts were treated as a separate group, and were not considered part of the necessary estimated sample size. The actual sample used consisted of 142 participants: 71 in the experimental group (with 27 dropouts) and 71 in the comparison group.

Treatment Outline

Thinking for a Change curriculum was developed by the National Institute of Corrections (NIC), and consists of 22 group format sessions of approximately 2 hours duration each. Groups take place at satellite offices of the CSCD and have no more than 20 participants per group. Groups at satellite offices take place twice weekly, over an 11-week period. Each group is led by certified facilitators who have completed a National Institute of Corrections (NIC) developed training program for *Thinking for a Change*. Facilitators are required to follow a scripted manual explicitly stating the content and objectives of each session. Most sessions include role-play illustrations of concepts, a review of previous lessons, and homework assignments in which participants practice skills learned in the group.

Cognitive Restructuring; Sessions 1-9:

- Sessions 1-4 include introductions, expectations of participants, and a course overview with illustrations of the three main parts of the program: cognitive restructuring, social skills, and problem solving. Beginning sessions focus on cognitive restructuring and cognitive self-change, involving self-evaluation and self-correction. These sessions attempt to teach offenders to self-reflect, to recognize underlying attitudes, beliefs, and feelings, and to change them when they are maladaptive.
- Sessions 5-6 focus on teaching and practicing the objective observation of thoughts, feelings, and attitudes. Participants learn to use “thinking reports”

- (structured, objective reports of thoughts and feelings) to recognize their thoughts, feelings, attitudes, and beliefs in an objective, non-argumentative manner.
- Session 7 teaches offenders to recognize those cognitive processes that lead them to trouble, where “trouble” is defined as “breaking a rule or hurting someone.”
 - Session 8 is devoted to helping participants find new, more adaptive thinking that reduces their risk of doing something hurtful or criminal.
 - Session 9 focuses on practicing all of the steps of cognitive self-change via “thinking check-ins.” A thinking check-in consists of participants reporting a situation in which they were at risk of doing something harmful, recording the accompanying thoughts and feelings they had, identifying the risk in those thoughts and feelings, and describing the new thinking they used or could have used.

Social Skills Training; Sessions 10-15: Social skills training is embedded in the program curriculum from the first session. However, Sessions 10-15 focus explicitly on building social skills while continuing to strengthen and reinforce cognitive restructuring.

- Sessions 10-12 constitute exercises in empathy training and perspective taking: Session 10 is devoted to extra practice focusing on identifying feelings; Session 11 is designed to help participants *understand* the feelings of others; Session 12 equips participants to *respond* to others’ feelings.
- Session 13 teaches participants to prepare for, and have, stressful conversations.
- Session 14 provides group members with skills to manage and respond to their anger in a manner that will reduce the risk of acting out.

- Session 15 teaches participants adaptive ways of dealing with accusations of wrong-doing, whether true or false.

Problem Solving; Sessions 16-22: These sessions provide participants with tools they can use to more effectively “navigate their world” and avoid trouble. Problem solving in this program is designed to integrate the skills of cognitive restructuring and social skills; concepts from the first 15 sessions continue to be practiced and reinforced. Session 16 teaches group members to recognize the “conflict cycle,” a cycle of thoughts, feelings, beliefs, and actions that tend to escalate problem situations. Participants are introduced to 6 problem solving steps, each of which is addressed and practiced in its own lesson in Sessions 17-22. These steps are: 1) stop and think; 2) describe the problem; 3) get information to set a goal; 4) consider choices and consequences; 5) choose, plan, do; 6) evaluate.

Procedure

The study proposal and informed consent for participants were reviewed and approved by the Institutional Review Board of the University of Texas Southwestern Medical Center at Dallas. Probation officers referred probationers who met criteria for *Thinking for a Change* to a group. Some probationers were also court-ordered to attend. Probationers were then assigned to groups based on their zip code. The CSCD maintains an extensive database of information on each probationer, and this information was used to ensure that study participants did in fact meet the group and study criteria.

At the first session of each *Thinking for a Change* group (Time 1), the investigator obtained informed consent and demographic information from participants,

verified (when possible) by the CSCD database. Demographic information included: age, gender, ethnicity, years of education, work status, marital status, weekly take-home income, and legal history including current charges, prior charges, number of arrests, total jail time served, and length of time on probation. The Study Investigator also administered the following measures: Criminal Sentiments Scale; Social Skills Self-Evaluation; Social Problem Solving Inventory-Revised; Interpersonal Problem Solving Skills Assessment; Marlowe-Crowne Social Desirability Scale. At the last group session twelve weeks later (Time 2), participants completed the same measures and also completed a course evaluation in which they rated the program. In addition, an evaluation of each participant's performance was obtained from group facilitators after the group's conclusion. Each group was randomly monitored at least once to rate facilitators' performance and adherence to the treatment manual, using the Group Process Inventory (Bogue & Mattson, 1998). This quality control measure provided a percentage score (0-100%) for facilitator competency to ensure the integrity of program delivery. CSCD records and criminal histories were examined after treatment completion and tracked for violations of probation and/or new offense charges. Group completers were tracked for at least three months and up to one year following their completion of study measures at Time 2.

The comparison group was obtained as follows: Probationers reporting to their probation officer at a regularly scheduled meeting, no later than two weeks from a *Thinking for a Change* group's start date, were invited to participate in this study. These probationers met criteria for *Thinking for a Change*, but had not been referred to a group

and had never attended one. Comparison group participants were obtained from each of the satellite offices where *Thinking for a Change* takes place. They were matched with participants assigned to the experimental group on a one-to-one basis (where possible) for gender, ethnicity, risk level, probation officer and court, and matched within a five-year range for age. Comparison group participants completed study measures at Time 1 (as close to a group's start date as possible), and at Time 2 (as close as possible to the same group's end date). These participants received five community service hours for their participation in this study. CSCD records and criminal histories of this group were tracked for new offense charges and probation violations for up to one year after completion of study measures.

Dropouts: As a part of group process and curriculum, each group voted to determine how many absences and uncompleted homework assignments would be tolerated before a participant would be dismissed from the program. Typically, three to four absences resulted in dismissal, and three missed homework assignments constituted an absence. No group dropouts voluntarily withdrew consent to participate in this study, and every effort was made to administer study measures at their regularly scheduled meeting with their probation officer at a date as close to the participant's group end date as possible. Participants who dropped out of *Thinking for a Change* were tracked for new offense charges and probation violations for three months to one year following the program's end date.

Measures

Criminal Sentiments Scale (CSS). The Criminal Sentiments Scale is a 41 item self-report measure of antisocial attitudes, values and beliefs related to criminal activity. The Scale was first created by Gendreau, Grant, Leipeiger, and Collins (1979) who developed the instrument from the work of Walter Reckless (1967) and colleagues (Mylonas & Reckless, 1963). The CSS asks the participant to rate pro-social and antisocial statements on a 5-point (1-5) Likert scale from “strongly disagree” to “strongly agree.” The CSS is composed of five subscales: Attitudes Toward the Law (L; “Nearly all laws deserve our respect”); Court (C; “Almost any jury can be fixed”); Police (P; “Policemen are just as crooked as the people they arrest”); Tolerance for Law Violations (TLV; “A hungry man has the right to steal”); and Identification with Criminal Others (ICO; “People who have broken the law have the same sorts of ideas about life as me”). The first three subscales are combined to form the Law-Court-Police (LCP) subscale that assesses respect for the law and criminal justice system. The TLV scale reflects specific justifications for criminal behavior and ICO taps personal evaluative judgments about law violators. Higher scores on the TLV and ICO scales reflect pro-criminal attitudes while lower scores on the LCP scale reflect pro-criminal attitudes.

The CSS possesses adequate psychometric properties and can be used to predict criminal conduct and re-conviction rates among serious offenders (Wormith & Andrews, 1995; Simourd, 2000). As reported by Rettinger (1992), reliability tests of the CSS are in the acceptable range (test-retest reliability ranges from .59-.84; split-half reliability of

ALCP = .85 and TLV = .75; ICO = .36). The instrument has also yielded adequate validity (Andrews, 1980; Wormith, 1984).

Social Skills Self-Evaluation (SSE). This is a 50-item self-report instrument developed by the authors of *Thinking for a Change* (Bush, Glick, Taymans, 1997). It is included in the *Thinking for a Change* manual, labeled as “Self-Evaluation; What Else Do I Need,” but the authors also refer to it as the “Social Skills Self-Evaluation” (personal communication, 2000). The SSE assesses how often individuals use a particular social skill by asking them to rate their use of it on a 5 point (1-5) Likert scale ranging from “never” to “always.” The instrument yields a total score ranging from 50-250, with higher scores indicating more frequent use of social skills. Item content matches the skills taught in the course curriculum, and includes questions about listening to others (e.g., “Do I listen to someone who is talking to me?”), speaking to others appropriately (e.g., “Do I talk with other people about things that interest both of us?”), recognizing feelings (e.g., Do I understand what other people are feeling?), and thinking before acting (e.g., “Do I control my temper when I feel upset?”).

As of yet, there are no psychometric properties available for this instrument. However, at this date, it is recognized that there are no available measures of social skill that are relevant to, and appropriate for, an offender population. The SSE, however, is written specifically to reflect the skills taught to offenders in *Thinking for a Change*, and it will provide a gross measure of social skill. A reliability measure of internal consistency will be obtained for this administration.

Social Problem Solving Inventory-Revised (SPSI-R). The SPSI-R is a 52-item self-report instrument that assesses the process by which people attempt to resolve everyday problems. The SPSI-R consists of statements about problem-solving approaches, and asks one to rate the statement on a 5 point (0-4) Likert scale from “not at all true of me” to “extremely true of me.” This measure was developed by D’Zurilla, Nezu, and Maydeu-Olivares (2000), and it is linked to a five-dimensional model of social problem solving, validated by a factor analytic study (Maydeu-Olivares & D’Zurilla, 1996). The SPSI-R is composed of five scales: two that measure constructive or adaptive problem-solving dimensions (*positive problem orientation* and *rational problem solving*), and three that measure dysfunctional dimensions (*negative problem orientation*, *impulsivity/carelessness style*, and *avoidance style*). Thus, the SPSI-R assesses problem-solving orientation (positive or negative) and three dimensions of problem-solving proper (rational, impulsive, or avoidant styles). The SPSI-R yields five scaled scores and a total score, with higher total scores indicating more constructive and effective problem solving.

As operationalized by D’Zurilla et al (2000), positive problem orientation (PPO) is a cognitive set that involves the general disposition to appraise problems as solvable challenges that require time, effort, and persistence. Negative problem orientation (NPO) is a cognitive set involving the tendency to view problems as threats, as unsolvable, to doubt one’s self-efficacy in solving them, and become easily frustrated when they arise. Rational problem solving (RPS) involves the rational, deliberate, and systematic application of problem solving techniques, including gathering facts, identifying

obstacles, setting goals, generating alternative solutions, evaluating consequences, and implementing solutions. Impulsivity/Carelessness style (ICS) is characterized by active attempts to apply problem-solving strategies but the attempts are impulsive, incomplete, and unsystematic. An avoidant problem solving style (AS) is characterized by procrastination, passivity or inaction, and dependency.

The SPSI-R has good reliability and validity. As reported by D’Zurilla, Nezu and Maydeu-Olivares (2000), all five scales of the SPSI-R show adequate to high internal consistency (.76-.93), and test-retest reliability that ranges from .68 to .91. Validity estimates are also adequate (D’Zurilla et al., 2000), with SPSI-R scores related to social competence as measured by peer ratings.

Interpersonal Problem Solving Skills Assessment (IPSSA). This instrument (Jurich, 2000) consists of three vignettes containing interpersonal problems that offenders might face in everyday life. For each vignette, there are four questions, with five multiple choice responses that ask participants to: 1) identify the problem in the scenario provided; 2) identify the facts; 3) determine a goal; and 4) to pick a solution to implement the goal. Response choices are rated 1-4, with 1 being an antisocial response choice, 2 and 3 reflecting neutral responses, and 4 reflecting a pro-social response. The vignettes and the response choices were written to reflect the *Thinking for a Change* curriculum (Jurich, personal communication). Responses to the vignettes thus test comprehension of the program, as well as proposed anti-social versus pro-social behavior choices. Scores range from 12-48, with higher scores reflecting more pro-social responses and better comprehension of *Thinking for a Change*.

The vignettes and response choices were developed by interviewing male and female offenders in prison, and by incorporating the suggestions of cognitive behavior instructors in the Corrections Departments of Virginia and Colorado (Jurich, personal communication). Each response choice was rated 1-4 on an antisocial-prosocial dimension by 61 teacher raters, with an acceptable agreement rating set at 60%. For the purposes of this study, one of the vignettes pertaining to prison life was modified, as that scenario might not be familiar to study participants. This instrument is in the process of validation, and is currently being tested in two U.S. states.

Marlowe Crowne Social Desirability Scale (M-C SDS). This instrument consists of 33 statements of behavior that are, "...culturally sanctioned and approved but are of improbable occurrence...and have minimal pathological or abnormal implications if responded to in either the socially desirable or undesirable directions" (Crowne & Marlowe, 1960). Respondents are to mark the statements true or false (e.g., "I am always careful about my manner of dress; my table manners at home are as good as when I eat in a restaurant"), as applied to them. The M-C SDS is intended to assess the need to obtain approval independent of psychopathology (Crowne & Marlowe, 1960). The measure was designed to provide less extreme items than those found in other "faking" measures, such as the L scale of the MMPI. The pathology-free statements thus better discriminate between the effects of item content (e.g., whose endorsement might indicate a true lack of pathology rather than "faking good") and the needs of subjects to present themselves in a socially desirable (or undesirable) light (Crowne & Marlowe, 1960).

The M-C SDS is a well-researched instrument, with strong psychometric properties. The internal consistency coefficient is .88, and test-retest reliability is reported to be .89 (Crowne & Marlowe, 1960). Some of the items on the M-C SDS, such as questions about voting and always obeying laws, do not apply to an offender population. Thus, these items were omitted. Reliability estimates of the instrument given these omissions were obtained in this study. A shortened form of this instrument has been used reliably in previous work ($\alpha = .74$; Eisenberg, Fabes, & Murphy, 1995).

Course Evaluation. This is a 15-item questionnaire created by the Investigator in order to obtain participants' opinions about the usefulness of *Thinking for a Change*. The questionnaire asks participants to rate questions such as, "Do you think that your ability to identify thoughts and feelings has improved?" on a 5-point Likert scale (0-4), ranging from "never" to "always" and "not at all" to "definitely." Questions assess whether participants viewed themselves as having difficulty with thinking and interpersonal relations before the program and whether, in their opinion, these areas have improved. The evaluation also asks about motivation level, the course's difficulty level, and the group facilitator. Scores range from 0-60, with higher scores indicating greater satisfaction with and perceived utility of the course.

Facilitator Course Evaluation. This is a 15-item questionnaire created by the Investigator that asks *Thinking for a Change* facilitators to rate each participant's performance in the group. Facilitators rate items, such as, "Overall, how well did this participant understand the concepts presented?" on a 5 point Likert scale (0-4), from "never" to "always" and "very poor" to "excellent." Items assess how well each

participant grasped the skills taught, how often he/she appeared to make use of them, his/her participation level, quality of homework assignments (a separate log tracks whether or not homework was completed), and apparent motivation level. Scores range from 0-60 with higher scores indicating better course performance.

