Moral Reconation Therapy and Problem Behavior in the Oklahoma Department of Corrections

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Abstract

In late 1993, Oklahoma Department of Corrections officials implemented Moral Reconation Therapy (MRT), a cognitive behavioral treatment program, throughout the correctional system. Relying on official records of institutional misconduct and community recidivism, the analysis of the Oklahoma implementation of the program compared the outcomes of individuals who participated in the MRT cognitive-behavioral program to both individuals who participated in other correctional programming such as education and job training sessions, and individuals who did not participate in any programming. The longitudinal nature of the analysis also facilitated an examination of behavior changes within individuals before and after they initiated program involvement. The results indicated that (1) the decision to participate in MRT and in other programs was correlated with a number of individual characteristics; (2) closure on the question of group comparisons was premature because treatment effects and factors that led to program initiation were difficult to disentangle; and (3) among individuals who initiated MRT, program involvement was associated with moderate but statistically significant reductions in the risk of misconduct and recidivism incidents. Limitations of the analysis included: (1) a need to better understand factors influencing program initiation, (2) large quantities of missing data, and (3) relatively short follow-up periods (less than one year in most cases).

INTRODUCTION

The effectiveness of correctional rehabilitation programs has been a controversial topic. The roots of this controversy can perhaps be most directly traced to the work of Lipton and his colleagues (1975) who found that there was only scattered evidence of success among well documented efforts to rehabilitate criminal offenders. The National Research Council panel commissioned to study the extant correctional treatment literature reached similar conclusions (Sechrest, White, & Brown, 1979).

Others, while conceding that rehabilitation programs were not inevitably effective, argued that there was strong evidence that rehabilitation programs could produce beneficial changes (Andrews, Bonta, Gendreau, & Cullen, 1990, p. 374; Lipsey, 1992, p. 124; Palmer, 1991, p. 338-341). After assessing large numbers of studies, those observers suggested that successful rehabilitation programs could be distinguished from unsuccessful programs along several noteworthy dimensions. For example, Andrews et al. (1990) contended that

[t]he most promising intermediate targets include changing antisocial attitudes, feelings, and peer associations; promoting familial affection in combination with enhanced parental monitoring and supervision; promoting identification with anticriminal role models; increasing self-control and self-management skills; replacing the skills of lying, stealing, and aggression with other, more prosocial skills; reducing chemical dependencies; and generally shifting the density of rewards and costs for criminal and noncriminal activities in familial, academic, vocational, and other behavioral settings (p. 375).

Still, as recent exchanges suggested, it was hard to draw uncontroversial conclusions from the correctional treatment literature (Andrews et al., 1990; Cullen, Wright, & Applegate, 1996; Glaser 1994; Lab and Whitehead, 1990; Logal & Gaes 1993; Palmer, 1991; Whitehead and Lab, 1989). Neither the conclusion that "nothing works" nor the near opposite conclusion that "some things work" appeared to have broad based support within criminological circles.

In an effort to bring more evidence to bear on this question, we examined a system wide "cognitive-behavioral" treatment program called Moral Reconation Therapy (MRT) in the Oklahoma Department of Corrections (Oklahoma DOC, 1995, p. 1). This program emphasized the development of moral reasoning skills which, theoretically, should have erected a barrier to future problem behaviors such as misconduct and recidivism incidents. The focus of the assessment was the empirical association of program involvement with misconduct citations in prison and recidivism incidents in the community.

The MRT Treatment Program

The MRT program was developed and implemented by Kenneth Robinson, Gregory Little, and their colleagues at Correctional Counseling, Inc. (Little & Robinson, 1988, 1989a, 1989b; Little, Robinson, & Burnette, 1991, 1993, 1995). In this section, the authors briefly review the content of the treatment program and the evaluation research they have conducted.

The MRT program anticipated nine personality stages based loosely on the developmental paradigms advanced by Kohlberg and Piaget. The first stage, "disloyalty," was typified by extremely self-centered behavior, a willingness to be dishonest, take revenge, and blame and victimize other people. The "opposition" stage seemed to differ from the disloyalty stage in degree rather than in kind. Persons in this developmental stage did everything that disloyal persons did, they just did them less often. In the "uncertainty" stage, individuals "are not sure how they stand with others or how they feel about other people" (Little & Robinson, 1988, p. 142). Little and Robinson (1988) contended that, like the earlier two stages, "there is a strong tendency for those in the stage of uncertainty to make decisions based upon pleasure/pain and reciprocity" (p. 142).

At the "injury" stage, individuals still tended to engage in behavior that was destructive to themselves and to others but they "usually recognize that they are the source of the problem" (Little & Robinson, 1988, p. 142). Little and Robinson maintained that the willingness of those individuals to take some responsibility for their actions did not preclude the possibility of developing some positive relationships. In short, those individuals made significant numbers of decisions based on their consequences for other people.

