



AN EVALUATION OF THE INTEGRATION OF MOTIVATIONAL INTERVIEWING AND RISK-NEED-RESPONSIVITY MODEL IN THE CASE MANAGEMENT OF COMMUNITY-SUPERVISED OFFENDERS

Report Submitted to the New Brunswick Department of Public
Safety

© February 25, 2014

Authors:

Mary Ann Campbell, Ph.D.
Director, Centre for Criminal Justice Studies
Associate Professor, Department of Psychology
University of New Brunswick, Saint John Campus
mcampbel@unb.ca

Heather Dyck, B.A. (Hons) & Julie Wershler, B.A. (Hons)
Doctoral Students, Clinical Psychology Program
Department of Psychology
University of New Brunswick, Fredericton Campus

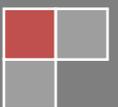


Table of Contents

Table of Contents.....	1
EXECUTIVE SUMMARY.....	2
Introduction	6
Method.....	9
Data Collection & Case File Selection	9
Materials	10
Level of Service/Case Management Inventory (LS/CMI; Andrews, Bonta, & Wormith, 2004).....	10
Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews 2002).....	11
Adherence to Risk-Need-Responsivity (RNR) Model Coding Guide.....	11
Index Offence & Recidivism Data.....	12
Procedure.....	13
Results	14
Adult Probation Results	15
Youth Probation Results	18
DISCUSSION.....	21
Adult Offenders	22
Justice-Involved Youth.....	22
General Discussion.....	23
Strengths and Limitations of the Current Study	25
Recommendations.....	26
Table 1.....	32
Table 2.....	33
Table 3.....	34
Table 4.....	35
Table 5.....	36
Table 6.....	37
Table 7.....	38
Table 8.....	39
Table 9.....	40
Table 10.....	41
Table 11.....	42
<i>Figure 1</i>	<i>43</i>
<i>Figure 2</i>	<i>44</i>

EXECUTIVE SUMMARY

The Risk-Need-Responsivity model (RNR; Andrews, Bonta, & Hoge, 1990) of offender rehabilitation posits that in order to reduce criminal behaviour, the risk level, criminogenic needs, and responsivity factors of each offender must be considered. The Risk principle states that the intensity of supervision and rehabilitation should match the recidivism risk level of an offender; the Need principle states that dynamic criminogenic needs are to be prioritized as intervention targets, and the Responsivity principle requires that intervention be tailored to an individual's capacities and strengths and utilize evidence-based practices for reductions in criminal behaviour (Andrews & Bonta, 2010). The effectiveness of the RNR model has consistently been supported. Specifically, stronger adherence to the RNR principles in a case plan is associated with reduced recidivism, whereas weak adherence either has no effect on recidivism or slightly elevates it (e.g., Andrews & Bonta, 2010; Bonta et al., 2011; Smith et al., 2009).

In contrast to the Risk and Need principles, the Responsivity principle has received little empirical attention. However, one aspect of responsivity pertains to an offender's motivation to change. To enhance an offender's response to intervention, some have called for the integration of motivation enhancement methods with the RNR approach (Walters et al., 2010). Motivational Interviewing (MI; Miller & Rollnick, 2001) is a strategy advocated for this type of integration as it elicits clients' own intrinsic motivations to change (Miller & Rose, 2009). Preliminary research suggests that MI may be effective for increasing readiness to change (Austin, Williams, & Kilgour, 2011) and reducing procriminal attitudes (Harper & Hardy, 2000) in offender populations, although it alone may not be sufficient to reduce recidivism (Walters et al., 2010).

The integration of MI into an existing evidence-based case management strategy for crime reduction may be helpful when motivation waxes and wanes over time. In light of this supposition, the present study examined the impact of an integrated MI/RNR case management strategy for 118 community-supervised adult offenders and justice-involved youth in the province of New Brunswick relative to 118 offenders supervised using the pre-existing RNR-only case management strategy. It was hypothesized that MI/RNR supervised offenders would demonstrate lower recidivism rates and longer time to recidivism than those supervised under the RNR-only strategy. This effect was expected to be maximized when case plans highly adhered to the RNR principles.

Methods & Materials

Archival data were collected on 236 community-supervised provincial offenders (100 youth, 136 adult) in New Brunswick. Cases were drawn from the cities of Fredericton and Saint John, as well as the surrounding communities within the jurisdictions of these offices. These cases were predominantly male (73%) and Caucasian (88%). An equal number of cases were drawn from the 2-year period following the delivery of integrated MI/RNR training and the 2-year period prior to this training in which a RNR-only strategy was used to manage cases as per policy. This selection process resulted in 50 youth cases chosen from both the RNR-only and MI/RNR periods and 68 adult offender cases from each time period. Offenders in both age groups were comparable on key demographics and intake risk level ($ps > .05$). Correctional service case records were accessed to gather data on offenders' criminal records, case management plans, and intake risk-need assessments as completed by probation officers using the Level of Service/Case Management Inventory (LS/CMI; Andrews, Bonta, & Wormith,

2004) for adult offenders or the Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews, 2002) for young offenders. Recidivism events were defined as any new charge obtained for a crime that occurred during the 2 years following the start of the index community supervision period and were obtained through the New Brunswick Department of Public Safety's electronic record system. Case plans were reviewed to code adherence to the RNR principles in a manner consistent with previous research (Hanson, Bourgon, Helmus, & Hodgson, 2009). Risk adherence was coded as present or absent based on whether the service intensity provided matched the offender's identified LS/CMI or YLS/CMI risk-level. Need adherence was coded based on whether each criminogenic need was addressed in the case plan. Responsivity adherence was coded as present or absent based on whether interventions used within the case plan were evidence-based and individualized to the offender's responsivity needs (e.g., mental illness, learning capacities). Inter-rater reliability of the coding guide was excellent ($k = .91$).

Results & Discussion

Adult Offender Results: Although the offenders supervised by probation officers who under the MI/RNR strategy had a lower rate of recidivism rate during the 2 year follow-up period (35%) compared to offenders supervised by probation officers under the RNR-only case plan strategy (49%), this difference was not statistically significant. Offenders supervised under the different strategies also did not differ significantly in the type of recidivism event that occurred during the follow-up period (i.e., violent, non-violent, sexual, technical violation; $ps > .05$) or in the length of time passed before the occurrence of the first new charge after the start of supervision, $X^2(1) = .853, p = .356$. However, visual inspection of the survival curves assessing the passage of time prior to recidivism suggested that some degree of separation between these two groups was starting to emerge near the end of the follow-up period. Thus, although the integrated MI/RNR strategy did not significantly influence time to recidivism any more than the RNR-only supervision strategy in the 2-year window, the benefits of this integration may be more evident in long-term recidivism trajectories.

With respect to adherence to the RNR principles by adult probation officers, Risk principle adherence analysis revealed a main effect of risk level, $F(2, 122) = 9.269, p < .001$. Specifically, high risk offenders were referred to a higher number of interventions, which is consistent with the Risk principle. This practice was equally present in the RNR-only and MI/RNR supervised cases. An increase in adherence to the Need principle was observed in the case plans of MI/RNR supervised offenders (65%) compared to the RNR-only supervised offenders (54%), but this difference did not reach statistical significance ($p = .172$). The overall number of criminogenic needs appropriately addressed in case plans was also examined with respect to risk level and probation officer MI/RNR training status. There was no significant effect of training on the number of needs addressed in case plans ($p = .276$) but when examining risk level, the high risk offenders had fewer criminogenic need areas addressed in their case plans than medium and low risk offenders, $F(2, 112) = 31.664, p < .001$. This pattern may be a consequence of having limited community resources for high risk-need offenders and/or reflective of the challenges of working with high risk clients under community supervision.

Responsivity principle adherence could not be coded due to insufficient documentation about adjustments to case plans for offender's capacity limitations and strengths, including regular failure on

adult probation officers' part to complete the LS/CMI responsivity section. The fact that this section is not required to estimate recidivism risk, and the high task demands and time constraints of probation officers, may explain why this section was often left blank. Given that Responsivity adherence could not be coded, overall RNR model case plan adherence was limited to no adherence, slight adherence (1 principle met) or some adherence (2 principles met). RNR-only and MI/RNR groups were comparable on the percentage of case plans that had "some adherence" to the RNR model, 38% and 44% respectively. However, low risk cases were more frequently coded as having "some" adherence compared to the high risk cases, regardless of supervision strategy. Thus, probation officers are not over-intervening with low risk cases, but high risk offenders are not receiving adequate intervention.

Justice-Involved Youth Results: A comparison of recidivism over the 2-year follow-up period indicated that there was no significant difference in rates of recidivism between the RNR-only (70%) and MI/RNR (64%) periods, $X^2(1) = .41, p = .52$ for young offenders. Similarly, no differences were observed for subtypes of recidivism (i.e., non-violent, violent, and technical violations; $ps > .05$). Survival analysis results indicated that there also was no significant difference in the time (days) to first re-offence between the RNR-only and MI/RNR groups, $X^2(1) = .10, p = .75$ and no discernable pattern of separation was observed near the end of the follow-up period.

In terms of RNR adherence, Risk adherence was poor in both the RNR-only and the MI/RNR groups. Only 43% of the RNR-only and 28% of the MI/RNR groups had Risk adherence and the rates of adherence to this principle did not differ significantly based on training status, $X^2(1) = 2.39, p = .12$. Similarly, the Need principle was not adequately adhered to in either the RNR-only or the MI/RNR group, with the presence of "some adherence" in 51% of the RNR-only and 50% of the MI/RNR cases. The rates of adherence to the Need principle did not differ significantly between groups $X^2(2) = 3.67, p = .16$. However, greater Need principle adherence was associated with non-recidivism, $X^2(2) = 8.64, p = .013$, regardless of supervision strategy. The total number of need areas addressed did not differ significantly between the groups; however, analysis revealed that high risk offenders had significantly more need areas addressed in their case plans ($M = 2.23, SD = 1.75$) than medium ($M = 1.43, SD = 1.27$), $p = .01$, and low risk offenders ($M = .57, SD = .65$), $p < .001$; medium risk offenders also had significantly more need areas addressed than low risk offenders, $p = .04$. This effect is in keeping with the RNR model.

Responsivity principle adherence could not be coded due to a consistent lack of information in the files regarding adjustments made to case plans addressing responsivity issues. Similar to what was observed for adult offender cases, the Responsivity sections of the YLS/CMI were infrequently completed by probation officers. In terms of overall RNR adherence, a significantly higher proportion of cases in the MI/RNR period fully adhered to at least one of the RNR principles relative to the RNR-only period, $X^2(3) = 8.867, p = .03$. Unfortunately, the highest overall RNR adherence was demonstrated in the low risk offender cases, $X^2(2) = 25.51, p < .001$.

Conclusions

The current study was the first step in examining the impact that integrated MI/RNR training on the services provided by the Department of Public Safety in the province of New Brunswick. The fact that adding MI to an existing RNR case management-based strategy did not enhance recidivism reduction is consistent with previous research indicating that MI itself does not have a direct impact on recidivism (e.g., Walters et al., 2010). It is possible that longer term follow-up studies will show greater evidence of long-term gains from the MI/RNR integrated approach that is not evident in the short-term.

The low levels of adherence to the Risk and Need principles were consistent with previous community supervision research on the practical use of the RNR model (Andrews & Bonta, 2010; Bonta, Rugge, Scott, Bourgon, & Yessine, 2008), as was the limited documentation of how case management plans were adjusted to meet responsivity factors. Alternatively, the fact that the Responsivity sections of the risk assessment tools are not required to estimate recidivism risk, coupled with the high task demands and time constraints of probation officers, may explain why this section of the risk assessment tools was often left blank. However, inadequate RNR adherence likely limited the potential benefit of the integrated MI/RNR case management strategy and highlights areas in which probation officers would benefit from additional training to increase adherence. Additional recommendations are discussed in the main of body of this document.

AN EVALUATION OF THE INTEGRATION OF MOTIVATIONAL INTERVIEWING AND THE RISK-NEED-RESPONSIVITY MODEL IN THE CASE MANAGEMENT OF COMMUNITY-SUPERVISED OFFENDERS

Introduction

Andrews, Bonta, and Hoge (1990) reviewed multiple offender treatment and rehabilitation programs with documented evidence of reducing recidivism and extracted the key characteristics of these programs that made them so effective. Based on this review, and research on risk assessment, Andrews and colleagues developed the Risk-Need-Responsivity (RNR) model of correctional intervention: a model comprised of three primary guiding principles of effective case management for use with offenders. The Risk principle states that a reliable assessment of offender risk factors (e.g., personal characteristics and circumstances) through the use of a standardized risk assessment tool is essential for effective risk reduction. Furthermore, the offender's risk level should be matched with intervention intensity in order to maximize recidivism risk reduction. Research has demonstrated that high-risk offenders respond better to more intensive services (e.g., longer time commitment, greater engagement required by the offender), whereas low risk individuals do very well with minimal to no intervention (e.g., Andrews & Bonta, 2003; Andrews & Bonta, 2010; Andrews et al., 1990; Andrews & Dowden, 2006; Bonta, 1997).

The Need principle calls for the identification of criminogenic factors that contribute to an offenders' criminal behaviour (Andrews & Bonta, 2006). Criminogenic needs are required be the main targets of any offender intervention within the RNR model, as changes in these needs have been associated with changes in the risk of recidivism (Andrews & Bonta, 2003; Andrews & Bonta, 2010; Andrews et al., 1990; Taxman & Thanner, 2006; Viera, Skilling, & Peterson-Badali, 2009). In contrast, non-criminogenic needs are defined as factors that may influence the offender's overall functioning and quality of life, but have little to no effect on recidivism (e.g., low self-esteem, history of victimization, depression, anxiety and a lack of ambition). As such, these non-criminogenic factors should not be the primary targets of intervention plans intended to decrease persistent criminal behaviour; it is the criminogenic factors that should be emphasized in such plans (Andrews & Bonta, 2010).

The Responsivity principle outlines general and specific guidelines for how treatment should be implemented. General responsivity refers to the use of evidence-based methods of recidivism reduction. For example, a cognitive-behavioural skill-based therapy that is rooted in social cognition and social learning theories and delivered in a human service model context would qualify as meeting the General responsivity guideline. Specific responsivity argues that any form of intervention should be provided in a manner that matches the offender's age, gender, ethnicity, learning style, motivation, cognitive abilities and individual strengths (Andrews & Bonta, 2003; Andrews & Bonta, 2010; Brooks Holliday, Heilbrun, & Fretz, 2012; McMurrin, 2009).

There are 12 additional principles that supplement the three guiding principles of the RNR model (Andrews & Bonta, 2010). These supplementary principles describe preferred characteristics of intervention services (e.g., community-based; targeting of multiple criminogenic needs; identifying and encouraging use of the client's strengths) and case management techniques (e.g., encouraging case

plan modifications when necessary; use of assertive, non-punitive strategies to achieve compliance; promoting positive expectations of change). Finally, these supplementary principles outline characteristics for continuing care after the required interventions are completed. For example, offenders are taught techniques for how to identify high-risk circumstances and, subsequently, how to respond with low-risk behaviours in order to reduce reoffending behaviour (Andrews, 2001).

Adherence to the RNR model was designed to enhance the pursuit of “ethical, legal, efficient, humane, and just means of reducing offending through human service activity” (Andrews & Dowden, 2007, p. 455) and has led to reductions in offender recidivism rates ranging from 10-50% when compared to control groups (Andrews & Bonta, 2010; Bonta 1997). The RNR model has been associated with decreased levels of recidivism in males and females, in youth and minority offenders, and in community and custodial settings (Andrews & Bonta, 2006; Andrews & Bonta, 2010; Andrews et al., 1990; Dowden & Andrews, 1999; Vieira et al., 2009). Adherence to the RNR model has been shown to decrease rates of substance abuse relapses as well as a variety of criminal activities, including violent, nonviolent, gang and sexual offences, and prison misconducts (Andrews & Bonta, 2003; Andrews & Bonta, 2010; Bourgon et al., 2010; Di Placido, Simon, Witte, Gu, & Wong, 2006; Dowden & Andrews, 2000; French & Gendreau, 2006; Hanson, Bourgon, Helmus & Hodgson, 2009; Taxman & Thanner, 2006; Wormith, Althouse, Simpson, Reitzel, Fagan, & Morgan, 2007). These results have been replicated in the United Kingdom, Canada, Australia and the USA (Andrews & Bonta, 2010). Furthermore, a cost-effectiveness examination of adherence to the RNR model concluded that there was no statistically significant difference between traditional punishment (e.g., sanctions) and RNR models of correctional services (i.e., RNR was not more expensive to implement); however, the RNR model had a larger return on investment in that it produced a cost of \$2 for each 1% decrease in recidivism event, whereas sanctions cost \$40 for each 1% decrease (Romani, Morgan, Gross, & McDonald, 2012). These results indicate that appropriate correctional services that adhere to the RNR model significantly reduce recidivism events without a significant increase in costs.

Although research has indicated that the greatest reductions in recidivism are achieved when all three of the primary RNR principles are followed, most of the empirical literature has focused on establishing the relevance of the Risk and Need principles rather than the application of the Responsivity principle (Andrews, Bonta & Wormith, 2006). One recent development in researching the Responsivity principle concerns the application of Motivational Interviewing (MI) as a means of promoting offender engagement in the rehabilitation process. MI was originally developed to facilitate engagement in treatment for individuals who were dealing with addictions (e.g., cigarette smoking, alcohol abuse, drug abuse; Miller & Rollnick, 2002) and it has been recently defined as the following:

...a collaborative, goal-oriented style of communication with particular attention to the language of change. It is designed to strengthen personal motivation for and commitment to a specific goal by eliciting and exploring a person’s own reasons for change within an atmosphere of acceptance and compassion (Miller & Rollnick, 2013, p. 29).

Addictions research has demonstrated significant reductions in problem behaviour when MI techniques are used with clients who were attempting to quit smoking (Hettinga & Hendricks, 2010) and those trying to reduce their cannabis use (McCambridge, Day, Thomas, & Strang, 2011). Increases in

commitment to rehabilitation, as facilitated by MI, have been shown to predict the number of days clients abstained from drug use, including use of heroin, cocaine, crack, methamphetamines, speed, and codeine (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003). Research also has demonstrated a casual mechanism in the presence of “change talk” in the dialogue of clients in session due to the use of MI techniques and this has been associated with subsequent behavioural change in alcohol use (Moyers, Martin, Houck, Christopher, & Tonigan, 2009). Given the positive results from the addiction literature, MI has been extended to other types of behaviour modification, including eating disorders (Wilson & Schlam, 2004), healthy exercise behaviour (Burke, Arkowitz, & Menchola, 2003), and criminal behaviour (McMurrin, 2009). As with many forms of addiction and health concerns, offenders are engaging in behaviours that are viewed as pleasant, or as having short-term reinforcing qualities, but in reality are detrimental to the individual’s quality of life in the long-term.

The research literature is slowly emerging with regards to the effectiveness of MI within forensic contexts, but this literature is largely descriptive and theoretical. Of the available research on the use of MI within correctional contexts, most has focused on its use with offenders who have substance abuse behaviours, and not on their general criminal behaviour (McMurrin, 2009). A systematic review of 19 studies that evaluated the use of MI with offenders concluded that MI has the capacity to increase treatment completion among offenders and was able to enhance motivation to change criminal behaviour (McMurrin, 2009). However, there was mixed support in terms of MI’s abilities to decrease specific criminal behaviours, including drunk-driving and domestic violence. McMurrin (2009) also noted that a significant limitation of the reviewed studies specifically focusing on offenders was that MI was not fully integrated into the offender case management strategy. Rather, MI techniques were delivered as a pre-intervention program only; a trend that has continued in both institutional rehabilitation programs as well as community treatment interventions (e.g., Anstiss, Polaschek, & Wilson, 2011; Kistenmacher & Weiss, 2008).

Austin, Williams, and Kilgour (2011) recently reviewed a manual-based treatment program used with high risk offenders that combined cognitive-behavioural tasks with a MI communicative approach. The authors did not report recidivism data for the sample, but did report that readiness to change scores shifted to indicate that high risk offenders were more motivated to change their behaviour; whether or not behavioural change actually occurred after that study was unknown. Therefore, at this point in time, MI has initial support for incorporation into treatment protocols to be used with offenders but it has yet to be determined.

The only published study to date to assess how the integration of MI into a case management strategy might impact offender rehabilitation with specific attention to reoffending outcomes was conducted by Walters and colleagues (2010). The authors examined the impact of MI as an integrated component of community probation supervision: a sample of probation officers (POs) in Texas were given MI training and then had their case files compared with a sample of POs who had no interest in the training. Walters and colleagues found that MI trained POs demonstrated and maintained improvement in the use of MI skills over a 6-month post-training follow-up period. However, this improvement in MI skill use was unrelated to probation violation outcomes (i.e., positive urinalysis, breaches, and recidivism) in their cases when compared with cases who were supervised by non-MI trained POs. Walters et al. concluded that the use of MI in the case plan did comply with the essence of the Responsivity principle,

but it should not be viewed as a means of decreasing recidivism or increasing compliance with supervision on its own. Specifically, the authors recommended that, in order to enhance client engagement with POs and increase motivation to participate in intervention, MI should be integrated with appropriate interventions that are designed to specifically target identified criminogenic needs. Thus, the benefit of MI might be enhanced when integrated within a case plan that is based upon the evidence-based RNR model of offender rehabilitation.

Given the lack of research on the integration of MI into a case management strategy for use with offender populations, the current study examined the impact of MI training in combination with adherence to the RNR model in the community supervision of probationers in New Brunswick, Canada. In Study 1, case files were compared before and after the provision of integrated MI/RNR training to determine whether the training reduced recidivism and criminogenic needs for adult offenders and justice-involved youth. The effect of MI training was examined with respect to POs' degree of adherence to the RNR model in these cases. Based on the work of Andrews and Bonta (2010), it was hypothesized that cases managed by MI/RNR-trained POs who develop case plans with greater adherence to the RNR model would show more positive outcomes than cases managed by MI/RNR-trained POs with low RNR adherence. Study 2 was proposed to examine POs' actual use of MI techniques in their sessions with current community supervised offenders, in conjunction with the utilization of RNR consistent case management/intervention techniques and general case plan adherence to the RNR principles. However, Study 2 was discontinued due to low participant recruitment. Thus, the remainder of this report will focus only on Study 1 findings.

Method

Data Collection & Case File Selection

To develop core competencies in integrating motivational interviewing skills with the RNR model within its staff, the New Brunswick Department of Public Safety provided all probation officers with a 3-day training workshop. The Motivational Interviewing/Risk Need Responsivity (MI/RNR) training covered six topics, which included an overview of risk assessment and the RNR principles, introducing MI, how to assess and enhance motivation within the context of effective casework, how to deliver feedback, prioritize, focus goal setting, and how to identify and support effective interventions, including how to monitor progress and update case plans. The workshop format involved lectures from the RNR-trained speaker to introduce each topic as well as case example work that was done in pairs or small groups, followed by large group discussions.

Offender case files were randomly selected for inclusion in the present study to be representative of two timeframes that surrounded the mandatory MI/RNR training provided in May 2009. A "RNR-only" group was drawn from a pool of community-supervised provincial corrections cases that were closed between 2006 and 2008, and a second group of "MI/RNR" cases were randomly selected from a pool of community-supervised provincial corrections cases opened after July 2009 and closed before December 31, 2011. Cases included adult offenders and justice-involved youth. Data were collected between May 2012 and February 2013 from two major service regions (Fredericton and Saint John areas and their surrounding communities) of the New Brunswick Department of Public Safety.

Materials

Level of Service/Case Management Inventory (LS/CMI; Andrews, Bonta, & Wormith, 2004).

The LS/CMI is designed to assist professionals in justice, forensic, prevention and correctional agencies with the management and case planning of male and female offenders over the age of 16. The LS/CMI is an assessor-rated tool made up of 11 sections based on the Risk-Need-Responsivity model of criminal behaviour. The first section contains 43-items that assess eight criminogenic need areas, including criminal history, family/marital interactions, employment/education status, peer relations, alcohol/drug problems, leisure/recreation activities, antisocial personality/behaviour patterns, and pro-criminal attitudes/orientations. Items are scored as either *Yes* or *No*, with the *Yes* items receiving one point. Eight subscores, one for each criminogenic need area, are calculated in addition to an overall total risk-need score. An override option is available for instances where the total risk score does not adequately reflect the offender's risk level due to extraneous significant factors. Scores can then be classified into one of five risk categories: Very Low, Low, Medium, High, and Very High. An additional section is available for the rater to identify specific responsivity factors (e.g., cognitive ability, gender specific factors) that may be significant for case planning.

The LS/CMI was developed as an extension of the Level of Service Inventory – Revised (Andrews & Bonta, 1995) to further integrate recent research findings in offender recidivism risk factors and risk assessment that have occurred since the publication of the LSI-R (Bauman, 2007). Internal psychometric properties of the LS/CMI are described in the manual (Andrews et al., 2004). The LS/CMI has demonstrated moderate to high predictive validity for general recidivism outcomes with male and female offenders, in incarcerated and community-based settings, in Canada, the United States, England, Australia and Germany (Byrne & Pattavina, 2006; Heilbrun, 2008; Holtfreter & Cupp, 2007; Hsu et al., 2011; Kelly & Welsh, 2008; Raynor, 2007; Rettinger & Andrews, 2010; Vose et al., 2009). The instrument also has been found to be moderately predictive of violent recidivism (Campbell, French, & Gendreau, 2009). The LS/CMI data used in the current research were completed in real time by POs as part of their standard practice protocols for community supervised offenders. These assessments were completed at intake for most cases (e.g., within the first 3 months of supervision) and at the 6-month point in the supervision period for some cases. During the RNR-only cases, 6-month follow-up assessments were not required by department policy and were left up to the probation officer's discretion. In 2010, policy was implemented that required reassessment of offender risk to be completed after 6-months of community supervision. Cases that were originally coded using the LSI-R had the scores converted for comparison with LS/CMI scores by means of an item-by-item recoding procedure described in the LS/CMI manual (Andrews et al., 2004).