Group Process Inventory (GPI). The GPI is an 87 item rating scale that measures the accuracy and quality of facilitator performance. The GPI was developed by Justice System Assessment and Training (Bogue & Mattson, 1998) as a quality control measure to ensure that cognitive behavioral instruction is delivered appropriately to correctional populations. GPI criteria are rated on a 5 point Likert scale (0-4), with higher scores indicating more rigorous adherence to program components. The instrument is composed of nine subscales but, for the purpose of facilitator evaluation, three of the subscales were not relevant, and were therefore not included in this study. The following GPI scales were used: Group/Class Setup, Specific Skill Cultivation, Classroom Management, Documentation and Accountability, Participation Involvement, and Clinical Skills. Sample checklist items included: “The facilitator presented the skill steps; the examples and scenarios used were simple and easy to follow; the facilitator assigned homework.” The four scales listed above are comprised of 54 items, and yield a percentage score for each scale and a total score, indicating quality of service delivery.

Design Summary

This study was designed to evaluate demographics, differences in study measures, probation violations and new offense charges among probationers who complete *Thinking for a Change* versus those who do not and those not assigned to the group. The

dependent measures in this study included CSS, SSSE, SPSI-R, and IPSSA scores, as well as the number of probation violations and criminal charges at follow-up. This study followed a 3 X 2 (Group X Time) mixed design. Group consisted of completers, dropouts, and comparisons, and Time consisted of Time 1 (before group) and Time 2 (after group). Performance on measures among the completers, dropouts, and comparisons were compared, as were performance within each group at Time 1 (before group) and Time 2 (after group). Additionally, multiple logistic regression analyses were performed to determine what combination of variables best differentiated those who recidivated from those who did not. In this study, recidivism is defined as a technical violation of probation or new offense charge. A technical violation is a violation of probation conditions that does not result in a new offense charge, such as failing to report as scheduled or providing a positive urine analysis drug screen. A new offense charge is a charge for new criminal activity, such as theft or assault.

Statistical Analyses

Demographic variables. Groups were matched on all demographic variables assessed, except education and income. Chi Square tests were conducted to check that adequate matching occurred. An analysis of variance (ANOVA) was conducted to determine if differences existed among the three groups in education and income level. If differences were found, they would be controlled for in subsequent analyses. Stepwise multiple regression analyses were used to determine if demographic variables predict outcome measure scores and/or probation violations and new offenses.

Attitudinal Measures. In order to obtain reliability estimates, an internal consistency test, using Cronbach's alpha, was performed on all of the measures. To control for defensiveness on the self-report measures, correlations between the M-C SDS and all attitudinal measures were performed. The M-C SDS was included as a covariate in all subsequent analyses. A 3 X 2 repeated measures analysis of variance (ANOVA) was conducted for each dependent measure.

Course Evaluations. A correlation coefficient was determined for participant course evaluations and facilitator evaluations. As facilitator ratings and participant ratings were not highly correlated, both evaluations were used as predictors in the following described regression analyses. Simple regression analysis was used to determine if student ratings and facilitator evaluations predicted any of the criterion measures (CSS, SSE, SPSI-R, IPSSA). Multiple logistic regression analyses were used to determine if course evaluation scores were predictive of the occurrence of probation violations and/or new offenses.

Facilitator Performance. Facilitators' GPI scores were assessed for competency level and were expected to obtain ratings of 60% or better. If facilitators did not meet this minimum standard, a regression analysis would be performed to determine if higher or lower scoring facilitators predicted outcome measures.

New Offenses and Probation violations. Stepwise logistic regression analyses were performed to determine if performance on study measures and/or demographic variables predicted the occurrence of future probation violations and new charges. Additionally, recidivism rates for each group were determined.

CHAPTER 5

RESULTS

Analyses of the data focused on three areas: description, comparison, and prediction. Descriptive statistics were computed for all of the variables. Comparative analyses were performed among group completers, dropouts, and comparisons to determine differences among the groups in terms of demographics, performance on study measures, and recidivism. Predictive analyses were completed to assess predictive power of the variables in regard to recidivism and performance on study measures. An alpha level of .05 was used for all statistical tests.

Demographic Characteristics

As presented in Table 1, the final sample size was 142, consisting of 100 men (70.4%) and 42 women (29.6%). The average participant age was 27 years ($M = 27.11$, $SD = 8.62$), with a range of 18-56 years. Seventy-two participants (50.1%) were aged 18-24 years. Seventy-one participants identified themselves as African American/black (50%), 47 were Caucasian (33.1%), 19 were Hispanic/Latino (13.4%), 3 were Asian (2.1%), 1 was Native American (0.7%), and 1 identified himself as “Black Indian” (0.7%). The majority of participants (63.4%) had a high school diploma or GED equivalent, but most participants (70.4%) had no college education. Mean years of formal education for all participants was 11 ($M = 11.1$; $SD = .86$) (see Table 2). Eighty-six participants (60.6%) identified themselves as never married, 17 (12%) as cohabitating with a partner, 16 (11.3%) as married, 12 (8.5%) as divorced, 10 (7.0%) as separated, and 1 (0.7%) as widowed (see Table 3). One hundred-five participants (75.1%) reported their

weekly family take-home income as less than \$501 a week. The median weekly family take-home income fell in the \$301-\$401 category (see Table 3).

Eighty-five participants (59.9%) were medium risk level (indicating a moderate potential for further criminal activity), 52 (36.6%) were maximum risk level (indicating a high potential for further criminal activity), and 5 (3.5%) were minimum risk (low potential for further criminal activity) but accepted into the study because of exceptionally high need scores, indicating a great need for rehabilitative services (see Table 4). Participants were on probation as a result of a variety of felony offenses: 1) drug-related offenses (possession, intent to deliver, delivery of controlled substance, driving while intoxicated), representing 35.6% of charges; 2) theft-related offenses (burglary, theft, robbery, unauthorized use of motor vehicle), 26.3% of charges; 3) fraud-related offenses (forgery, fraud, credit card abuse), 12.8% of charges; 4) assault-related offenses (assault, aggravated assault, assault causing bodily injury, retaliation) representing 11.1% of charges; 5) weapons-related offenses (unlawfully carrying a weapon, deadly conduct discharging a firearm), 4.7% of charges; 6) injuring or endangering a child or elderly person, 4.7% of charges; 7) criminal mischief, 1.8% of charges; 8) engaging in organized crime, 1.8% of charges, 8) attempted murder, representing 0.6% of charges, and tampering with physical evidence, 0.6% of charges (see Table 5). The average amount of time on supervision at the beginning of group was 21.7 months (see Table 6).

Matching on Demographic Characteristics

There were no significant differences among the experimental, comparison, and dropout groups on any of the demographic variables assessed, including variables not used in the matching procedure. Based on Chi Square tests, there were no differences among groups in gender, $\chi^2 = (2, \underline{N} = 142) = .279, p = .870$; ethnicity, $\chi^2 = (10, \underline{N} = 142) = 10.62, p = .338$; high school completion, $\chi^2 = (2, \underline{N} = 142) = 3.44, p = .179$; college education, $\chi^2 = (6, \underline{N} = 142) = 1.67, p = .948$ (see Table 1); marital status, $\chi^2 = (10, \underline{N} = 142) = 7.39, p = .688$; weekly family take-home income, $\chi^2 = (18, \underline{N} = 142) = 27.67, p = .067$ (see Table 3); or risk level, $\chi^2 = (4, \underline{N} = 142) = 4.57, p = .334$ (see Table 4). A one-way ANOVA revealed that there were also no significant differences among the groups in age $F(2, 139) = 2.03, p = .136$, or years of education completed, $F(2, 139) = .695, p = .501$ (see Table 2). The experimental and comparison groups were also matched as closely as possible to supervision officers and courts, with similar numbers of participants reporting to a particular officer and court (see Table 7). Additionally, length of time on supervision, based on an ANOVA, was not significantly different among groups, $F(2, 139) = 2.52, p = .085$ (see Table 6). Thus, the experimental and comparison groups were carefully matched to control for potential confounding factors.

Thinking for a Change Group

Based on a Chi Square test, there were no differences between group outcome (successfully completed or drop out) among the various satellite offices where the groups took place, $\chi^2 = (6, \underline{N} = 142) = .789, p = .992$ (see Table 8). Nineteen was the average number of groups attended by group completers; 6 was the average number of groups

attended by drop-outs. No participant was dismissed from a group for a reason other than absences and/or homework noncompliance. Of the 71 participants assigned to groups, 44 graduated (62%), and 27 (38%) dropped out. All Group Process Inventory (GPI) scores were satisfactory, ranging from 72% to 92%, with an average of 82.6%, indicating acceptable program delivery and facilitator competence (see Table 9). A Mann-Whitney U test revealed that there were significant differences in facilitator ratings of group completers and group dropouts on quality of homework ($p < .001$), level of participation ($p < .001$), and understanding of session concepts ($p < .001$), such that completers received significantly higher ratings on those categories than dropouts (see Table 10).

Recidivism for New Offenses

Recidivism results were based on a sample size of 120 (86% of the total sample), as this group was followed for a minimum of 3 months and up to 1-year post-group completion. The recidivism rate for group completers having been charged with a new offense at follow-up was 13.2% (5 offenders), compared to 18.2% for group dropouts (4 offenders), and 20% for the comparison group (12 offenders) (see Figure 1). As evaluated by a Chi Square test, there were no statistically significant differences in new offense rates among the groups, $\chi^2 = (2, N = 120) = .763, p = .683$ (see Table 11). A sample-size calculation revealed that a significant result at the .05 level, with power set at .80, would be achieved with a sample size of 938. However, even with $n = 120$, the trend appears to be that group completers re-offend less frequently than their untreated counterparts, with a 6.8% difference, or 33% reduction in new offenses between group completers and comparison subjects. An analysis of covariance (ANCOVA) was

performed on the total number of new charges among groups, controlling for time between completion of group and follow-up (see Table 11). There were no significant differences among groups for new charges, $F(2, 116) = .988, p = .376$. Of those who received a new charge, the majority of completers (60%) received the charge 3 to 6 months after the group's completion, while 75% of the dropout group and 50% of comparisons with a new charge received the charge within the first 3 months following *Thinking for a Change* (see Table 12). Of the remaining 22 participants, followed for one month post-group, no completer was charged with a new offense, while one comparison group member and one group dropout were charged. For the experimental group, the majority of new offenses were misdemeanors (67% for completers and 57% for dropouts), while the offenses for the comparison group were evenly split between misdemeanors and felonies.

Predictors of New Offenses

A (forward) step-wise logistic regression analysis was performed to determine if any set of variables significantly predicted being charged with a new offense. The predictor variables included: age, gender, ethnicity, years of education, reading level, educational achievement, work status, marital status, income, risk level, need level, group (completer, dropout, or comparison), satellite office of group, and scores on all study measures. For this analysis, work status was collapsed into two groups: employed and unemployed. Reference groups for the variables with more than two categories were as follows: the "comparison group" was the reference for group, "black" the reference group for ethnicity, "high risk" the reference for risk level, "high need" the reference for need

level, “never married” the reference for marital status, “\$301-401” the reference for income, and “east office” the reference for satellite office of group. All other levels of categorical variables were coded with binary dummy variables. No significant predictors of new offense charges were found. Overall model significances for each step were greater than .05.

Recidivism for Technical Violations

The recidivism rate for technical violations of probation conditions (i.e., failing to follow supervision requirements but not violating the law) was 42.1% for group completers (16 violators), 77.3% for dropouts (17 violators), and 45% for the comparison group (27 violators) (see Figure 2). A Chi Square test indicated that there was a significant difference among groups, $\chi^2 = (2, N = 120) = 8.09, p = .017$, with group dropouts receiving technical violations at a significantly higher rate than either group completers or comparisons, and no differences observed between completer and comparison groups (see Table 13). Any technical violations received for not attending or for dropping out of *Thinking for a Change* were not included. Some probationers received more than 1 violation: 2 in the completer group (completers had 19 total violations), 8 in the dropout group (dropouts had 26 total violations), and 10 in the comparison group (controls had 44 total violations). An ANCOVA was performed on the total number of technical violations received among groups, controlling for time between completion of group and follow-up. There were significant differences in the number of technical violations received per group, $F(2, 116) = 3.79, p = .025$. A Tukey Post-Hoc test revealed that completers differed from dropouts, and comparisons differed from

dropouts, with dropouts receiving more violations. There were no differences between completers and comparisons. Of those who received new technical violations, the majority of comparison (53.8%) and dropout groups (76.5%) received the first technical violation within 3 months of the *Thinking for a Change* group's end, while most completers (56.3%) received a first technical violation at least 3 months after the group's end (see Table 14). For the 22 participants who were followed for one month, 1 new probation violation had been recorded for each group: completers, dropouts and comparisons.

Predictors of Technical Violations

A (forward) step-wise multiple logistic regression analysis was performed to determine which set of variables significantly predicted the odds of receiving a new technical violation. The potential predictor variables included were: age, gender, ethnicity, years of education, educational achievement, work status, marital status, weekly family income, risk level, need level, satellite office of group, and scores on all study measures. The reference groups and variable coding were the same as those described in the "predictors of new offenses" section. The step-wise regression analysis resulted in group status (completer, dropout, comparison), risk level, and Interpersonal Problem Solving Skills Assessment (IPSSA) scores being significant predictors of technical violations (see Table 15). Group dropouts were 4.7 times more likely to receive a technical violation than either group completers or comparison group participants, $\chi^2(1, N= 120) = 5.20, p = .023$, while the odds were no different between group completers and comparisons. Maximum risk participants were 2.79 times more likely to receive a

technical violation than medium risk participants, $\chi^2(1, N = 120) = 5.04, p = .025$. Furthermore, for each point decrease in IPSSA (indicating poorer interpersonal problem solving skills), the odds of a new technical violation were 1.08 times higher, $\chi^2 = (1, N = 120) = 5.00, p = .025$. This set of predictors explained 30% of the variability in the odds of receiving a technical violation (Nagelkerke $R^2 = 0.298$). For goodness of fit, the Hosmer and Lemeshow test yielded non-significant results, indicating that the model fits the data, $\chi^2 = (8, N = 120) = 7.70, p = .464$. Using the model to predict whether or not a participant would receive a technical violation, 67.9% of the observations were correctly classified. The specificity (probability of not getting a false positive) was 86%. The sensitivity (probability of not getting a false negative) was 82%.

Jail Time and Revocations

At follow-up, there were no significant differences among groups in terms of whether or not participants spent time in jail/prison subsequent to the last *Thinking for a Change* class, $\chi^2 = (2, N = 142) = 2.61, p = .272$. At follow-up, 2 completers (4.5%), 5 dropouts (18.5%), and 5 comparison group participants (7%) had had their probation sentence revoked and were sent to jail/prison as a result of a new offense or probation violation. There were also no significant differences among groups for reason of revocation (new offense or technical violation), $\chi^2 = (2, N = 142) = 2.126, p = .345$ (see Table 16). Participants' supervision status (on supervision, revoked, absconded, completed supervision, outstanding warrant, in jail awaiting court decision) at follow-up was relatively evenly spread among groups, $\chi^2 = (10, N = 142) = 17.45, p = .065$ (see Table 16).

Marlowe-Crowne Social Desirability Scale (MC-SDS)

The shortened version of the MC-SDS was found to have adequate reliability (Cronbach's alpha ranged from .77 to .80), consistent with previous findings. A Wilcoxon Signed Ranks Test indicated that there were no changes in MC-SDS scores within groups comparing Time 1 and Time 2: completers, $T(42) = -1.10$, $p = .271$, dropouts, $T(21) = -1.19$, $p = .235$, and comparisons, $T(62) = -1.10$, $p = .270$. A Kruskal-Wallis Test indicated that MC-SDS scores did not differ among groups at either Time 1, $\chi^2(2, N = 140) = 2.42$, $p = .299$, or Time 2, $\chi^2(2, N = 129) = 3.92$, $p = .141$. The MC-SDS mean score for all groups at Time 1 and at Time 2 was 5 (see Table 17). This indicates that there was a moderate to high degree of defensiveness among respondents, as they attempted to present themselves in a socially desirable light. Thus, the MC-SDS scores were used as a covariate in all subsequent analyses involving scores on study measures.

Criminal Sentiments Scale (CSS)

All subscales of the CSS were found to have adequate reliability (Cronbach's alpha ranged from .72 to .89). As determined by a repeated measures ANOVA, there were no significant within-subject differences on the following: Law/Courts/Police (LCP) scale, $F(2, 105) = .014$, $p = .986$; Tolerance for Law Violations (TLV) scale, $F(2, 105) = .592$, $p = .555$; or Identification with Criminal Others (ICO) scale, $F(2, 105) = .986$, $p = .377$. The effect sizes for the mean change between Time 1 and Time 2 ranged from .01 to .03, indicating a poor effect for clinical change (Cohen, 1977). There were also no between-subjects effects on LCP, $F(2, 105) = 2.24$, $p = .111$, TLV, $F(2, 105) = 1.59$, $p =$

.208, or ICO, $F(2, 105) = .491$, $p = .613$ measures (see Table 18). On average, mean LCP subscale scores decreased about five points across groups, suggesting that participants harbored slightly less favorable attitudes toward the law, courts, and police over time, regardless of group. Mean scores for TLV and ICO remained the same across time for comparison subjects, and increased by about one point for group completers and group dropouts, indicating that group status did not impact attitudes toward tolerating law violations or identification with criminal others. Further, there were no significant differences found in CSS scores between those who recidivated and those who did not.

Social Skills Self-Evaluation (SSE)

The SSE was found to have adequate internal consistency (Cronbach's alpha ranged from .65 to .66). As analyzed by a repeated measures ANOVA, there was a significant Group X Time interaction, $F(2, 119) = 3.91$, $p = .023$. A Tukey Post-Hoc Test revealed that both completers and dropouts differed at Time 1 and Time 2, with scores increasing significantly for both groups, indicating a reported improvement in pro-social skills over time (see Figure 3). Mean scores increased for the experimental group by 7 to 10 points (see Figure 4). Additionally, completers at Time 1 differed from comparisons at Time 1, with completers scoring lower than comparisons initially (see Table 19). Scores for comparisons remained relatively constant over time. Mean SSE scores at Time 2 for participants who recidivated ($M = 189.4$, $SD = 27.4$) were lower than nonrecidivators ($M = 195.9$, $SD = 23.4$). Although this difference was not statistically significant, $t(105) = -1.324$, $p = .188$, there was a 6-point difference

between groups, with nonrecidivators rating themselves as having more social competence (see Table 20).

Social Problem Solving Inventory-Revised (SPSI-R)

As determined by a repeated measures ANOVA, there was a significant between-subjects effect for total SPSI-R scores, $F(2, 103) = 3.66, p = .029$ (see Tables 21 and 22; Figure 5). A Tukey's Post-Hoc analysis revealed that group completers had significantly higher SPSI-R total scores at Time 2 scores than group dropouts or comparisons, indicating more adaptive social problem solving skills among completers. There was a significant between-groups effect for Negative Problem Orientation (NPO) scores, $F(2, 103) = 3.84, p = .025$ (See Figure 6). Tukey's Post-Hoc test revealed that group dropouts had significantly higher NPO scores than group completers or comparisons, indicating that dropouts had a more negative approach to solving problems. There were also significant main effects for Impulsivity/Carelessness Style (ICS), $F(2, 103) = 7.23, p = .001$ (see Figure 7), and for Avoidant Style (AS), $F(2, 103) = 6.19, p = .003$ (see Figure 8). Tukey's Post Hoc results indicated that dropouts were higher in ICS and AS than completers or comparisons, suggesting that group dropouts have more maladaptive problem solving styles. There were no significant between-group effects for Positive Problem Orientation (PPO), $F(2, 103) = .112, p = .894$, or Rational Problem Solving (RPS) style, $F(2, 103) = .720, p = .489$, although group completers scored slightly higher on these scales at Time 2 than the other groups, indicating a trend toward greater use of adaptive problem solving skills (see Figures 9 and 10). There were no within-subjects effects for the SPSI-R total score, $F(2, 103) = .954, p = .389$, or for scale scores.

However, group completers' scores increased slightly for Positive Problem Orientation and Rational Problem Solving, suggesting a trend of greater use of adaptive problem solving skills. Further, group completers' scores decreased slightly for Negative Problem Orientation, Impulsivity/Carelessness and Avoidant Styles, indicating that they approached problems with a less negative mental set at Time 2. There were no similar trends for the dropout or comparison groups. Mean scores at Time 2 for the recidivating group were significantly higher on NPO, $t(94.05) = 2.78$, $p = .006$, ICS, $t(106) = 3.05$, $p = .003$, and AS, $t(106) = 2.58$, $p = .011$, than for the nonrecidivator group. Recidivators also had significantly lower SPSI-R total scores than nonrecidivators, $t(105) = -2.57$, $p = .011$, suggesting that the recidivating group had less adaptive social problem solving skills (see Table 20).

Interpersonal Problem Solving Skills Assessment (IPSSA)

The IPSSA was found to have satisfactory internal consistency (Cronbach's alpha ranged from .77 to .87). There was a significant Group X Time interaction, $F(2, 103) = 11.05$, $p < .001$ (see Table 23 and Figure 11). A Tukey Post-Hoc Test revealed that completers at Time 1 differ significantly from completers at Time 2, with improved applied social problem solving scores at Time 2. Scores for comparisons and dropouts tended to remain constant. With higher scores indicating better interpersonal problem solving ability, groups had similar means at Time 1, ranging from 36.9 to 39, but means at Time 2 ranged from 37.9 for dropouts to 42.8 for completers (See Figure 12). The nonrecidivating group had significantly higher mean scores than the recidivating group, t

(91.83) = -2.696, $p = .008$, indicating that the nonrecidivating group had better interpersonal problem solving skills than the recidivator group (see Table 20).

Course Evaluations

A Pearson's Correlation Coefficient was calculated for participant Course Evaluations and Facilitator Evaluations. The correlation was weak ($r = .295$). Since participant and facilitator course evaluations were not highly correlated, they were both used as predictors in a logistic regression model for new offenses and technical violations. Neither evaluation was predictive of new offenses, $\chi^2 = (2, N = 50) = 1.51, p = .469$, or of new technical violations, $\chi^2 = (2, N = 50) = 1.59, p = .451$. A step-wise multiple regression analysis was performed on all attitude measures using both course evaluations as predictors (See Table 24). The participant course evaluation score was found to be a significant predictor of the CSS LCP score. The predictive equation for LCP scores was $LCP = 79.209 - .743$ (participant evaluation score). Thus, higher participant evaluation scores (indicating that participants reported finding the class useful) predicted lower LCP scores (indicating more antisocial attitudes toward the law, courts and police). Participant course evaluations and facilitator evaluations were predictive of CSS TLV scores, such that higher participant evaluation scores were predictive of higher TLV scores (indicating greater tolerance for law violators), and higher facilitator evaluation scores (indicating better class performance) were predictive of lower TLV scores (indicating less tolerance for law violators). The predictive equation is as follows: $TLV = 33.268 + 296$ (participant evaluation score) $- .126$ (facilitator evaluation score).

Predictors of Study Measure Scores

A step-wise multiple regression analysis was conducted on each of the study measures to determine if any demographic variables predicted study scores (see Table 25). For these analyses, the Asian, Indian, and Black Indian categories were included in the “other” ethnicity category, with Hispanic as the reference group. Further, the “divorced” and “separated” categories were collapsed into one group, with divorced/separated as the reference group for marital status. All other levels of categorical variables were coded with binary dummy variables. Significant results were found for each of the study measures:

- On the CSS LCP scale, greater education was predictive of lower (more antisocial) LCP scores: $LCP = 77.321 - 1.595 (\text{years of education})$.
- On the CSS ICO scale, the never married group differed from the divorced/separated group, such that never having been married predicted lower (more pro-social) CSS ICO scores: $ICO = 22.880 - 1.667 (\text{never married})$.
- There were no significant predictors of the CSS TLV scale score.
- Never having been married and being in the “other” ethnicity category were predictive of higher (better) SSE scores: $SSE = 199.065 - 11.236 (\text{never married}) + 23.876 (\text{other ethnicity})$.
- For the IPSSA, being in the “living together” category was predictive of lower (poorer) scores: $IPSSA = 41.367 - 4.179 (\text{living together})$.
- On the SPSI-R total score, being in the dropout group and having a higher risk score was predictive of lower (less adaptive social problem solving) scores on that

measure, while having greater education was predictive of a higher (better social problem solving) scores: $SPS = 11.915 - 1.417 (\text{dropout}) - .995 (\text{risk}) + .298 (\text{years of education})$.

- On the NPO scale of the SPSI-R, being Caucasian, a group dropout, or having a higher risk score or less education were predictive of higher (having a more negative problem solving orientation) scores: $NPO = 16.728 + 4.015 (\text{risk}) + 4.626 (\text{dropout}) - 1.06 (\text{years of education}) + 3.246 (\text{Caucasian})$.
- On the ICS scale of the SPSI-R, being a group dropout was predictive of a higher score (more impulsive and careless in regard to problem solving), and being older was predictive of a lower score (less impulsive and careless in regard to problem solving): $ICS = 15.667 + 5.012 (\text{dropout}) - .184 (\text{age})$.
- For the AS scale of the SPSI-R, being a dropout or having a high needs score was predictive of a higher AS score (more avoidant style to problem solving), and being in the “other” ethnicity category was predictive of a lower (less avoidant) AS score: $AS = 7.012 + 2.930 (\text{dropout}) + 2.136 (\text{needs}) - 4.934 (\text{other ethnicity})$.

CHAPTER 6

DISCUSSION

Overview of the Study

There has long been a lively debate concerning “what works” to correct offender populations, affecting many lives and the allocation of millions of dollars. Thus far, investigations of treatment options using sound research methodology have been relatively scarce. Of those that exist, results have been mixed and warrant modest enthusiasm at best. Programs that do succeed in producing positive results tend to use cognitive-behavioral approaches, emerging as the modality of choice with offender populations. However, investigators have agreed that more research is needed, as it is still largely unclear “what works” and what combination of elements in a rehabilitation program is efficacious. Further, the majority studies with offenders used juvenile populations, took place in prisons rather than in the community, and did not use carefully constructed comparison groups but rather used group dropouts as a quasi-control group (Gondolf, 2002). The present study was designed to extend the research literature by investigating a cognitive-behavioral program for adult offenders in their communities. The investigator analyzed major components of the program (cognitive restructuring, social skills and problem solving training), and assessed recidivism in terms of new criminal offenses and technical violations of probation. It also compares *Thinking for a Change* participant with those receiving regular probation only. The study aimed to add to the outcome literature on cognitive-behavioral approaches for offenders generally, and

to add to the knowledge concerning “what works” in adult community supervision and corrections specifically.

This investigation was designed to evaluate the efficacy of a National Institute of Corrections’ structured cognitive-behavioral program for offenders on probation, entitled *Thinking for a Change*. Probationers who successfully completed the program were contrasted to a matched comparison group and with those who dropped out of the program. Probationers in the three groups: completers, dropouts, and comparisons, were tracked for three months and up to one year following the *Thinking for a Change* group, and were assessed for any new criminal offense charges and/or technical violations of probation conditions. Study participants were also evaluated immediately before the first session (Time 1) and directly after the final session (Time 2), and were assessed for changes in those skills and attitudes that the program is supposed to affect: interpersonal problem solving, social skills, and criminal thinking. These areas were assessed with self-report measures, applied skills tests, and facilitator ratings. Additionally, demographic information, including age, ethnicity, marital status, education, work status, income, and criminal history was gathered and analyzed. Moreover, each *Thinking for a Change* group was monitored and rated by an independent observer to ensure facilitator competence and integrity of program delivery.

Recidivism

The results concerning recidivism were mixed. There appears to be a trend toward reduced number of future criminal offenses among those who completed *Thinking for a Change*. Although the differences were not statistically significant, there was about

a 33% reduction in the new offense rate among the completer group in contrast to the comparison group. Even small percentage differences in recidivism can have very large practical implications. For example, just a 1% rise in the felony revocation rate (removing offenders from probation and sentencing them to jail or prison) in Texas results in an additional 4,120 individuals being incarcerated at an additional cost of more than \$55 million per year (Rylander, Texas Comptroller of Public Accounts, 2000). As committing a new criminal offense usually results in revocation, if new offense rates could be impacted by at least 6.8% Statewide, as was found for completers in this study, more than 24,000 individuals potentially could be kept out of prison at a savings of over \$300 million dollars. Thus, if implemented on a large scale, programs such as *Thinking for a Change* that reduce recidivism by even just a few percentage points could be quite cost-effective, in addition to decreasing numbers of victims and other damages associated with crime. This suggests, as others have noted (e.g., Morley & Williams, 2001), that interventions may have strong clinical significance without demonstrating statistical significance in terms of a *p* value.

Additionally, there is evidence that completers do not recidivate as quickly as untreated groups. The majority of dropouts attended just a few sessions of *Thinking for a Change*, and did not have an appreciable reduction in new offenses, which tended to be committed within the first three months following group. In contrast, the majority of group completers who ended up receiving a new charge did so at least three months after the last session of *Thinking for a Change*, while those who were not in the group tended to recidivate within three months of the last session. This suggests that the group is

effective in at least forestalling, if not preventing, additional criminal activity, and effects may be more long-lasting if an aftercare group and/or booster sessions were implemented. Indeed, it is well accepted that behavior change is not a linear progression, and relapse is often an expected part of the change process (Prochaska, 1992). Therefore, building in relapse prevention procedures are essential components of successful change programs (Marlatt & Gordon, 1973; 1985), and are recommended for the *Thinking for a Change* curriculum as well. In general, the criminal justice system does not tolerate relapses, or “slips” back to problematic (e.g., criminal) behavior. Yet relapse is an expected and well-established phenomenon in the literature concerning the alteration of any maladaptive behavior, including smoking, over-eating, and drug use (Prochaska & DiClemente, 1992; Prochaska, Norcross, Fowler, Follick, & Abrams, 1992). It seems only reasonable to expect that relapse is part of the criminal behavior change process as well, rendering a focus on relapse prevention procedures in criminal intervention programs crucial. With appropriate preparation for the potential for relapse, relapses may be less likely to occur (Jensen, 1996). Further, some programs that are deemed “failures” by appearing not to reduce recidivism long-term, may in fact yield positive results if appropriate follow-up and relapse prevention were added.

Differences in recidivism for new technical violations of probation conditions were statistically significant among groups, with group dropouts having dramatically higher rates of technical violations than either group completers or comparisons. As the groups were carefully matched, and violations for not attending *Thinking for a Change* were not included in the analysis, it is not clear why, in this case, the dropout group

received more technical violations. It may be that this group tends to not follow the rules, whether the rule is to comply with *Thinking for a Change* or to adhere to another probation stipulation. A worthwhile course of future study would be to examine the motivational differences between people who comply with probation (as indicated by following its rules and not receiving technical violations and/or dropping out of groups) and those who do not, aiming to develop strategies to increase motivation for change among the noncompliant. Indeed, there is a growing literature on methods for increasing motivation for change, and strategies for doing so have been used with some success in the areas of chronic pain and substance abuse (e.g., Jensen, 1996; Miller & Rollnick, 1991). Thus, it may be useful to separate potential *Thinking for a Change* participants according to their readiness for change, assigning the program only to those in an appropriate stage of readiness for change, and providing an intervention that focuses on enhancing motivation for change, such as with “motivational enhancement therapy,” (Miller & Rollnick, 1991) for probationers in the earlier stages of change. Further, perhaps the dropout group differs from those who complete the program in areas not assessed in this study, such as social support, optimism, perception of their probation officer, or prior experiences with the criminal justice system. Supervision could then focus on the additional relevant areas. Determining what leads probationers to be noncompliant with probation conditions is important because too many technical violations often lead to revocation and jail or prison time. In this study, those who dropped out of *Thinking for a Change* tended to violate probation more often and are, therefore, in danger of having their probation revoked. Thus, probation officers may

consider supervising them differently, such as monitoring them more closely or giving special encouragement to this group, to decrease the likelihood of violations and subsequent revocation.

Predictors of Technical Violations

Certain factors were found to significantly increase the likelihood of receiving a new technical violation. These included being classified as “high risk” on an objective risk assessment instrument, being a group dropout, and having poorer interpersonal problem solving skills, as measured by the Interpersonal Problem Solving Skills Assessment (IPSSA). It is important to understand what leads to technical violations, because offenders who have been revoked from probation based solely on technical violations are becoming a significant part of the jail population, at an overwhelming cost. The Report of the Technical Violations Committee (2001) indicates that the proportion of revocations classified as technical have been increasing in recent years. The felons in Texas whose probation sentences were revoked for technical violations in the year 2000 alone are estimated to cost the state over \$219 million. Further, other things being equal, research indicates that technical violations do not signal an increased likelihood of committing a crime (Report of the Technical Violations Committee, 2001). Thus, probationers who are not a threat to society are being incarcerated at increasing rates. It would be more cost-effective to allocate government monies to community corrections departments, which could then increase supervision and rehabilitation options. Yet partly because of pessimism concerning offender rehabilitation, there is a tendency to revoke those probationers who receive too many technical violations. It thus seems crucial to

identify and ameliorate those factors that are predictive of increased technical violations and to disseminate research indicating that treatment can make a difference.

Probationers who are classified as “high risk” are already more closely supervised, and the results in this study are additional evidence that there is good reason that they be. Probationers who are not compliant with *Thinking for a Change* (i.e., dropouts) also should be targeted for special supervision, as they appear to be at increased risk of violating probation. Further, providing programs that teach and practice problem solving are important, as possessing adaptive interpersonal problem solving skills was an important predictor of staying out of trouble, consistent with previous research (e.g. Fabiano, Porporino, & Robinson, 1990; Taymans, 1997).

Procriminal Sentiments

Overall, results for changes and improvements in criminal sentiments found in the present study were disappointing and counter to expectation. As measured by the Criminal Sentiments Scale (CSS), there were no significant differences in criminal attitudes among completers, dropouts, or comparisons. There were also no statistically significant changes in pro-criminal attitudes for any of the groups between Time 1 (before *Thinking for a Change*) and Time 2. Criminal sentiments are often referred to as internalized pro-criminal norms (e.g., Wormith & Andrews, 1984) and involve a distrustful world-view (Granic & Butler, 1998). Thus, it stands to reason that these closely held and deeply entrenched beliefs would not be easily altered by an 11-week course. Further, the cognitive restructuring in *Thinking for a Change* focuses on identifying, evaluating, and changing automatic thoughts, as these are what offenders

often act upon or act out. There is no direct emphasis on restructuring the core beliefs presumed to be underlying automatic thoughts. A surprising trend, although not a statistically significant finding, is that CSS scores for all groups tend to move in a direction of increased pro-criminal sentiments over time. This may indicate that individuals become more disgruntled and cynical about the criminal justice system as time goes on, making it even more important to provide them with the skills to cope successfully. There is also an indication, as found in other group treatments for offenders, that for some individuals the group may provide an environment in which increased cohesion and identification with other criminals may occur (Wormith, 1984). High participant course evaluation ratings, indicating that participants found the class useful, were predictive of greater tolerance for other law violators and less pro-social attitudes toward the law, courts, and police. One explanation for this is that the *Thinking for a Change* group provided an antisocial peer group that some members could use to bond, identify, and reinforce their own antisocial beliefs. Another explanation is that participants with stronger pro-criminal beliefs may be inaccurate in their course evaluation ratings. They may have exaggerated their responses, perhaps because they are insensitive to the connection between truly altering pro-criminal attitudes and the program's goals. Indeed, facilitators who well recognize pro-criminal attitudes among participants tended to give higher ratings (indicating that participants progressed well in the class) to those participants who had less tolerance for, and identification with, law violators, as measured by the CSS.

Although the CSS is well-established and widely used, many lament the paucity of assessment instruments to properly evaluate criminal thinking among offenders, and some argue that there is not yet an instrument that accurately measures criminal sentiments. Therefore, it must be considered that the results regarding criminal sentiments in the present investigation may not be a true reflection of actual criminal sentiments among probationers, but rather may be a reflection of the instrument itself.

Social Skills

The results for social skills changes and improvements highlight the effectiveness and usefulness of social skills interventions for probationers. As measured by the Social Skills Self-Evaluation (SSE), there were significant changes in social skills for the experimental group (completers and dropouts) between Time 1 and Time 2, while social skills for the comparison group tended to remain constant. SSE scores for the completers and dropouts improved over time by about 7 to 10 points. Additionally, at Time 1, the completer group scored about 7 points lower than the comparison group, but they improved and ultimately surpassed the comparison group at Time 2 after the intervention. Interestingly, group dropouts also demonstrated a positive improvement in SSE scores. As group participants also had lower initial scores than comparisons on several measures besides the SSE, it is possible that probation officers “guided” those probationers into *Thinking for a Change* that they recognized as having the most difficulty. Basic social skills are taught and practiced from the beginning lessons, and perhaps even some exposure to skills intervention is helpful. *Thinking for a Change* uses didactics, role-playing, modeling, and homework assignments to instruct participants in the basics of

reciprocity and empathy, and participants are rewarded for their demonstration. It is important to note, however, that the SSE is a self-report instrument and the social skills endorsed therein may or may not be reflective of actual behavior. Even so, believing that one has acquired new skills can become a self-fulfilling prophecy and can at least make one more aware of their use. Further, there was about a six-point difference in SSE scores between participants who recidivated and those who did not, with recidivators having lower SSE scores, suggesting that this social skills measure may be a valid assessment tool for offenders, with less socially competent individuals at higher risk.

Interpersonal Problem Solving

The results concerning social problem-solving indicate a positive effect for clinical change for *Thinking for a Change* group completers. Interpersonal problem solving was measured two ways: with a self-report instrument (Social Problem Solving Inventory-Revised, (SPSI-R)), and with an applied social problem-solving test, the Interpersonal Problem Solving Skills Assessment (IPSSA). On the SPSI-R total score, measuring the reported use of problem solving approaches, there were significant differences at Time 2 such that completers rated themselves as employing adaptive problem solving skills, resulting in better outcomes, more frequently than either the comparison or dropout groups. Further, the dropout group scored significantly higher on the Negative Problem Orientation (NPO) scale, the Impulsivity/Carelessness Style scale (ICS) and the Avoidant Style (AS) scale compared to completers or comparisons. This indicates that the dropout group had an over-reliance on maladaptive, self-defeating problem solving styles as measured by the above scales on the SPSI-R, which in fact

translated into poor compliance on probation. Although there were no statistically significant results for the scales measuring Positive Problem Orientation and Rational Problem Solving, there appears to be a trend toward group completers employing adaptive problem solving more often by Time 2, as their scores improved slightly and were higher at Time 2 than scores of group dropouts or comparisons. Further, group completers' scores decreased slightly for Negative Problem Orientation, Impulsivity/Carelessness, and Avoidant Styles. Finally, those probationers who had recidivated at follow-up had significantly poorer problem solving skills than those who did not recidivate, as indicated by lower SPSI-R total scores and higher ICS and AS scores. These results underscore the importance of a problem-solving component to treatment with an offender population. Like much of the previous research (e.g., Research and Statistics Branch Correctional Service of Canada, 1991; Larsen & Gerber, 1987; Lochman & Dodge, 1994), this study demonstrates that problem solving can be positively impacted with a cognitive-behavioral group intervention, and suggests that poor problem solving is indeed a factor in criminal behavior.

There were also strong positive improvements in problem solving ability as measured by the IPSSA. This is particularly noteworthy because the IPSSA does not rely on the probationer's self-report, but rather asks the test-taker to *apply* social problem-solving skills in hypothetical situations. Specifically, the probationer is asked to identify problems and find acceptable solutions for tense interpersonal situations that could lead to trouble if not reasoned through. For the IPSSA, there was a significant Group X Time interaction, with completers scoring slightly lower than dropouts and comparisons at

Time 1, and significantly improving in applied social problem solving skills by Time 2, while the dropout and comparison groups had no such gains. Further, those who had recidivated at follow-up had significantly lower IPSSA scores than did those who managed to stay out of trouble. These findings, again, stress the importance and utility of teaching problem solving skills to offenders; as found in other research, knowing how to resolve interpersonal problems is a skill that can be acquired through instruction and practice and serves to help offenders make better choices. Further, it seems that the manner in which these skills are cultivated in the *Thinking for a Change* curriculum is indeed effective. Facilitators modeled and instructed, and probationers role-played and practiced the *process* of solving interpersonal problems, which then seems to have become a transferable skill.

Study Limitations

A potential limitation of this study was that most of the measures used were self-report instruments. As the validity of self-report instruments largely depend on the respondent's insight and honesty, they must be used with caution, particularly with an offender population. Even so, for practical reasons and resource limitations, many studies with offenders rely solely on self-report instruments as outcome measures, and often use only one or two tests. In this study, an attempt was made to overcome this potential limitation by employing convergent validity measures. The Investigator used facilitator evaluations, an applied skills measure, several self-report measures, and an official CSCD information database to verify as much of participants' self-reports as possible. Further, the Investigator attempted to control for the conscious or unconscious

attempt to conceal one's shortcomings by measuring degree of defensiveness with a shortened version of the Marlowe-Crowne Social Desirability Scale (MC-SDS). Indeed, probationers were fairly defensive, as indicated by MC-SDS scores, and these scores were used as a covariate when analyzing self-report measures.

Another potential limitation of this study was that the sample size qualifies the study's impact, in that it was too small to significantly highlight the differences in new criminal behavior between the completer and comparison groups. According to sample size calculations, the trend observed toward reduced offenses among those who completed *Thinking for a Change* would have had statistical significance, in addition to its already significant practical implication, with a larger sample size. Additionally, the sample in this study consisted mostly of young, unmarried, black males of lower socioeconomic status residing in a large urban area. Although those demographic characteristics are typical of probationers Nationwide (Mauer, 1990; Walker, Spohn, DeLone, 1996), one must be cautious about generalizing these results to different offender populations, such as female prisoners or Caucasian probationers living in rural communities, for example.

Conclusions and Implications

The present investigation partially substantiates the research promulgating cognitive-behavioral programs as "what works" in offender rehabilitation. With the measures used in this study, there were positive changes in interpersonal and problem-solving skills among probationers who completed *Thinking for a Change* compared to comparison subjects. However, as other studies have shown, positive changes in

constructs correlated with criminal and delinquent behavior do not necessarily reduce it. The results for recidivism were mixed, with completers no different from comparisons in terms of technical violations of probation conditions post-*Thinking for a Change*, and completers with reduced (though not statistically significant) rates in new criminal offenses compared to comparisons. As many point out, even reductions in revocations by one percent have large practical implications in terms of keeping thousands out of jail and saving millions of dollars. *Thinking for a Change* group completers differed from untreated probationers, with about a 33% reduction in new offense charges. That alone makes it seem quite cost-effective and beneficial to continue to offer *Thinking for a Change* in the future. Further, as those who did not recidivate demonstrated better interpersonal and problem-solving skills than did those who re-offended, it does seem that these are worthwhile targets for change.

Future research should continue to explore which components of rehabilitation programs effectively reduce recidivism, as this remains unclear. This present study provides some encouragement for cognitive-behavioral treatments for offenders, but it is important to continue to explore this modality's effectiveness, particularly examining what combination of treatment elements effect most change, as this seems to vary across studies. Further, an important area for future research is to examine what the motivational and other differences are that make some higher-risk probationers compliant with *Thinking for a Change*, and with probation in general, and others not, as increased technical violations account for a major proportion of probation violations. It is noteworthy that the majority of program completers who received a new criminal charge

and/or technical violation did so at least three months after *Thinking for a Change*, while the majority of comparisons and dropouts had trouble within three months of the group's end. It would be important to explore if "booster sessions," an aftercare group, and relapse prevention measures could further delay future criminal behavior. While this study provides additional evidence that there is significant hope for change among criminal offenders, there continues to be much to be systematically evaluated in order to more fully answer the controversial question, "what works?" in offender rehabilitation.

Table 1

Demographic Characteristics

Variable	Completers	Dropouts	Comparisons	Totals	Significance
<u>Gender</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
Male	30 (68.2)	20 (74.1)	50 (70.4)	100 (70.4)	$\chi^2 = .279$
Female	14 (31.8)	7 (25.9)	21 (29.6)	42 (29.6)	$p = .870^{**}$
<u>Age</u>					
18-24	20 (45.5)	16 (59.3)	36 (50.7)	72 (50.7)	$\chi^2 = 1.89$
25-32	12 (27.3)	6 (22.2)	21 (29.6)	39 (27.5)	$p = .755^{**}$
33+	12 (27.3)	5 (18.5)	14 (19.7)	31 (21.8)	
<u>Mean Age</u>	<u>M</u> <u>SD</u>	<u>M</u> <u>SD</u>	<u>M</u> <u>SD</u>	<u>M</u> <u>SD</u>	
	28.7 9.6	24.5 6.9	27.1 8.4	27.1 8.6	
<u>Age Range</u>	19-56	18-40	18-55	18-56	
<u>Ethnicity</u>					
Caucasian	12 (27.3)	13 (48.1)	22 (31.0)	47 (33.1)	$\chi^2 = 10.62$
AA ⁺ /Black	22 (50.0)	10 (37.0)	39 (54.9)	71 (50.0)	$p = .388^{**}$
Hispanic/ Latino	8 (18.2)	3 (11.1)	8 (11.3)	19 (13.4)	
American Indian	1 (2.3)	0 (.0)	0 (.0)	1 (0.7)	
Asian/ Pacific Islander	0 (.0)	1 (3.7)	2 (2.8)	3 (2.1)	
Black Indian	1 (2.3)	0 (.0)	0 (.0)	1 (.7)	
<u>High School/ GED</u>					
Yes	23 (52.3)	18 (66.7)	49 (69.0)	90 (63.4)	$\chi^2 = 3.44$
No	21 (47.7)	9 (33.3)	22 (31.0)	52 (36.6)	$p = .179^{**}$
<u>College</u>					
None	31 (70.5)	20 (74.1)	49 (69.0)	100 (70.4)	$\chi^2 = 1.66$
Some	10 (22.7)	6 (22.2)	18 (25.4)	34 (23.9)	$p = .948$
College Degree	3 (6.8)	1 (3.7)	3 (4.2)	7 (4.9)	

** Chi Square

⁺ African American

Table 2

Age and Years of Education

	Completers	Dropouts	Comparisons	Total	Significance
Mean Age	28.7	24.5	27.1		F =2.03
Standard Deviation	9.6	6.9	8.4		p = .136*
Range	19-56	18-40	18-55		
N	44	27	71	142	
Mean Years Of Education	10.9	11.1	11.3	11.1	F = .695
Standard Deviation	2.0	2.0	1.9	.86	p = .501*
Range	4-16	8-14	4-15	4-16	
N	44	27	71	142	

* ANOVA

Table 3

Marital Status and Income

Variable	Completers	Dropouts	Comparisons	Total	Significance
<u>Marital Status</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>N (%)</u>	
Never Married	25 (56.8)	19 (70.4)	42 (59.2)	86 (60.6)	$\chi^2 = 7.39$ $p = .688^{**}$
Married	3 (6.8)	2 (7.4)	11 (15.5)	16 (11.3)	
Divorced	6 (13.6)	2 (7.4)	4 (5.6)	12 (8.5)	
Separated	3 (6.8)	1 (3.7)	6 (8.5)	10 (7.0)	
Living Together	7 (15.9)	3 (11.1)	7 (9.9)	17 (12.0)	
Widowed	0 (.0)	0 (.0)	1 (.0)	1 (0.7)	
<u>Weekly Family Take-Home Income</u>					
\$0	5 (11.6)	8 (29.6)	6 (8.6)	19 (13.6)	$\chi^2 = 19.29$ $p = .082^{**}$
Less Than \$200	6 (14.0)	4 (14.8)	2 (2.9)	12 (8.6)	
\$200-\$300	9 (20.9)	5 (18.5)	18 (25.7)	32 (22.9)	
\$301-\$400 ⁺	8 (18.6)	1 (3.7)	18 (25.7)	27 (19.3)	
\$401-\$500	5 (11.6)	1 (3.7)	9 (12.9)	15 (10.7)	
\$501-\$600	3 (7.0)	2 (7.4)	5 (7.1)	10 (7.1)	
> \$601	7 (16.3)	6 (22.2)	12(16.9)	25 (17.9)	

** Chi Square

⁺ Median Family Take-Home Income

Table 4

Risk Level

	Completers	Dropouts	Comparisons	Total	Significance
<u>Risk Level</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	$\chi^2 = 4.57$
Minimum	1 (2.3)	1 (3.7)	3 (4.2)	5 (3.5)	$p = .344^{**}$
Medium	26 (59.1)	12 (44.4)	47 (66.2)	85 (59.9)	
Maximum	17 (38.6)	14 (51.9)	21 (29.6)	52 (36.6)	

** Chi Square

Table 5

Categories of Felony Offenses

	Completers	Dropouts	Comparisons	Total
<u>Offense</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>
Drug Related	19 (38.0)	13 (37.1)	29 (34.1)	61 (35.6)
Theft	9 (18.0)	7 (20.0)	29 (34.1)	45 (26.3)
Fraud	9 (18.0)	5 (14.3)	8 (9.4)	22 (12.8)
Assault	7 (14.0)	2 (5.7)	10 (11.8)	19 (11.1)
Weapons	0 (0.0)	4 (11.4)	4 (4.7)	8 (4.7)
Endangering				
Child or Elderly	4 (8.0)	1 (2.9)	3 (3.5)	8 (4.7)
Criminal Mischief	1 (1.9)	0 (0.0)	2 (2.3)	3 (1.8)
Organized Crime	0 (0.0)	2 (5.7)	1 (1.2)	3 (1.8)
Attempted Murder	1 (1.9)	0 (0.0)	0 (0.0)	1 (0.6)
Tampering with				
Physical Evidence	0 (0.0)	1 (2.9)	0 (0.0)	1 (0.6)

Table 6

Number of Months on Supervision at Start of *Thinking for a Change* Group

	Completers	Dropouts	Comparisons	Total	Significance
Mean Time on Supervision	21.1	14.1	25.0	21.7	F (2, 139) = 2.52 p = .085*
Standard Deviation	20.4	13.2	24.9	22.0	
Range	1-85	3-54	1-101	1-101	
N	44	27	71	142	

* ANOVA

Table 7

Frequency of Participants to Officer and Court

<u>Number of Officers Supervising Study Participants</u>	<u>Number of Participants Per Supervision Officer</u>	<u>Total Number of Participants</u>
2	8	16
1	6	6
3	5	15
6	4	24
3	3	9
27	2	54
18	1	18
<u>N = 60</u>		<u>N = 142</u>
<u>Court Number Supervising Participants</u>	<u>Number of Participants Per Court</u>	<u>Total Number of Participants</u>
#1	2	2
#2	10	10
#3	11	11
#4	6	6
#5	4	4
#6	13	13
#7	8	8
#8	7	7
#9	6	6
#10	8	8
#11	16	16
#12	12	12
#13	7	7
#14	9	9
#15	6	6
#74	2	2
#79	4	4
#80	4	4
#88	7	7
<u>N = 19</u>		<u>N = 142</u>

Table 8

Thinking for a Change Groups

	Completers	Dropouts	Comparisons	Total	Significance
<u>CSCD Satellite Office</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
East	10 (22.7)	5 (18.5)	14 (19.7)	29 (20.4)	$\chi^2 = .789$ $p = .992^{**}$
North	11 (25.0)	9 (33.3)	20 (28.2)	40 (28.2)	
Decker	12 (27.3)	6 (22.2)	19 (26.8)	37 (26.1)	
South	<u>11 (25.0)</u>	<u>7 (25.9)</u>	<u>18 (25.4)</u>	<u>36 (25.4)</u>	
Total	44 (61.9)	27 (38.0)	71	142	
<u>Groups Attended</u>	<u>Mean</u> <u>SD</u>	<u>Mean</u> <u>SD</u>			
	19.2 1.5	6.7 3.7			
Range	17-23	1-16			

** Chi Square

Table 9

Group Process Inventory (GPI) Percent Scores

<u>CSCD Satellite Office</u>	GPI 1		GPI 2		GPI 3		Mean	<u>SD</u>
	Score	Session	Score	Session	Score	Session	Score	
East	72 *	12	81	21	92	13	81.7	10.2
North	88	18	89	12	86	12	87.7	1.5
Decker	77	15	84	13			80.5	4.9
South	75	12	81	22	83	20	79.7	4.2
Total Mean Score	78%		83.7%		87%		82.6%	6.2

* Higher GPI scores indicate greater facilitator competence

Table 10

Key Facilitator Evaluation Questions: Homework Quality, Participation, and Understanding of Session Concepts

	Median	Z	Significance
<u>Homework Quality</u>			
Completers	3 *	-4.03	$\underline{U} = 164.5^{**}$
Dropouts	1	-4.03	$\underline{p} < .001$
<u>Participation Level</u>			
Completers	4	-5.21	$\underline{U} = 85.5$
Dropouts	2	-5.21	$\underline{p} < .001$
<u>Understanding Session Concepts</u>			
Completers	3	-3.95	$\underline{U} = 167.0$
Dropouts	1	-3.95	$\underline{p} = .000$

* Higher median scores indicate better class performance

** Mann-Whitney U Test

Table 11

New Offenses at Follow-Up

	Completers	Dropouts	Comparisons	Total	Significance
<u>New Offenses</u>	<u>n (%)</u> 5 (13.2)	<u>n (%)</u> 4 (18.2)	<u>n (%)</u> 12 (20)	<u>n (%)</u> 21(17.5)	$\chi^2 = .763^{**}$ $p = .683$
<u>Number of Charges</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
Misdemeanor	4 (66.6)	4 (57.1)	10 (50)	18(54.5)	
Felony	2 (33.3)	3 (42.8)	10 (50)	15(45.5)	
<u>Mean Charges at Follow-up</u>	<u>M</u> <u>SD</u> .16 .44	<u>M</u> <u>SD</u> .18 .39	<u>M</u> <u>SD</u> .30 .67	<u>M</u> <u>SD</u> .23 .56	F (2,116) = .988* $p = .376$

** Chi Square Test

* ANCOVA

Table 12

Recidivism: Time New Criminal Offense was Received

Group	<i>After Thinking for a Change Group</i>			
	0-3 months	3-6 months	6-9 months	9-12 months
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>
<u>Completer</u>	1 (20)	3 (60)	1 (20)	0 (0)
<u>Dropout</u>	3 (75)	1 (25)	0 (0)	0 (0)
<u>Comparison</u>	6 (50)	3 (25)	1 (8.3)	2 (16.7)
<u>Total</u>	10 (47.6)	7 (33.3)	2 (9.5)	2 (9.5)

Probationers Who Did Not Recidivate: Length of Time Observed

	0-3 months	3-6 months	6-9 months	9-12 months
<u>Completers</u>	6	12	6	15
<u>Dropouts</u>	6	11	2	4
<u>Comparisons</u>	16	21	5	16

Table 13

New Technical Violations at Follow-Up

	Completers		Dropouts		Comparisons		Total		Significance
<u>Probationers</u> <u>Receiving New</u> <u>Technical</u> <u>Violations</u>	<u>n</u> (%) 16 (42.1)		<u>n</u> (%) 17 (77.3)		<u>n</u> (%) 27 (45)		<u>n</u> (%) 60 (50)		$\chi^2 = 8.09^{**}$ $p = .017$
<u>Number of New</u> <u>Technical</u> <u>Violations</u>	<u>n</u> (%) 19 (21.3)		<u>n</u> (%) 26 (29.2)		<u>n</u> (%) 44 (49.4)		<u>n</u> (%) 89(74.1)		
<u>Mean New</u> <u>Technical</u> <u>Violations at</u> <u>Follow-up</u>	<u>M</u> .5	<u>SD</u> .7	<u>M</u> 1.2	<u>SD</u> .9	<u>M</u> .7	<u>SD</u> 1.1	<u>M</u> .7	<u>SD</u> 1.0	F (2,116) = 3.79* $p = .025$

** Chi Square Test

* ANCOVA

Table 14

Recidivism: Time New Technical Violation was Received

Group	<i>After Thinking for a Change Group</i>			
	0-3 months	3-6 months	6-9 months	9-12 months
<u>Completer</u>	<u>n (%)</u> 7 (43.8)	<u>n (%)</u> 5 (31.3)	<u>n (%)</u> 4 (25.0)	<u>n (%)</u> 0 (0.0)
<u>Dropout</u>	13 (76.5)	1 (5.9)	2 (11.8)	1 (5.9)
<u>Comparison</u>	14 (53.8)	7 (26.9)	3 (11.5)	2 (7.7)
<u>Total</u>	34 (57.6)	13 (22.0)	9 (15.3)	3 (5.1)

Table 15

Predictors of Technical Violations

Variable Predictor	Beta	Wald χ^2	p	Odds-ratio	95% CI Lower	95% CI Upper
<u>Risk level*</u>						
Minimum	-9.70	.16	.692	.00	.00	4.04E+16
Medium	-1.03	5.04	.025***	.36	.15	.89
<u>IPSSA</u>	-.075	5.00	.025***	.93	.87	.99
<u>Group**</u>						
Completer	-.016	.001	.974	.98	.38	2.58
Dropouts	1.54	5.20	.023***	4.7	1.24	17.54
Constant	3.38	5.69	.015	29.3		

* Maximum Risk is the reference group

** Comparison group is the reference group

*** Significant ($p < .05$)

Table 16

Probation Revocations, Jail Time, and Status at Follow-Up

	Completers	Dropouts	Comparisons	Total	Significance
<u>Revocations</u>	<u>n (%)</u> 2 (4.5)	<u>n (%)</u> 5 (18.5)	<u>n (%)</u> 5 (7.0)	<u>n (%)</u> 12 (8.5)	
<u>Reason for Revocation</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
New Offense	0 (0.0)	2 (40)	3 (60)	5 (41.7)	
Technical Violation	2 (100)	3 (60)	2 (40)	7 (58.3)	
<u>Jail Time Since Group</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
Yes	11 (25)	11 (40.7)	18 (25.4)	40 (28.2)	$\chi^2 = 2.61^*$ $p = .272$
No	33 (75)	16 (59.3)	53 (74.6)	102 (71.8)	
<u>Status at Follow-up</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
On probation	36 (81.8)	13 (48.1)	55 (75)	104(73.2)	$\chi^2 = 17.44^*$ $p = .065$
Revoked	2 (4.5)	5 (18.5)	5 (7.0)	12 (8.5)	
Absconded	0 (0.0)	2 (7.4)	2 (2.8)	4 (2.8)	
Completed supervision	5 (11.4)	3 (11.1)	4 (5.6)	12 (8.5)	
On Probation; Current Warrant	0 (0.0)	2 (7.4)	1(1.4)	3 (2.1)	
In Jail Awaiting Court Decision	1 (2.3)	2 (7.4)	4 (5.6)	7 (4.9)	

* Chi Square

Table 17

Marlowe-Crowne Social Desirability Scale (MC-SDS)

	Median	Z	p	χ^2	p	Mean (Standard Deviation)
<u>Time 1</u>						
Completers	6			2.42	.299**	5.1 (1.6)
Dropouts	5					4.7 (2.0)
Comparisons	6					5.4 (1.8)
<u>Time 2</u>						
Completers	5	-1.10	.271*	2.42	.141**	4.9 (1.7)
Dropouts	5	-1.19	.235*			5.0 (1.9)
Comparisons	6	-1.10	.270*			5.5 (2.0)

* Wilcoxon Signed Ranks Test

** Kruskal-Wallis Test

Table 18

Criminal Sentiments Scale Scores

	Time 1	Time 2
	<u>Mean</u> (SD)	<u>Mean</u> (SD)
<u>Law/Courts/Police (LCP)</u>		
Completers (n = 37)	68.27 (11.13)	62.88 (11.45)
Dropouts (n = 19)	64.37 (14.09)	59.30 (16.84)
Comparisons (n = 53)	62.54 (9.57)	58.08 (11.69)
<u>Tolerance for Law Violations (TLV)</u>		
Completers (n = 37)	36.57 (5.71)	37.49 (5.66)
Dropouts (n = 19)	37.44 (5.96)	39.04 (5.76)
Comparisons (n = 53)	39.23 (5.08)	39.38 (5.91)
<u>Identification with Criminal Others (ICO)</u>		
Completers (n = 37)	20.70 (3.24)	21.76 (3.50)
Dropouts (n = 19)	20.37 (3.83)	21.74 (3.52)
Comparisons (n = 53)	21.64 (3.14)	21.95 (3.27)

Criminal Sentiments Scale Repeated Measures ANOVA

	df	F	p
<u>LCP</u>			
Time	1	1.01	.318
Group	2	2.24	.111
Time X Group	2	.014	.986
Error	105 (35.1)		
<u>TLV</u>			
Time	1	.149	.700
Group	2	1.59	.208
Time X Group	2	.592	.555
Error	105 (11.6)		
<u>ICO</u>			
Time	1	3.08	.082
Group	2	.491	.613
Time X Group	2	.986	.377
Error	105 (5.6)		

Note: Value in parentheses represents mean square error

Table 19

Social Skills Self-Evaluation (SSE)

<u>SSE Scores</u>	Time 1	Time 2
	<u>Mean</u> (<u>SD</u>)	<u>Mean</u> (<u>SD</u>)
Completers (n = 43)	186.35 (17.55)	192.81 (24.28)
Dropouts (n = 22)	187.62 (28.18)	193.45 (26.58)
Comparisons (n = 63)	193.71 (23.89)	192.32 (28.65)

SSE Repeated Measures ANOVA

<u>SSSE</u>	df	F	<u>p</u>
Time	1	1.05	.307
Group	2	.038	.963
Time X Group	2	3.92	.023*
Error	119 (185.5)		

* Significant $p < .05$

Note: Value in parenthesis represents mean square error

Table 20

Study Scores: Recidivators Versus Nonrecidivators

	Time 1	Significance	Time 2	Significance
<u>CSS (LCP)</u>	<u>Mean (SD)</u>		<u>Mean (SD)</u>	
Recidivators	66.35 (10.81)	$t = -1.22$	62.65 (13.33)	$t = -1.84$
Nonrecidivators	63.76 (12.24)	$p = .225$	58.07 (12.64)	$p = .068^{**}$
<u>CSS (TLV)</u>				
Recidivators	37.22 (5.72)	$t = 1.16$	37.63 (6.10)	$t = 1.38$
Nonrecidivators	38.41 (5.50)	$p = .249$	39.19 (5.71)	$p = .171$
<u>CSS (ICO)</u>				
Recidivators	20.55 (3.32)	$t = 1.33$	21.42 (3.20)	$t = 1.29$
Nonrecidivators	21.36 (3.30)	$p = .185$	22.26 (3.58)	$p = .201$
<u>SSE</u>				
Recidivators	187.55 (21.84)	$t = 1.11$	189.45 (27.41)	$t = -1.32$
Nonrecidivators	192.15 (22.29)	$p = .271$	195.96 (23.44)	$p = .188$
<u>SPSI-R (Total)</u>				
Recidivators	12.90 (2.73)	$t = 1.50$	12.84 (3.07)	$t = -2.57$
Nonrecidivators	13.66 (2.81)	$p = .137$	14.34 (2.95)	$p = .011^*$
<u>SPSI-R (NPO)</u>				
Recidivators	13.25 (9.38)	$t = -.653$	15.06 (10.19)	$t = 2.78$
Nonrecidivators	12.19 (8.21)	$p = .515$	10.21 (7.60)	$p = .006^*$
<u>SPSI-R (ICS)</u>				
Recidivators	12.5 (7.61)	$t = -1.37$	14.04 (8.40)	$t = 3.06$
Nonrecidivators	10.69 (6.65)	$p = .172$	9.61 (6.63)	$p = .003^*$
<u>SPSI-R (AS)</u>				
Recidivators	9.56 (5.97)	$t = -1.02$	10.15 (5.89)	$t = 2.58$
Nonrecidivators	8.53 (4.80)	$p = .309$	7.57 (4.47)	$p = .011^*$
<u>SPSI-R (PPO)</u>				
Recidivators	12.93 (4.13)	$t = .761$	13.60 (3.86)	$t = .507$
Nonrecidivators	13.52 (4.20)	$p = .448$	13.98 (4.03)	$p = .613$

* Significant $p < .05$

** Approaching significance

Table 20 (continued)

Study Scores: Recidivators Versus Nonrecidivators

	Time 1	Significance	Time 2	Significance
	<u>Mean</u> (<u>SD</u>)		<u>Mean</u> (<u>SD</u>)	
<u>SPSI-R (RPS)</u>				
Recidivator	45.78 (13.60)	$t = -1.44$	49.65 (14.06)	$t = -.56$
Nonrecidivator	49.34 (13.3)	$p = .154$	51.29 (15.86)	$p = .574$
<u>IPSSA</u>				
Recidivators	37.42 (7.93)	$t = .713$	38.59 (8.26)	$t = -2.70$
Nonrecidivators	38.42 (7.27)	$p = .477$	42.40 (6.16)	$p = .008^*$

* Significant $p < .05$

Table 21

Social Problem Solving Inventory-Revised (SPSI-R) Scores

	Time 1	Time 2
	<u>Mean</u> (SD)	<u>Mean</u> (SD)
<u>SPSI-R Total</u>		
Completers (n = 44)	13.65 (2.42)	14.35 (2.67)
Dropouts (n = 27)	12.95 (3.32)	12.40 (3.29)
Comparisons (n = 68)	13.55 (2.92)	13.62 (3.10)
<u>SPSI-R (NPO)</u>		
Completers (n = 42)	11.95 (8.24)	11.12 (7.44)
Dropouts (n = 23)	14.22 (9.49)	16.83 (9.55)
Comparisons (n = 64)	11.50 (8.63)	11.19 (9.56)
<u>SPSI-R (ICS)</u>		
Completers (n = 44)	9.80 (6.64)	9.64 (6.14)
Dropouts (n = 27)	13.96 (8.81)	16.17 (8.62)
Comparisons (n = 69)	11.16 (6.54)	11.44 (7.80)
<u>SPSI-R (AS)</u>		
Completers (n = 44)	8.04 (4.51)	7.86 (4.37)
Dropouts (n = 27)	10.11 (6.12)	11.96 (6.36)
Comparisons (n = 68)	8.41 (5.56)	8.53 (5.33)
<u>SPSI-R (PPO)</u>		
Completers (n = 42)	12.98 (3.80)	14.12 (3.86)
Dropouts (n = 23)	13.70 (4.11)	13.87 (3.22)
Comparisons (n = 64)	13.38 (4.81)	13.41 (4.32)
<u>SPSI-R (RPS)</u>		
Completers (n = 41)	47.66 (12.65)	53.34 (13.75)
Dropouts (n = 23)	49.41 (15.05)	52.65 (14.61)
Comparisons (n = 64)	47.33 (15.66)	48.45 (15.68)

Table 22

SPSI-R Repeated Measures ANOVA

	df	F	p
<u>SPSI-R Total</u>			
Time	1	.443	p = .507
Group	2	3.662	p = .029*
Time X Group	2	.954	p = .389
Error	103 (2.61)		
<u>SPSI-R (NPO)</u>			
Time	1	1.029	p = .313
Group	2	3.84	p = .025*
Time X Group	2	.796	p = .454
Error	103 (32.03)		
<u>SPSI-R (ICS)</u>			
Time	1	.148	p = .701
Group	2	7.23	p = .001*
Time X Group	2	.364	p = .696
Error	103 (18.68)		
<u>SPSI-R (AS)</u>			
Time	1	.068	p = .795
Group	2	6.19	p = .003*
Time X Group	2	.413	p = .663
Error	103 (10.24)		
<u>SPSI-R (PPO)</u>			
Time	1	.006	p = .941
Group	2	.112	p = .894
Time X Group	2	.410	p = .665
Error	103 (7.36)		
<u>SPSI-R (RPS)</u>			
Time	1	.443	p = .507
Group	2	.720	p = .489
Time X Group	2	.817	p = .444
Error	103(58.96)		

Note: Values in parentheses represent mean square errors

* Significant p < .05

Table 23

Interpersonal Problem Solving Skills Assessment (IPSSA) Scores

	Time 1	Time 2
<u>IPSSA Scores</u>	<u>Mean (SD)</u>	<u>Mean (SD)</u>
Completers (n = 43)	37.42 (6.62)	42.79 (5.73)
Dropouts (n = 23)	39.07 (7.85)	39.13 (8.19)
Compariosns (n = 64)	37.59 (7.58)	37.59 (7.58)

IPSSA Repeated Measures ANOVA

	df	F	<u>p</u>
<u>IPSSA</u>			
Time	1	.333	p = .565
Group	2	.275	p = .760
Time X Group	2	11.05	p < .001*
Error	103 (15.47)		

* Significant $p < .001$

Note: Value in parenthesis represents mean square error

Table 24

Course Evaluation Scores

	Participant Evaluation Scores	Facilitator Evaluation Scores	r
<u>Completers</u>			r = .295*
Mean (SD)	25.7 (4.9)	41.2 (8.0)	
Range	8-32	17-57	
Median	26	41	
N	42	44	
<u>Dropouts</u>			
Mean (SD)	22.0 (7.3)	22.4 (15.6)	
Range	4-32	0-53	
Median	25	23	
N	21	18	

* Pearson's Correlation Coefficient

Course Evaluation Scores as Predictors

<u>Predictor Variable</u>	<u>Dependent Variable</u>	<u>B</u>	<u>Std. Error</u>	<u>Beta</u>	<u>t</u>	<u>Significance</u>
Participant Evaluation	CSS (LCP)	79.21	.281	-3.48	-2.64	p = .011
Participant Evaluation	CSS (TLV)	.296	.110	.348	2.70	p = .009
Facilitator Evaluation	CSS (TLV)	-.126	.055	-.293	-2.27	p = .027

Table 25

Predictors of Study Measures Scores

<u>Predictor Variable</u>	<u>Dependent Variable</u>	<u>B</u>	<u>Std. Error</u>	<u>Beta</u>	<u>t</u>	<u>Significance</u>
Years of Education	CSS (LCP)	-1.60	.615	-.227	-2.59	p = .011
Never Married	CSS (ICO)	-1.67	.603	-.242	-2.77	p = .007
Risk Level	SPSI-R (NPO)	4.02	1.37	.243	2.93	p = .004
Dropout	SPSI-R (NPO)	4.63	1.94	.199	2.38	p = .019
Years of Education	SPSI-R (NPO)	-1.06	.416	-.210	-2.55	p = .012
Caucasian	SPSI-R (NPO)	3.25	1.58	.171	2.05	p = .042
Dropout	SPSI-R (ICS)	5.01	1.69	.254	2.97	p = .004
Age	SPSI-R (ICS)	-.18	.075	-.211	-2.47	p = .015
Dropout Need	SPSI-R (AS)	2.93	1.21	.210	2.43	p = .017
Level	SPSI-R (AS)	2.14	.817	.228	2.61	p = .010
“Other” Ethnicity	SPSI-R (AS)	-4.93	2.33	-.179	-2.12	p = .036
Dropout	SPSI-R Total	-1.42	.681	-.181	-2.08	p = .040
Risk Level	SPSI-R Total	-.995	.484	-.179	-2.06	p = .042
Years of Education	SPSI-R Total	.289	.15	.175	2.03	p = .045
Living Together	IPPSA	-4.18	1.78	-.207	-2.35	p = .021
Never Married	SSE	-11.24	4.73	-.208	-2.38	p = .019
“Other” Ethnicity	SSE	23.88	11.79	.177	2.03	p = .045

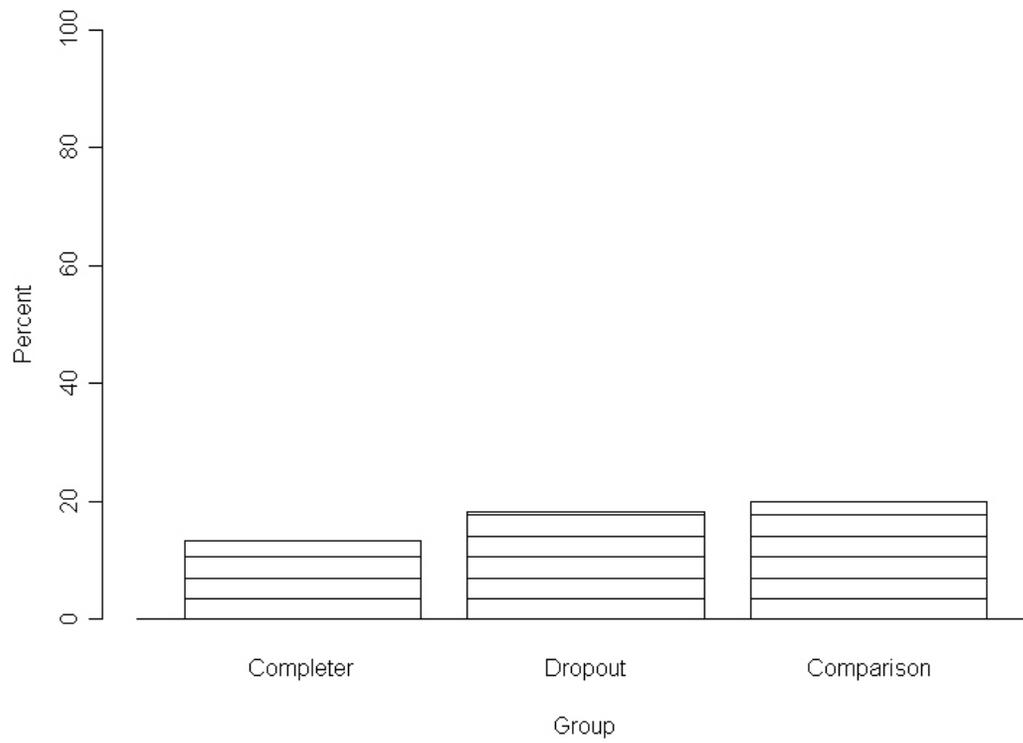
Figure 1**Recidivism for New Offenses by Group**

Figure 2

Recidivism for New Technical Violations by Group

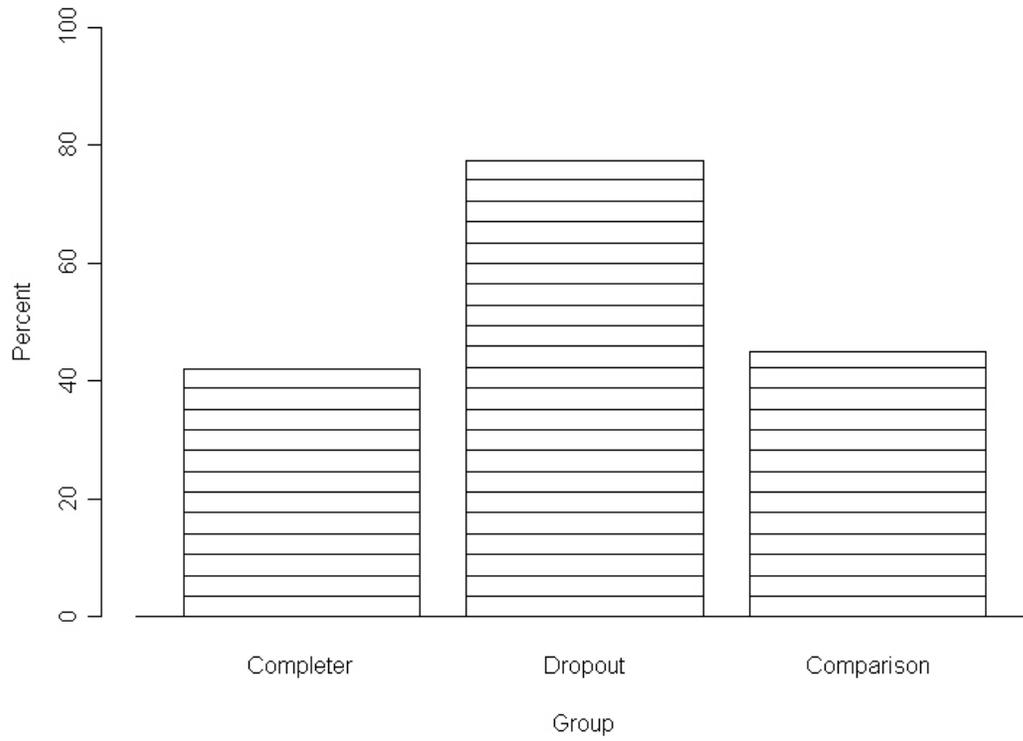
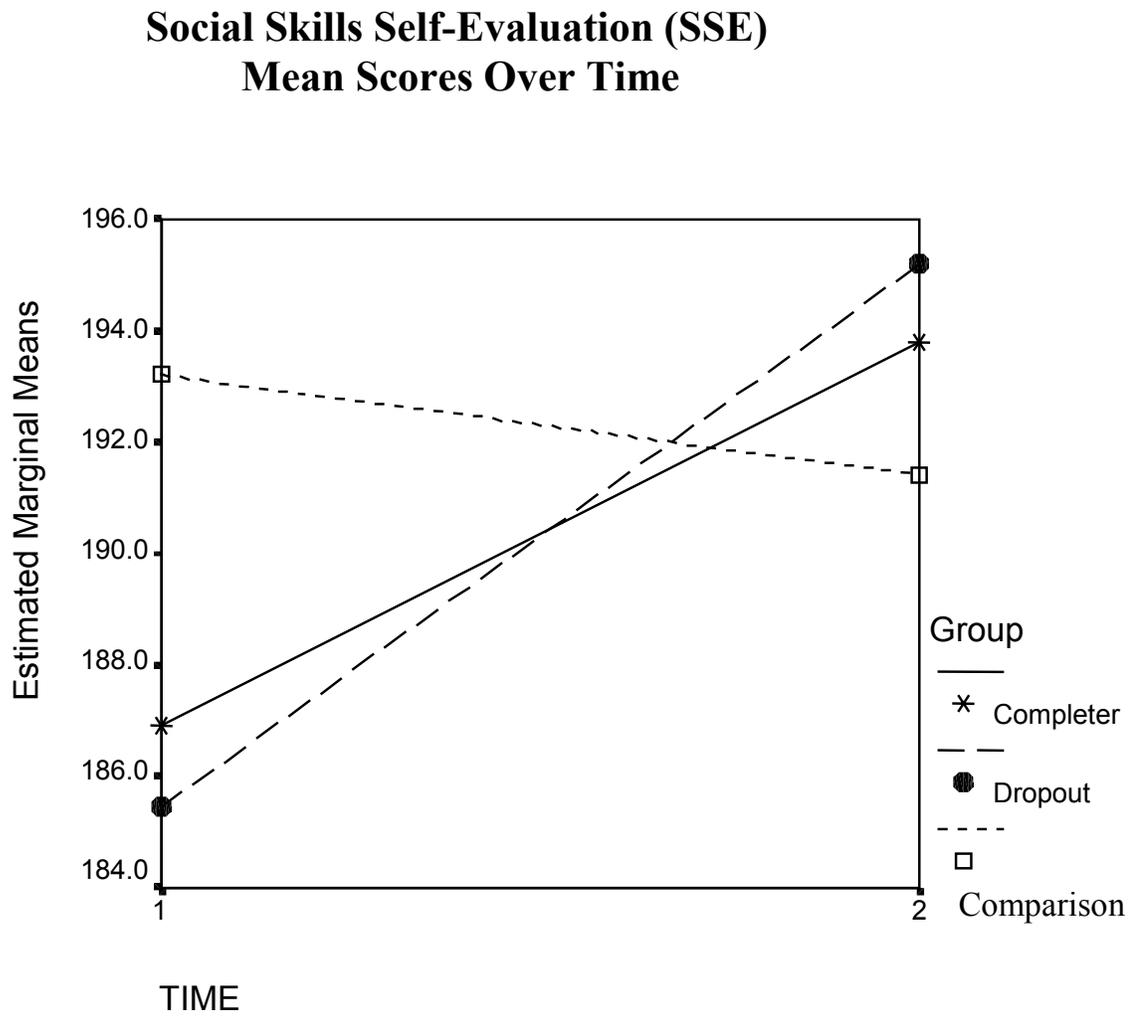


Figure 3



* Significant ($p < .05$) Group X Time Interaction

Figure 4

Social Skills Self-Evaluation (SSE) Scores

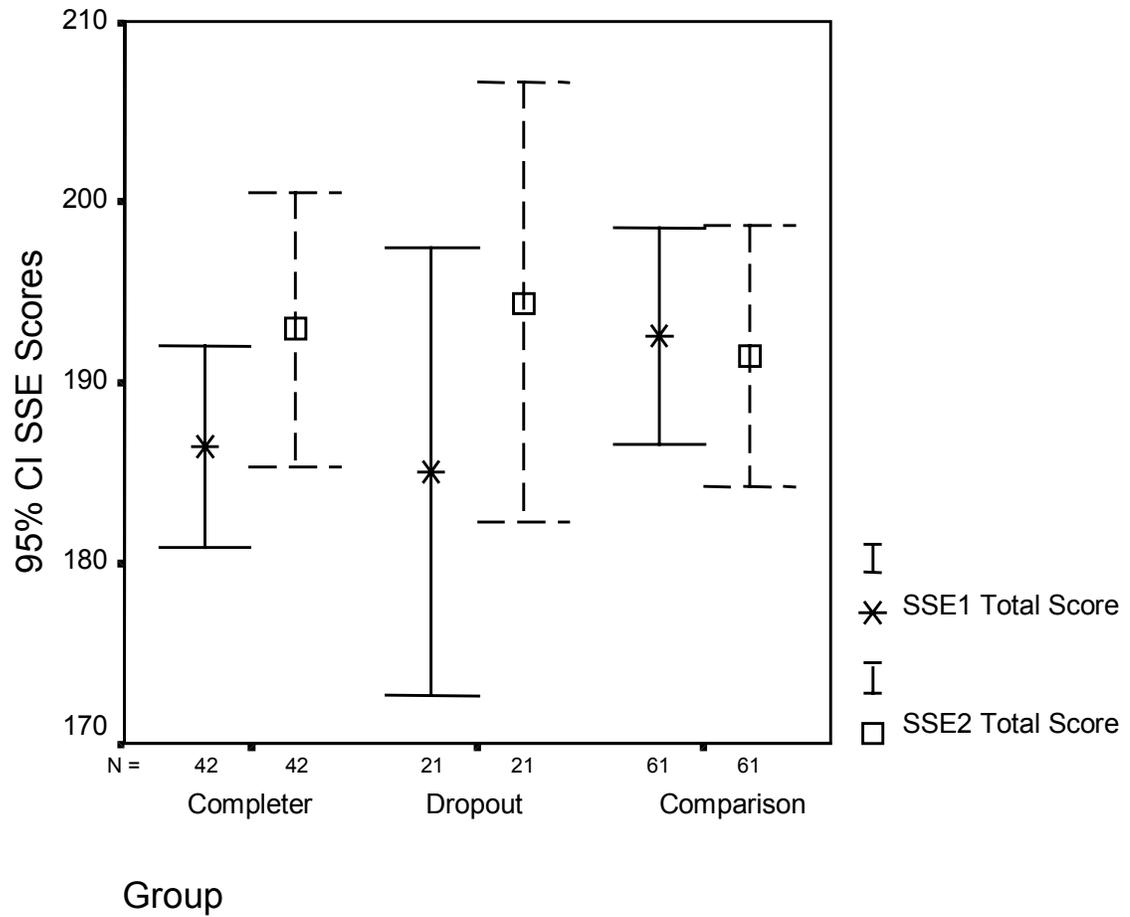
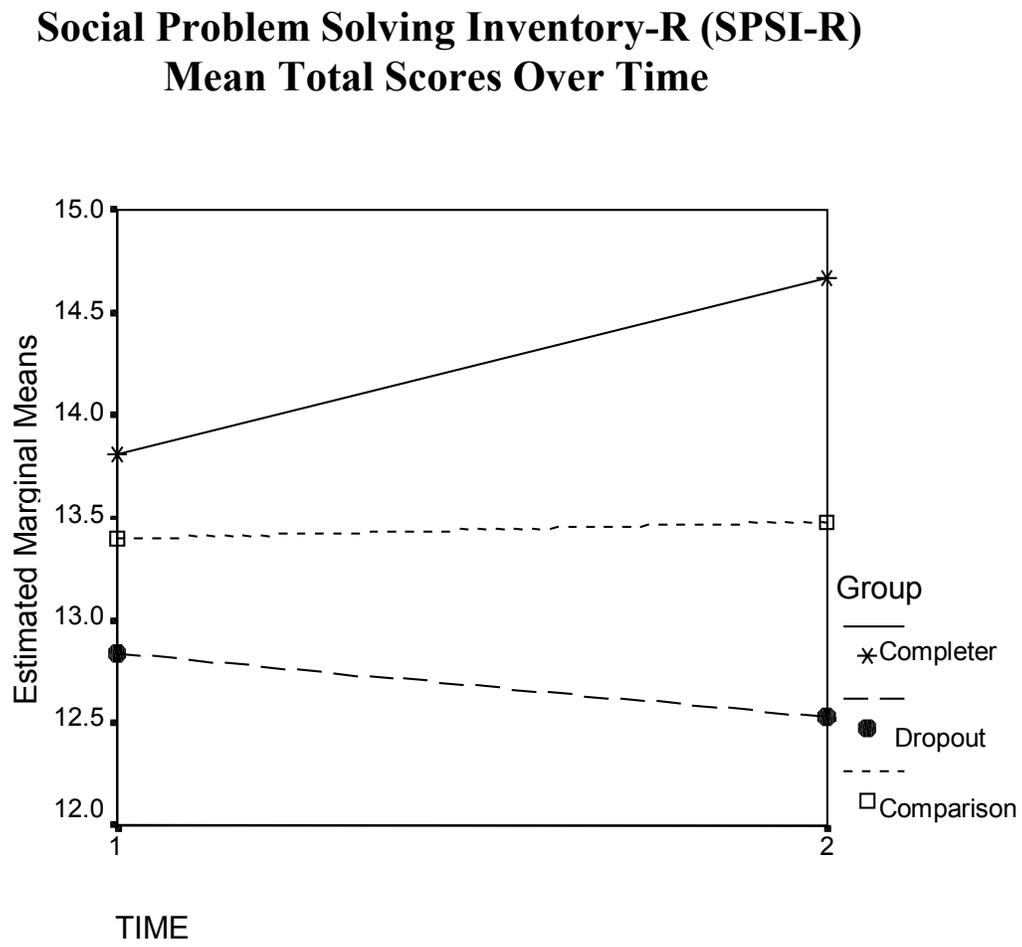


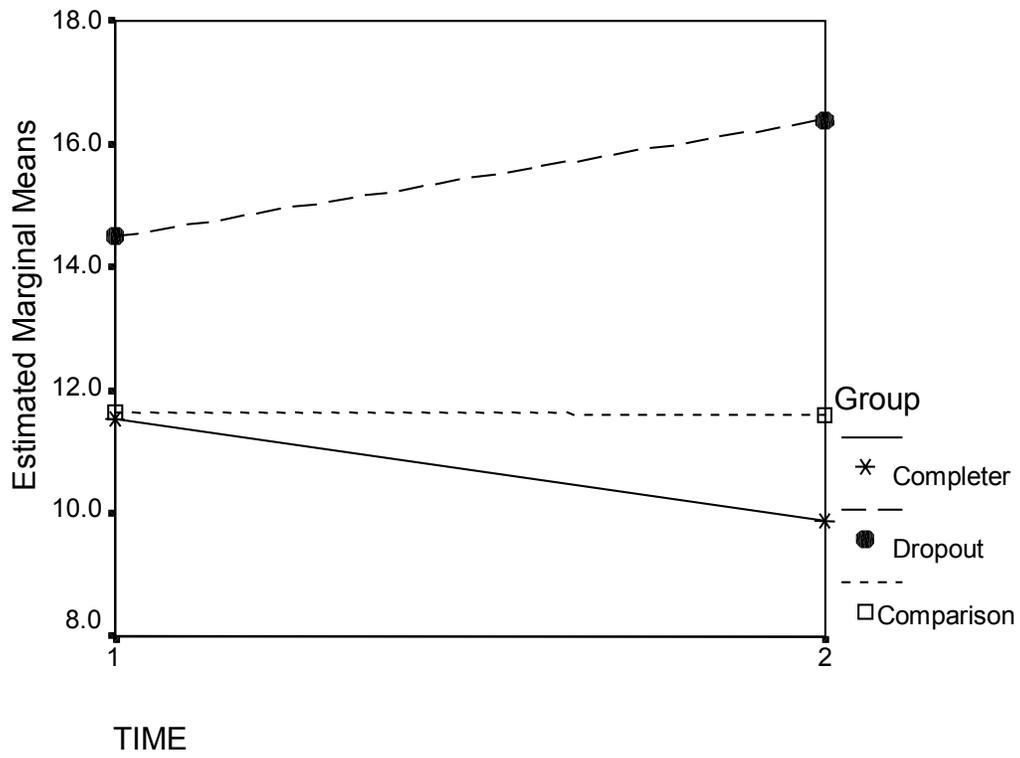
Figure 5



* Significant ($p < .05$) Main Effect

Figure 6

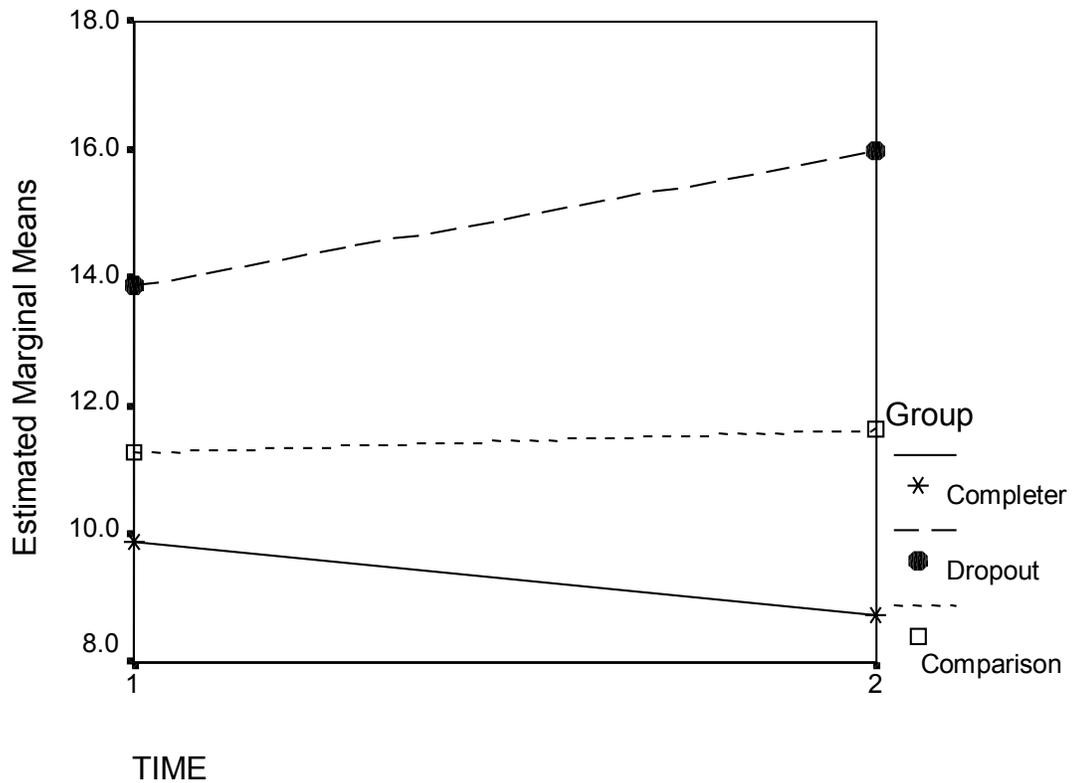
**Social Problem Solving Inventory-R (SPSI-R)
Negative Problem Orientation (NPO) Mean Scores Over Time**



* Significant ($p < .05$) Main Effect

Figure 7

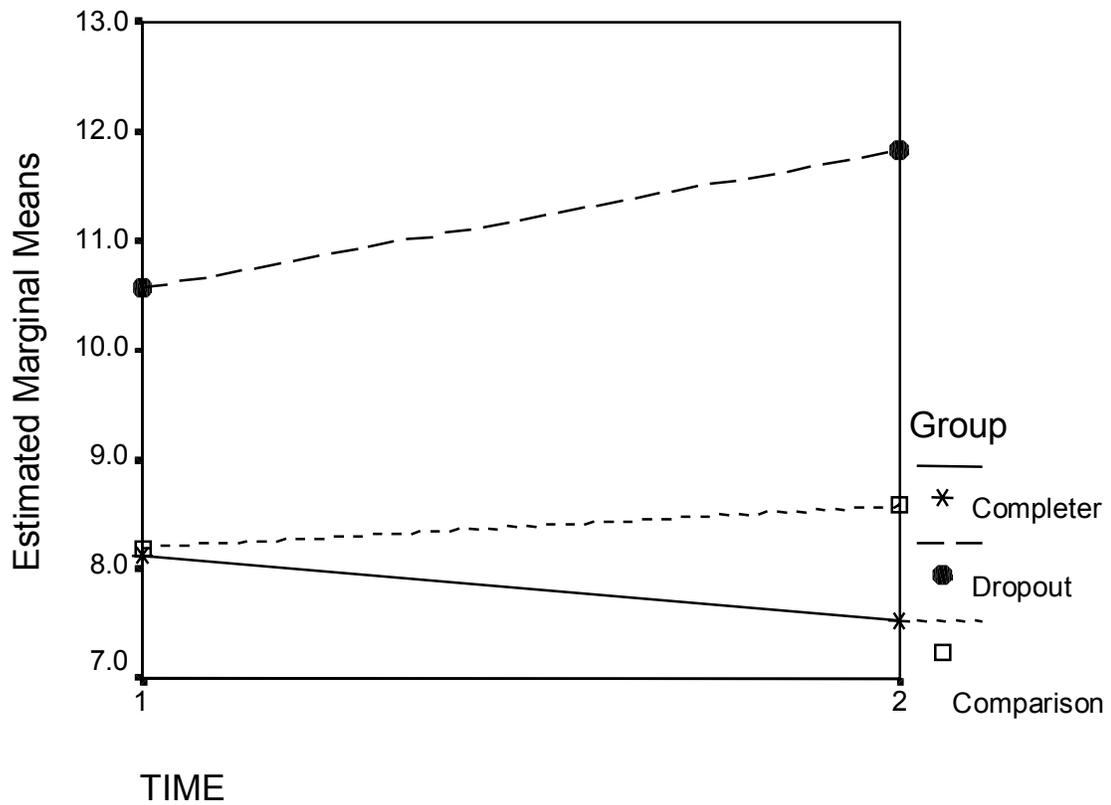
**Social Problem Solving Inventory-R (SPSI-R)
Impulsivity/Carelessness Style (ICS) Mean Scores Over Time**



* Significant ($p < .05$) Main Effect

Figure 8

**Social Problem Solving Inventory-R (SPSI-R)
Avoidant Style (AS) Mean Scores Over Time**



* Significant ($p < .05$) Main Effect

Figure 9

Social Problem Solving Inventory-R (SPSI-R) Positive Problem Orientation (PPO) Mean Scores

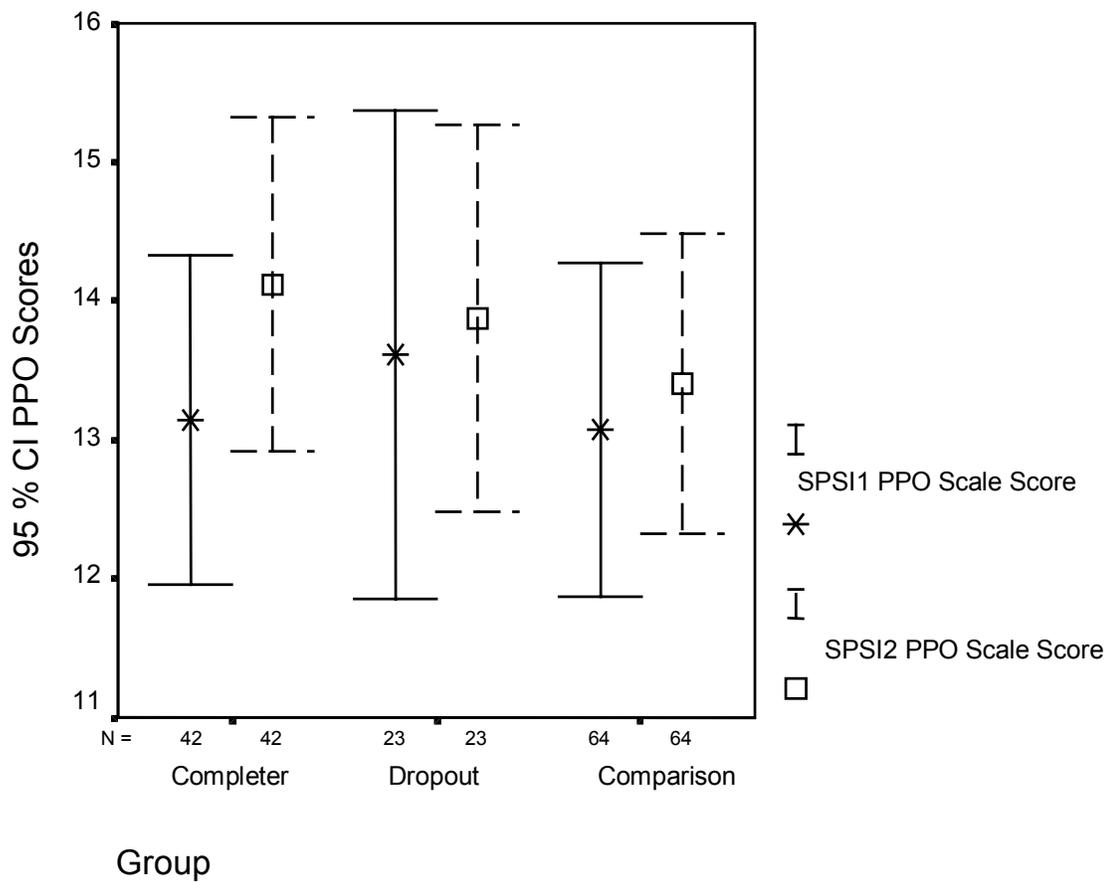


Figure 10

**Social Problem Solving Inventory-R (SPSI-R)
Rational Problem Solving (RPS) Mean Scores**

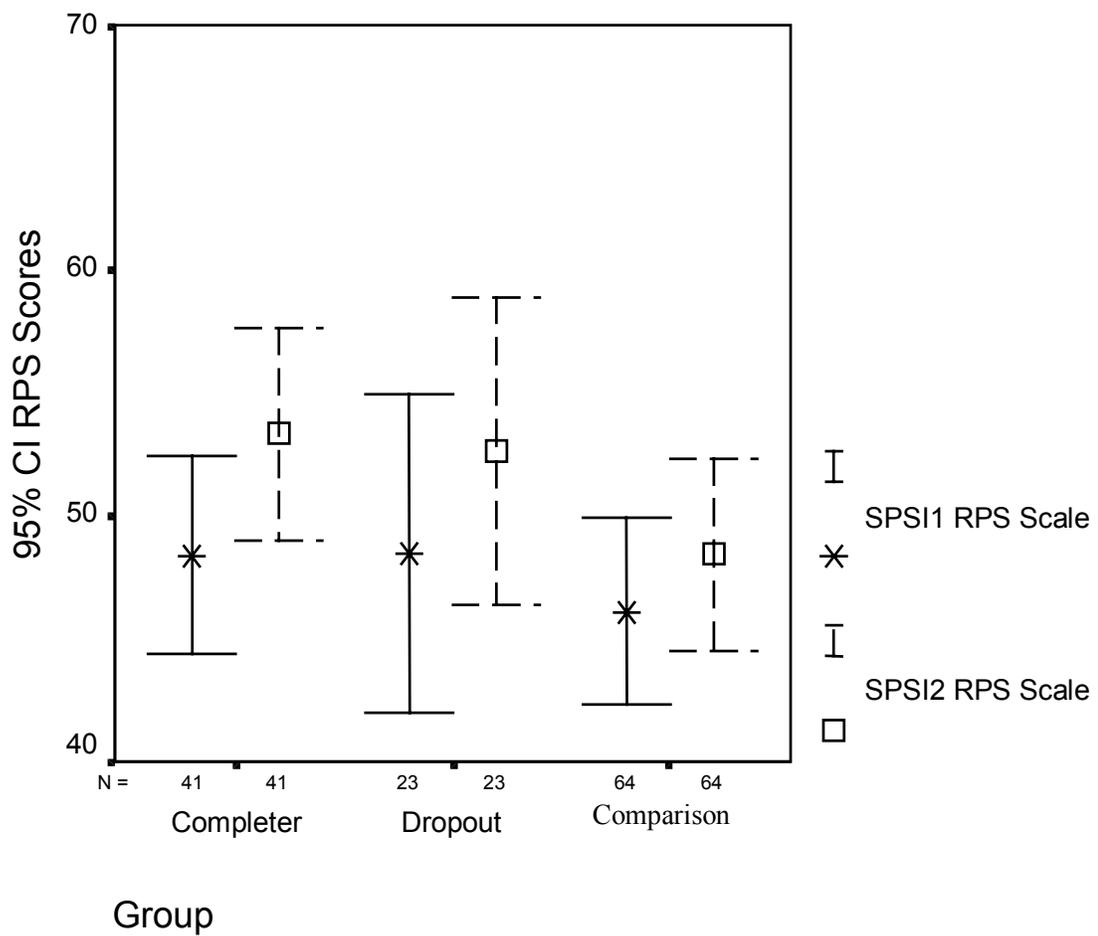
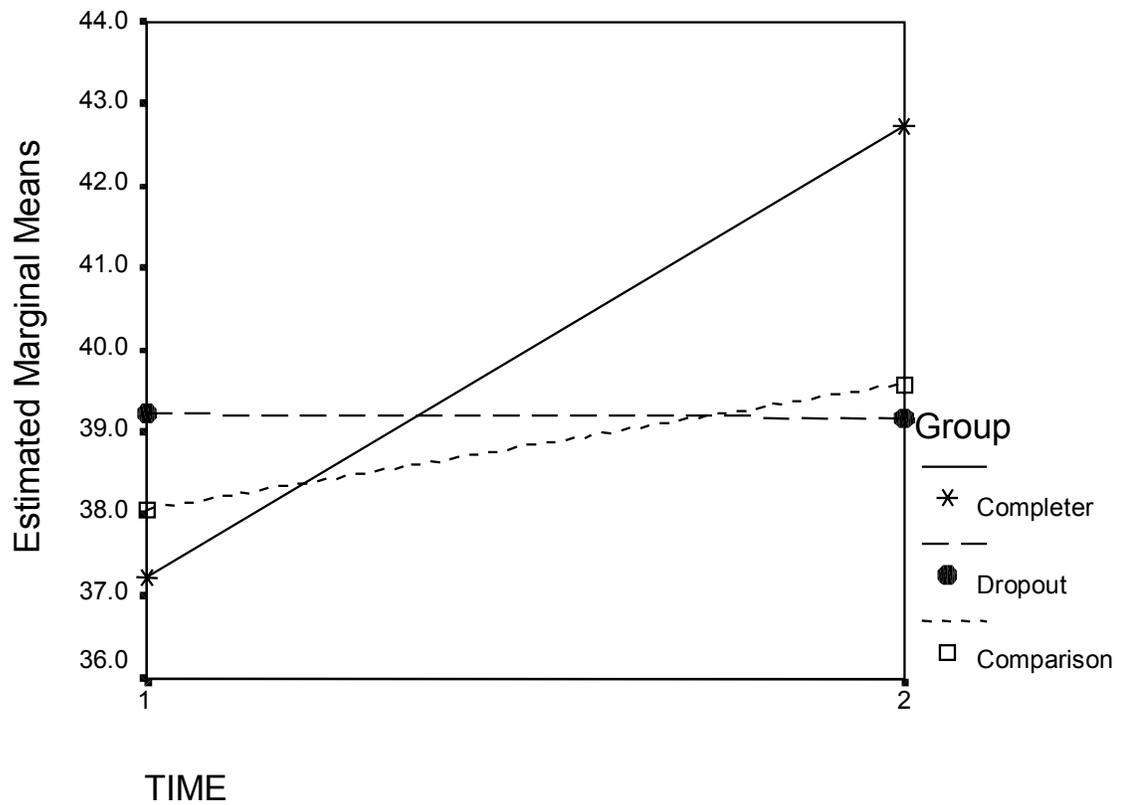


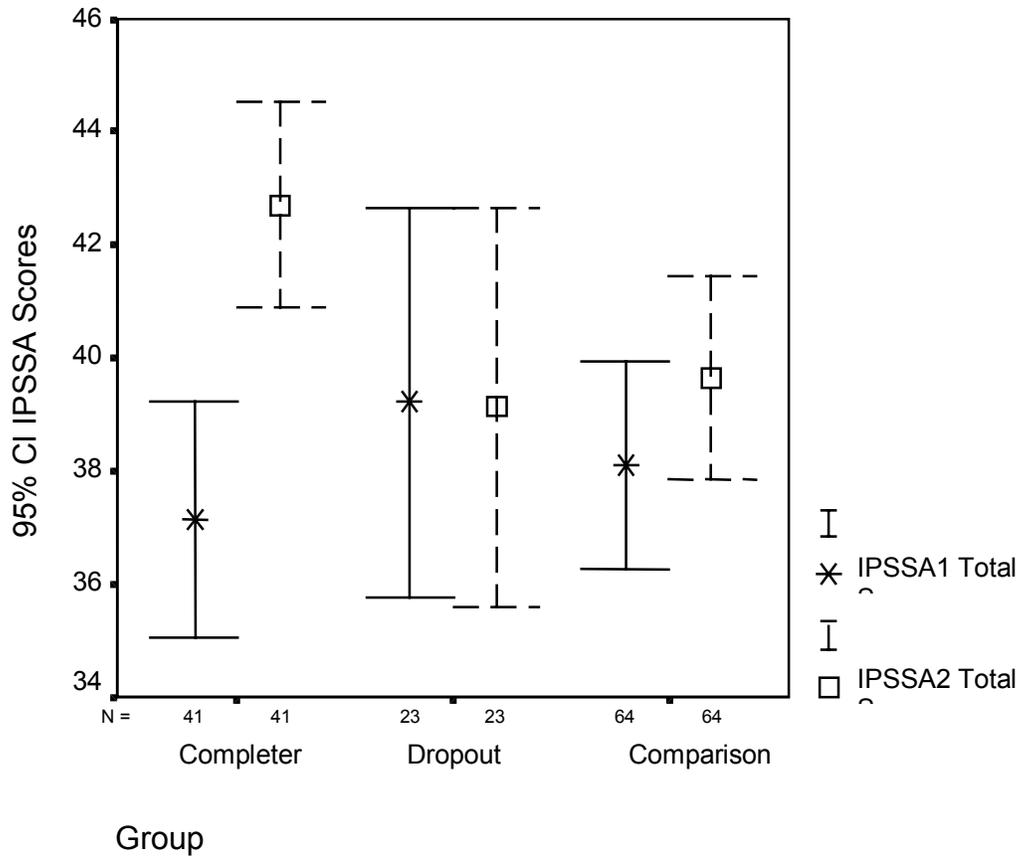
Figure 11

**Interpersonal Problem Solving Skills Assessment (IPSSA)
Mean Scores Over Time**

Significant ($p < .05$) Group X Time Interaction

Figure 12

Interpersonal Problem Solving Skills Assessment (IPSSA) Mean Scores



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