The "nonexistence" stage was the likely location for people who "often feel alienated from things but usually have a few relatively satisfying relationships" (Little & Robinson, 1988, p. 142). They tended to drift between making decisions based on formal rules and laws and making decisions based on pleasure and pain. Persons in the "danger" stage commited to goals and based their decisions "primarily upon societal values and law and order" (Little & Robinson, 1988, p. 143). They occasionally regressed to pleasure/pain decision making but when they did, "they experience a degree of anguish and loss of self-esteem" (Little & Robinson, 1988, p. 143). In the "emergency" stage, "[d]ecisions are based primarily upon social considerations, but a strong element of idealized ethical principles influences judgement." Those individuals regressed to pleasure/pain decision making on relatively rare occasions but "when this occurs . . . usually they will seek to bring it into the open and correct the situation" (Little & Robinson, 1988, p. 143).

The "normal" stage was exemplified by "relatively happy, content people who were convinced that they had chosen the right goals for themselves and that they were fulfilling them in the right manner" (Little and Robinson, 1988, p. 143). For those people, decision making was based on a mix of social considerations and ethical principles with virtually no influence of pleasure/pain or reciprocity. At the "grace" stage, the characteristics of the "normal" stage were subsumed. The main difference was that "[t]he great majority of . . . decisions are based upon ethical principles" (Little & Robinson, 1988, p. 144). According to Little and Robinson (1988), only a small minority of adults reached the grace stage of moral development.

The MRT program attempted to move its participants to higher stages in the hierarchy outlined by Little and Robinson. At the beginning of the treatment process, participants described their beliefs, attitudes, and behavior and subjected themselves to self-criticism as well as criticism from others. They also assessed the quality of their current relationships with other people. They would typically conclude that some relationships should continue while others should not. In response to those preliminary evaluations, participants formulated a strategy for confronting their problems, terminating negative relationships, and repairing valued relationships.

Later in the treatment process, participants engaged in self-evaluation of their goals and the equipment necessary to achieve their goals (to do the right things in the right ways). They were challenged to enhance their self-concept by working through "ego-enhancing activities and exercises" (Little & Robinson, 1988, p. 144). During that period, participants were taught or conditioned to expect delayed gratification for their efforts

and that ends must be evaluated not only in and of themselves but also in terms of the means required to achieve them (Little & Robinson, 1988, p. 144).

The MRT program was devised so that it could be completed in either 12 or 16 sequential steps (Little & Robinson, 1988, p. 144). The Oklahoma implementation of MRT used the 12 step variation at the time of the study. Step completions were hypothesized to be positively correlated with one's stage of moral development and progress toward other treatment goals. According to the model, in order to improve moral reasoning,

[c]lients must become honest at the beginning of the treatment. They must display trust in the treatment program, other clients, and staff. They must become honest in their relationships with others and actively work on improving their relationships. They must begin actively to help others in need of help and accept nothing in return. They must perform a major amount of public service work for those in need (again with nothing in return). All these activities are mandatory for clients in Moral Reconation Therapy. Finally, the client must perform an ongoing self-assessment in conjunction with receiving assessments from other clients and staff. These assessments require that clients be morally accountable on all levels of functioning: their beliefs, their attitudes, and virtually all their behavior (Little & Robinson, 1988, p. 148).

The program, which relied on confrontation of both cognitions and behaviors, and the use of verbal and "semantic" interventions as well as behavioral interventions (i.e., penalties for failure to comply with the rules of the program and reinforcement for satisfactory progress in the program), was described by its authors as a cognitive behavioral approach with a strong moral reasoning emphasis. Reinforcements and punishments were largely confined to status within the program (step promotions and demotions or exclusion from the group), and, as such, the cognitive (rather than the behavioral) emphasis would appear to have dominated. Still, the program's effectiveness could be evaluated via actual behavior, there were strong prosocial modeling components, and participants must behave in particular ways in order to progress (i.e., doing service for others with no immediate reward).

Little and Robinson first implemented a version of MRT at a correctional facility in Shelby County, Tennessee in the mid-1980s and followed exit cohorts (from 1988) of treated felony drug offenders and nontreated controls (individuals who volunteered to participate but could not because of resource limitations) for five years (Little et al., 1993, p. 1089). Their analysis revealed that 37.1% of treated subjects and 54.9% of control subjects were reincarcerated. In a recently published report, the authors reported results from a seven year follow-up of this cohort and found that 44% of the treated and 60% of the controls had been reincarcerated (Little, Robinson, Burnette, & Swan, 1996, p. 3). Although rearrest rate differences between the groups were not statistically significant, the average number of arrests was 19.9% lower for MRT participants compared to the nontreated control group (Little, et al., 1996, p. 4).

Little and Robinson also investigated the mediating linkage between programming and behavior outcomes: moral reasoning skills. In one paper, they conducted pre-test-posttest

comparisons of principled reasoning scores on the Defining Issues Test (Rest, 1993) for both their drug and alcohol offenders. For the drug offenders they found a positive correlation between program step progression (through step seven of the MRT 12 step program) and moral reasoning level (Little & Robinson, 1989, p. 86). Among both the drug and impaired driving offenders they reported a statistically significant difference between pre- and posttest moral reasoning scores. In further analysis of the impaired driving cohort, Little and Robinson (1989b) found that recidivism and moral reasoning were negatively correlated (p. 1173).

The Oklahoma Implementation of MRT

In September 1993, the Oklahoma Department of Corrections implemented MRT throughout its entire system (including prisons, community correctional centers, and community supervision offices). The Department was then responsibile for housing 13,053 incarcerated offenders and supervising another 33,000 offenders in the community. Until the implementation of MRT, the Department operated various programs in correctional facilities and community supervision offices. But the programs were not linked to a consistent treatment philosophy and in-prison programs often could not be continued in the community. This latter aspect of traditional programming in Oklahoma proved especially problematic for the Department:

It has been a goal for years to provide the offender with a consistent program that may be continued from each security level. In the past, when offenders transfer, the same program has not always been available at another security level or facility. This allows the offender to begin the program and be able to continue it until completion (Oklahoma Department of Corrections, 1995, p. 1).

There were four sources of activity associated with the Oklahoma implementation of MRT. Those included staff training, program implementation, data collection, and quality assurance. Between the program's inception in September, 1993, and July, 1994, over 250 staff (including line staff and supervising officers) members from correctional facilities, community correctional centers, and community supervision offices were trained in MRT delivery. Training sessions were off-site and lasted for one week. Once trained, the staff returned to their workplaces and establish MRT groups.

During training, staff members were briefed on the importance of reporting data associated with individual program participants. Those data included the date on which participants began the program and the date they progressed to each of their "steps." MRT group coordinators were responsible for sending those data to the Department's Research and Evaluation Unit on a monthly basis. Quality assurance visits by MRT experts to the program sites were designed to assess staff commitment to MRT techniques and to determine whether MRT was being implemented as designed.

Pursuant to that, an MRT implementation questionnaire was sent to 150 MRT trained Department staff. The questionnaire asked respondents whether they had implemented an MRT group, how many new participants had enrolled, how many dropouts occurred, and

whether or not they had experienced any special problems or difficulties. Forty percent of those trained had implemented MRT. Another 15% to 25% expected to implement the program in the near future. During the first two months, between 6.5% and 15.6% of participants dropped out of the program (rates varied by facility). Overall, the Department reported pockets of resistance amidst general enthusiasm for the MRT approach. Waiting lists for the program existed in a number of correctional facilities and the Pardon and Parole Board took MRT progress into account in many of its decisions.

Progress in the Oklahoma implementation of MRT was indexed by MRT "steps." Participants began the program at Step 1 and progressed to the completion of Step 12 to successfully complete it. MRT groups met at regular intervals (usually either once or twice a week). Sessions were typically comprised of structured group discussion directed by trained Oklahoma Department of Corrections staff. Discussions typically revolved around participants' progress in the program as well as strategies and tactics for successfully completing MRT steps.

MRT programming was different in kind from most other kinds of treatment programs offered in the Oklahoma Department of Corrections. It was a program that attempted to teach offenders why they *should* stay out of trouble and how they could go about making decisions that would keep them out of trouble. While other programs attempted to equip offenders with skills that would have helped them to function adequately when they returned to the community (e.g., basic education and high school diploma programs) or reduced the risk of involvement in future problem behavior (e.g., substance abuse counseling, rational behavior therapy), those programs did not emphasize the transformation of individuals' value structure. An explicit goal of MRT programming, then, was to induce a shift in an individual's set of priorities so that they became committed to behavioral change.

Analysis Overview

The central question to be addressed by the analysis in this report was whether or not participation in MRT was empirically associated with reduced levels of problem behavior. In particular, problem behavior in two settings was studied: official misconduct citations within prison facilities and recidivism incidents within the community. Misconduct citations were issued by prison staff for incidents of misbehavior in prison (e.g., disruptive behavior, fights, assaults, possessing contraband, etc.). Recidivism was operationally defined as a return to Oklahoma Department of Corrections custody after some period of time in the community. Individuals could have their community supervision status revoked for either new criminal activities or for violations of their supervision conditions.

To address their question, the researchers identified three groups of individuals within the Oklahoma Department of Corrections: (1) individuals who participated in MRT; (2) individuals who participated in non-MRT self-improvement programs; and (3) individuals who had no record of participating in any of the programs in (1) or (2). The first two groups were not mutually exclusive since individuals could have participated in

multiple programs. There was no reason to believe that those groups were equivalent to each other a priori and we, therefore, gathered available background information on all individuals so that measured differences between individuals that helped account for problem behavior could be held constant. The non-MRT program group was of particular interest because this group was comprised of individuals who, like those in MRT, volunteered for one reason or another to participate. The identification of and inclusion of this group in the analysis should strengthen the study's internal validity, although in the absence of random assignment to groups conclusions must be drawn cautiously.

A total of 65,390 individuals were included in the analysis. This group included virtually all persons who: spent time (1) on probation during the period beginning January 1, 1993, and ending April 30, 1995, (N=41,087); or (2) served a prison sentence between January 1, 1993, and December 31, 1994, that included no time on probation (N=24,303). For convenience, members of the former group were described as probationers and members of the latter group were described as prisoners.

All of these cases were tracked in a database that recorded physical movements and incidents associated with each individual. Entries in the database were recorded when any of the following events occurred: (1) a change in facility (in prison) or supervising office (in the community); (2) a change in security classification; (3) a recidivism incident (in the community); (4) a misconduct incident (in prison); (5) initiation into, dropout of, or completion of one of the following correctional programs: (a) MRT, (b) Rational Behavior Therapy (RBT), (c) Stress Management and Relaxation Training (SMART), (d) Substance Abuse Education (SAE), (e) Adult Basic Education (ABE), (f) High School Equivalency (GED), or (g) Vocational/Technical Education and Training (Vo-Tech). Movements of all individuals were tracked through the end of April 1995.

Descriptive analysis of the movement/incident database revealed that a total of 3,375 individuals began participating in MRT between September 1, 1993, and April 30, 1995. Further inquiry indicated that only 587 individuals among the 41,087 (1.4%) probationer cases began participating in MRT. Those 587 individuals comprised only 17.4% of the 3,375 persons that began participating in MRT. Thus, 82.6% of the cases that began participating in MRT were drawn from the population of prisoners. Because the population of individuals who spent no time on probation in 1993-1994 (1) was a minority of the total analysis file, (2) included the vast majority of individuals who initiated MRT (as well as other programs), and (3) might have differed in important ways from the probationer population (i.e., more serious offenses, longer prior records, etc.), both groups were analyzed separately.

The focus of the analysis was on the temporal correspondence of program participation and occurrence of misconduct and recidivism incidents. In short, the authors wished to examine whether individuals were less likely to recidivate or be charged with a misconduct incident after having become involved in MRT. The primary analytic method for accomplishing the task was repeated event survival analysis (e.g., see Allison, 1984, pp. 51-55). Full details on the analytic methods and model specifications were presented in MacKenzie, Brame, Waggoner, and Robinson, (1996).

Descriptive Results

Table 1 presents characteristics of individuals included in the analysis. Most of the variables are self-explanatory but several require comment. Education was measured in years of schooling (or equivalent reading level). Sentence length was measured in years both for prisoners and probationers. Individuals with sentence lengths exceeding 60 years were assigned a value of 60 for this variable. Two measures of prior incarcerations were included. The first was simply a count of the number of prior incarcerations and the second was a quotient equal to the number of prior incarcerations divided by age at the beginning of the current sentence. The latter calculation was included to adjust for age heterogeneity among those with the same number of prior incarcerations. The authors used this variable in all of the inferential analyses. Substance abuse and vocational/technical training needs were based on diagnostic classification by Oklahoma Department of Corrections personnel into three-point ordinal scales that roughly indexed level of need: none, moderate, or serious.

The results in Table 1 suggested that the data were of uneven quality between the probation and prison groups. Specifically, there were substantially more missing data associated with the probationers than the prisoners. Missing data were most pronounced for education, and substance abuse·vocational·technical training needs. Second, the level of prior criminal activity was significantly greater in the prison group than in the probation group. Finally, the race and sex distributions differed between the groups. Males comprised a significantly greater proportion of the prison group than the probation group. Blacks were more prevalent in the prison group than in the probation group. Nearly all of the evidence in Table 1 suggested that the prison and probation groups differed from each other.

Table 2 summarizes the available program participation information. The level of participation in departmental programming was significantly higher for the prison group than the probation group. According to department officials, probation officials did not routinely report this information even though some programming apparently did take place (Waggoner, personal communication, 1995). As Table 2 indicates, however, the problem did not appear to be as serious for the MRT program. Nevertheless, the analyses should be interpreted cautiously for the probation group since it is likely that there were individuals who participated in programs who were not identified as such.

A prominent feature of Table 2 is that only a moderate proportion of individuals who began participating in programs (including MRT) either completed or dropped out of them.[1] Tables A and B in the Appendix summarize this information in more detail. The authors, therefore, treated program participation · dropout · completion indicators as historical facts about individuals that were not subject to change after they occurred (i.e., the variables could only move in one direction) (Allison, 1994, p. 177, 188; Heckman & Robb, 1985, p. 162).[2]

Distributions for Time at Risk of Misconduct and Recidivism

The amount of time that one was at risk to engage in misconduct in prison or recidivism in the community was pertinent. In many analyses of behavioral outcomes with criminological data, researchers cap the follow-up period at some fixed length (e.g., one year or five years) (Maltz, 1984). Such a cap was deemed inappropriate for the analyses because individuals were followed for varying periods of time.

Table 3 presents the maximum likelihood estimates of the mean and standard deviation of the exposure time distribution for misconduct incidents and recidivism incidents. The maximum likelihood estimates were based on the estimation of LogNormal and Weibull survival time models. All of those estimates suggested that probationers were at risk for misconduct incidents for shorter time periods on average than prisoners. Probationers, on the other hand, were at risk for recidivism incidents for longer time periods on average than prisoners. Moreover, the length of time-at-risk for both misconduct and recidivism incidents exhibited a strong positive skew.[3]

Distributions of Misconduct and Recidivism Incidents

To estimate the misconduct and recidivism rates, the researchers took each person's entire exposure time and broke it into discrete intervals of 30 days each and estimated survival time models that took the following features of the data into account: (1) time at risk varied from individual to individual and exhibited heavy right-hand censoring; (2) individuals may or may not have been at risk for more than one event; and (3) the relative risk of misconduct or recidivism may not have been the same throughout the exposure period.

Analysis Results

A number of tests to assess the effects of MRT participation on misconduct and recidivism hazard rates were conducted. A hazard rate could conveniently be viewed as the probability that an event occurred within a particular time interval, given that it had not occurred prior to that time interval (Allison, 1994). Figure 1 presents the hazard rates for misconduct and recidivism outcomes within both the probation and prison groups. In the remainder of this section the authors briefly describe each of the tests conducted and the results obtained. Table 4 presents a summary of the findings associated with each test.

Baseline Program Effects. The first set of models assessed the effect of MRT participation on misconduct and recidivism hazards without controlling for any of the other variables listed in Table 1. Potentially serious specification problems emerged from a simple assessment like this simply because variables that could be related both to the outcome hazards and to participation in MRT were omitted from the model (since participation in MRT was unlikely to be random event). Nevertheless, such results were interesting to examine as a first analysis step.

For misconduct incidents, the analysis revealed that initiation of MRT was associated with a reduction in the hazard rate (for the prison group but not the probation group).

Participation in other programs was associated with higher misconduct rates for both prisoners and probationers.

Within the prison group, the results suggested that MRT participation had no impact on the recidivism hazard while it increased the risk of recidivism for the probation group. Participation in other programs was associated with a higher recidivism rate for both prisoners and probationers.

As noted above, those results should be interpreted with caution because they may have been the result of serious specification problems in the analysis. For example, if the subsample of probationers who ended up participating in MRT differed from the subsample of probationers who did not in ways that were related to the probability of recidivism, then the above analysis would incorrectly attribute those differences to MRT participation. The researchers attempted to at least partially address those sorts of deficiencies in the analyses that follow. An important feature of all of the analyses was that all of the variables listed in Table 1 were included in the model so that their effects were held constant.

Multivariate Failure Time Models Including All Prisoners and Probationers. The investigators estimated multivariate survival time models to assess the effects of MRT participation on the risk of misconduct incidents within the entire sample of offenders described in Table 1. Among members of the prison group, the results indicated that MRT initiation decreased the misconduct rate, dropping out of MRT increased the misconduct rate, and persistence (time since beginning program) in the MRT program had a pronounced negative effect on the misconduct rate.

Demonstrated progress in the program (measured in MRT steps 1-12 completed), however, had no effect on the misconduct rate. Initiation of non-MRT programming was associated with an initial increase in the misconduct rate but program completion and dropout were both negatively associated with misconduct incidents as was persistence in non-MRT programming.

Among members of the probation group, there was no evidence that participation in MRT had any effect on the misconduct rate. Estimated effects for program initiation, demonstrated progress (in MRT Steps completed), and persistence in the program over time were not statistically significant. The analysis further suggested that initiation of a non-MRT program was associated with increased risk of misconduct while the misconduct reducing effects of program persistence, completion and dropout were not statistically significant.

For probationers, initiation of MRT and non-MRT programs were both associated with increased risk of recidivism. Moreover, the number of MRT steps completed was associated with increased recidivism risk. But the probationer analysis also revealed that time spent in the MRT program was associated with reduced risk of recidivism. For non-MRT programs, both program completion and persistence increased the risk of recidivism.

Participation in non-MRT programs among prisoners was also associated with heightened recidivism risk while non-MRT program completers and dropouts were less apt to recidivate than those who started but did not progress. MRT initiators were less likely to recidivate than those who began participating in non-MRT programs, but they were not significantly different from those who did not initiate programs at all. Persistence (i.e., time spent) in MRT was also not related to recidivism for this group.

The Question of Patterned Program Initiation. The results presented in the full sample multivariate models (described above) may not be fully satisfying because they assumed that all factors which were related both to program participation and failure (misconduct or recidivism) risk had been taken into account. There was no reason, however, to believe that the variables in Table 1 completely accounted for all possible causes of both program initiation and failure. While it was not possible to conclusively address this problem in the context of a nonexperimental design, attempts were made to estimate effects under different specifications.

The authors began the process by estimating two logistic regression models. To estimate the first model, the dummy variable was regressed, signifying initiation into the MRT program, onto the complete set of variables listed in Table 1. In the second model, a dummy variable was regressed, signifying initiation into any of the other non-MRT programs included in the analysis, onto the same set of predictor variables. The models were estimated separately for probationers and prisoners. Results suggested patterned (as opposed to random) program initiation.

For probationers, a major predictor of MRT program initiation was whether any time had been spent in prison. Above and beyond that, however, individuals who were Black, serving a sentence for a drug-related offense, and who had a relatively high level of education were most likely to have begun participating in MRT. For prisoners, those with shorter sentence lengths and higher levels of prior incarcerations, and higher education levels as well as those serving a sentence for a drug-related offense were most likely to have initiated the MRT program.

Among both prisoners and probationers, younger individuals, females, and those who were less well-educated were more likely to have initiated non-MRT programming. For probationers, lower levels of prior incarcerations and the variable signifying whether any time was spent in prison increased the likelihood of initiating. For prisoners, the analysis revealed that individuals who were non-White, but not Black, were significantly more likely to initiate non-MRT programs than individuals in other racial/ethnic groups.

This information was used to estimate probabilities of MRT and non-MRT program initiation for all individuals in the database. The prisoners and the probationers were then ranked on those estimated probabilities. Although analysis indicated that not everyone who had a relatively high probability of participating in programs actually did, the possibility that the individuals who had a relatively high probability of participating yet did not actually participate would comprise a useful comparison group was entertained.

To construct samples that looked like the program participants from the subset of the database that did not participate in programs, the investigators established a cut-off point along the continuum of probability scores. The selection of a cut-off point for the probability scores was arbitrary. This was not, however, believed to be a major barrier. The understanding that the closer the threshold was to zero, the more the analysis results would resemble those presented above was the operational factor. The following decision rules were used to include cases in the analysis:

Include the case if:

- the individual had begun participating in MRT or a non-MRT program at some point during the current sentence; or

- the individual had been in the prison group and ranked above the 80th percentile probability of initiating either the MRT or a non-MRT program; or

- the individual had been in the probation group and ranked above the 95th percentile probability of initiating the MRT or a non-MRT program.

In sum, an analysis sample was created that comprised individuals who had: (1) entered MRT; (2) entered a non-MRT program; or (3) did not enter either type of program, but had a high estimated probability of entering either or both program types.

Multivariate Failure Time Models With Samples of High Probability and Actual Program Participants. The researchers next estimated misconduct hazard models for the probation group (N=2,597) and the prison group (N=13,809). For both groups, the conclusions about the effects of MRT remained basically the same as before. For probationers, there was no effect of MRT on misconduct rates while, for prisoners, initiation of MRT reduced the risk of misconducts (and dropping out increased the risk of misconducts). There was no evidence that increased progress in MRT (e.g., MRT steps) was associated with reduced risk of misconduct in either group.

The effects of non-MRT programs were mixed. For the probation and prison groups, initiating a non-MRT program was associated with a higher risk of misconduct but, for prisoners, the program completion and dropout variables canceled out this increased risk.

By imposing the above selection criteria on the samples studies in the recidivism analysis, some interesting departures from earlier conclusions were encountered. The modified specification included 2,756 probationers and 7,316 prisoners. For probationers, the recidivism increasing effect of MRT initiation was substantially diminished from the analyses reported above, while increased time spent in MRT programming continued to be negatively associated with recidivism. Initiation of non-MRT programming also increased the risk of recidivism in the probation group but its effect was greatly reduced within the restricted sample. While the positive non-MRT initiation effect on recidivism was weaker than the positive MRT initiation effect, the negative effect of time spent in

MRT implied that longer-term MRT participants exhibited lower risk of recidivism than their non-MRT counterparts.

Among the restricted sample of prisoners, the estimated effects of both MRT and non-MRT program initiation were negative and statistically significant. The analysis also indicated that both the non-MRT program completion and dropout events reduced the risk of recidivism. For MRT participants, step progression and dropout effects were virtually zero. Taken at face value, that result suggested that the effect of MRT was confined to the decision to initiate the program rather than what actually occurred in the program. The lack of complete MRT step information in the sample, however, erected a barrier to strong inference on that point. Specifically, the conclusion that more successful individuals sorted themselves into the MRT program rested heavily on untestable assumptions about individuals for whom no MRT step information was available (e.g., that either they made no progress in the program or that, if they did make progress, that progress was truly unrelated to the behavioral outcomes under study).

Subsample of Individuals With Moderate to Severe Substance Abuse Problems and Individuals Serving Sentence For a Drug-Related Offense. As noted above, the MRT program was originally developed and implemented in a therapeutic community environment for substance abusing offenders. In Oklahoma, the original objective was to deliver MRT to its population with substance abuse problems (although at the time of the study, of course, it had been available to anyone who wished to participate, conditional on available resources). Using the sample selection threshold discussed above and limiting the analysis to individuals who had: (1) been serving a sentence for a drug-related offense; (2) had "moderate" substance abuse treatment needs; or, (3) had "severe" substance abuse treatment needs; the investigators attempted to determine whether one would have been led to a different set of conclusions about the effectiveness of MRT in a sample of offenders who were apparently in greater need of treatment attention for substance abuse problems.

The misconduct analysis was comprised of 2,183 probationers and 9,396 prisoners who had moderate to severe substance abuse treatment needs or were serving their current sentence for a drug-related offense. Recidivism models were estimated on samples of 2,266 probationers and 5,487 prisoners (using the same criteria as those employed for the misconduct analysis). The results of those analyses were very similar to those for the earlier analyses reported above. An exception to the broad pattern of similar conclusions was discovered in the recidivism analysis for the probationer sample. In that analysis, time spent in the MRT program had no effect on the hazard rate.

Multivariate Failure Time Models Including Program Participants Only. The analysis results presented so far have indicated that MRT was not strongly related to behavioral outcomes among individuals in the probation group while the association for the prison group was much stronger and in the theoretically expected direction. Although the analyses assessed within-individual change, it was also possible the investigators had pooled heterogeneous groups into earlier analyses and that the presence of those individuals induced ambiguity rather than clarity into the results. The question the

investigators would have liked to have answered was "what would the outcomes have looked like if individuals had been randomly assigned to MRT?" Since there was no random assignment design, the comparisons rested on an important and untestable assumption: there were no unmeasured variables related both to program participation and behavioral outcomes. While the researchers controlled for all of the measured variables thought to predict outcomes, the possibility existed that unmeasured variables related both to program participation and behavior outcomes had not been included (i.e., initiative to change, inducements by corrections officials, etc.).[4]

In this section, the authors attempted to corroborate and possibly even strengthen the internal validity of earlier assessments by confining the analysis exclusively to individuals who either participated in MRT or participated in other non-MRT programs. A second question posed in this section, however, was somewhat different from the one posed above. Here the desired assessment was what behavior outcomes would have looked like in the absence of MRT programming for those who had participated.

The results of the misconduct analysis for probationers revealed that the decision to begin MRT had been unrelated to the misconduct hazard, but they also showed that increased time in the program was associated with a lower misconduct hazard. Among prisoners, both the decision to have begun the program as well as time spent in the program were negatively related to the misconduct hazard. The assessment of non-MRT programming indicated that programming time was negatively related to misconduct incidents for prisoners. Furthermore, among the prisoners, the decision to initiate non-MRT programming increased the likelihood of a misconduct incident but program completion more than offset this effect. For probationers, the decision to initiate non-MRT programming (but no progress or time spent in non-MRT programming) was associated with a decrease in the risk of a misconduct incident.

The recidivism analysis revealed that MRT initiation was unrelated to recidivism while increased time spent in the program reduced the risk of recidivism. Curiously, increased MRT step levels were associated with greater risk of recidivism in the probationer group. Among prisoners, however, both initiation of and time spent in MRT programming were significantly related to lower rates of recidivism.

Analysis of the effects of non-MRT programming for probationers indicated that initiation, completion, and dropout increased the likelihood of recidivism as did the amount of time spent in the program. Since there was no reason to believe (and had trouble imagining) that the effects of those programs were criminogenic, the results might have been indicative of inadequate model specification or insufficient data. For prisoners, initiation made no difference in the results while both completions and dropouts reduced the recidivism hazard. Longer amounts of time spent in non-MRT programming were associated with reduced risk of recidivism.

Replications of both sets of analyses in the assessment of the subsamples of substance abusing offenders yielded results very similar to those obtained above. The main

exception to that occurred within the probationer group recidivism analysis where the recidivism increasing effect of MRT steps became nonsignificant.

Mulltivariate Failure Time Models Including Subsample of Program Participants With Complete Program Participation Information. In contemplating the results, the researchers became concerned about the lack of statistical and substantive significance in the MRT step progression effects across most of the analyses. Since the Steps were the major indicator of program progress it seemed theoretically sound to have expected more pronounced suppression of problem behavior with increasing MRT steps. The absence of conclusive results on this matter was troubling because of the prevalence of missing Step information in the data. Recall that for a bare majority of individuals whom it was known had begun MRT, the researchers were unable to discern anything at all about their progress in the program. Thus far, the analyses assumed that they simply had not progressed in the program. Under that circumstance, there were at least two conditions that could have led to a lack of measurable impact of MRT Steps among those for whom Step information was available: (1) possibly Step progression truly had no impact on the risk of misconducts and recidivism; or (2) conversely, there was nontrivial variation in Steps among the subsample with completely missing Step data which masked the effect of Steps among the sample of cases whose Step information was available. While the investigators could not completely identify the answers to those questions in the current data, they were able to pursue a partial test.

To conduct this test, all individuals with no valid MRT Step information were removed from the sample of MRT participants and the hazard models were reevaluated. For the assessment of non-MRT programming effects, only individuals who had a complete set of start and termination dates associated with their program initiation dates were included.

For probationers, MRT initiation had no impact on misconduct incidents, while both time spent in the program and increasing number of MRT steps completed were associated with lower risk of misconduct incidents. For prisoners, time in the program was not related to misconduct incidents, but both the initiation decision and the number of MRT steps completed were associated with reduced risk of misconduct. None of the non-MRT program variables affected the risk of misconduct incidents for probationers while, for prisoners, initiation increased the risk of misconduct while completion, dropout, and time in the program all decreased the risk of misconduct.

Next, the recidivism data was examined. For probationers, the analysis revealed that MRT initiation and Step progression were unrelated to recidivism, although time spent in MRT was associated with reduced recidivism risk. Among prisoners, MRT initiation and number of Steps completed were both negatively related to recidivism risk while time spent in the program was not. For probationers, participation in non-MRT programming continued to be associated with heightened recidivism risk while time in non-MRT had no effect. Among prisoners, non-MRT program initiation was associated with an increase in recidivism risk followed by decreases when termination events (completions and

dropouts) occurred. Time spent in non-MRT programming made no difference within the prison group.

Discussion and Conclusions

Moral Reconation Therapy (MRT) has been an innovative cognitive behavior program that emphasized the development of moral reasoning ability in "treatment resistant" populations. In September 1993, the Oklahoma Department of Corrections implemented this treatment approach throughout their entire correctional system. Using data collected on individuals who were under correctional supervision in Oklahoma during 1993, 1994, and early 1995, the researchers conducted an analysis of the empirical association between participating in MRT and behavior both in the institution (misconduct citations) and in the community (recidivism). The results of the analysis have been complicated to develop and interpret. However, several important themes seemed to have emerged. They are considered briefly here.

The findings varied in important ways across the various analyses performed. In general, the results suggested that the imposition of constraints on the sample of individuals included in the various analyses had important implications for the conclusions drawn. That result was important because it indicated that the decision to have participated in programming was nonrandom and confounded with the outcome measures. Specifically, when individuals did not randomly sign up to participate in programs such as MRT, evaluation of the effects of programming became difficult undertakings. Individuals, for example, who had made the decision to enter programs might then have exhibited better behavior for the same reason that they decided to enter the programs, rather than because of the effects of the program.

In light of the program participation patterns that were identified, it was believed premature to reach closure on the question of whether individuals randomly assigned to MRT were apt to have done better or worse than individuals who did not participate in MRT. For example, if those who were better educated were attracted to MRT perhaps other characteristics that were not measured and were related to lower levels of failure (e.g., a conscious decision to change one's own behavior), the models would have incorrectly attributed the effects of those unmeasured characteristics to the MRT program. That, of course, highlighted the need for an experimental evaluation.

The authors may be better equipped to address a more restrictive question so long as causal inferences were avoided: how did the post-MRT problem behavior of individuals who initiated MRT compare to the problem behavior that might have been observed in those same individuals if they had not participated in MRT?

Within the latter framework, the majority of the analysis results indicated that initiation and participation duration in MRT was associated with reduced risk of problem behavior (misconduct and recidivism incidents) on the part of individuals who participated in it. When an additional constraint was imposed on the sample allowing analysis by only including those individuals who had possessed complete participation information, it was

found that increasing progress in MRT (as measured by MRT steps) exerted a suppression effect on both misconduct incidents and recidivism incidents (prisoners only). Some evidence of suppression was also evident with other non-MRT programs but the evidence was more equivocal (dropouts did almost as well as completers) and the effects were not as strong as those observed in the MRT analyses.

In sum, the results of the analysis indicated that, in this sample, MRT participation was associated with lower risk of misconduct and recidivism among prison inmates that chose to participate in it. Because the results changed a great deal depending on who was included in the analysis sample, however, the researchers were unable to report an unconditional beneficial effect of MRT programming. The primary implication of the results, then, was that more work is necessary to reach a more complete understanding of MRT programming effects.

In this view, two efforts seemed likely to provide the most new information. First, more complete data recording the progress of MRT program participants is essential. That, of course, will require the implementation and maintenance of detailed record keeping procedures on the part of Oklahoma DOC employees who administer the programs. Second, the implementation of a completely randomized experiment will be necessary to rigorously examine the effects of MRT programming. While within-subject designs such as the one employed here were useful surrogates for experimental designs, they were still only approximations to the ideal study.

The within-subject design used here permitted the authors to say only that, among prison inmates who had participated in MRT, there was a reduction in problem behavior when they were participating compared to when they were not participating. That was clearly an important correlation and one would expect to find it if the MRT program did indeed have beneficial effects. Nevertheless, it was not sufficient to demonstrate that the program actually had a beneficial effect. There was no way of knowing whether the program itself caused improved behavior or whether it merely signaled individuals' willingness and desire to have changed for the better. Hopefully, future research will bring more conclusive evidence to bear on this important question.

FOOTNOTES

[1]Another complication was that the groups of program completers and program dropouts were not mutually exclusive since some individuals dropped out of programs only to return and complete them at a later date.

[2]The missing data that is apparent in Tables 1 and 2 was filled in using the imputation methods described by Little and Rubin (1987, pp. 255-259). The results appeared to be quite sensitive to whether or not cases were included with missing data on the program participation variables in the analysis. The investigators, therefore, compiled results

addressing the issue of who was included in the analysis sample in different ways, then elaborated on the results of the various analyses below.

[3]This positive skewness was evident in plots of the observed and expected (based on results in Table 3) time-at-risk distributions which are presented in Figures A and B in the Appendix.

[4]As Heckman and Robb (1985) indicated, the answer to the first and second questions would be the same only when one of the following two conditions existed: (1) MRT would have the same effect on all individuals who might have participated in it; and (2) assignment to MRT was random (p. 161). The plausibility of the first condition was untestable and the second condition was absent in this analysis. Heckman and Robb indicated that so long as the selection process for MRT (and other non-MRT program initiation) was time-stable, pre- and post-program behaviors could be compared for those who participated to assess the effect of programming on those who actually participated (1985, p. 161-162). That suited the authors' purposes.

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Tables

Figures