The predictive validity of the LS/CMI was evaluated to determine the degree to which it reliably predicted recidivism in the current adult offender sample, collapsed across supervision group status, over a maximum 4 year follow-up period (average follow-up period = 766.61 days, $SD = 674$ days). The total LS/CMI was a strong predictor of general recidivism ($AUC = .80$, 95% CI .73 to .88), and performed well for male offenders ($AUC = .75$, 95% CI .66 to .85) and especially well for female offenders ($AUC = .94$, 95% CI .84 to 1.00). These AUC values reflect large effect sizes for

discriminating recidivists from non-recidivists among the adult offender sample. Survival analyses also indicated that very low/low, medium, and high/very high LS/CMI risk categories performed as expected. Specifically, the high/very high risk category reoffended significantly more quickly ($M = 965.63$ days, $SD = 112.82$) than did the medium ($M = 1252.63$, $SD = 165.20$) or very low/low ($M = 1716.69$, $SD = 92.78$) risk groups, $\chi^2(2) = 24.95$, $p < .001$.

Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews 2002).

The YLS/CMI is a tool based on the RNR model of criminal behaviour (Andrews et al., 1990) that allows for a detailed evaluation of a youth's risk and need factors which assists in the development of a case plan that addresses the identified factors. It is an assessor-rated measure for use with justice-involved youth aged 12 to 17 years. The "central eight" criminogenic need areas are assessed with 42 items rates as either present (score of 1) or absent (score of 0). Eight subscores, one for each criminogenic need area, are calculated in addition to an overall total risk-need score. Scores can then be classified into one of four risk categories: Low, Medium, High, and Very High. A professional override principle allows a caseworker to make the final decision regarding the risk level of the client for cases in which significant factors are not represented in the ratings. The YLS/CMI also contains additional sections to identify client and responsivity issues (e.g., mental health concerns) that are not included in the risk score.

The YLS/CMI has been found to have good internal consistency and inter-rater reliability (Hoge & Andrews, 2002). It also has demonstrated moderate to high predictive validity for general recidivism for male and female youth (Onifade, Davidson, Campbell, Turke, Malinowsky, & Turner, 2008; Schmidt, Campbell, & Houlding, 2011; Schmidt, Hoge, & Gomes, 2005). In the current study, the YLS/CMI forms were completed by the POs at intake (e.g., within the first 3 months of supervision) and at the 6-month point in the supervision period in some cases. Departmental policy did not require 6-month follow-up reassessments until 2010, leaving some RNR-only cases without a reassessment of risk.

Prior to examining the use of the YLS/CMI in the development of case plans, its predictive validity was assessed using the entire youth sample. Recidivism was collapsed for RNR-only and MI/RNR supervision groups, to create a maximum follow-up period of 4 year post-assessment, with an average follow-up period of 436.68 days ($SD = 503.04$). Within the entire sample, the YLS/CMI produced a large effect size for general recidivism ($AUC = .77$, 95% CI .67 to .88) and the overlapping confidence intervals between genders indicates that its predictive validity was similar for males and females (Male: $AUC = .81$, 95% CI .70 to .92; Female: $AUC = .78$, 95% CI .59 to .94). In addition, the YLS/CMI was a reliable predictor of violent recidivism for the entire sample ($AUC = .72$, 95% CI .61 to .83). Furthermore, Kaplan-Meier survival analysis showed that there was a significant difference in time to first re-offence based on YLS/CMI risk level, $\chi^2(2) = 17.856$, $p < .001$, with the high/very high risk group displaying the shortest time prior to first recidivism event in the post-index follow-up period ($M = 409$ days) than medium risk cases ($M = 612$ days) and low risk cases ($M = 1225$ days).

Adherence to Risk-Need-Responsivity (RNR) Model Coding Guide.

Case management plans were coded with reference to the degree of adherence to the RNR model by means of a coding system used in previous research (Hanson, Bourgon, Helmus, & Hodgson, 2009).

Specifically, case plans were coded as adhering to the Risk principle when they have provided higher intensity intervention to higher risk individuals (e.g., longer hours per session, more sessions) and lower/no intervention to low risk individuals. Adherence to the Need principle was coded as present if the primary treatment goals were those that had been identified as criminogenic factors associated with recidivism in previous meta-analytic reviews and formal risk tools (e.g., poor cognitive problem solving, negative peer associations, drug/alcohol use, antisocial behaviour, impulsive tendencies, unstructured leisure time, and unstable employment; Hanson et al., 2009). Finally, adherence to the Responsivity principle was coded as present when there was evidence to indicate that the intervention was tailored to match the offender's strengths and limitations (e.g., such as the use of concrete psychoeducational material and learning models for offender's with cognitive difficulties) and when evidence-based interventions were used (e.g., cognitive-behavioural approaches, social learning approaches; Andrews & Dowden, 2007). To be fully informed about the nature of interventions used in these cases, program manuals/brochures, research articles, and accreditation credentials were used to understand their nature and content when the information was not articulated sufficiently in the case file. If this information was unable to be freely obtained, services providers were canvassed for descriptions of program content. This strategy was consistent with the procedure followed by Hanson et al. (2009). The overall score for case plan RNR adherence ranged from 0 (*no adherence*) to 3 (*full adherence*). A score of 3 indicated that all three RNR principles were adhered to in the case plan.

When missing information was present, a final RNR adherence score could not be coded. When sufficient information was unavailable to complete the adherence coding, missing information was classified into four categories: evidence that the client received services but no information was available on the content of programming; client was referred to an external service but there was no information as to whether the client attended or participated in the service; notes were too vague to permit coding information about program attendance or content; no referrals to programs were made.

Index Offence & Recidivism Data

The New Brunswick Department of Public Safety provided offence data for all cases in order to gather criminal history information and to identify subsequent criminal behaviour that occurred once the index period of community supervision began. The length of time spent in custody during the supervision period was recorded, as was the length of the index supervision period. The total number of days in custody was subtracted from the days free in the community to provide an accurate estimate of time free in the community in which an offender had the opportunity to re-offend.

Due to the longer follow-up time period for the RNR-only cases, these individuals had a greater opportunity to reoffend. Therefore, to reduce the bias of a longer follow-up time during which to reoffend for the RNR-only supervision cases, a restricted follow-up time frame of two years after the start of each offender's index period was imposed on all adult and youth cases when recidivism was being examined.

Index offences for all cases were classified into one of four offence categories: violent (e.g., murder, attempted murder, assault-related offences, robbery, weapon-related offences, uttering threats, arson and assault), nonviolent (e.g., break and enter, fraud, theft, property damage, miscellaneous against

morals, obstruction of justice, driving while under the influence, dangerous driving, trafficking/importing, drug possession, and miscellaneous against public order), sexual (e.g., sexual assault, sexual exploitation, sexual interference, indecent exposure, child pornography-related offences), or technical (e.g., breach of recognizance, fail to comply/appear). Recidivism events in the current study were defined as any new convictions obtained for a crime that occurred during the 2 years following the start of community supervision. The recidivism events were coded in the same manner as index offences. The number of days between the start of the probationary period and a recidivism event were also calculated.

Procedure

Ethical approval for the current study was obtained from the University of New Brunswick Saint John's Human Research Ethics Board and approval for the project was obtained from the Minister of the New Brunswick Department of Public Safety. On-site presentations were provided to POs serving Fredericton and Saint John and surrounding areas to describe the purpose of the project and its procedures. Specifically, it was explained to staff that the project was requested by the Department of Public Safety to examine the impact of integrating MI into case management of community supervised offenders and that this process would necessitate a review of their case records. This gave POs an opportunity to provide feedback on the study design and ask questions. POs were also asked to provide demographic, work history, and MI training information to facilitate the contextualization of the research findings.

The design of the study was primarily archival in nature. Offender cases were randomly selected from the New Brunswick Department of Public Safety – Community Corrections caseloads from one of two time periods: 1) cases for whom their community supervision started following MI/RNR training (July 2009 and later), or 2) cases that were closed sometime in the two years prior to the delivery of MI/RNR training. Efforts were made to ensure equal numbers of low, medium, and high risk offender cases were selected, among both male and female offenders. An attempt was made to match cases from probation officers that were present both before and after MI/RNR training, but this was not possible due to technological limitations with regard to linking cases and POs over time.

Two of the primary researchers were trained on the electronic record management system employed by the Department of Public Safety. The use of the electronic record system was complemented by accessing the paper based files for each case that was selected for inclusion. Correctional records were reviewed to record the LS/CMI and YLS/CMI data, offender demographic information and criminal behaviour, recidivism data, and RNR case plan adherence using a coding guide developed for the current study. Inter-rater reliability of the RNR adherence coding guide was assessed by selecting 20 cases at random to be coded by a blind second rater. The resulting kappa was .91 and reflected a high level of inter-rater agreement (see Landis & Koch, 1977). Inter-rater reliability was not available on the LS/CMI and the YLS/CMI as the POs completed these forms as part of their standard practice.

Results

Condition of Case Records

For both adult offenders and justice-involved youth, some case records had incomplete file information, which affected their availability for data analysis. Specifically, of the adult offender cases, 19 did not have a completed Level of Service/Case Management Inventory (LS/CMI) risk assessment form on file. For 14 of these cases, the record management system did make note of the total LS/CMI score, but there was no information on the specific criminogenic needs of these cases. Five of these 19 cases did not have any information about the offender's baseline LS/CMI score or even the associated recidivism risk level status (very low to very high) at the start of their supervision period. The absence of this information precluded an assessment of risk-need change for these five cases. When total risk assessment scores were available only through the record management system there typically was a case note indicating that the form was completed either by an institution (e.g., Saint John Regional Correctional Centre) or that the risk score was reviewed by the probation officer. Only 38 adult offender cases had a completed LS/CMI reassessment on file that provided information about specific criminogenic needs and overall risk; therefore, our ability to assess changes in risk-need scores overtime was limited. A further 40 adult offender cases only had a total LS/CMI score noted in the record management system, making these cases available for broader analyses. Thus, for adult offenders, the total sample available for pre-post comparisons with regard to changes in LS/CMI total risk scores was 78, with 37 cases from the RNR-only period and 41 cases from the MI/RNR period.

For the youth cases, 14 files were missing the hard copy of the intake YLS/CMI form. The total score was available for 13 of these youth, although the specific criminogenic needs and responsivity factors of these individuals could not be determined. In terms of follow-up, 43 files did not contain any reassessment data, but an additional 14 files contained a YLS/CMI total score at reassessment. The sample size of youth available for comparison of intake and reassessment YLS/CMI scores was 55. It is important to note that it was only after 2010 that the Department of Public Safety in New Brunswick implemented a policy for both adult offenders and justice-involved youth in which a follow-up LS/CMI or YLS/CMI was to be completed at the 6-month period into community supervision. If the PO saw significant changes after that point and felt another reassessment would assist in case management, it was within their discretion to complete an additional assessment(s). No cases were eliminated due to missing data; however, the type of statistical analyses had to be altered due to the limited amount of information contained in offender records. Missing or incomplete information did not impact all variables of interest, but it did limit the researchers' capacity to establish recidivism risk level and RNR adherence. Files that did not have an intake risk assessment or contained only a total score could not be included in the analyses assessing Need or Responsivity principle adherence.

The condition of the offender case files also hindered the ability to code adherence to the RNR model due to insufficient intervention information for those offenders referred to programs, including unknown treatment orientation and methods, lack of treatment goal definitions, and no documented indication of adjusting the case plan to consider general or specific responsivity factors.

Adult Probation Results

Offender Sample. Data were collected from 136 adult offender case files (101 male, 35 female), which were predominantly of Caucasian ethnicity (93.4%) with the remaining 6.6% comprised of African Canadian, Asian, and First Nations individuals. Equal percentages of cases were selected from Fredericton and Saint John (38% per city), with the remaining 26% of the sample coming from the surrounding areas of Burton, Miramichi, Woodstock, Kingsclear First Nation, Minto, Sussex, and Hampton. RNR-only and MI/RNR cases did not significantly differ in offender age at the start of their index supervision period, $t(134) = .37, p = .916$, ethnicity, $\chi^2(3) = 2.99, p = .393$, or gender representation, $\chi^2(1) = .04, p = .844$. Furthermore, these two groups did not significantly differ in the geographic location of supervision represented within the province of New Brunswick, $\chi^2(5) = 7.12, p = .212$. These results indicated that the RNR-only and the MI/RNR samples of offenders were comparable on identified demographic variables. Additionally, there were no statistically significant differences between groups with respect to the proportion of cases falling in very low, low, medium, high, very high risk level categories based on the LS/CMI, $\chi^2(4) = 8.20, p = .084$, indicating that there was an equal balance of offender risk level between the two case groups. See Table 1 for the number of offenders in each risk category at the start of supervision and at the 6-month point of supervision. To increase the power of statistical analyses, the risk categories were truncated so that the very low and low groups were combined, as were the high and very high risk groups as few offenders fell into the extreme ends of the risk categorizations. In addition, the proportion of offenders identified at these revised risk level categories did not significantly differ as a function of offender gender in the total sample, $\chi^2(4) = 3.83, p = .430$.

Probation officer sample. Thirty-four adult POs' case files were accessed across both the RNR-only and the MI/RNR periods. Thirteen POs had files coded in both time periods, leaving 13 unique POs in the RNR-only period and 8 unique POs in the MI/RNR time period. Nine probation officers consented to have their demographic information used in the current study. This subgroup of the PO sample was comprised of two females and seven males who ranged in age from 34 to 58 years ($M = 46.22$ years, $SD = 8.69$). All nine POs identified their ethnicity as Caucasian and all held Bachelor's Degrees as their highest level of education. The POs reported working an average of 20.33 years ($SD = 7.09$; range 9 – 29) in the corrections field, with an average of 15.78 years ($SD = 7.00$; range 3 – 24) as a PO. No participants reported a history of working in a field other than corrections.

