

Applying the Risk-Needs-Responsivity (RNR) Model to Juvenile Justice

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Abstract

Application of the Risk-Needs-Responsivity (RNR) model in adult correctional research and practice is well developed, but remains underway in the juvenile justice system. The RNR model may facilitate a shift from punitive practices in the juvenile justice system toward individualized assessment and treatment of youth fostering rehabilitation and reintegration. This article reviews the history of the RNR model in adult correctional settings, its theoretical application to the juvenile justice system, and available tools and literature utilizing RNR principles in juvenile justice settings. Criticisms of applying the RNR model to the juvenile justice system and future research directions are addressed.

Keywords

juvenile justice, comparative crime/justice, violent behavior, other

The juvenile justice system was originally designed to rehabilitate wayward youth, protecting both the juvenile's best interest and the public interest by attempting to "save him from a downward career" (Mack, 1909, p. 120). More than a century ago, the concept of rehabilitation through identification and correction of the underlying causes of delinquency was already prevalent in discussions of juvenile justice (Mack, 1909). Screening instruments were used with juvenile offenders in the early 20th century, though they gained little traction until mid-century, when researchers and practitioners attempted to develop tools for structured decision making (Shook & Sarri, 2007). Even though formal assessment instruments were less common decades ago, the focus of the juvenile justice system was to determine and address the factors that had contributed to delinquency for each individual juvenile (Clarke, 2005).

However, over time, the goals of rehabilitating juveniles and of protecting society came to be seen as conflicting with one another, and rising crime rates were blamed on the rehabilitative

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approach taken with justice-involved youth (Thorson, 1999). Individualized rehabilitation lost favor and was replaced with a one-size-fits-all approach to juvenile justice that was much more punitive in nature (Redding, Goldstein, & Heilbrun, 2005); this approach also significantly increased the number of youth involved in the juvenile justice system, classified and treated many justice-involved youth as adults, and gave harsher sentences to those still classified as juveniles (Clarke, 2005). Along with this shift, U.S. Supreme Court rulings granted due process rights to juveniles, which significantly altered the way in which juvenile justice systems were organized (*In re Gault*, 1967; *In re Winship*, 1970). Rather than advancing its original goal of rehabilitation, the juvenile justice system became more retribution-focused, and, as a result, the goal of matching treatment to each individual youth received much less attention (Feld, 1997).

The most recent statistics available from the Office of Juvenile Justice and Delinquency Prevention indicate that, in October 2011, 68,815 youth were in juvenile residential placement facilities (Hockenberry, 2014). Fourteen percent of these youth were female, 30% were age 15 or younger, and 68% were minority youth (Hockenberry, 2014). In terms of most serious charges, of the youth who had been committed to a facility (excluding those detained pending adjudication), 37% had a crime against another person (including criminal homicide, sexual assault, robbery, aggravated assault, and simple assault), 24% had a property crime (burglary, theft, auto-theft, and arson), 7% had a drug crime (drug trafficking or possession), 12% had a public order offense (including weapons possession or other public order violation), 16% had a technical probation violation, and 4% had a status offense (Hockenberry, 2014). To our knowledge, no studies exist that establish an estimated percentage of justice-involved youth classified in each of the identified risk levels (i.e., low, moderate, and high).

Through the first half of the 20th century, assessment of offender risk in both the adult and juvenile systems (focusing in particular on risk of recidivism) relied almost entirely on professional judgment (Bonta & Andrews, 2007). However, as the juvenile justice system was evolving, so, too, were methods of risk assessment. In the 1970s, actuarial risk assessment began to replace unstructured professional judgment, and it has been consistently shown to outperform clinical professional judgment in predicting risk (Grove, Zald, Lebow, Snitz, & Nelson, 2000). However, such actuarial assessments have faced criticism for lacking a theoretical basis and for relying heavily on static risk factors that are not amenable to intervention, such as criminal history variables (Bonta & Wormith, 2007).

In response to these criticisms, risk-assessment tools began to include dynamic risk factors; that is, those factors that were correlated with future offending and were *also* amenable to change and, therefore, could be targeted through interventions (Andrews, Bonta, & Hoge, 1990). These “risk-need” tools take into account the changing nature of factors relevant to risk, including occupational, family, social, and substance use domains (Bonta & Andrews, 2007). Changes in scores on such tools accurately predict matching changes in recidivism (Bonta & Wormith, 2007). However, because these “third-generation” tools do not take into account aspects relevant to case management—such as those factors that influence the effectiveness of interventions designed to impact dynamic risk factors—the current trend has moved toward developing comprehensive assessment tools that consider factors relevant to treatment (Andrews, Bonta, & Wormith, 2006).

The development of risk-assessment tools has been significantly influenced by the Risk-Needs-Responsivity (RNR) approach to assessment and treatment of individuals in the justice system (Bonta & Andrews, 2007). This model recognizes that the push for retribution in both the juvenile and criminal justice systems has failed to reduce recidivism and has resulted in significant prison growth and minimal societal benefit (Andrews & Bonta, 2010a). As a result, these systems should return to individualized approaches that emphasize offender rehabilitation (Andrews & Bonta, 2010a). Although the RNR principles are well developed in adult correctional research and practice, the process of applying the concepts of the RNR model to juvenile justice is still underway (Singh et al., 2014). The RNR model has the potential to help facilitate a change in focus from punitive

juvenile justice practices back toward individualized assessment and treatment of each juvenile with a final goal of rehabilitation and reintegration.

This article summarizes the history of the RNR model in adult corrections settings, examines its theoretical application to juvenile justice, and reviews the available tools and literature on use of RNR principles in the juvenile justice system. Criticisms and limitations of the RNR model in its application to juvenile justice are addressed and recommendations for future research and application of these principles are examined.

History of the RNR Model

The RNR approach to criminal justice emphasizes that decreasing recidivism requires determining offender risk level and considering specific particularized factors related to responsivity to treatment when matching interventions to individual needs (Bonta & Andrews, 2007). The risk principle identifies the importance of accurately assessing risk of recidivism for each offender (Bonta & Andrews, 2007). Using these determinations of risk, it is then possible to classify offenders into low-, moderate-, and high-risk groups; the risk principle states that more resources should be devoted to those at a high risk of offending, while fewer resources should be devoted to those at lower risk (Andrews et al., 1990). Adhering to the risk principle allows for potentially significant decreases in recidivism, because it directs interventions to those who stand to make significant change, as opposed to those who were already unlikely to reoffend.

The need principle emphasizes the importance of determining which individual needs should be the focus of intervention and then devoting resources to addressing those needs (Andrews & Bonta, 2010a). The need principle distinguishes between dynamic needs and static needs and stresses the importance of designing interventions to address criminogenic needs; that is, those dynamic needs that, if addressed, are likely to lead to a reduction in recidivism risk (Dowden & Andrews, 1999). A noncriminogenic need example commonly given in the literature is self-esteem. Many offenders may have low self-esteem, but focusing interventions on increasing self-esteem alone likely will not lead to a reduction in recidivism; rather, it will lead to a self-confident offender (and may even increase likelihood of recidivism; Andrews & Dowden, 2007). Criminogenic needs have been divided into eight domains, namely, procriminal attitudes, antisocial personality, procriminal associates, history of antisocial behavior, substance abuse, circumstances pertaining to family/marital, school/work, and leisure/recreation domains (Andrews, Bonta, & Wormith, 2011).

Finally, the responsivity principle recognizes that different individuals have different strengths and deficits that may impact the effectiveness of particular treatment approaches for that person (Dowden & Andrews, 1999). To successfully address the criminogenic need domains among high-risk offenders and reduce recidivism, it is critical to consider both general responsivity (i.e., emphasizing the importance of providing therapeutic factors known to be generally effective, including a strong therapeutic relationship and a cognitive-behavioral approach) and specific responsivity (i.e., matching treatment to offender characteristics, including personality and demographic characteristics as well as factors related to ability and motivation; Andrews & Bonta, 2010a). Andrews and Bonta (2010a) initially defined responsivity as the delivery of treatment in a manner consistent with an offender's learning style and ability. Critics argued that conceptualizing responsivity in this way failed to recognize (1) the constraints the justice system imposes on measuring an offender's learning style and capacity and (2) the limited number of interventions available to justice-involved individuals (Crites & Taxman, 2013). Crites and Taxman (2013, p. 144) redefined responsivity "as matching the correct type (behavioral target and intensity) of programming to an individual based on his or her risk and needs profile" to address the shortcomings of the initial responsivity definition. Crites and Taxman (2013) emphasized that successful adherence to the responsivity principle requires the interplay of sound clinical practice and established empirical

evidence, which holds potential to generate interventions that are more intensive and address an offender's noncriminogenic needs—treatment characteristics salient to enhancing treatment outcomes.

Underlying the RNR model is a theoretical approach called Personal, Interpersonal, and Community Reinforcement (PIC-R; Andrews & Dowden, 2007). PIC-R takes a social learning theory approach to understanding criminal behavior, understood through principles of cognitive and personality psychology (Andrews & Dowden, 2007). This theory posits that criminal activity develops through social contact with those who are not opposed to antisocial behavior; criminal activity is then reinforced through operant and classical conditioning, so that rewards associated with this behavior contribute to continuation of offending behavior (Ward, Melser, & Yates, 2007). A detailed explanation of this model is outside the scope of this article; however, it has been covered extensively in the literature (e.g., Andrews & Dowden, 2007; Ward, Melser, et al., 2007).

Application of the RNR Model to Adult Corrections

A significant amount of research has focused on evaluating the RNR model, particularly in adult correctional settings. Since a 1990 meta-analysis by the researchers responsible for articulating the RNR model (Andrews et al., 1990), a number of studies have confirmed the utility of the RNR model as a tool to reduce recidivism. This meta-analysis categorized research into “inappropriate” and “appropriate” correctional interventions—where appropriate was defined as minimally meeting the RNR principles—and found that appropriate interventions were more effective in reducing recidivism in both adult and juvenile settings (Andrews et al., 1990). Smith, Gendreau, and Swartz (2009) conducted a more recent meta-analysis of commonly cited and comprehensive meta-analyses of adult and juvenile offender treatments and produced results similar to those observed in Andrews et al.'s (1990) earlier work. Researchers affirmed that treatments adhering to the principles of effective intervention (i.e., risk, need, and responsivity; Andrews & Bonta, 2003; Gendreau, Smith, & French, 2006) are effective in reducing recidivism. Smith et al. (2009) reported a mean effect size of $r = .28$ for treatment programs adhering to all three principles in comparison to $r = .05$ for those that did not. Of studies reviewed in this meta-analysis that employed cognitive-behavioral interventions, nearly three quarters (16 of the 22 studies) reported reductions in recidivism greater than 15% in comparison to control conditions—establishing sound support for the general responsivity principle (i.e., the most effective interventions are based on social learning, cognitive, and behavioral theories; Gendreau, 1996). Findings from this meta-analysis also confirmed support for the need principle. Mean effect size for treatments targeting criminogenic needs ranged from $r = .20$ to $.30$ whereas treatments addressing noncriminogenic needs yielded smaller effect sizes ($-.01 \geq r \geq .04$). Empirical support for the risk principle was not as robust within this meta-analysis as it was for the need and responsivity principles. Effect sizes were small to medium in magnitude for programs targeting higher risk offenders and even smaller for those targeting lower risk offenders. These values may reflect the paucity of meta-analyses conducted on the risk principle as well as inconsistencies in defining and classifying risk within the literature (Smith et al., 2009).

Several more recent studies examined each of the RNR principles individually and found that programs that treated high risk offenders rather than low risk offenders demonstrated substantially greater reductions in recidivism (Andrews & Dowden, 2006). More specifically, RNR research with adults suggests that providing intensive services to low risk offenders may actually increase recidivism (e.g., Bonta, Wallace-Capretta, & Rooney, 2000), that addressing criminogenic rather than noncriminogenic needs leads to greater reductions in recidivism, and that following the responsivity principle's call for using cognitive-behavioral approaches leads to greater reductions in recidivism (Andrews & Bonta, 2006). Further, level of RNR adherence appears to correlate with reductions in

recidivism across settings, such that the more closely a program adheres to RNR principles, the greater it appears to reduce recidivism (Andrews & Dowden, 2007). RNR approaches have also been shown to be effective among female offenders (Dowden & Andrews, 1999). However, evidence suggests that, even though integrity of adherence to RNR principles is critical to reducing recidivism (Lowenkamp, Latessa, & Smith, 2006), significant barriers to accurately implementing those principles may exist (Andrews & Bonta, 2006). Despite these barriers, the Council of State Governments Justice Center (2013) has described the RNR model as the most effective approach to criminal justice treatment.

Theoretical Application of the RNR Model to Juvenile Justice

Although the RNR model was developed for use with adult offenders, its ability to match effective treatments to criminogenic needs suggests it could also be successfully applied in the juvenile justice system—especially given the system’s declared emphasis on rehabilitation and the increased capacity for change among adolescents (Redding et al., 2005). However, successful implementation of this model must go beyond simply applying adult measures and methods to youthful offenders because, as decades of social science research has demonstrated, “adolescents are not miniature adults” (Steinberg, 2003, p. 25), and their developmental differences must be taken into account.

To our knowledge, no one theoretical model is accepted as the most effective approach to addressing youths’ risk for delinquency and recidivism. Meta-analytic and systematic literature reviews provide valuable guidance for effectively treating justice-involved youth across various risk levels and with diverse criminogenic needs. Therapeutic approaches and interventions offering services that address various needs have been found to be more effective in reducing recidivism among youth than attempts to control their behavior (Evans-Case & Zhou, 2014; Leve & Chamberlain, 2007; Lipsey, Howell, Kelly, Chapman, & Carver, 2010; Mallett & Julian, 2008). Assigning youth to these types of interventions based on their risk and needs profile may stimulate and/or augment treatment engagement, thereby generating appreciable reductions in recidivism.

Although researchers have created several juvenile risk/needs-assessment tools and have investigated the effectiveness of matching youth risks and needs to established services, there has been little theoretical discussion of how the RNR model could be modified to take into account youth-specific criminogenic needs or how empirically based interventions targeting youth-specific risk factors might be developed in adherence to the principles underlying the RNR model. Ideally, to conform to the RNR model, common youth risk/needs-assessment tools would investigate several domains of risk factors, assess for empirically supported factors, take into account youth developmental limitations, and guide treatment planning while maintaining flexibility and practicality (Borum, Bartel, & Forth, 2005). Simultaneously, interventions used within an RNR model should take a therapeutic approach (Evans-Chase & Zhou, 2014) and be comprehensive, individualized, focused on relevant criminogenic needs, attentive to treatment amenability factors, and offered at an appropriate intensity level commensurate to the youth’s identified level of risk (Vieira, Skilling, & Peterson-Badali, 2009).

Despite burgeoning research literature attempting to apply RNR principles to juvenile justice settings, it is still unclear to what degree RNR principles are utilized and, when they are utilized, how successfully these principles reduce recidivism in practice. To translate the research on RNR with adults into practice with youth, it is necessary to examine the available risk-assessment tools and evidence-based interventions for juvenile offenders to determine how successfully they can be adapted for use within the RNR model.

The RNR Model in Juvenile Justice

Although initial studies of the RNR model examining the effectiveness of RNR principles in reducing recidivism included juveniles (e.g., Andrews et al., 1990), relevant research among justice-involved youth has focused very heavily on using risk assessment to predict recidivism and much less on examining the RNR model as whole (Singh et al., 2014). A meta-analysis addressing the RNR model in juvenile justice found a strong, positive relationship between adherence to RNR principles, especially treating criminogenic needs, and reduced recidivism (Dowden & Andrews, 2003). Although the authors interpreted the results as offering general support for the RNR model, adherence to the risk principle was not significantly related to decreased recidivism (Dowden & Andrews, 2003).

Use of the RNR Model in Current Practice

To date, only one empirical study has examined the full RNR model in a juvenile justice setting, with similar findings to the aforementioned meta-analysis (Singh et al., 2014). This study assessed the degree to which the number of interventions specified in treatment plans correlated to risk level, the degree to which treatment plans addressed the specific needs identified using a risk-assessment tool, and the degree to which individual strengths were matched to planned interventions (Singh et al., 2014). Results revealed that the three RNR principles were inconsistently implemented, but also that adherence to need and responsivity principles—and not to the risk principle—was related to positive outcomes (Singh et al., 2014). These findings are consistent with other research showing that adherence to the risk and need principles varied considerably among judges and probation officers in juvenile courts and that implementation of these principles was related to perception of the usefulness of such tools (Shook & Sarri, 2007).

Research on Each RNR Principle in Juvenile Justice

A significant amount of research in juvenile justice settings has focused in particular on the risk principle, which is notable given the above indications that this principle may be less related to recidivism reduction for juvenile offenders (e.g., Singh et al., 2014). There is some evidence that, when risk assessment is conducted, determinations of level of risk influence decisions about level of intervention in probation settings—findings that align with RNR principles (Luong & Wormith, 2011). For example, a quasi-experimental study implementing risk assessment before disposition for justice-involved youth revealed that use of a risk-assessment tool led to significantly decreased use of intensive levels of interventions without any increase in recidivism (Vincent, Guy, Gershenson, & McCabe, 2012). However, this study also found that the risk principle was not always applied, as detention decisions appeared to be related to offense history and presiding judge more than to risk level (Vincent et al., 2012). This represents a barrier to adherence to the risk principle, as even when risk assessments are available, individual judges may not consider the juvenile's identified risk as a significant factor. Despite this barrier, substantial evidence suggests that the greatest treatment-related reductions in recidivism occur for youth with the highest risk of delinquency, which suggests the importance of the risk principle in practice (Lipsey, 2009).

Additionally, some research has examined the need principle in juvenile justice. A meta-analysis examining which domains represent criminogenic needs in juveniles identified family factors, social factors (delinquent peers), leisure time, conduct problems, and nonsevere pathology (e.g., stress and anxiety) as key areas of interest (Cottle, Lee, & Heilbrun, 2001). Another study found that youth on probation had several needs in the domains of education, employment, family, substance use, peer relationships, personality, anger management, leisure time, and antisocial attitudes, and that addressing those needs led to a significant decrease in recidivism (Vieira et al., 2009). However, a number of

barriers impeding adherence to the need principle also exist in juvenile justice settings. First, decision makers may overidentify needs, such that youth who have low needs in a particular area may be deemed to have high need and, therefore, receive interventions for unneeded domains (Luong & Wormith, 2011). Enrolling youth in treatments not specific to their unique criminogenic needs—for example, by mandating substance abuse treatment for youth based on a single criminal charge for possession rather than the presence of habitual or impairing substance use—may increase the amount of time youth spend in juvenile justice facilities among deviant peers, thereby jeopardizing their rehabilitation and increasing their likelihood of reoffense in adulthood (Vincent, 2011). For youth on probation, such enrollment may increase time spent under supervision of a juvenile court, particularly if their lack of progress is attributed to noncompliance rather than to a lack of need for such treatment. Second, assigning treatments that address dynamic risk factors irrelevant to a particular youth divert scarce and costly resources away from those juvenile offenders most in need of such services (Vincent, 2011). Finally, research also suggests that criminogenic risk factors may shift away from certain domains and into other domains as youths age and develop; therefore, age must be considered when determining which needs will be addressed by interventions (van der Put et al., 2012). However, when treatments are targeted to factors contributing to delinquent behavior, recidivism reduction increases (Lipsey, 2014). Matching treatment to identified needs may impact recidivism much more for male youth than for female youth, which might indicate the presence of different, gender-specific needs that have not yet been identified or addressed (Vitopoulos, Peterson-Badali, & Skilling, 2012).

To our knowledge, no studies have examined the responsivity principle in isolation among juveniles, and this represents the most significant gap in the literature related to the application of RNR principles to juvenile justice settings. Vieira and colleagues (2009) found no significant reduction in recidivism as a result of selecting treatments on the basis of responsivity factors, which they postulated may have resulted from difficulty separating needs factors and responsivity factors. Even to the degree that it is possible to identify appropriate versus inappropriate matches between an individual juvenile and a treatment approach or placement, decision makers' failure to take that information into account when making placement decisions limits the impact of the responsivity principle on justice-involved youth, which represents a significant barrier to implementing the responsivity principle in juvenile justice settings (Jones & Wyant, 2007). One study found that, in a probation setting, no responsivity factors were identified for 80% of youth, indicating that responsivity currently may play little or no role in treatment decisions (Luong & Wormith, 2011).

Lipsey and colleagues have developed significant literature identifying factors related to effective intervention for justice-involved youth and translating those factors into practice (e.g., Lipsey, 2009, 2014; Lipsey et al., 2010). In particular, a meta-analysis of 548 studies found that juvenile justice programs that stressed discipline were less effective in reducing recidivism than those that did not (Lipsey, 2009). Programs emphasizing discipline and deterrence actually increased recidivism, while programs emphasizing surveillance reduced recidivism; however, such programs were less effective than those programs with a therapeutic focus (Lipsey et al., 2010). Counseling, multiple services, skill building, and restorative interventions resulted in average recidivism reductions between 10% and 13% (Lipsey, 2009). It is important to note that these are broad categories of interventions and do not indicate the degree of match between the individual adolescent and the treatment approach provided. This research can provide general guidance on the match between juveniles and treatment approach, as results indicate that counseling interventions were generally less effective for incarcerated juveniles compared to non-incarcerated juveniles, while skill building interventions were generally more effective for diverted youth than incarcerated youth (Lipsey, 2009). These interventions are only effective, however, if a sufficiently high "dose" is provided—juveniles must receive a certain number of days of service and contact hours in order for an intervention to reduce recidivism (Lipsey et al., 2010). Treatment fidelity is also essential to effective intervention in the juvenile justice system (Lipsey, 2009).

Using Available Risk Assessments and Intervention Programs Within the RNR Model

Identified factors related to risk, need, and responsivity are varied and represent several different areas of life; for example, substance abuse might represent a criminogenic need and mental health concerns might affect an individual's responsivity to treatment (Osher, D'Amora, Plotkin, Jarrett, & Eggleston, 2012). As a result, to adhere to the RNR model, justice-involved youth should undergo a multifaceted clinical risk/needs assessment (including, e.g., a biopsychosocial interview and a mental health and substance abuse screening) upon intake into the system, so that he or she receives the proper level of treatment intensity in the most appropriate setting (Vincent, 2011). Given that the RNR model has only recently been applied to juveniles, few tools for measuring risk, need, and responsivity factors—and for subsequently matching youth with associated interventions—have been created and empirically supported for use within a juvenile population. However, the recent increase in this type of research suggests that additional tools and treatments will be developed, implemented, and validated in the near future.

The risk-assessment tools described below are two of several standardized screening and assessment instruments commonly employed within the juvenile justice system. These instruments consider the unique factors contributing to delinquency as well as recognize the dynamic interplay between factors that promote and protect against delinquency during adolescence (Childs et al., 2013). These types of tools hold three primary purposes: (1) to assist juvenile justice agencies in improving resource allocation, (2) to convey useful details regarding risk and need levels of each juvenile client to juvenile justice agencies, and (3) to provide general guidance during intervention planning (Funk, 1999; Wiebush, Baird, Krisberg, & Onek, 1995). The interventions described subsequently are empirically supported “model programs” commonly assigned to justice-involved youth (Evans-Chase & Zhou, 2014, p. 461). Multiple studies have evaluated these programs with similar findings revealing their effectiveness in reducing recidivism across various juvenile justice populations (Evans-Chase & Zhou, 2014).

Juvenile Risk-Assessment Tools

In the past, when faced with identifying proper services and supervision for juvenile offenders, court and prison personnel determined a youth's risk of reoffending using unstructured professional judgments based on anecdotal evidence from their previous experiences (Bonta & Andrews, 2007). More recently, however, researchers have developed more structured, standardized assessments that evaluate factors linked to recidivism and impose a level of risk classification based on actuarial methods of prediction (Slobogin, 2013). Other tools—such as the Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2000)—rely more on structured professional judgment (SPJ) rather than purely statistical methods of risk assessment (Meyers & Schmidt, 2008). Much of the work involved in developing these risk-assessment tools has been targeted at adult offenders; however, the past decade has seen an increase in the development of structured risk assessment measures created specifically for juveniles, such as the Youth Level of Service/Case Management Inventory (YLS/CMI; Andrews, Hoge, & Leschied, 2002; Hoge & Andrews, 2002; Jeglic, Maile, & Calkins-Mercado, 2011). Likely as a result of burgeoning support and acceptance of the RNR model, many modern adult and juvenile assessment tools now include items meant to evaluate criminogenic needs that could be targeted by specific interventions, thus adopting the risk/need—rather than simply risk—assessment classification (Vieira et al., 2009). Because a systematic review of all available youth risk-assessment tools is outside the scope of this article, this section will focus on two common risk/needs assessments that have historically been utilized within the RNR model as applied to juvenile justice.

YLS/CMI. Often identified as the most widely used and most commonly researched risk/need assessment for juvenile offenders, the YLS/CMI (Hoge & Andrews, 2002) is an actuarial-based instrument meant to be completed by probation officers and/or mental health professionals with minimal training (Campbell et al., 2014). In addition to classifying youth as within one of the four risk categories (i.e., low, moderate, high, and very high), the YLS/CMI includes semistructured guidelines for identifying specific factors to target with court-imposed interventions (Schmidt, Campbell, & Houlding, 2011).

Developed by leading experts on the RNR model, the YLS/CMI is based on the Level of Service Inventory (LSI), a risk/need measure with strong psychometric support among adult offenders (Andrews & Bonta, 1996; Schmidt, Hoge, & Gomes 2005). Prior efforts to create a youth version of the tool resulted in the psychometrically supported Youth Level of Service Inventory (YLSI; Andrews, Robinson, & Hoge, 1984; Hoge, 2002); however, it did not include items to measure responsivity, and, with 112 items, it was identified as too cumbersome for regular use within the juvenile justice system (Hoge, 2001). The current version includes a 42-item checklist meant to evaluate eight empirically based risk/need factors most associated with juvenile reoffending: offense history, family circumstances/parenting, education, peer relations, substance abuse, leisure/recreation, personality/behavior, and attitudes (Cottle et al., 2001; Hoge, 2002).

Psychometrically validated for youth between ages 12 and 17, the YLS/CMI assigns a risk category based on the total checklist score, but also allows for professional override (i.e., if the assessor believes the results provide an inaccurate measure of the youth's risk, the assessor can adjust the ultimate risk level assignment); however, use of this override has been shown to reduce the accuracy of the tool (Vaswani, 2013). In addition to demonstrating the ability to validly differentiate between high- and low-risk offenders in terms of predicting recidivism, the YLS/CMI has shown reliability between probation officers and mental health professionals, supporting use of the tool in a variety of settings (Hoge, 2001). Finally, the component that sets the YLS/CMI apart from other risk/needs assessments is its addition of a case planning tool, which combines information about criminogenic needs and responsivity factors to identify proper service intensity recommendations and offers suggestions for future intervention targets (Hoge, 2002).

SAVRY. Identified as an SPJ tool, the SAVRY (Borum, Bartel, & Forth, 2000) is modeled after the Historical Clinical Risk-20 (HCR-20)—an adult measure predicting violent behavior—and allows assessors to focus on historical, social-contextual, and individual-clinical risk factors empirically associated with violent behavior and recidivism in adolescents (Catchpole & Gretton, 2003). In addition to these risk factors, which are rated on a 3-point scale, the SAVRY evaluates the presence or absence of six protective factors, providing more of an emphasis on resiliency (Welsh, Schmidt, McKinnon, Chattha, & Meyers, 2008). Despite the presence of scores for each factor, the tool discourages using the sum of these scores alone as a determining factor of youth risk level, instead instructing assessors to review the identified factors as a whole and make a final professional determination of low, moderate, or high risk (Schmidt et al., 2011).

In addition to assigning a violence risk level, the SAVRY identifies the criminogenic factors relevant to each assessed youth, allowing examiners to identify targets for future intervention (i.e., to match useful services to criminogenic needs; Meyers & Schmidt, 2008). Psychometric research has shown that the SAVRY demonstrates strong predictive validity for general violent behavior and recidivism over 1- and 3-year follow-up periods; however, SAVRY research is less prevalent than YLS/CMI research as a result of its more recent development (Olver, Stockdale, & Wormith, 2009; Schmidt et al., 2011).

Empirically Based Interventions for Justice-Involved Youth

To align with the RNR model, justice-involved youth—once assigned a risk level and once their criminogenic needs are identified—must receive ongoing, individualized treatment specific to their

risk level, needs, and capabilities (Trupin, 2007). Further, the model prescribes only the use of empirically supported treatments; thus far, the limited available research supports interventions that target maladaptive thought processes, enhance problem-solving skills, and regulate impulsive behavior—especially with juveniles at higher risk of recidivism (Jeglic et al., 2011). Researchers from the Blueprints for Violence Prevention Initiative—a group that reviewed more than 600 existing programs and identified effective and ineffective approaches to, among other things, treating youth with behavioral issues—included multisystemic therapy (MST), functional family therapy (FFT), and multidimensional treatment foster care (MTFC) as three “Model Programs” for adolescent offenders with adequate support in the literature (Mihalic, Fagan, Irwin, Ballard, & Elliott, 2004). These interventions have been successfully implemented with justice-involved youth of varying risk levels and often seem to be most effective at reducing behavioral problems and recidivism rates in youth with high risk of future delinquent behavior (Mihalic et al., 2004; Sexton & Turner, 2010; Smith, 2004). See Table 1 for a summary of each intervention.

MST. Developed in the 1980s, MST serves youth at risk for out-of-home placements and their families in the community, with an emphasis on individualized treatment plans that take into account strengths and weaknesses of the youth and the youth’s family and environment (Henggeler, Melton, & Smith, 1992). Conceptualizing youth behavior as the result of relationships between youth and many interrelated systems (i.e., family, peers, school, and community), MST therapists work in teams and carry a small caseload, making themselves available to clients’ families 24 hours a day (Landsman, 2013). Utilizing this intensive contact over a 3- to 5-month period, therapists develop an understanding of the functional basis of youth behavioral problems and work with families to restructure the youth’s environment across several systems to facilitate prosocial behavior and reduce antisocial behavior (Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006).

MST targets cognitive and systemic factors linked to antisocial behavior using “present-focused and action-oriented interventions” (Schaeffer & Bourduin, 2005, p. 446). Examples of MST-facilitated changes in specific systems include removing the youth client from deviant peer groups and facilitating friendships with prosocial peers (improving peer social network); enrolling youth in job skills classes to enhance capacity for future employment (improving school/vocational system); and teaching parents the skills needed to supervise and monitor youth in the future while removing barriers to successful parenting such as parental drug use, mental health issues, and low social support (i.e., improving the family system; Henggeler, 1997). Research investigating the effectiveness of MST with justice-involved youth with serious arrest histories (i.e., an average of about four felony arrests prior to treatment) found that its use reduced recidivism rates compared to individual therapy and other typical court services, with fewer rearrests and less time spent in adult detention facilities throughout a nearly 14-year average follow-up period (Schaeffer & Bourduin, 2005). Further, MST demonstrated improvements in factors not directly related to recidivism in youth with a history of chronic violent, delinquent, and antisocial behaviors, including more reported family warmth and cohesion and decreased youth aggression with peers (Henggeler, 1999).

FFT. Another family-based intervention program typically implemented with moderate- to high-risk youth, FFT differs from MST in that it focuses solely on family system dynamics during much of the treatment program, waiting until near the end of the treatment implementation to generalize skills to other potential problem areas (Celinska, Furrer, & Cheng, 2013). Although treatment often aims to reduce offending behavior of one youth between the ages of 11 and 18, FFT therapists view the family as one entity, and problems are attributed to relational issues generally rather than to any individual family members (Trupin, 2007). Program implementation typically involves between 12 and 30 family visits in a 90-day period—depending on each specific family’s needs—and therapists

Table 1. Summary of Evidence-Based Interventions for Use in an RNR-Model Juvenile Justice System.

	Multisystemic Therapy (MST)	Functional Family Therapy (FFT)	Multidimensional Treatment Foster Care (MTFC)
Target population	Youth ages 12–17 with chronic antisocial and delinquent behavior, at high risk for out-of-home placement	Youth ages 11–18 with moderate to high risk of out-of-home placement	Youth ages 12–17 with chronic delinquency and antisocial behavior issues warranting out of home placement
Target behavior	Antisocial and delinquent behavior	Antisocial and delinquent behavior	Antisocial and delinquent behavior
Curricula	Restructure youth's environment across systems; e.g., improve peer social network; increase capacity for employment; improve family system	Use applied behavioral analysis techniques to develop family's motivation and hope for change	Place youth with highly trained and supervised foster family that implement behavior management programs, supervise daily behaviors, and limit exposure to delinquent peers
Dosage of treatment	MST therapists meet at least weekly with families over a 3- to 5-month period and are available to them 24 hours a day	Approximately 30 hours' worth of family visits in a 90-day period	Youth receive at least an hour each week of individual and family therapy for 6–9 months; the foster home also serves as a therapeutic environment for youth
Skills learned	Improved problem-solving, social, and communication skills; additional job-related skills to increase vocational opportunities	Communication and problem-solving skills, self-sufficiency, self-respect	Interpersonal skills, prosocial behavior, family management skills, problem-solving skills

maintain caseloads of about 10–12 families at one time (Trupin, 2007; Washington State Institute for Public Policy [WSIPP], 2002).

Leading developers and proponents of the FFT program describe the system as a way to develop families' motivation and hope for change, enhance individual members' inner strengths, and foster greater self-sufficiency and self-respect (Sexton & Alexander, 2000). Conceptualized as a flexible structure with three phases (i.e., engagement and motivation, behavior change, and generalization), FFT starts by maximizing positive responsivity factors and reframing maladaptive beliefs to increase hope and decrease resistance, moves on to develop individualized behavior change plans for each family member, and finally helps the family to apply positive change to other situations, such as at school, work, community, or even in the juvenile justice system (Sexton & Alexander, 2000). Using applied behavioral analysis techniques (i.e., token economy and social reinforcement), FFT therapists work with families to increase communication, improve problem-solving skills, establish clear rules and consequences for youth misbehavior, and provide rewards for prosocial behavior (Trupin, 2007). Research investigating FFT's use with justice-involved youth suggests that, when properly applied, the program can reduce recidivism at rates between 20% and 60%, as compared to individual therapy and/or other typical court services (Celinska et al., 2013; Sexton & Alexander, 2000; Trupin, 2007; WSIPP, 2002).

MTFC. A social learning-based treatment for children and adolescents with chronic delinquency and antisocial behavioral issues (i.e., "high-risk" youth), MTFC focuses on behavioral management

techniques and often serves as an alternative to residential care or juvenile justice facility commitment (Elliott, 1998; Fisher & Chamberlain, 2000; Rhoades, Chamberlain, Roberts, & Leve, 2013). By placing youth with a highly trained and supervised foster family, MTFC providers hope to reduce delinquent behavior, increase prosocial engagement in developmentally appropriate activities, and, ultimately, return foster youth back to their original homes. To do so, MTFC seeks to create a therapeutic and structured family environment for youth, with parents that implement individualized behavioral management programs, closely supervise daily behaviors, delineate fair and consistent consequences for antisocial behavior, positively reinforce prosocial behavior, and limit a youth's exposure to delinquent peers. Youth typically enroll in an MTFC program for 6–9 months, during which they attend school regularly and participate in individual and family therapy with their pre-MTFC families. In addition to monitoring youth homework completion, attendance, and behavior in school, MTFC parents must make daily reports to case managers regarding their child's progress; identify problems; and maintain close contact with behavior-support specialists, physicians, teachers, probation/parole officers, and/or work supervisors (Fisher & Chamberlain, 2000).

Research examining intervention effectiveness suggests that MTFC implementation results in positive outcomes for both male and female youth in multiple countries. For example, Rhoades Chamberlain, Roberts, and Leve (2013) examined 12-month outcomes for youth enrolled in either an implementation MTFC trial for female foster youth in England or a randomized controlled trial of MTFC for female youth chronically involved within the United States juvenile justice system and found that both samples demonstrated statistically significant reductions in offending, violence, risky sexual behavior, and self-harm. Further, when Westermarck, Hansson, and Olsson (2011) randomized behaviorally and emotionally disturbed Swedish youth referred out of social services to either MTFC or treatment as usual (TAU) conditions, they found that youth in the MTFC condition demonstrated statistically significant positive treatment effects compared to TAU youth 24 months post-baseline. Results from these and other studies examining the effectiveness of MTFC reveal its ability to bring about positive change, both in male and female adolescent offenders (Rhoades et al., 2013).

With the advent of empirically supported juvenile-specific risk/needs assessments like the YLS/CMI and the SAVRY, it is important that court personnel and mental health professionals utilize these tools appropriately within an RNR framework so as to match supported intervention programs like MST, FFT, and MTFC to assessment-identified criminogenic needs. Although the multidimensional nature of the above interventions may seem counterintuitive to a system that identifies and attempts to match individual youth needs, these interventions also allow for flexibility, enabling providers to focus treatment on each youth-specific need, while also accounting for responsivity strengths and limitations. However, it is critical to continue to evaluate the risks and benefits of using such newly developed tools in this manner—making sure that programs maintain an individualized focus, such that each youth receives services targeting only the factors determined to be in need of treatment. Doing so may shorten time spent in the juvenile justice system among delinquent peers, conserve scarce and costly treatment resources, and expedite successful reintegration of youth back into the community.

Criticisms of the RNR Model as Applied to Justice-Involved Youth

Since its inception in 1990, the RNR model has emerged as a premier offender rehabilitation model with considerable empirical support across several countries and within diverse offender samples (Ward, Melser, et al., 2007). The widespread adoption of the RNR model into offender treatment led to the development of multiple empirically supported risk-assessment tools, such as the LS/CMI and the YLS/CMI, with established predictive validity of recidivism rates. A substantial body of meta-analytic literature lends robust empirical support to the efficacy of interventions adhering to the principles comprising the RNR model in reducing recidivism in adult and youth offenders

(Andrews et al., 1990, 2006; Andrews & Bonta, 2010b; Hanson, Bourgon, Helmus, & Hodgson, 2009). However, application of the model to the rehabilitation of justice-involved youth reveals weaknesses in theory and practice that may undermine its effectiveness in treating offenders.

Theoretical Criticisms

Critics argue that the RNR model is theoretically impoverished for several reasons. The main critiques include (1) too narrow of a focus on dynamic factors, or criminogenic needs, relevant to risk reduction (e.g., Mann, Webster, Schofield, & Marshall, 2004; Ward, Melser, et al., 2007); (2) insufficient attention paid to the impact of noncriminogenic needs on rehabilitation (e.g., Maruna, 2001; Ward, Melser, et al., 2007); and (3) a tenuous theoretical relationship among its principle components, which marginalizes the importance of the responsivity principle in offender rehabilitation (Ward & Stewart, 2003). Juxtaposing these main theoretical criticisms with the application of the RNR model within the juvenile justice system reveals gaps in the RNR framework that should be filled to best utilize RNR principles to match youth with treatments that reduce their risk of reoffending.

Criminogenic needs. Ward and colleagues (1998, 2003, 2006) consistently criticized the RNR model for its narrow focus on criminogenic needs, which they argue is, “a necessary, but not sufficient treatment aim” (Ward & Gannon, 2006, p. 78). More specifically, Ward and Gannon (2006) posited that the RNR model’s emphasis of dynamic risk factors and relapse avoidance techniques downplays the impact of context and relationship variables (e.g., the therapeutic alliance and clinicians’ attitudes towards offenders) as well as necessary conditions (e.g., skills, values, opportunities, and social supports) that motivate offenders to engage in, and adhere to, therapy.

Vitopoulos et al. (2012) considered the current RNR model to be “gender-neutral” (p. 1026) in its approach to criminogenic needs in that it assumes that dynamic risk factors of recidivism are similar for males and females. Some researchers argue that a gender-specific approach to identifying criminogenic needs of female justice-involved youth is warranted, given their unique treatment needs (i.e., significantly higher rates of mental health problems in comparison to male youths; Cauffman, 2004; Chitsabesan & Bailey, 2006) and qualitative differences in adolescent female aggression and violence in comparison to males (Conway, 2005; Odgers, Moretti, & Reppucci, 2005; Thompson & McGrath, 2012). Opponents of gender-neutral risk-assessment approaches assert that risk-assessment tools based on males may not be appropriate for female youth, given their exclusion in large-scale empirical research (Covington, 2007). Also, categorization of female youth as high risk based on risk assessments developed with males may result in higher sanctions that exacerbate the problems (e.g., depression, sexual abuse, and relationship distress) carried with them into the juvenile justice system (Hannah-Moffat & Shaw, 2001).

According to Ward and Brown (2004), the RNR model is psychometric in nature due to its primary emphasis on criminogenic needs that, when translated into practice, promote employment of “one-size-fits-all” (Ward, Melser, et al., 2007, p. 210) treatments for offenders. Andrews and Bonta (2006) expressed a similar concern that correctional agencies may, in their zeal to maintain RNR-based interventions, fail to consider individual differences among offenders. Neglecting individual differences among offenders may lead correctional agencies to “overmanualize” (Andrews et al., 2011, p. 747) their training of service providers, thereby diluting RNR-implementation integrity and the delivery of associated interventions. The large-scale, international implementation of RNR-based programs within the last decade raises concern regarding RNR-treatment integrity, as such widespread dissemination initiatives tend to prioritize content over technique (Goggin & Gendreau, 2006; Polaschek, 2012). This is alarming, given that effective treatment requires the successful interaction of good content and mature technique, with the latter being compromised by efforts to achieve

the former (Polaschek, 2012). Relying heavily on treatment manuals restricts genuine application of the responsivity principle, which prevents therapists from tailoring treatments to clients and leads to assigning “cookie-cutter” interventions that do not appropriately target factors identified as in need of treatment (Ward, Melser, et al., 2007).

Ward, Melser, et al. (2007) suggest that generic treatment approaches arising from the RNR model’s omission of noncriminogenic need evaluation impairs offenders from developing capabilities necessary for adaptive behavior in pursuit of personal goals within their particular, unique environments. If true, this development may pose deleterious consequences for the juvenile justice system, given that generically based, one-size-fits-all treatment packages may apply costly treatment resources to low-risk youth, thus diverting scarce resources away from higher risk youth most in need of such intensive assessments and treatments. Additionally, retaining lower risk youth in the juvenile justice system longer than necessary promotes deviancy training, wherein peer interactions foster positive responses to deviant talk and behavior that may manifest as future adult offending (Dishion & Tipsord, 2011; Gatti, Tremblay, & Vitaro, 2009). Thus, addressing both criminogenic and noncriminogenic needs may be integral to effectively changing justice-involved youths’ behavior.

Noncriminogenic needs. Poor treatment response among justice-involved youth may be attributable to low motivation for change, distrust, noncompliance, and increased anger and impulsivity (Garrett, 1985; Mulvey, Arthur, & Reppucci, 1993). The RNR model’s focus on criminogenic needs may overlook the underlying etiology of the barriers that dissuade a youth’s motivation for change. Ward, Melser, et al. (2007) claim that addressing noncriminogenic needs, such as personal distress, low self-esteem, and distrust, is integral to establishing a sound therapeutic alliance with offenders, as this may increase the offender’s engagement with treatment and thus reduce recidivism (Marshall et al., 2003). Such focus may be particularly salient for youth, given that the available empirical literature conceptualizes delinquency not just as a by-product of maladaptive interactions with social systems (e.g., family, peers, school, and community), but as the interplay of individual characteristics (e.g., low self-esteem, peer rejection, and hostile attribution bias) with those social systems, which may also contribute to the youth’s participation and trust in a therapeutic alliance (Tarolla, Wagner, Rabinowitz, & Tubman, 2002).

Some critics have suggested that application of the Good Lives Model of offender (GLM-O) rehabilitation (Ward & