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Examining Improvements in Criminogenic Needs: The Risk Reduction Potential of a Structured Re-entry Program[§]

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The risk–need–responsivity (RNR) model describes the importance of targeting criminogenic needs through planned interventions in order to reduce the risk of future offending behavior. Although risk/needs instruments capture these dynamic risk factors and previous research has demonstrated their sensitivity to change in these domains, correctional programs may not be leveraging the full case management potential of these instruments. This study explored the potential for improvements in criminogenic needs through participation in a brief, structured re-entry program consistent with the principles of RNR. Four criminogenic needs were identified as having the potential to change during the course of this program: education/employment, family/marital, procriminal attitudes/orientation, and antisocial pattern. The results indicated that overall risk level significantly decreased during the course of the treatment program, as did risk level for each of these criminogenic needs. For three of these domains, the participants in the highest risk category experienced significant improvements, consistent with the risk principle of RNR. Implications for the interface between assessment and treatment planning are discussed. Copyright © 2012 John Wiley & Sons, Ltd.

In recent decades, the number of individuals who are incarcerated in the United States has risen dramatically. In 1980, there were 139 sentenced inmates per every 100,000 persons incarcerated at the state or federal level; in 2010, that estimate was 497 per every 100,000 persons (Bureau of Justice Statistics, 2011; Guerino, Harrison, & Sabol, 2011). An estimated 3.1% of the adult population was involved in the justice system in some way in 2009 (including jail, prison, probation, and parole; Glaze, 2010). Although the number of offenders released to the community each year has begun to decline, the numbers remain considerable: in 2010, approximately 709,000 individuals were released from state or federal prisons (Guerino et al., 2011).

These statistics raise an important question: are these offenders prepared for release? A recent study considered the recidivism data (including reconviction and technical violations) from 41 states, and found that the 3-year recidivism rates averaged 43.3% (Pew Center on the States, 2011). In part driven by concern about recidivism, the issue of preparing offenders for release has received more scrutiny in recent years. However, identifying practices that are empirically supported has been elusive. Researchers have

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worked to develop models of effective correctional programs that may be adapted for use in many settings and many populations. One such theory, which has grown in prominence over the years, is the risk–need–responsivity (RNR) model (Andrews & Bonta, 1998).

RISK–NEED–RESPONSIVITY MODEL

The RNR model describes a general framework for effective interventions with offender populations. The "risk principle" states that effective correctional programs match the level of intervention an offender receives to that offender's risk level; for instance, individuals with a higher risk of recidivism benefit from high levels of contact and more intensive intervention (Dowden & Andrews, 1999). The "need principle" indicates that effective programs should target criminogenic needs, or dynamic risk factors, such as antisocial attitudes or substance use issues, as improvements in these factors have been associated with a decreased risk of offending behavior (Dowden & Andrews, 2000). Additionally, programs should not focus on non-criminogenic needs, such as self-esteem (Dowden & Andrews, 1999). Finally the "responsivity principle" includes two recommendations: specific responsivity, which involves the provision of services in a manner that considers specific characteristics of an offender; and general responsivity, which promotes cognitive behavioral and social learning models as the most effective classes of intervention (Andrews & Bonta, 2006; Dowden & Andrews, 2000).

The RNR model has been the focus of several empirical investigations, including a series of meta-analyses. These studies have operationalized RNR at a programmatic level – determining if programs generally served higher- vs. lower-risk populations, offered services that targeted criminogenic vs. non-criminogenic needs, and utilized cognitive behavioral or social learning orientations (Dowden & Andrews, 2000). The first meta-analyses, which included studies of adult and juvenile programs, demonstrated that "appropriate correctional service," defined as meeting the RNR principles, resulted in the lower recidivism rates than criminal sanctions or treatment defined as "inappropriate correctional service" (Andrews et al., 1990). With respect to violent offenders, Dowden and Andrews (2000) demonstrated that the mean effect size of programs adhering to the need and responsivity principles, respectively, was significantly higher than the mean effect size for programs not adhering to those principles; the presence of human service elements was also significantly associated with reduced recidivism. However, the risk principle was not associated with a significantly higher effect size, although the authors note that their method of coding risk may have played a role in this finding. Meeting all four program components was associated with the highest effect size. An examination of RNR among programs serving predominantly or solely female populations supported the risk principle within both types of programs, the need principle among predominantly female programs, and the responsivity principle among predominantly female programs (Dowden & Andrews, 1999). Although the need and responsivity principles did not have significant impact within the solely female programs, the effect sizes were moderate, and the small sample of these programs may account for the lack of differences. Programs meeting all three principles and incorporating human service components appeared maximally effective.

Additionally, a meta-analysis focusing on the risk principle was conducted more recently (Andrews & Dowden, 2006). The researchers used a within-sample approach

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to risk classification when possible (i.e., looking at different risk levels within a study), although this was only possible with 44 of the 374 tests included in the analysis. For the remainder of the studies, an aggregate approach – determining if the program tended to serve high-risk clients or not – was employed. They found that programs targeting high-risk populations were significantly more effective in reducing criminal justice outcomes than programs targeting low-risk offenders. Though programs targeting high-risk offenders yielded higher effect sizes than programs targeting low-risk offenders, whether the aggregate or within-study approach to coding risk was used, this difference was more substantial for studies using the within-study approach. This study also demonstrated that programs meeting criminogenic needs (with the exception of substance use) yielded a significant relationship between risk level and effectiveness, whereas programs that targeted non-criminogenic needs demonstrated no significant relationship between risk and program effectiveness. A significant interaction between gender and risk, and an interaction between age and risk that approached significance were also identified. More specifically, the risk principle was particularly strong among female offenders, and weak among adult offenders.

These studies provided a good foundation for research regarding the effectiveness of RNR within specific correctional programs. For instance, Bourgon and Armstrong (2005) examined this model within a program offering 5-, 10-, and 15-week programs. Results indicated that higher-risk offenders who only completed the 5-week program had a significantly higher recidivism rate than those who completed the appropriate-length program. They also found potential support for the iatrogenic effects of more intensive treatment for lower-risk offenders: offenders recommended for the 5-week program who completed the 5-week program had slightly lower recidivism rates (12%) than offenders recommended for the 5-week program who actually completed the 10-week program (16.7%). Bonta, Wallace-Capretta, and Rooney (2000) found additional support for the importance of matching risk level to service intensity among offenders receiving community-based treatment with and without electronic monitoring. A significant interaction between treatment and risk level was identified, such that high-risk offenders in treatment had a lower recidivism rate and low-risk offenders who received treatment had a higher recidivism rate (relative to both the high-risk offenders in treatment and the low-risk offenders who were not in treatment). Another study examined the role of the risk principle in reducing recidivism across a number of programs, operationalizing risk by determining whether programs served primarily high- or low-risk offenders, examining participant lengths of stay, and identifying the number of services received by participants (Lowenkamp, Latessa, & Holsinger, 2006). They found that programs with all three levels of adherence to the risk principle were most effective, especially within residential models.

Taxman and Thanner (2006) tested the RNR model for a substance-abusing population in a two-site study. Consistent with RNR, high-risk treatment offenders at one of the sites were significantly less likely to test positive for drugs or to use alcohol compared with the high-risk control group. The opposite pattern was observed for moderate-risk offenders, as treated offenders had significantly higher rates of positive urine samples than control participants. With respect to rearrest and violation of parole, however, some inconsistencies were observed. At one site, high-risk offenders in the treatment group had significantly fewer arrests; treated moderate-risk offenders had a greater, though non-significant, arrest rate than those in the control group. Although also non-significant, the opposite trend was seen at the second site: high-risk

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offenders in the treatment group had slightly higher numbers of arrests than high-risk control group participants; moderate-risk offenders in treatment had fewer arrest events than the control group. Though non-significant, several of these comparisons were also underpowered.

Polaschek (2011) studied the effectiveness of an intensive prison-based rehabilitation program that "conformed broadly" to the principles of RNR (p. 668). This study examined reductions in violent and non-violent recidivism, and well as the differential effects for high- vs. medium-risk offenders. Polaschek (2011) found that high-risk treatment completers had significantly fewer reconvictions for any crime than their matched controls. This contrasted with medium-risk individuals, who were at somewhat increased risk for any recidivism (although the comparison was not statistically significant). An intent-to-treat analysis confirmed these trends, although the effects were small. A survival analysis demonstrated that high-risk treatment completers spent significantly more time in the community prior to recidivating, but it is noteworthy that 38% of the reconvictions within this treated group took place within the first 6 months after release.

These studies provide additional support for the RNR model. However, the inconsistencies also raise additional questions. For instance, the study of RNR among substance abusing individuals (Taxman & Thanner, 2006) suggests that some site-specific characteristics may have influenced the results. In addition, the meta-analyses provided somewhat inconsistent support for each of the principles across populations, raising questions of whether this may be accounted for by methodological challenges, or perhaps by an incomplete understanding of the model. Moreover, several of these studies focused on defining RNR from a programmatic perspective, especially in terms of operationalizing criminogenic needs – rather than measuring adherence to the need principle by determining whether individual program participants were receiving services based on their own specific deficits, need principle fidelity was defined by identifying the services generally offered by a program.

Some recent research has begun to examine the role of RNR on a more individual level, and has brought attention to the importance of targeting an individual's specific criminogenic needs. For instance, Vieira, Skilling, and Peterson-Badali (2009) examined this concept of "match" between services and criminogenic needs and responsivity factors. Using a sample of juvenile offenders who received a court-ordered risk/needs assessment, they employed probation files and court records to determine whether present needs and responsivity factors had been targeted with some form of service, and calculated a "matching variable" to represent this fit. They found that a better match between present needs and services obtained was associated with fewer recidivism events and reduced reoffense risk. Similarly, juveniles who had a greater proportion of responsivity factors met had significantly better outcomes, though this did not significantly contribute after controlling for overall risk level and the matching of criminogenic needs. This study is an important example of the manner in which RNR may be operationalized on an individualized level, and also reinforces the importance of targeting an offender's specific dynamic risk factors as a way to improve criminal justice outcomes. However, this area remains understudied.

In addition, investigators have begun to recognize the role of risk/needs measures in the implementation of needs-based services, and have demonstrated the potential for improvement in criminogenic needs following treatment participation. For instance, one study examined changes in scores on the Level of Service Inventory – Revised (LSI-R; Andrews & Bonta, 1995), which reflects both static risk factors and dynamic needs,

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among offenders in four community corrections programs (Schlager & Pacheco, 2011). Case management staff at these facilities used results from the LSI-R and other assessments "to develop a comprehensive individualized treatment and case management plan" (p. 544), which was updated throughout the program. During the average 152 days between assessments, significant improvements were observed for seven of the nine dynamic subcategories (only alcohol/drug and emotional/personal did not achieve significance), as well as in the composite LSI-R score. This finding is important, as it demonstrates the sensitivity of risk/needs instruments to changes in criminogenic needs over time. Additionally, it indicates that improvements in an individual's criminogenic needs can be made when targeted with planned, RNR-informed interventions. This study also examined differences in LSI-R score change across programs, and identified some differential effects over time by program. These site-related differences suggest that there may be program-specific factors that influence the degree of improvement in needs observed among treatment participants.

A study of prisoners in England also examined the possibility for change on the LSI-R (Hollin, Palmer, & Clark, 2003). These investigators anticipated the potential use of knowledge regarding change on this instrument, such as evaluating the effectiveness of prison programming or weighing on the question of transfers to less secure settings. The researchers adapted the LSI-R for use in England, and added items to more thoroughly assess criminal history and in-prison experiences (e.g., "Number of prior convictions between 17–21 years of age?;" "How do you get on with your job in prison?;" "In prison, do you have a lot of friends?" – p. 437). They found that participant scores significantly improved on the dynamic items in the following categories: education/employment, financial, alcohol/drug problems, emotional/personal, inside prison. There were significant increases in the score for criminal history, though the researchers noted that this subscale did not have the potential for improvement due to the nature of the items. Another investigation demonstrated the importance of change on the LSI-R in the prediction of recidivism (Prell & Smith, 2009; Vose, 2008). A sample of probationers and parolees was obtained from the Iowa Department of Corrections. During the 5-year study period, participants had been administered the LSI-R at least twice, with an average of approximately 1 year between administrations. Participants were from the general state-wide database, and had not participated in a particular treatment program; in addition, there was substantial variability in the time between the first and second assessments. However, the results indicated that both raw change and percentage change in the overall LSI-R score was a significant predictor of recidivism (as defined by reconviction), such that improvements in the LSI-R composite score was related to a reduction in recidivism. In addition, a significant interaction was observed between change on the LSI-R (both percent change and raw change) and risk level: a 10% reduction on the LSI-R yielded a 6% decrease in recidivism for high-risk offenders, compared with a 1% decrease in recidivism for low-risk offenders. Interestingly, change in the individual criminogenic needs was not a significant predictor of recidivism; rather, improvements in overall score appeared to drive the impact on reconviction rates. This study demonstrates the potential risk-reduction implications of change in scores on risk/needs instruments, and emphasizes the sensitivity of these instruments to change over time.

These studies support the use of risk/needs assessments as a method of measuring improvement in dynamic need areas, but focus on the LSI-R, a third-generation risk measure (Andrews, Bonta, & Wormith, 2006). The fourth generation of risk assessments

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instruments was designed to incorporate dynamic factors, as well as to "guide[s] and follow[s] service and supervision from intake through case closure (Andrews et al., 2006, p. 8). These instruments, such as the Level of Service/Case Management Inventory (LS/CMI; Andrews, Bonta, & Wormith, 2004), assess for risk of criminal offending, and then provide guides for linking this information to treatment planning and case management. A better understanding of change in these measures over time and in response to treatment programming – especially as recommended by the RNR model – will contribute to our knowledge of the importance of linking assessment and treatment to promote short- and longer-term improvements.

RE-ENTRY PROGRAMMING

Researchers have described three phases to re-entry programs, which help offenders to prepare for reintegration into the community: the institutional phase, structured re-entry phase, and community reintegration phase (Taxman, Young, Byrne, Holsinger, & Anspach, 2002). The institutional phase begins several months prior to release, while an offender is still incarcerated. During this phase, placement is ideally based on an assessment and classification procedure, and a treatment plan is developed. The structured re-entry phase, which begins 6 months prior to release and ends about 1 month post-release, focuses on the creation of more specific service plans and development of community connections. The final phase is the community reintegration phase, which begins 2 months post-release, and may include community supervision or aftercare components (e.g., Haas, Hamilton, & Hanley, 2007).

Re-entry services are important, as they equip offenders with the resources and skills that they need to succeed in the community – for instance, vocational or substance abuse services. Re-entry services also have favorable implications for the larger community, such as reducing unemployment and homelessness, and improving mental and physical health (Petersilia, 2001). There is some empirical support for the effectiveness of re-entry programming. For instance, Seiter and Kadela (2003) reviewed several studies of re-entry programs and classified programs according to those which "work," "do not work," or are "promising." Among those identified as "working" are vocational training and work release, drug rehabilitation, and halfway houses. Other studies have found that participation in re-entry programs may increase referral to and participation in community services, improve drug-related behaviors, reduce arrest rates, (Bouffard & Bergeron, 2006), and reduce reincarceration (Zhang, Roberts, & Callanan, 2006). One study demonstrated that these advantages were especially pronounced for those who successfully achieved treatment goals set by the program (Zhang et al., 2006). Therefore, it appears that there is a role for re-entry services. However, given the methodological weaknesses of some investigations (Seiter & Kadela, 2003), investigating the risk reduction potential of re-entry facilities remains an important goal.

CURRENT STUDY

Risk/needs assessments provide important information, in terms of both overall risk and criminogenic needs. In addition, one of the strengths of dynamic assessments is their sensitivity to change in criminogenic needs. However, although the RNR model

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describes the importance of targeting criminogenic needs as a method of reducing risk of recidivism, programs may not be leveraging the full case management potential of the results of risk/needs assessments. Therefore, the present study focuses on the potential for improvement in criminogenic needs for participants of a program that follows an RNR-informed treatment model, and whether RNR-defined risk factors can be altered in a relatively brief intervention as part of the re-entry process. More specifically, this study examined change in the overall risk level of participants, as well as specific criminogenic need domains, during their time in the brief intervention program.

As such, this study had two primary hypotheses. First, it was hypothesized that participants' criminogenic needs and overall risk level would significantly improve as a result of the intervention. This was tested by comparing LS/CMI scores (including subscale and total scores) of the participants upon admission to the facility with their scores upon release. It is important to note that, with the assistance of the assessment staff at the facility where this study took place, it was determined that only four of the criminogenic needs had the potential to change, due to the nature and relatively brief length of the program. These needs included education/employment, family/marital, pro-criminal attitude, and antisocial pattern. Therefore, the analyses focus on these domains.

Secondly, it was hypothesized that criminogenic needs would significantly improve within the subset of participants with the highest risk scores for a given need. A participant was classified as high risk if they rated in the "high" or "very high" categories for a particular need. Again, the focus of these analyses was those needs identified as having the potential to change during this program.

METHOD

Program

Participants were recruited from a privately operated assessment and treatment facility in Trenton, NJ. This facility serves males and females from three primary populations: individuals awaiting transfer to a halfway house from the New Jersey Department of Corrections; individuals awaiting sentencing or serving sentences in both Mercer and Gloucester Counties, New Jersey; and individuals who have violated conditions of their parole or the Parole Board sentenced to the facility as a condition of parole. Residents of the facility have a variety of current charges, including drug-related offenses, violent crimes, and property crimes. The current investigation focuses on those individuals under the custody of the Department of Corrections. During this program, comprehensive assessments are conducted, and residents participate in programming that follows a modified therapeutic community model. Programming includes attendance at large lectures, which follow a curriculum based on rational emotive behavior therapy (REBT); participation in specialty groups (described below); participation in weekly group counseling sessions that are led by program staff; and provision of individual counseling sessions with a personally assigned counselor every two weeks. Additionally, they complete assignments related to REBT during a personal application time each day and attend occasional peer-led sessions. At the beginning of their stay in the program, residents meet with a member of the clinical staff for an intake interview, which addresses various areas, including demographic information, current

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charge(s), and information related to social support, current/past drug and alcohol use, education, and vocational skills. The resident's initial treatment plan is also developed at this time, and includes mandatory program elements (including the large psychoeducational lectures, caseload group meetings, and individual counseling), as well as specialty programs to target counselor- or self-identified needs. If risk assessment results are also available at this time, they may be used to inform specialty program assignment. This treatment plan is updated every 30 days, and residents also undergo a monthly review to gauge their progress and any areas for improvement. Upon completion of the program, the majority of these residents are assigned to an appropriate halfway house by Department of Corrections personnel. The placement assignment is based on a number of factors, including the assessment report findings and recommendations. A small number of residents reach their parole eligibility or maximum sentence date while at the facility and are released directly to the community. The average length of stay for all study participants who completed the program – including those who did and did not complete the second study assessment – was 73.53 days (SD = 19.11), with a range of 27–126 days.

The treatment model at this facility is largely consistent with RNR. The majority of program residents may be classified as at least high risk with respect to total LS/CMI score. The focus of the large lectures includes topics such as antisocial attitudes and criminal thinking patterns, drug and alcohol abuse, and the role of previous patterns of behavior and companions. The specialty programs that are available focus on a number of criminogenic needs, and include programs such as anger management, entrepreneurship, chess classes, general educational development (GED) classes, and Narcotics Anonymous/Alcoholics Anonymous. The individual and group counseling sessions often aim to help the offenders to examine their own potential deficits in these various areas. Moreover, the program follows a cognitive behavioral model. Although the program is consistent with RNR on a programmatic level in these ways, there are also ways in which adherence to the model on an individual offender level may be improved. To implement this model in a more individualized manner, the results of the structured risk assessment (the LS/CMI) would be used to identify deficits, and the individual would then be matched to programs that specifically target his pattern of deficits (see Brooks-Holliday et al., 2011, Vieira et al., 2009 for more details). However, at this facility, administration of the LS/CMI did not always occur at the beginning of an individual's placement in the program, which may have interfered with the counseling staff's ability to assign offenders to programs that target their specific needs upon entry. Since this study's completion, the center has developed a policy that all residents are assessed with the LS/CMI within 10 days of their entry to the facility. Additionally, the small and somewhat closed nature of some of the groups makes it difficult for counselors to assign individuals to services to target their needs, even if that need and service have been identified. Programmatically, however, the services offered are consistent with the RNR model.

Participants

This sample comprised male residents ($N = 71$) of the facility. Residents under the custody of the state Department of Corrections were eligible for participation, including: those who were transferred to this facility directly from a New Jersey state prison; and individuals who were transferred from another halfway house in New Jersey for

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administrative purposes or after being charged with violating the program rules at the respective halfway house. Although individuals classified in this second category had already spent time at another halfway house, they had not been formally discharged to community supervision. Ability to speak and understand English was required of participants. Residents who were transferred to the facility during a 60-day period of time were randomly selected to be invited to participate in the study. An initial sample of 94 participants was recruited. Of the 94 study participants, 13 were returned from the facility for violating program rules, and seven were paroled or transferred to a halfway house before being seen for a follow-up assessment. Two were removed from the program for disciplinary problems and then returned to the facility; these individuals were also considered ineligible to complete the study. One participant declined to complete the second assessment point. Therefore, a total sample of 71 participants completed both assessments.

As may be seen in Table 1, the age of the 71 study completers ranged from 21 to 62 years ($M = 35.61$, SD = 9.10). Forty-eight of the participants (67.61%) entered directly from a Department of Corrections prison facility, whereas 23 (32.39%) were transferred from another Department of Corrections halfway house. Of the study completers, 16.90% were White, 69.01% were Black, 12.68% were Hispanic/Latino, and one was identified as "other." Nearly half of the sample was serving a sentence for drug- and alcohol-related charges (49.30%), 19.72% had a firearms charge, 14.08% committed violent crimes, and 11.27% committed property crimes. Three participants committed violations of supervision (4.23%).

With respect to level of education, 16.90% completed a grade between 6th and 11th, 5.63% completed high school without receiving a diploma, 29.58% received a high school diploma, and 23.94% earned a GED. A combined 16.90% of participants completed at least some college coursework, with two achieving an associate's degree and one achieving a bachelor's degree. Data were unavailable for 7.04% of these individuals.[1]

Analyses were conducted to determine whether study completers ($N = 71$) differed significantly from those non-completers who were returned for disciplinary reasons ($N = 15$) and those who completed the program but not the second study assessment point ($N = 8$). There were no significant differences with respect to baseline risk level [$F(2, 91) = 0.04$, $p = 0.96$] or age [$F(2, 91) = 1.98$, $p = 0.15$]. There was a significant difference with respect to length of stay [$F(2, 91) = 8.01$, $p = 0.001$]. More specifically, individuals who were discharged for disciplinary reasons had a significantly shorter length of stay ($M = 51.60$ days, SD = 20.80) than individuals who completed the study ($M = 73.38$, SD = 17.78, $p = 0.001$), and individuals who completed the treatment program but not the study ($M = 74.88$, SD = 23.25, $p = 0.028$). This difference in length of stay between treatment completers and non-completers, however, would be expected. Statistical comparisons regarding the racial/ethnic group, marital status, current charge, level of education, and transfer status were not possible, given the small number of participants in some categories; however, other demographic information is described in Table 1.

[1] Education level at the facility is collected during the intake interview, and entered into the record using a categorical menu of choices: Less than 6th, 6th through 11th, K-12, high school diploma, GED, college education: no degree, associate's degree, bachelor's degree, and other.

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Table 1. Characteristics of completers, partial completers, and non-completers ($N = 94$)

	Study completers ($n = 71$)	Treatment completers, study non-completers ($n = 8$)	Treatment and study non-completers ($n = 15$)
Marital status			
Single	85.92%	100.0%	93.33%
Married	5.63%	0.00%	6.67%
Divorced	8.45%	0.00%	0.00%
Drug of choice			
Marijuana	38.03%	50.00%	26.67%
Alcohol	12.68%	0.00%	6.67%
Cocaine	8.45%	12.50%	6.67%
Heroin	8.45%	12.50%	13.33%
Other	0.00%	12.50%	6.67%
Unreported/no use	32.39%	12.50%	40.00%
Current charge			
Violent	14.08%	25.00%	6.67%
Property	11.27%	12.50%	20.00%
Drug/alcohol	49.30%	25.00%	46.67%
Firearms	19.72%	37.50%	26.67%
Violation of supervision	4.23%	0.00%	0.00%
Eluding	1.41%	0.00%	0.00%
Level of education			
6th–12th	16.90%	12.50%	13.33%
High school, no diploma	5.63%	0.00%	6.67%
High school, diploma	29.58%	37.50%	40.00%
GED	23.94%	12.50%	13.33%
Some college	12.68%	12.50%	20.00%
Associate's	2.82%	12.50%	0.00%
Bachelor's	1.41%	0.00%	0.00%
Not available	1.41%	0.00%	0.00%
Other	5.63%	12.50%	6.67%
Race			
White	16.90%	37.50%	0.00%
Black	69.01%	37.50%	80.00%
Hispanic/Latino	12.68%	25.00%	20.00%
Other	1.41%	0.00%	0.00%
Transfer status			
Yes	32.39%	37.50%	26.67%
No	67.61%	62.50%	73.33%

Measures

Level of Service/Case Management Inventory

The LS/CMI is an assessment of static risk factors and dynamic needs, and is designed both to generate an estimate of offender risk and to aid in treatment planning and case management (Andrews et al., 2004). The instrument was normed on more than 150,000 adult and youth offenders, and is indicated for use with male and female offenders over the age of 16. Section 1 of this instrument, which assesses general risk factors, was administered for this investigation. This section contains 43 items that determine the risk/need score, including areas such as criminal history, family/marital, companions, and alcohol/drug problems. The tool is psychometrically sound with respect to internal consistency (for Section 1, Cronbach's α is estimated between 0.89 and 0.94; for the subcomponents of Section 1, α ranges from 0.39 to 0.89). Test–

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retest/inter-rater reliability ranged from poor to very good, depending on the subcomponent; for instance, criminal history had a test–retest reliability of $r = 0.91$, while pro-criminal attitude/orientation had a reliability of $r = 0.16$. However, as a dynamic risk assessment tool, this variability on retest may be expected.

Texas Christian University (TCU) Criminal Thinking Scales

The TCU Criminal Thinking Scales (CTS; Knight, Garner, Simpson, Morey, & Flynn, 2006) aim to assesses criminal thinking (TCU Institute of Behavioral Research, 2005). Its scales include entitlement; justification; personal irresponsibility; power orientation; cold heartedness; and criminal rationalization. This measure was normed on more than 3,266 clients from 26 correctional programs. There are 37 questions on the CTS, with responses ranging from 1 ("disagree strongly") to 5 ("agree strongly"). The α coefficients for the scales range from 0.68 (cold-heartedness, personal orientation) to 0.81 (power orientation). Test–retest reliability ranges from 0.66 (cold-heartedness) to 0.84 (criminal rationalization).

TCU Criminal Justice Client Evaluation of Self and Treatment

The TCU Criminal Justice Client Evaluation of Self and Treatment (CJ CEST; Garner, Knight, Flynn, Morey, & Simpson, 2007) assesses client needs and treatment performance. This measure includes scales related to treatment motivation, psychological functioning, social functioning, therapeutic engagement, and social network support. The intake version of the assessment (TCU Criminal Justice Client Evaluation of Self and Treatment – Intake, CJ CESI) is administered by the program to most residents, and the social support scale was administered at a second assessment for this study. The TCU CJ CEST was normed on a sample of more than 3,266 clients from 26 programs (TCU Institute of Behavioral Research, 2005). There are a total of 115 questions, with responses ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The social support scale comprises nine questions, and the α coefficient for this scale is 0.75.

Procedure

Upon entry to Bo Robinson, individuals from the Department of Corrections population were randomly selected for invitation to participate in this study. The nature of the study was described to these individuals, and informed consent was obtained for those who expressed interest. Within two weeks of their entry, participants were administered an LS/CMI interview by the primary author or one of three research assistants (students in a doctoral program in clinical psychology). The LS/CMI was scored based on this interview and historical information regarding past criminal behavior. Assessment staff at the facility administered the CJ CEST and CJ CTS to the majority of residents at the beginning of their stay, including study participants. During their stay at the facility, residents participated in the program activities described earlier. One week prior to release from Bo Robinson, study participants were administered the second set of measures: specific portions of Section 1 of the LS/CMI; the social support scale of the TCU CJ CEST; and the TCU CTS. With respect to Section 1 of the LS/CMI, the emphasis of the updated interview and ratings was on those criminogenic needs that could

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change during the course of the program (i.e., education/employment, family/marital, procriminal attitudes, and antisocial pattern). Scores for the other subsections, which were based on more static information or factors that did not have the potential change during the treatment program, were carried forward from the first assessment. After each participant was released, his treatment and assessment records were obtained, including background and demographic information, specialty group participation, official LS/CMI records, and TCU instrument results.

RESULTS

Data were analyzed using IBM SPSS Statistics 19. To test whether improvements in criminogenic needs were observed during the program, a series of one-tailed repeated-measures *t*-tests was conducted. A Bonferroni correction was employed to control experiment-wise α, and effect sizes were calculated using percent of variance explained (r^2). An additional series of one-tailed repeated-measures *t*-tests examined improvements on each domain of the LS/CMI specifically for participants who scored in the high/very high level (i.e., those for whom the need was considered "present"). As noted, due to the program structure and length, not all risk factors/criminogenic needs had the potential to change during an individual's stay at the facility. Those scores that were identified as having the potential to change include education/employment, family/marital, procriminal attitude/orientation, antisocial pattern, and total LS/CMI score. Therefore, the pairwise comparisons focus on these domains.

For the 71 study completers, the average LS/CMI score was 22.01 (SD = 5.16), with scores ranging from 9 to 31. In terms of categorical risk level, 5.63% were classified as very high risk, 69.01% qualified as high risk, 23.94% as medium risk, and 1.41% as low risk. With respect to subscales, the most common high-risk categories were criminal history and leisure/recreation, and a large number of participants scored in the high or very high range on companions. Few participants scored in the medium-, high-, or very high-risk range on alcohol/drug problem, though this may be due to the temporal nature of the scoring of these items (i.e., specifically rating use in the last 12 months, even if incarcerated). For the eight subscales of the LS/CMI, the number of participants falling into each risk/need category is summarized in Table 2.

The subscales identified as having the potential to change included education/employment, family/marital, procriminal attitude/orientation, antisocial pattern, as well as total LS/CMI score. For the 71 completers, there was a significant improvement in total LS/CMI score [$t(70) = 6.38$, $p < 0.01$, $r^2 = 0.37$]. The average change on the LS/CMI was a decrease of 1.30 points in the total score (SD = 1.71), although the amount of change ranged from a three-point increase to a six-point decrease. There were also significant improvements in education/employment, family/marital, procriminal attitudes, and antisocial pattern; each of these comparisons was significant at $\alpha = 0.05$, and with the exception of education/employment, the comparisons were also significant after a Bonferroni comparison for multiple tests ($\alpha = 0.01$). The average change on these scales and total score is summarized in Table 3.

In addition, the amount of change in these needs for those in the highest risk range (i.e., individuals scoring in the high or very high category) was examined. Each criminogenic need had a varying number of participants scoring within that severity

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Table 2. Level of Service/Case Management Inventory (LS/CMI) categorical scores for study completers ($N = 71$)

	Risk/need level				
LS/CMI subscale	Very low	Low	Medium	High	Very high
Criminal history	0 (0.0%)	2 (2.82%)	17 (23.94%)	45 (63.38%)	7 (9.86%)
Education/employment	8 (11.27%)	6 (8.45%)	23 (32.39%)	30 (42.25%)	4 (5.63%)
Family/marital	10 (14.08%)	19 (26.76%)	25 (35.21%)	14 (19.72%)	3 (4.23%)
Leisure/recreation	7 (9.86%)	0 (0.00%)	15 (21.13%)	49 (69.01%)	N/A
Companions	0 (0.00%)	2 (2.82%)	22 (30.99%)	17 (23.94%)	30 (42.25%)
Alcohol/drug problem	17 (23.94%)	47 (66.20%)	3 (4.23%)	3 (4.23%)	1 (1.41%)
Procriminal attitude/orientation	19 (26.76%)	24 (33.80%)	18 (25.35%)	7 (9.86%)	3 (4.23%)
Antisocial pattern	7 (9.86%)	20 (28.17%)	26 (36.62%)	18 (25.35%)	0 (0.00%)

range. Within these subsets, significant improvements were still observed for family/marital, procriminal attitude/orientation, and antisocial pattern, with $\alpha = 0.05$, and after a Bonferroni correction for multiple tests ($\alpha = 0.01$). Data on the number of participants with each need and average improvements are summarized in Table 4.

DISCUSSION

This study focused on the extent to which residents of a brief, structured re-entry program consistent with the principles of the RNR model experienced improvements

Table 3. Participants ($N = 71$) change in Level of Service/Case Management Inventory (LS/CMI) scores

Criminogenic need	M (SD)	r^2
Education/employment	0.06 (0.23)*	0.06
Family/marital	0.47 (0.79)**	0.26
Procriminal Attitude/orientation	0.48 (0.98)**	0.19
Antisocial pattern	0.28 (0.68)**	0.15
Total LS/CMI score	1.30 (1.71)**	0.37

*$p < 0.05$, **$p < 0.01$

Table 4. Change in Level of Service/Case Management Inventory (LS/CMI) score for participants with highest level of need

Criminogenic need	Number of high need participants	M (SD)	r^2
Education/employment	34	0.06 (0.24)	0.06
Family/marital	17	0.88 (0.78)**	0.58
Procriminal Attitude/orientation	10	1.40 (0.84)**	0.75
Antisocial pattern	18	0.39 (0.61)**	0.30

**$p < 0.01$.

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in their criminogenic needs and overall risk level. The primary focus of this investigation was determining whether some of the dynamic needs improved during the brief duration of the re-entry program. Furthermore, the study focused on the improvement in criminogenic needs for those individuals who demonstrated the most serious deficits in a given area.

The results suggest that individuals improved significantly in certain areas, as measured by decreases in LS/CMI overall scores as well as specific criminogenic needs. Although the length of stay at this facility is relatively brief (for treatment completers, the average length of stay was 73.53 days), participants improved significantly with respect to their family and marital relationships; their attitudes toward crime, offending, supervision, and treatment; and their antisocial patterns of behavior. In addition, there was significant improvement in education/employment. Although the level of improvement in scores on this subscale and its associated effect size were modest, it is clinically important to note that those individuals who improved on this item all obtained a GED while at the facility. For these four participants, obtaining this degree represented a substantial accomplishment. In addition, considering only those individuals who scored in the high or very high risk category on each criminogenic need, there was significant improvement on family/marital, procriminal attitude, and antisocial pattern. This suggests that individuals who most needed to improve in certain areas were able to achieve this improvement during their time in the program.

These findings have important practice implications. They support the risk reduction potential of a structured re-entry program that is relatively brief in duration. Many times, classification or step-down facilities may be seen as a brief stop on the way to a less secure level of custody, and attempts at providing intensive treatment services may be forgone to focus on the assessment and placement process. However, based on the results of this study, a time-limited treatment may have an important impact on risk for future offending. As the RNR-related research has demonstrated, improvements in criminogenic needs and overall risk level are associated with a reduced risk of reoffense (Andrews et al., 2004; Dowden & Andrews, 2000). The results of this study suggest that participants experienced improvements in their criminogenic needs and overall risk despite the relatively short duration of the interventions. Moreover, the finding that individuals in the highest risk categories for each respective need also experienced significant improvement suggests that those who are more in need of intensive interventions in a given domain were able to make gains in a relatively short period of time. In addition, many residents of the study site are subsequently placed in community-based facilities with lower security levels. Providing treatment in a re-entry setting prior to entering a halfway house may enable offenders to begin improving in areas that may increase their likelihood of success in a less secure program.

More generally, consistent with the findings of Schlager and Pacheco (2011), these results underscore the utility of dynamic risk/needs assessments in treatment planning and case management. By utilizing instruments that are sensitive to change over time – such as the LS/CMI – correctional programs can measure the effectiveness of their interventions, identify areas that deserve further attention, and plan appropriately for future treatment. Taking advantage of the dynamic nature of these measures may enable treatment programs to be more deliberate when assigning individuals to services, and to maximize the often-limited financial, staffing, and time-related resources that are available.

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Because this study focused on the potential for criminogenic needs to change in response to brief, targeted interventions, a control or comparison group was not recruited. The initial study goal was to determine whether change in dynamic risk factors may occur in response to a relatively brief, targeted intervention. Previous research has examined change across a longer intervention period (Schlager & Pacheco, 2011), but this study suggests that even a more short-term program has the potential to impact offenders' deficits. Future research may focus on specific program elements that that are essential to effect change, and inclusion of a comparison group in this type of investigation may facilitate the identification of interventions that are most effective.

This study had several limitations. For instance, it is possible that experimenter expectations played a role in more favorably rating participant responses at the second assessment, and thus account in part for the significant improvement. It is also possible that the improvements were due to non-specific aspects of the treatment program, such as pending release to a less secure level of custody, participation in individual and group counseling, or participation in the treatment milieu. In addition, it was not possible to examine the impact of program participation on those criminogenic needs that did not have the potential to change during the program – companions, leisure/recreation, and alcohol/drug problem. Though aspects of the programming and services at the facility targeted these areas and have the potential to influence improvement on a longer-term basis, it was not possible to capture change on these items due to the short-term and secure nature of this treatment facility.

In addition, this study focused on the LS/CMI as administered to individuals upon entry and release, but does not provide information about intermediate changes in dynamic needs. It would be ideal to have a study that measures these intermediate data; this might be accomplished in several ways. First, an additional administration of the LS/CMIcould be conducted at an intermediate stage in the program (e.g., after approximately 4–5 weeks). Alternatively, even if the full LS/CMI were not administered more frequently, having a sensitive measure of dynamic needs that could be administered weekly would provide rich information regarding the patterns of change in criminogenic needs over time. Although this was not within the scope of the current study, additional research may determine how to measure this more continuous and longitudinal assessment of change. However, the current study provides support for the potential for dynamic risk factors to be improved within a brief period of time, which is an important finding for subsequent investigations and more precise questions regarding the process of change.

This study also has several implications for future research. It will be important to consider the longer-term impacts of this treatment program on outcomes such as rearrest or reconviction. In addition, this treatment program follows the principles of risk, need, and responsivity, and efforts are made to connect residents with interventions that are appropriate to their backgrounds and deficits. Due to the brief length of stay at the facility, however, it is not always possible for program residents to complete all the programs for which they may be appropriate. Accordingly, it would be interesting to explore the degree to which individuals' risks and needs are being met through planned interventions during their stay at the program. In a similar vein, it would be useful to examine the impact of the match between an individual's risk level and criminogenic needs and the services that were provided. More specifically, based on the RNR model, it would seem that a better fit between individual risk and needs

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and treatment programming would result in greater improvements during the treatment program, and better long-term outcomes, such as reduced rates of rearrest or reconviction. Additional research in this direction would add to the limited research regarding the implementation of RNR on an individualized level.

Overall, this study supports the risk reduction potential of a short-term structured re-entry program. Despite this program's relative brevity, participants experienced significant reductions in their overall risk scores on the LS/CMI while on the program, as well as their RNR-described criminogenic needs. This finding adds to the evidence regarding the impact of RNR-informed interventions, while raising additional questions about how such interventions can be measured on an individual level. The long-term outcomes of program participants, as well as the measurement of adherence to the RNR model, are important "next steps" in the scientific study of correctional rehabilitation.

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