Offender recidivism. Overall, the RNR-only group displayed higher rates of recidivism during the follow-up period, with 48.5% of offenders ($n = 33$) reoffending compared to 35.3% of the MI/RNR offenders ($n = 24$) reoffending during the follow-up period (see Table 2). This difference was not statistically significant, $\chi^2(1) = 2.45, p = .118$; however, it did demonstrate a reduction in recidivism in the expected direction, with fewer MI/RNR supervised offenders recidivating.

There was a significant gender difference in recidivism rates during the follow-up period, across both supervision periods, $\chi^2(1) = 5.08, p = .024$. Collapsed across the two supervision periods, 47.5% of male offenders recidivated compared with 25.7% of female offenders during the follow-up period. Within the genders, no significant difference was found in either time frame. The RNR-only and MI/RNR supervised male offenders appeared to reoffend at similar rates, $\chi^2(1) = 2.25, p = .134$, as 54.9% of

RNR-only males and 40.0% of MI/RNR males recidivated. The same pattern was observed in the female offenders with a non-significant difference between groups, $\chi^2(1) = 2.37, p = .627$, but the RNR-only females had slightly more reoffenders, 29.4%, than the MI/RNR female offenders, 22.2%. These results indicate that the MI/RNR training may be having an effect on recidivism rates, as evidenced by lower percentages of recidivism events, in both males and females. Although these results did not achieve statistical significance, they are trending in the predicted direction.

When examining the types of reoffending events that took place, no significant differences were found between the RNR-only and the MI/RNR supervision periods. Both groups had nonviolent offences as the most common type of recidivism event. See Table 3 for the number and type of reoffence crimes committed by the two groups.

Changes in LS/CMI recidivism risk. At the start of the index supervision period, the RNR-only supervised group had a somewhat higher mean LS/CMI risk score ($M = 17.57, SD = 9.66$) than the MI/RNR supervised group ($M = 15.48, SD = 9.01$), but this difference was not statistically significant, $F(1, 129) = 1.61, p = .207$. At the time of the 6-month follow-up assessment, there also was no significant difference in LS/CMI total risk scores between the RNR-only ($M = 18.54, SD = 9.95$) and the MI/RNR groups ($M = 15.73, SD = 9.44$), $F(1, 76) = 1.64, p = .205$.

For cases that included a follow-up LS/CMI at least 6 months into their index supervision period, a repeated measures multivariate analysis of covariance (MANCOVA) was conducted to examine changes in LS/CMI scores within supervision groups and risk levels. The median time between assessments was 198 days (range 8 to 1169) and the time between assessments was included as the covariate in the analysis. This analysis found no statistically significant change in LS/CMI total scores, $F(1, 67) = .82, p = .367$. Furthermore, PO supervision type did not significantly predict LS/CMI score, $F(1, 67) = 2.89, p = .094$, nor risk level, $F(2, 67) = 1.42, p = .248$.

RNR Adherence

Risk Adherence. Risk principle adherence was successfully coded for all but six cases; these six cases did not have an available overall risk score (4.3% of the sample). In general, there was no significant difference in the percentage of offenders with case plans that adhered to the Risk principle between the RNR-only (42.6%; $n = 29$) and the MI/RNR (45.6%; $n = 31$) groups, $\chi^2(1) = .04, p = .850$. A 2 x 3 factorial analysis of variance (ANOVA) was used to determine whether the number of interventions to which offenders were referred varied as a function of recidivism risk level (low/medium/high) and PO supervision status (RNR-only/MI/RNR). Due to a significant Levene's test, $F(5, 122) = 2.29, p = .050$, a conservative alpha value of $p < .01$ was used to decrease the risk of Type I error. Results indicated that there was a main effect of risk level on the number of interventions to which offenders were referred, $F(2, 122) = 9.27, p < .001, \eta^2 = .132$, a non-significant main effect for PO supervision status, $F(1, 122) = .01, p = .942$, and a non-significant interaction effect, $F(2, 122) = .87, p = .424$. Tukey post hoc tests revealed that high risk offenders were referred to a higher mean number of intervention services ($M = 1.47, SD = 1.1$) than low risk offenders ($M = .63, SD = .63$). However, medium risk offenders ($M = 1.08, SD = .95$) did not significantly differ from either the low or high risk groups in the number of referred interventions.

Need Adherence. Need principle adherence was examined in three ways. First, Need principle adherence was coded as having occurred if more than half of the LS/CMI identified criminogenic needs were addressed in the case plan, which is consistent with the method used by Hanson et al. (2009). Specifically, 54.4% of cases supervised during the RNR-only period were coded as having adhered to the Need principle based on this criterion compared to 64.7% of cases in the MI/RNR period. Although this difference was not statistically significant, $\chi^2(1) = 1.86$, $p = .172$, an increase in adherence to the Need principle was observed in the desired direction.

Second, the overall number of needs being addressed within the offender case plan was examined with respect to offender risk level and PO supervision status in a 2 x 3 factorial ANOVA. A significant Levene's test was obtained, $F(5, 112) = 3.02$, $p = .014$, resulting in a conservative alpha level of .01 being used to determine significance in subsequent analyses to reduce the chance of Type I error. No significant main effect was found for PO supervision status, $F(1, 112) = 1.20$, $p = .276$. However, a significant main effect for risk level was found, $F(2, 112) = 31.66$, $p < .001$, $\eta^2 = .361$. Tukey post hoc analysis revealed that high risk offenders had significantly fewer need areas addressed in their case plans ($M = 3.20$, $SD = 1.83$) than medium ($M = 4.03$, $SD = 1.56$) and low risk offenders ($M = 5.82$, $SD = .98$); medium risk offenders also had a significantly fewer number of need areas addressed compared to the low risk offenders. No significant interaction effect was found. It is important to note that a need-case plan match was identified even when a criminogenic need was rated a low/very low in need and was not targeted in the case plan, as well as when a need was identified as medium/high/very high in need and was targeted in the case plan. Thus, the higher level of need-intervention match (adherence) among low risk cases reflects the appropriate practice of not over-intervening in low risk cases. Chi square analyses were completed on each of the need areas and revealed that significant differences were found in all LS/CMI criminogenic need areas, with those being identified as low need areas being coded with higher ratings of adherence than when identified as a high need area. See Table 4 for Chi square results for each need area.

Each of the eight LS/CMI criminogenic areas were examined using Chi Square analysis to determine whether the level of need-intervention match was dependent on the supervision strategy. To compensate for multiple comparisons, a conservative value of $p < .01$ was used to indicate a significant result. In this regard, no significant differences were found between RNR-only and MI/RNR groups. However, the Family/Marital need area approached the conservative level of significance, $\chi^2(1) = 6.26$, $p = .012$, suggesting that this area was targeted more often in offender case plans of MI/RNR supervised offenders relative to prior to this training. The LS/CMI criminogenic need areas that were found to be most commonly met, regardless of PO supervision status, included procriminal attitudes as well as alcohol and drug problems. See Table 5 for details on the number of case plans that addressed each criminogenic risk area.

Responsivity Adherence. Adherence to the Responsivity principle was more difficult to assess due to a general lack of documentation within the records and a tendency for POs not to complete the responsivity section of the LS/CMI form. Approximately half (46.3%) of the adult cases had insufficient information to speak to General responsivity adherence and a majority (80.9%) of the adult cases had insufficient information to speak to Specific responsivity adherence. Thus, Responsivity adherence could not be meaningfully evaluated for adult offenders in the current study.

Due to the lack of information found in the case files and an inability to ascertain program content information, general adherence calculations were altered to reflect only adherence to the Risk and Need principles, resulting in a Likert scale of 'No Adherence' (complying with neither of the two principles), 'Slight Adherence' (complying with one of the two principles), and 'Some Adherence' (complying with the two principles being investigated). Chi square analysis revealed a non-significant difference in general adherence ratings between RNR-only and MI/RNR supervision groups, $\chi^2(2) = .96, p = .619$, as both had similar percentages of cases being coded with 'Some' adherence (RNR-only 38.3%; MI/RNR 44.1%). There was a significant difference found when examining risk levels, regardless of PO supervision status, $\chi^2(4) = 55.18, p < .001$, in that low risk cases had more frequent ratings of 'Some Adherence' (86.8%) than high risk cases (9.0%). See Table 6 for rates of general adherence for the different risk levels.

Time to recidivism and training effects. A survival analysis was conducted to examine the length of time prior to first recidivism between the RNR-only and the MI/RNR supervised cases during the entire study period 2006 to 2011, regardless of the recidivism risk level. Thus, the RNR-only group had a longer follow-up period ($M = 1850.89$ days, $SD = 316.56$) in this analysis than the MI/RNR group ($M = 639.68$ days, $SD = 164.20$). Kaplan-Meier survival analysis revealed a non-significant difference between the RNR-only and the MI/RNR supervised groups, $\chi^2(1) = .85, p = .356$; see Figure 1 for a graphical representation of the survival curves. Although the difference between supervision groups was found to be non-significant, there is what appears to be the beginning of a separation between these two groups at approximately the 500-day mark. It is possible that the differences between groups would be more observable with a longer follow-up period (> 2 years) for the MI/RNR group.

Youth Probation Results

Justice-Involved youth sample. Demographic characteristics for the RNR-only and the MI/RNR files were compared using independent samples t-tests and chi-square analyses to ensure that the random selection of files had been successful. As shown in Table 7, there were no significant differences between the two groups in terms of age, gender, education level, ethnicity, or location of residence during supervision. The two supervision groups also did not differ on the proportion of youth with previous correctional services contact. Therefore, the two samples collected were deemed to be comparable on identified demographic and criminal justice contact variables.

Probation officer sample. A total of 38 probation officers were involved in the supervision of the selected youth cases. Due to staff turnover, the majority of these individuals were no longer employed as youth probation officers for the New Brunswick Department of Public Safety at the time of data collection. This turnover also resulted in many cases being supervised by multiple probation officers. Current probation officers were asked to provide demographic information to contextualize the characteristics of the typical youth probation officer. All current youth probation officers ($n = 11$) consented to provide this information to the researchers. The youth probation officers ranged in age from 27 years to 43 years ($M = 33.82, SD = 6.06$) and all were Caucasian. There was a close gender ratio (6 males, 5 females), and all youth probation officers held a Bachelor's Degree as their highest level of education. Approximately half of the officers ($n = 6$) had previously worked in a field other than corrections, but had spent an average of approximately 8 years in the corrections field ($M = 8.09, SD =$

4.32) and almost 6 years as a probation officer ($M = 5.91$, $SD = 3.11$). There were 11 probation officers who had supervised cases in both the RNR-only and MI/RNR groups, compared to 20 probation officers who had only supervised RNR-only cases and 7 probation officers that had only supervised MI/RNR cases.

Index offence characteristics. Table 8 presents information regarding the index offence of youth included in the study. In both the RNR-only and the MI/RNR cases, youth tended to have multiple index offences, with no significant difference in the number of index offences between the two groups. In terms of the most serious offence (MSO) rating, there was again no significant group difference; both groups had an index offence MSO rating of moderate severity (i.e., theft or uttering threats). The most common index offences across groups were theft (23%), assault (21%), and break and enter (16%).

Supervision conditions. The supervision characteristics of the RNR-only and the MI/RNR cases are also provided in Table 8. The majority of justice-involved youth in both groups received a probation sentence, with no significant difference in the types of sentences represented, although there was a trend towards more conditional sentence cases in the MI/RNR group. There was also no significant difference in the number of supervision conditions between the two groups, with both groups receiving, on average, approximately six different conditions. The most common conditions across groups were to keep the peace and be of good behaviour (93%), attendance at mental health services or counselling appointments (92%), attending an educational program (80%), substance use restrictions (78%), and curfew restrictions (54%).

Cases managed in the RNR-only period did have a significantly longer supervision period than the MI/RNR cases. However, this does not necessarily mean that longer sentences were being awarded in the RNR-only period. The RNR-only period was longer by 76.32 days on average as cases could be closed at any point from January 2006 through April 2009, whereas MI/RNR cases could not be opened until after July 2009 and must have closed by the end of 2011, when the data collection period ended. Thus, cases that received longer sentences or were extended due to further charges would have met inclusion criteria for the RNR-only period, but would have most likely been excluded from the MI/RNR group as their supervision was still underway.

YLS/CMI Risk level. Table 9 contains the mean scores and risk levels at intake and 6-month reassessment for the YLS/CMI. Very few cases ($n = 2$) fell within the very high risk range, so the high and very high risk levels were collapsed for all analyses. Although the RNR-only and MI/RNR cases were comparable at intake, $t(97) = .91$, $p = .36$, there were significant group differences at the 6-month reassessment period among the 57% of cases that had available reassessment data, $t(55) = 2.07$, $p = .04$. Specifically, the RNR-only cases showed an *increase* in their YLS/CMI scores during the first 6 months of their supervision, which resulted in their mean score moving from a *medium* risk level at intake to now falling within the *high* risk range at reassessment. In comparison, the MI/RNR cases had no change in their average YLS/CMI score during the first 6 months of supervision, which fell in the medium risk range at both time points.

Recidivism by PO Training Status. As mentioned previously, a maximum 2-year follow-up period was imposed on both groups, which began with the start of each individual's index supervision period. Re-

offences committed after this 2-year period are not reported here. Overall, rates of recidivism across the 2-year period, as well as rates for specific types of re-offences, are reported in Table 10. There was no statistically significant difference in the recidivism rates between the RNR-only and the MI/RNR groups over the 2-year follow-up period, and both groups displayed high rates of re-offending (70% for RNR-only group, 64% for MI/RNR group). There were also no significant differences between groups in the type of first re-offence committed, with technical offences (i.e., breach of supervision conditions) being the most common form, followed by nonviolent offences (e.g., theft, break and enter). The first re-offence was categorized based on the highest MSO code if multiple charges were associated with the offence. Table 10 also highlights that this group similarity in recidivism rate held across low, medium, and high risk cases. Unfortunately, there were not enough female offenders in the sample to compare recidivism rates by gender.

Kaplan-Meier survival analysis was conducted to assess for differences in time to first re-offence between groups. This analysis indicates that the RNR-only and the MI/RNR groups were similar in the number of days passed in the community before committing their first re-offence, $\chi^2(1) = .10$, $p = .75$ (see Figure 2). Specifically, the median number of days passed was 242 for the RNR-only group and 214 for the MI/RNR group.

RNR Adherence

Risk Adherence. The rate of adherence to the Risk principle was relatively low across both groups. Although 43% of RNR-only cases were coded as adhering to this principle and even fewer (28%) adhered amongst MI/RNR cases, this difference was not statistically significant, $\chi^2(1) = 2.39$, $p = .122$. A 2 x 3 factorial analysis of variance (ANOVA) was conducted with group (RNR-only/MI/RNR) and recidivism risk level (low/medium/high) as the independent variables and number of interventions received as the dependent variable. A trend was found for a main effect of risk level, $F(2, 93) = 3.06$, $p = .052$. As expected, Tukey post-hoc analysis revealed that low risk offenders received a significantly lower number of interventions ($M = 1.00$, $SD = .96$) than both medium risk offenders ($M = 2.31$, $SD = 1.79$), $p = .02$ and high risk offenders ($M = 2.22$, $SD = 2.04$), $p = .04$. Medium and high risk offenders did not significantly differ from each other, $p = .83$. However, there was no main effect of supervision group status on the number of interventions youths received, $F(1, 93) = .24$, $p = .623$. Thus, both RNR-only and MI/RNR supervised cases received a similar number of interventions in their case plans, and both groups tended not to over-interfere with low risk youth. In addition, there was no significant interaction between supervision period and risk level, $F(2, 93) = .08$, $p = .926$.

Need Adherence. The rate of adherence to the Need principle was also relatively low overall. For the RNR-only cases, 43% had “no adherence”, 51% had “partial adherence”, and only 6% had “total adherence.” Approximately one third of the MI/RNR cases (32%) had “no adherence”, 50% had “partial adherence”, and 18% had “total adherence”. The rates of Need principle adherence between the two groups were not significantly different, $\chi^2(2) = 3.67$, $p = .16$. Notably, a higher level of Need adherence was significantly associated with non-recidivism, $\chi^2(2) = 8.64$, $p = .013$, indicating that appropriately addressing the criminogenic needs was related to lower subsequent rates of re-offending. A 2 x 3 factorial ANOVA was conducted with group (RNR-only/MI/RNR) and recidivism risk level (low/medium/high) as independent variables, and the number of criminogenic needs addressed as the

dependent variable. There was no significant main effect of supervision period, $F(1, 92) = 1.24, p = .268$. However, a significant main effect of risk level was observed, $F(2, 92) = 6.90, p = .002$. Specifically, Tukey post-hoc analysis revealed that high risk offenders had significantly more need areas addressed in their case plans ($M = 2.23, SD = 1.75$) than medium ($M = 1.43, SD = 1.27$), $p = .01$, and low risk offenders ($M = .57, SD = .65$), $p < .001$; medium risk offenders also had significantly more need areas addressed compared to the low risk offenders, $p = .04$. Thus, in both the RNR-only and MI/RNR groups, a similar number of criminogenic needs were being addressed in the case management plans and both groups tended not to over-intervene with low risk youth. No significant interaction between group and risk level was found, $F(2, 92) = 1.41, p = .250$.

In examining each specific criminogenic need measured by the YLS/CMI, there were no significant differences between the RNR-only and MI/RNR cases in the rates at which each need area was appropriately addressed, all $ps > .05$. However, there was a trend towards the education/employment need being more often addressed in the case plans of the MI/RNR cases. The criminogenic needs of education/employment, family/parenting, and attitude/orientation were the needs that were most often appropriately addressed, whereas leisure/recreation, peer relations, and personality/behaviour were least often addressed adequately in case plans across groups.

Responsivity Adherence. Only a minority of the case plans contained enough details to code adherence to either the General responsivity or Specific responsivity principle. Across groups, only 9% of cases had sufficient information available in the file to determine whether interventions received were based on evidence-based principles. This was especially true for individual counselling, where there rarely was communication with the youth's therapist to determine the nature of the therapeutic approach and methods that were being utilized. Despite the efforts of the researchers to obtain program information, this was generally unsuccessful. Specific responsivity could only be evaluated for 7% of the overall sample. The components of the YLS/CMI that discuss specific individual risk and responsivity factors were rarely completed by probation officers, and case notes generally did not mention how case plans were individualized based on the characteristics of the offender. In light of these insufficient details, the Responsivity principle could not meaningfully be evaluated in the current study.

Overall Adherence. Due to the inability to code Responsivity adherence, the scale for assessing overall adherence to the RNR model was modified to include only Risk and Need adherence. Total adherence scores were classified as "no adherence" (score of 0; no adherence to either principle), "slight adherence" (score of 1), or at least "some adherence" (score of 2 or 3) based on their Risk adherence and Need adherence scores. There was a significant difference in the adherence rates across groups, $\chi^2(3) = 8.87, p = .03$, with MI/RNR cases having higher rates of "some adherence" compared to RNR-only cases. In addition, the pattern of overall RNR adherence differed across the recidivism risk level of the offender, $\chi^2(6) = 25.51, p < .001$, with higher rates of "some adherence" for low risk cases (see Table 11). Notably, only 26% of high risk cases fell in the "some adherence" category.

DISCUSSION

The current study set out to examine the impact of MI training in combination with the RNR approach to community supervision of offenders provided by the New Brunswick Department of Public Safety.

Before discussing the results, it is first important to note that the reviewed offender case files were not as complete as desired for effective coding of all variables. Although statistical checks indicated that the Section 1 of the LS/CMI and YLS/CMI both had strong predictive validity for recidivism events and time to first recidivism in the adult and youth samples (respectively), the vast majority of files did not have the rest of the LS/CMI or YLS/CMI sections completed that are intended to inform case management and supervision practices. Furthermore, many files did not have a follow-up risk assessment completed and lacked information on the type of program(s) to which offenders were referred, the mode of intervention (e.g., CBT) received by the offender, the main issues addressed within the intervention, and the criteria used to determine successful intervention completion. In addition, our attempts to gather necessary program information to aid in the coding of General and Specific responsivity adherence were unsuccessful, making it difficult to accurately code adherence to the Responsivity principle for the majority of cases. With these caveats in mind, the results of the current study found partial support for the impact of integrated MI/RNR training on the recidivism of community-supervised adult offenders, but no impact of this training was observed for justice-involved youth over and above the traditional RNR case management strategy delivered prior to the specialized MI/RNR integration training.

Adult Offenders

Although not statistically significant, the RNR-only supervised adult offenders were more likely to reoffend than those who were supervised under the MI/RNR strategy. When examining the time to reoffence in the overall sample, the supervision groups did not significantly differ in the passage of time prior to their first recidivism index once their period of supervision had begun. However, a separation between the groups was beginning to emerge as time progressed (i.e., approximately around the 500 day mark), with fewer MI/RNR supervised offenders reoffending. These trends suggest that the effect of the MI/RNR training may be demonstrated in longer-term recidivism (i.e., longer than 2 years) more so than short-term recidivism.

When examining adherence to the RNR model, high risk adult offenders were being referred to a significantly higher number of services than low risk offenders, which is in accordance with the Risk principle (Andrews & Bonta, 2010). The MI/RNR group was found to have significantly more need areas addressed in their case plans and low risk offenders were appropriately found to have received little or no intervention relative to high risk offenders. Thus, the integrated MI/RNR training appears to have maintained and somewhat enhanced adherence to the Risk and Need principles of the RNR model relative to the RNR-only supervision period, particularly in the case of not over-intervening with low risk cases.

Justice-Involved Youth

Over a 2-year follow-up period, rates of youth recidivism were high for both RNR-only and MI/RNR supervised cases, particularly for technical violations of supervision conditions. However, these two groups did not significantly differ from each other in their reoffence rates. In addition, survival analysis indicated that there was no significant difference in the length of time to first re-offence between the RNR-only and MI/RNR groups. Unlike for the adult offenders, there were no clear trend towards lower recidivism rates in the MI/RNR group. This indicates that the new MI/RNR integrated case management

strategy did not have incremental value in reducing recidivism above and beyond the previously existing application of what was supposed to be a RNR-based strategy.

Adherence to the Risk and Need principles of the RNR model was relatively low for youth cases managed both before and after the implementation of the MI/RNR integrated case management strategy. However, medium and high risk youth cases were referred to a significantly greater number of services on average than low risk cases. In addition, high risk cases had significantly more need areas addressed, and Need adherence was negatively associated with recidivism. These findings indicate that although rates of adherence were not at a desired level, components of the Risk and Need principles were being attended to in case plans. A significantly higher proportion of cases in the MI/RNR supervision period fully adhered to at least one of the RNR principles relative to the RNR-only supervision period. Unfortunately, it was the case plans of low risk youths that demonstrated the highest overall RNR adherence. This indicates that over-intervention was not an issue, but rather that high risk cases were not being managed as intensively as their risk level indicated they should be.

General Discussion

Despite the hypothesis that the MI/RNR integrated case management strategy would decrease rates of recidivism in the post-training adult and youth supervision cases, the non-supportive findings of the current study are consistent with previous research. Walters and colleagues (2010) also found that MI did not have a direct impact on recidivism when incorporated into a probation case management strategy. Rather, MI has been hypothesized to have a more indirect effect on re-offending, through increasing offender motivation and engagement in intervention (Andrews & Dowden, 2007; Austin et al., 2011). Andrews (2011) has stated that the approach appears promising with offenders, but that the evidence for its use is still limited. Due to the fact that the current study could only utilize the information present in offender case files, it is unclear whether MI techniques were being appropriately used with adult offenders and justice-involved youth and if the use of these skills was related to client motivation or engagement.

Previous research has demonstrated that a probation officer-offender supervisory relationship characterized by treating each other as individuals and showing respect for each other despite the power differential within the relationship, taking a “caring and fair” approach, can act to decrease recidivism substantially (Kennealy, Skeem, Manchak, & Eno Loudon, 2012). These relationship characteristics are consistent with the foundations of MI and these findings add additional support to the notion that the process of supervision is key to reducing recidivism. The content of supervision sessions has also been identified as important to reducing recidivism in community-supervised offenders. Specifically, focusing session discussions on identified criminogenic needs, consistent with the RNR model, have been linked to fewer recidivism events as well as a longer time to recidivism (Bonta et al., 2011). Monitoring of the use of integrated MI/RNR case management skills through the use of session recordings, such as what was initially proposed for Study 2, would provide information of the quality of the probation officer-offender relationship, which MI techniques are most commonly and effectively used, the frequency of their use, as well as the in-session application of the RNR model. Monitoring the quality and content of the probation officer-offender relationship dynamics and interactions would also allow for a more intricate examination of MI techniques as they become

intertwined with the RNR principles; this a methodology has been suggested by previous researchers in order to more fully understand the process of community supervision (e.g., Walters et al., 2010). The results of such an examination would be able to provide more explicit direction for future training and skill-building courses for probation officers.

The rates of adherence to the Risk and Need principles in both offender samples were relatively low. Although disappointing, this is consistent with previous research in community supervision settings that has generally found relatively low RNR adherence rates in practice (Andrews & Bonta, 2010; Bonta, Rugge, Scott, Bourgon, & Yessine, 2008). This occurred in the present study even though, for the majority of cases, the LS/CMI or YLS/CMI results provided clear guidelines for the intensity and targets of supervision. These results may partially be explained by findings that factors such as personal confidence in risk assessment tools, monitoring of tool use, and recency of training affect whether practitioners will base decisions on risk assessment results (Miller & Maloney, 2013).

Due to the condition of the case files, the Responsivity principle could not be thoroughly examined in the present study. It is unclear whether responsivity factors were considered but not documented, or whether inadequate attention was given to these factors in the design of case management plans. However, a lack of information on the Responsivity principle is not out of sync with the findings from previous research. It has been found that adherence to the Responsivity principle in probation case management is the lowest of the three RNR principles (Bourgon, Gutierrez, & Ashton, 2012). As suggested by Polaschek (2012), Responsivity is perhaps the most difficult of the three core principles to implement. For example, corrections officers, including probation officers, may have considered specific responsivity factors but did not take the time to document this consideration. Failure to document may be due to a multitude of reasons, including an overload of case work and a desire to reduce the time spent on paperwork so that more time can be spent on managing and assisting clients. Documentation of responsivity factors also may be more difficult for probation officers with limited exposure to the type of rehabilitation advocated within the RNR model and other evidence-based practices.

Other researchers have found that, regardless of the risk assessment results, offenders tend to be referred by probation officers to the same programs they would have been before the implementation of a risk assessment tool (Taxman & Marlowe, 2006). The tendency to continue to engage in old practices despite training may stem from probation officers' being familiar with the individuals conducting the programs to which they refer their clients from previous years of working together, and/or stem from a lack of alternative programs available within the community. Skeem and Manchak (2008) suggested changes in probation officers' approach to intervention are expected to be gradual as they slowly adapt to a new system of practice. Furthermore, outside of the Department of Public Safety and the probation officers, it is unclear as to what degree the community programs to which offenders have been referred in New Brunswick are able to conduct evaluations of their services to ensure the effectiveness of their programs for contributing to behaviour change and recidivism risk reduction. It is a substantial first step for the Department of Public Safety to endorse evidence-based risk assessment during the community supervision of offenders, whereas the next step is to strongly endorse the evidence-based rehabilitation of offenders through community programs. It is through the integration of both the assessment and rehabilitation processes that the strongest outcome results are obtained (Skeem & Manchak, 2008).

Strengths and Limitations of the Current Study

A strength of the current study is that it contributed to the literature on the application of the RNR model in community supervision. However, one of the main limitations of the current study is that it was limited to information included in offender case files. As previously highlighted, the information available in the files was not sufficient to answer all research questions. It has been well documented that fully completing risk assessment tools is crucial in order for the most useful information to be obtained by the rater (e.g., Fazel, 2012; Miller & Maloney, 2013). Since there were many case files that were not as fully completed as would be desired it is possible that some supervision characteristics, specifically relating to adherence to the Responsivity principle, may not have been coded or accounted for in the present study.

While conducting the current study, one of the primary researchers contacted some programs for information regarding their content and any research evidence or program reviews on the interventions that were offered to probation clients. None of the programs that were contacted responded to the requests for program information. In order to be as informed as possible on the program content, information available through websites was used to code Responsivity adherence but what is posted on a website as a program description and what occurs within sessions with clients may not always match up in practice. In future research, it will be important to gain insight into specific program characteristics as structured re-entry programs have been shown to be effective in reducing recidivism rates (Brooks Holliday et al., 2012).

Implications

The current study was the first step in examining the impact that MI/RNR training has had on the services provided by the Department of Public Safety in the province of New Brunswick. The results for adult offenders are promising in that there was a trend toward fewer recidivism events in the MI/RNR supervised group; however, there needs to be longer term follow-up studies conducted to examine whether or not this trend continues. For youth cases, no differences between the RNR-only and MI/RNR supervision groups were observed, but both had high rates of technical re-offences. It is unclear why a different pattern of results was observed for adult and youth offenders, but it may signal that the MI/RNR case management strategy is more effective for adult offenders, that it takes longer to see results for justice-involved youth, or that the strategy is being implemented differently in these different groups of offenders.

It is imperative to consider that community supervision occurs within the context of a larger correctional system, as well as within a particular community. Although the results of the current study point to specific areas to be targeted within the New Brunswick Department of Public Safety, the changes that can be made are limited by the larger context in which the integrated MI/RNR case management strategy is being implemented. During a feedback and consultation meeting with both frontline providers and management about the current findings, some of the specific issues limiting the ability of probation services to provide the highest quality of intervention were discussed, and are important to note here. The Risk principle provides guidelines on the intensity of service provision, but when the case loads of probation officers are too high and contain a high proportion of high risk offenders, it becomes increasingly difficult to devote the attention recommended to each offender. The Need

principle identifies targets for change, but in the current system, there may be limited programs to which a probation officer can refer offenders. For example, probation officers noted that a youth resource centre in the community is reluctant to have justice-involved youth attend, although participation in such a centre would target leisure/recreation needs. In addition, there are currently long waiting lists for mental health services, and the providers often are not familiar with how to target the relevant criminogenic needs of offenders. Guidelines for probation officers as to the evidence-based interventions available to refer offenders to in the community would be beneficial. It is also not always clear how the case plan and intervention should be tailored to responsivity factors of the individual offender, so this provides another area in which subsequent training and communication with probation officers could potentially improve adherence.

The present study provides a unique perspective in that it is an early examination of the impact of the combination of Motivational Interviewing with the Risk-Need-Responsivity principles in a community supervision environment. Revisiting the continuing progress made by the New Brunswick Department of Public Safety in implementing the new procedures will be important to investigate effectiveness and adherence over time. If case management strategies such as the MI/RNR model demonstrate effectiveness in reducing recidivism, it will have widespread importance for the community supervision division of offender case management, regardless of which community it is taking place in.

Recommendations

Based on the results of the current study, and discussion of these results with probation officers and management at the New Brunswick Department of Public Safety, the following actions are recommended:

1. Ensure full completion of the LS/CMI or YLS/CMI at intake and at 6-month reassessment. Doing so will provide probation officers a more complete picture of the offender that they are working with and these tools have been shown to be more effective when used in their entirety (Fazel, 2012; Miller & Maloney, 2013). During a feedback and consultation meeting with frontline providers, the researchers were informed that this recommendation already has been addressed and that a policy has been implemented since the conclusion of the current study follow-up period that requires all portions of the risk assessment measure to be completed on the computer system. This is an important step, and managers should monitor the use of the reassessment protocol to ensure that it is accurately being implemented and utilized to inform changes in case management.
2. Staff may benefit from training that not only teaches them how to administer and score the risk assessment instruments, but also provides them with training on the RNR model on which these tools are based and its practical application to the construction of a case management strategy. This model provides the theory and research evidence supporting the tool's use and value. This type of training approach has been suggested by Miller and Maloney (2013) and Bourgon et al. (2010), and should be provided to new probation officers as well as to established probation officers as a regular refresher course. In our discussion with probation officers, it was communicated by staff that training of this sort would be beneficial to their work. Although

knowledge of how to complete a risk assessment form is critical, an entirely different level of skill is required to know how to use the information that the tool provides. In addition, staff described being challenged by either: 1) the absence of appropriate services to which an offender could be referred to meet a specific criminogenic need, or 2) lack of knowledge about how best to meet a specific criminogenic need. Thus, simply identifying a criminogenic need is only half of the risk management process. Staff must also have the necessary knowledge about resources that can best meet each of the central criminogenic needs, and this also includes having the necessary skill sets to address some of these needs themselves rather than refer to outside resources. For example, Bonta et al. (2011) demonstrated that probation officers can successfully be trained in cognitive restructuring skills that are relevant to challenging antisocial cognitions, and importantly, found that use of these skills was associated with reductions in the recidivism of officers' case loads.

3. Implement a monitoring process using random file audits to assess the appropriate completion and utilization of the LS/CMI or YLS/CMI and their integration into case plans. This process should ensure that the risk assessment measure is being fully completed at both intake and at 6-month reassessment. In addition, the case management plan should be evaluated to determine if it adheres to the RNR model based on the LS/CMI or YLS/CMI results. Feedback should be communicated immediately to the probation officer to ensure that they are aware of any issues and can make adjustments to case plans. During the feedback session with staff, it was communicated to the researchers that a file audit process is in place, but this process should be reviewed to ensure that it is focused on the above goals and that all those involved are completing file audits and communicating results in a consistent manner.
4. In addition to the existing policy of reassessment at the first 6 months of supervision, it may be useful for the NB Department of Public Safety to create a policy in which follow-up LS/CMI or YLS/CMIs are completed annually for offenders with multiple year supervision orders (e.g., conditional sentences, lengthy probation periods). Follow-up assessments have been shown to provide incremental predictive validity with regards to recidivism (Andrews et al., 2006). Such reassessments over time allows the supervising officers to revisit offender criminogenic needs areas and consider how to best alter the case plan to respond to changes in these dynamic needs.
5. Finally, it is recommended that the Department of Public Safety continue to evaluate the integrated MI/RNR case management strategy over time. It is possible that changes will be more evident in a longer follow-up period than the 2 year window used in the current evaluation. Change is a process that occurs over time, and the true benefits of enhancing an offender's motivation for change may not be seen immediately. Based on what was communicated to the researchers at the feedback and consultation meeting, it appears that changes have been implemented since the current study's follow-up period ended. A current review of how these changes have impacted recidivism and RNR adherence would be beneficial. In addition, an evaluation of in-session use of MI techniques and the RNR principles would provide highly valuable information that would assist in identifying training needs and refining the current case management strategy.

References

- Amrhein, P. C., Miller, W. R., Yahne, C. E., Palmer, M., & Fulcher, L. (2003). Client commitment language during motivational interviewing predicts drug use outcome. *Journal of Consulting and Clinical Psychology, 71*, 862-878. doi: 10.1037/0022-006X.71.5.862
- Andrews, D. A. (2001). Principles of effective correctional programs. In L. Motiuk & R. C. Serin (eds.), *Compendium 2000 on Effective Correctional Programming*. Ottawa: Correctional Services of Canada.
- Andrews, D. A. (2011). The impact of nonprogrammatic factors on criminal-justice interventions. *Legal and Criminological Psychology, 16*, 1-23. doi: 10.1348/135532510x521485
- Andrews, D. A., & Bonta, J. L. (1995). *Level of Service Inventory - Revised*. North Tonawanda, NY: Multi-Health Systems.
- Andrews, D. A., & Bonta, J. (2003). *The psychology of criminal conduct* (3rd edition). Cincinnati, OH, USA: Anderson Publishing Co.
- Andrews, D. A., & Bonta, J. (2006). *The psychology of criminal conduct* (4th edition). Cincinnati, OH, USA: Anderson
- Andrews, D. A., & Bonta, J. (2010). Rehabilitating criminal justice policy and practice. *Psychology, Public Policy, and Law, 16*, 39-55. doi: 10.1037/a0018362
- Andrews, D. A., Bonta, J., & Hoge, R. D. (1990). Classification for effective rehabilitation: Rediscovering psychology. *Criminal Justice and Behavior, 17*, 19-52. doi: 10.1177/0093854890017001004
- Andrews, D. A., Bonta, J. L., & Wormith, J. S. (2004). *Level of Service/Case Management Inventory: An offender assessment system*. North Tonawanda, NY: Multi-Health Systems.
- Andrews, D. A., Bonta, J. L., & Wormith, J. S. (2006). The recent past and near future of risk and/or need assessment. *Crime & Delinquency, 52*, 7-27. doi: 10.1177/0011128705281756
- Andrews, D. A., & Dowden, C. (2006). Risk principle of case classification in correctional treatment. *International Journal of Offender Therapy and Comparative Criminology, 50*, 88-100. doi: 10.1177/0306624X05282556
- Andrews, D. A., & Dowden, C. (2007). The Risk-Need-Responsivity model of assessment and human service in prevention and corrections: Crime-prevention jurisprudence. *Canadian Journal of Criminology and Criminal Justice, 49*, 439-464. doi: 10.3138/cjccj.49.4.439
- Andrews, D. A., Zinger, I., Hoge, R. D., Bonta, J., Gendreau, P., & Cullen, F. T. (1990). Does correctional treatment work? A clinically relevant and psychologically informed meta-analysis. *Criminology, 28*, 369-404.
- Austin, K. P., Williams, M. W. M., & Kilgour, G. (2011). The effectiveness of Motivational Interviewing with offenders: An outcome evaluation. *New Zealand Journal of Psychology, 40*, 55-67.
- Austin, K. P., Williams, M. W. M., & Kilgour, G. (2011). The effectiveness of motivational interviewing with offenders: An outcome evaluation. *New Zealand Journal of Psychology, 40*(1), 55-67.
- Retrieved from
http://go.galegroup.com.ezproxy.lib.ucalgary.ca/ps/retrieve.do?sgHitCountType=None&sort=DA SORT&inPS=true&prodId=AONE&userGroupName=ucalgary&tabID=T002&searchId=R1&resultListType=RESULT_LIST&contentSegment=&searchType=AdvancedSearchForm¤tPosition=6&contentSet=GALE%7CA257859221&&docId=GALE|A257859221&docType=GALE&role=

- Bauman, S. (2007). [Test review of *Level of Service/Case Management Inventory: An offender assessment system*]. In K. F. Geisinger, R. A. Spies, J. F. Carlson, & B. S. Plake (Eds.), *The seventeenth mental measurements yearbook* [electronic version].
- Bonta, J. (1997). *Offender rehabilitation: From research to practice* (Cat. No. JS4-1/1997-1). Public Works and Government Services Canada: Ottawa.
- Bonta, J., Bourgon, G., Rugge, T., Scott, T-L., Yessine, A. K., Gutierrez, L., & Li, J. (2011). An experimental demonstration of training probation officers in evidence-based community supervision. *Criminal Justice and Behavior*, 38, 1127- 1148. doi: 10.1177/0093854811420678
- Bourgon, G., Bonta, J., Rugge, T., Scott, T. L., & Yessine, A. K. (2010). The role of program design, implementation, and evaluation in evidence-based “real-world” community supervision. *Federal Probation*, 74, 2-15.
- Bourgon, G., Gutierrez, L., & Ashton, J. (2012). *From case management to change agent: The evolution of ‘what works’ community supervision* (User Report 2012-01). Ottawa, ON: Public Safety Canada.
- Brooks Holliday, S., Heilbrun, K., & Fretz, R. (2012). Examining improvements in criminogenic needs: The risk reductions potential of a structured re-entry program. *Behavioral Sciences and the Law*, 30, 431-447. doi: 10.1002/bsl.2016
- Burke, B. L., Arkowitz, H., & Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. *Journal of Consulting and Clinical Psychology*, 71, 843-861. doi: 10.1037/0022-006X.71.5.843
- Byrne, J. M., & Pattavina, A. (2006). Assessing the role of clinical and actuarial risk assessment in an evidence-based community corrections system: Issues to consider. *Federal Probation*, 70, 64-67.
- Campbell, M. A., French, S., & Gendreau, P. (2009). The prediction of violence in adult offenders: A meta-analytic comparison of instruments and methods of assessment. *Criminal Justice and Behavior*, 36, 567-590. doi: 10.1177/0093854809333610
- Di Placido, C., Simon, T. L., Witte, T. D., Gu, D. & Wong, S. C. P. (2006). Treatment of gang members can reduce recidivism and institutional misconduct. *Law and Human Behavior*, 30, 93-114. doi: 10.1007/s10979-006-9003-6
- Dowden, C., & Andrews, D. A. (1999). What works for female offenders: A meta-analysis. *Crime & Delinquency*, 45, 438-452. doi: 10.1177/0011128799045004002
- Fazel, S., Singh, J. P., Doll, H., & Grann, M. (2012). Use of risk assessment instruments to predict violence and antisocial behaviour in 73 samples involving 24827 people: Systematic review and meta-analysis. *British Medical Journal*, 345, 1-12. doi: 10.1136/bmj.e4692
- French, S. A., & Gendreau, P. (2006). Reducing prison misconducts: What works! *Criminal Justice and Behavior*, 33, 185-218. doi: 10.1177/0093854805284406
- Hanson, R. K., Bourgon, G., Helmus, L., & Hodgson, S. (2009). The principles of effective correctional treatment also apply to sexual offenders: A meta-analysis. *Criminal Justice and Behavior*, 36, 865-891. doi: 10.1177/00938548093338545
- Heilbrun, K., DeMatteo, D., Fretz, R., Erickson, J., Yasuhara, K., & Anumba, N. (2008). How “specific” are gender-specific rehabilitation needs? An empirical analysis. *Criminal Justice and Behavior*, 35, 1382-1397. doi: 10.1177/0093854808323678
- Hettema, J. E., & Hendricks, P. S. (2010). Motivational interviewing for smoking cessation: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 78, 868-884. doi: 10.1037/a0021498

- Hoge, R. D., & Andrews, D. A. (2002). *Youth Level of Service/Case Management Inventory*. North Tonawanda, NY: Multi-Health Systems.
- Holtfreter, K., & Cupp, R. (2007). Gender and risk assessment: The empirical status of the LSI-R for women. *Journal of Contemporary Criminal Justice*, 23, 363-382. doi: 10.1177/1043986201309436
- Hsu, C-I., Caputi, P., & Byrne, M. K. (2011). The Level of Service Inventory - Revised (LSI-R) and Australian offenders: Factor structure, sensitivity, and specificity. *Criminal Justice and Behavior*, 38, 600-618. doi: 10.1177/0093854811402583
- Kelly, C. E., & Welsh, W. N. (2008). The predictive validity of the Level of Service Inventory – Revised for drug-involved offenders. *Criminal Justice and Behavior*, 35, 819-831. doi: 10.1177/0093854808316642
- Kennealy, P. J., Skeem, J. L., Manchak, S. M., & Eno Loudon, J. (2012). Firm, fair, and caring officer-offender relationships protect against supervision failure. *Law and Human Behavior*, 36, 496-505. doi: 10.1037/h0093935
- Kistenmacher, B. R., & Weiss, R. L. (2008). Motivational Interviewing as a mechanism for change in men who batter: A randomized controlled trial. *Violence and Victims*, 23, 558-570. doi: 10.1891/0886-6708.23.5.558
- McCambridge, J., Day, M., Thomas, B. A., & Strang, J. (2011). Fidelity to motivational interviewing and subsequent cannabis cessation among adolescents. *Addictive Behaviors*, 36, 749-754. doi: 10.1016/j.addbehs.2011.03.002
- McMurran, M. (2009). Motivational interviewing with offenders: A systematic review. *Legal and Criminological Psychology*, 14, 83-100. doi: 10.1348/135532508X278326
- Miller, J., & Maloney, C. (2013). Practitioner compliance with risk/needs assessment tools: A theoretical and empirical assessment. *Criminal Justice and Behavior*, 40(7), 716-736. doi: 10.1177/0093854812468883
- Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change* (Second edition). New York, NY: Guilford Press
- Miller, W. R., & Rollnick, S. (2013). *Motivational interviewing: Helping people change* (Third edition). New York, NY: Guilford Press
- Miller, J. & Maloney, C. (2013). Practitioner compliance with risk/needs assessment tools: A theoretical and empirical assessment. *Criminal Justice and Behavior*, 40, 716-736. doi: 10.1177/009385481248883
- Moyers, T. B., Martin, T., Houck, J. M., Christopher, P. J., Tonigan, J. S. (2009). From in-session behaviors to drinking outcomes: A causal chain for motivational interviewing. *Journal of Consulting and Clinical Psychology*, 6, 1113-1124. doi: 10.1037/a0017189
- Onifade, E., Davidson, W., Campbell, C., Turke, G., Malinowski, J., Turner, K. (2008). Predicting recidivism in probationers with the Youth Level of Service Case Management Inventory (YLS/CMI). *Criminal Justice and Behavior*, 35, 474-483. doi: 10.1177/0093854807313427
- Polaschek, D. L. L. (2012). An appraisal of the risk-need-responsivity (RNR) model of offender rehabilitation and its application in correctional treatment. *Legal and Criminological Psychology*, 17, 1-17. doi: 10.1111/j.2044-8333.2011.02038.x
- Raynor, P. (2007). Risk and need assessment in British probation: The contribution of LSI-R. *Psychology, Crime & Law*, 13, 125-138. doi: 10.1080/10683160500337592

- Rettinger, L. J., & Andrews, D. A. (2010). Risk and need, gender specificity, and the recidivism of female offenders. *Criminal Justice and Behavior*, *37*, 29-46. doi:10.1177/0093854809349438
- Romani, C. J., Morgan, R. D., Gross, N. R., & McDonald, B. R. (2012). Treating criminal behavior: Is the bang worth the buck? *Psychology, Public Policy, and Law*, *18*, 144-165. doi: 10.1037/a0024714
- Schmidt, F., Campbell, M. A., & Houlding, C. (2011). Comparative analyses of the YLS/CMI, SAVRY, and PCL:YV in adolescent offenders: A 10-year follow-up into adulthood. *Youth Violence and Juvenile Justice*, *9*, 23-42. doi: 10.1177/1541204010371793
- Schmidt, F., Hoge, R. D., & Gomes, L. (2005). Reliability and validity analyses of the Youth Level of Service/Case Management Inventory. *Criminal Justice and Behavior*, *32*, 329-344. doi: 10.1177/0093854804274373
- Skeem, J. L., & Manchak, S. (2008). Back to the future: From Klockars' model of effective supervision to evidence-based practice in probation. *Journal of Offender Rehabilitation*, *47*, 220-247. doi: 10.1080/10509670802134069
- Taxman, F. S., & Marlowe, D. (2006). Risk, needs, responsivity: In action or inaction? *Crime & Delinquency*, *52*, 3-6. doi: 10.1177/0011128705281757
- Taxman, F. S., & Thanner, M. (2006). Risk, need, and responsivity (RNR): It all depends. *Crime & Delinquency*, *52*, 28-51. doi: 10.1177/0011128705281754
- Vieira, T. A., Skilling, T. A., & Peterson-Badali, M. (2009). Matching court-ordered services with treatment needs: Predicting treatment success with young offenders. *Criminal Justice and Behavior*, *36*, 385-401. doi: 10.1177/0093854808331249
- Vose, B., Lowenkamp, C. T., Smith, P., & Cullen, F. T. (2009). Gender and predictive validity of the LSI-R: A study of parolees and probationers. *Journal of Contemporary Criminal Justice*, *25*, 459-471. doi: 10.1177/1043986209344797
- Walters, S. T., Vader, A. M., Nguyen, N., & Harris, T. R. (2010). Motivational Interviewing as a supervised strategy in probation: A randomized effectiveness trial. *Journal of Offender Rehabilitation*, *49*, 309-323. doi: 10.1080/10509674.2010.489455
- Wilson, G. T., & Schlam, T. R. (2004). The transtheoretical model and motivational interviewing in the treatment of eating and weight disorders. *Clinical Psychology Review*, *24*, 361-376. doi: 10.1016/j.cpr.2004.03.003
- Wormith, J. S., Althouse, R., Simpson, M., Reitzel, L. R., Fagan, T. J., Morgan, R. D. (2007). The rehabilitation and reintegration of offenders: The current landscape and some future directions for correctional psychology. *Criminal Justice and Behavior*, *34*, 879-892. doi: 10.1177/0093854807301

Table 1

Number of adult offender cases represented in each LS/CMI risk category at the beginning of the index supervisory period for RNR-Only and MI/RNR groups.

LS/CMI Risk Category (score range)	RNR-Only (n = 68)		MI/RNR (n = 68)	
	Start of Supervision	Follow-up	Start of Supervision	Follow-up
Very Low (0 – 4)	7 (10.3%)	2 (2.9%)	4 (5.9%)	5 (7.4%)
Low (5 – 10)	9 (13.2%)	7 (10.3%)	20 (29.4%)	9 (13.2%)
Medium (11 – 19)	16 (23.4%)	12 (17.6%)	21 (30.9%)	15 (22.1%)
High (20-29)	22 (32.4%)	10 (14.7%)	13 (19.1%)	7 (10.3%)
Very High (30 – 43)	9 (13.2%)	6 (8.8%)	7 (10.3%)	6 (8.8%)
Missing (not in file or CIS)	5 (7.4%)	31 (45.6%)	3 (4.4%)	28 (41.2%)

Note: completion of follow-up LS/CMI assessments was not required by the New Brunswick Department of Public Safety before 2010, which reduced the number of available follow-up LS/CMI scores for analysis.

Table 2

Number of adult offenders in each risk level who recidivated during the follow-up period.

LS/CMI Risk Level	RNR-Only Supervision <i>n</i> = 68	MI/RNR Supervision <i>n</i> = 68
Low	2 (2.9%)	3 (4.4%)
Medium	9 (13.2%)	8 (11.8%)
High	20 (29.4%)	13 (19.1%)

Table 3

Offence types for index and recidivism events, for RNR-Only and MI/RNR adult offender groups.

Offence Type	RNR-Only Supervision <i>n</i> = 68		MI/RNR Supervision <i>n</i> = 68	
	Index Event	Recidivism Event	Index Event	Recidivism Event
Violent	32.4% <i>n</i> = 22 (21M, 1F)	8.8% <i>n</i> = 6M	30.9% <i>n</i> = 21 (16M, 5F)	5.9% <i>n</i> = 4M
Non-violent	60.3% <i>n</i> = 41 (26M, 15F)	29.4% <i>n</i> = 20 (16M, 4F)	57.4% <i>n</i> = 39 (27M, 12F)	16.2% <i>n</i> = 11 (9M, 2F)
Sexual	1.5% <i>n</i> = 1M	-	1.5% <i>n</i> = 1M	-
Technical Violation	5.9% <i>n</i> = 4 (3M, 1F)	10.3% <i>n</i> = 7 (6M, 1F)	11.8% <i>n</i> = 8 (7M, 1F)	13.2% <i>n</i> = 9 (7M, 2F)

Note. Recidivism was defined as any new convictions obtained for crime that occurred during the follow-up period. “*n*” denotes the sample size for the cell. ‘M’ denotes number of male offenders and ‘F’ denotes number of female offenders.

**p* < .05

Table 4

Rate of adherence based on the initial LS/CMI need rating for adult offenders at the start of supervision.

LS/CMI Subscales	Intake LS/CMI Need Rating			χ^2 df = 2
	Low	Medium	High	
Education/Employment	84.0%	44.4%	42.9%	21.026***
Family/Marital	94.6%	26.1%	15.0%	67.896***
Leisure/Recreation	100%	4.5%	8.8%	93.492***
Companions	100%	2.3%	4.3%	109.168***
Alcohol/Drug	88.7%	53.8%	56.8%	15.305***
Procriminal Attitude	98.9%	6.7%	28.9%	93.352***
Antisocial Pattern	92.2%	71.4%	30.8%	62.537***

Note. Nineteen cases did not have completed LS/CMI forms in the paper based file and subsequently did not have identified need area categories. Sample sizes varied due to missing data and ranged from $n = 7$ for High risk in Procriminal Attitude to $n = 95$ for Low risk Procriminal Attitude.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5

RNR Need Adherence based on the percentage of identified LS/CMI criminogenic need areas addressed in case plans before and after integrated MI/RNR training for adult offenders.

LS/CMI Subscales	RNR-Only Supervision Adherence	MI/RNR Supervision Adherence	<i>p</i>
Education/Employment	52.9%	57.4%	.707
Family/Marital	48.5%	67.6%	.012*
Leisure/Recreation	29.4%	35.3%	.449
Companions	32.4%	45.6%	.098
Alcohol/Drug	60.3%	63.2%	.586
Procriminal Attitude	70.6%	73.5%	.637
Antisocial Pattern	58.8%	72.1%	.061

Note: each of the RNR-only and MI/RNR samples are missing eight cases. These cases had total risk scores recorded in their case files, but did not have completed LS/CMI forms from which to extract individual criminogenic subscale scores as rated by probation officers.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6

General adherence to RNR principles of Risk and Need by LS/CMI risk levels for adult offenders

LS/CMI Risk Category	Level of General Adherence (%)		
	None (0)	Slight (1)	Some (2)
Low <i>n</i> = 38	-	13.2	86.8
Medium <i>n</i> = 34	35.3	50.0	14.7
High <i>n</i> = 45	46.7	33.3	20.0

Note. The category of 'None' refers to no adherence to either the Risk or Need principle; the category of 'Slight' refers to adherence to one of the two principles; the category of 'Some' adherence refers to addressing both principles.

Table 7

Comparison of demographic characteristics between RNR-Only and MI/RNR supervision for justice-involved youth cases.

Characteristic	Supervision Period		<i>p</i>
	RNR-Only (<i>n</i> = 50)	MI/RNR (<i>n</i> = 50)	
Age in years, <i>M</i> , (<i>SD</i>)	15.89 (1.28)	16.05 (1.54)	.58
Gender (%)			.83
Male	72.0	70.0	-
Female	28.0	30.0	-
Highest Grade, <i>M</i> , (<i>SD</i>)	9.00 (1.44)	8.84 (1.42)	.58
Ethnicity (%)			.19
Caucasian	88.0	76.0	-
First Nations	12.0	16.0	-
Other	-	8.0	-
Geographic Location (%)			.68
Fredericton	26.0	34.0	-
Saint John	30.0	28.0	-
Other ⁺	44.0	38.0	-
Prior Contact with Correctional Services (% Yes)	40.0	38.0	.84

Note. Geographic location indicates the primary area of residence of the offender during their period of supervision. ⁺Other included smaller cities or towns in New Brunswick (e.g., Minto, Oromocto, Quispamsis) as well as rural residences.

p* < .05, ** *p* < .01, * *p* < .001, were criteria for statistical significance.

Table 8

Comparison of index offence and supervision characteristics between RNR-Only and MI/RNR supervision for youth cases

Characteristic	Supervision Period		<i>p</i>
	RNR-Only (<i>n</i> = 50)	MI/RNR (<i>n</i> = 50)	
Number of Index Charges, <i>M</i> , (<i>SD</i>)	2.62 (2.28)	2.46 (2.53)	.74
MSO at Index, <i>M</i> , (<i>SD</i>)	17.32 (4.38)	16.36 (3.73)	.24
Classification of Index MSO (%)			.86
Violent	40.0	46.0	-
Nonviolent	48.0	44.0	-
Sexual	2.0	-	-
Drug	2.0	2.0	-
Technical	8.0	8.0	-
Type of Supervision (%)			.08
Probation	82.0	62.0	
Conditional Sentence	14.0	34.0	
Deferred Custody [‡]	4.0	4.0	
Total Length of Supervision (Days), <i>M</i> , (<i>SD</i>)			
+	449.48 (205.56)	373.16 (157.43)	.04*
Total Number of Supervision Order Conditions, <i>M</i> (<i>SD</i>)	5.98 (1.94)	6.04 (1.86)	.88

Note. [‡]Could be combined with probation or conditional sentence. ⁺Days free in the community.

p* < .05, ** *p* < .01, * *p* < .001, were criteria for statistical significance.

Table 9

Comparison Youth Level of Service/Case Management Inventory for RNR-Only and MI/RNR supervised youth cases

Characteristic	Supervision Period		<i>p</i>
	RNR-Only (<i>n</i> = 50)	MI/RNR (<i>n</i> = 50)	
YLS/CMI Score at Intake, <i>M</i> , (<i>SD</i>)	18.49 (8.11)	17.00 (8.14)	.36
YLS/CMI Risk Level at Intake (%)			.74
Low	10.0	18.0	-
Medium	60.0	56.0	-
High/Very High	28.0	26.0	-
YLS/CMI Reassessment Score, <i>M</i> (<i>SD</i>) ⁺	21.40 (7.37)	17.00 (8.65)	.04*
YLS/CMI Reassessment Risk Level (%) ⁺			.02*
Low	4.0	8.0	-
Medium	28.0	36.0	-
High/Very High	28.0	10.0	-

Note. ⁺The sample size for YLS/CMI reassessment scores and risk levels is *n* = 30 for the pre groups and *n* = 27 for the post group due to missing 6-month reassessments.

p* < .05, ** *p* < .01, * *p* < .001, were criteria for statistical significance.

Table 10

Comparison of recidivism between the RNR-Only and MI/RNR supervision for youth cases

Characteristic	Supervision Period		<i>p</i>
	RNR-Only (<i>n</i> = 50)	MI/RNR (<i>n</i> = 50)	
New Charges During Follow-Up Period (% Yes)	70.0	64.0	.523
Classification of First Re-Offence (%) [†]			.301
Violent	11.4	6.3	
Nonviolent	42.9	37.6	
Technical	45.7	56.3	
MSO for First Re-Offence, <i>M</i> (<i>SD</i>)	10.86 (6.09)	9.34 (5.53)	.292
Recidivism by Risk Level (%)			
Low	20.0	33.3	.597
Medium	70.0	64.3	.643
High/Very High	85.7	84.6	.936
Time to First Re-Offence (days), <i>M</i> (<i>SD</i>)	184.17 (208.70)	163.78 (175.73)	.668

Note. [†]If the first re-offence included multiple charges, the re-offence was categorized under the charge with the highest Most Serious Offence (MSO) code.

p* < .05, ** *p* < .01, * *p* < .001, were criteria for statistical significance.

Table 11

Adherence to the RNR principles based on YLS/CMI risk level amongst the youth sample.

YLS/CMI Risk Category	Level of Overall Adherence (%)		
	None (0)	Slight (1)	Some (2)
Low (n = 14)	-	28.6	71.5
Medium (n = 58)	36.2	36.2	25.8
High (n = 27)	37.9	33.3	25.9

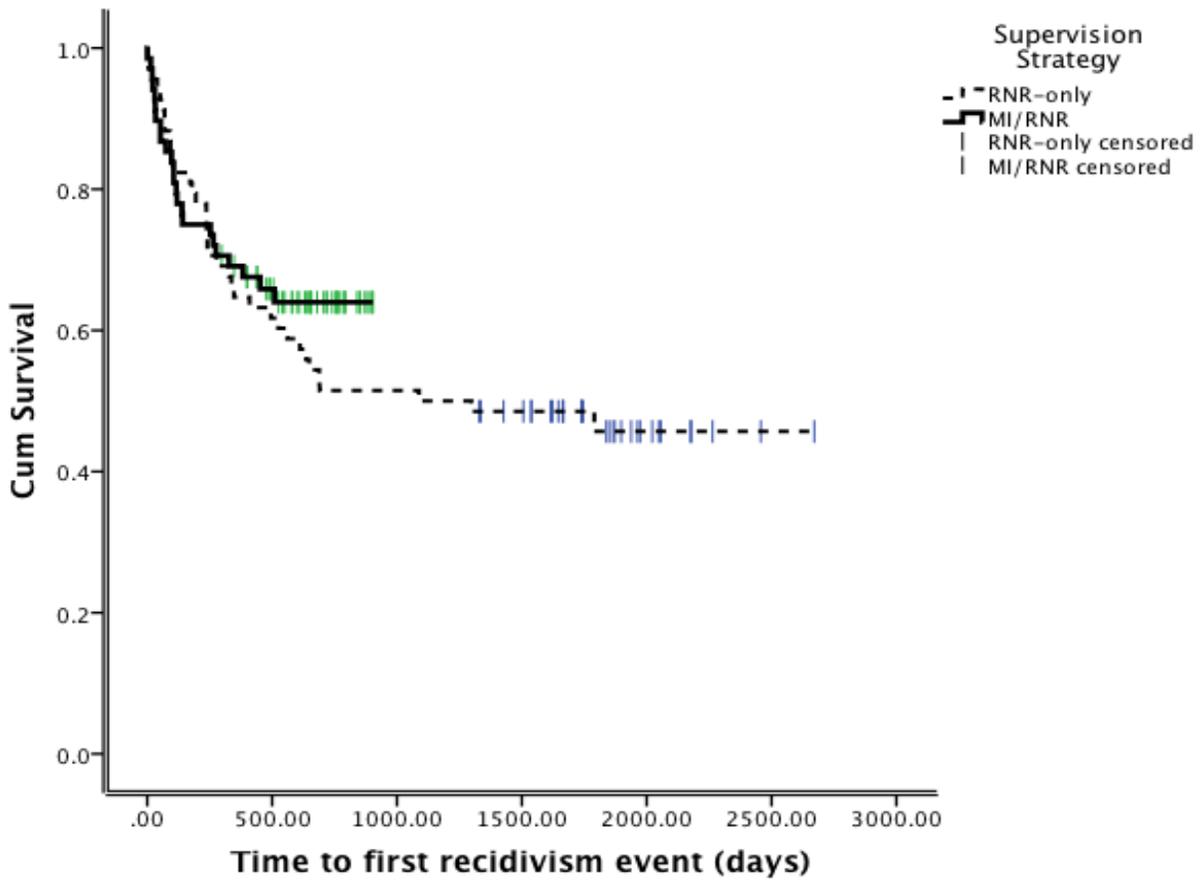


Figure 1

Survival curve for time to first recidivism event for RNR-only and MI/RNR supervised adult cases.

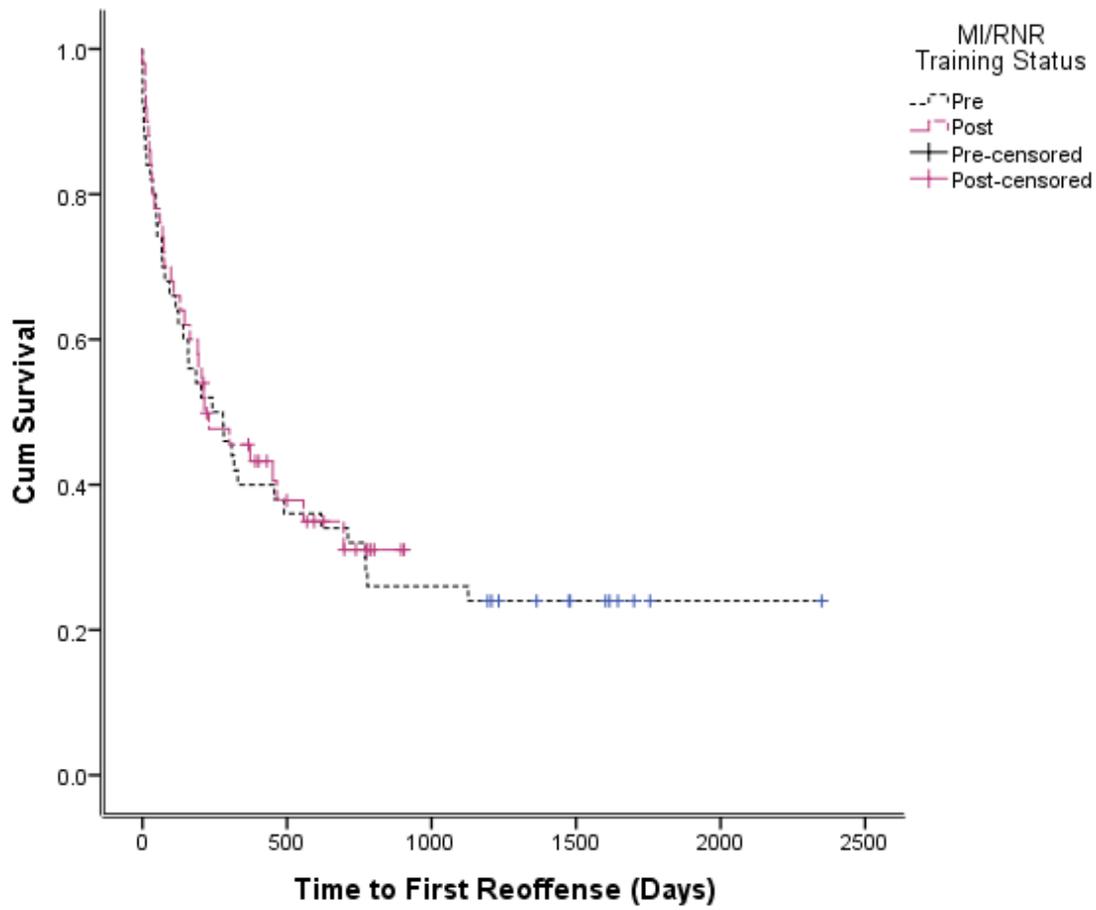


Figure 2

Survival curve comparing general recidivism of pre- and post-training of justice involved youth on time to recidivism.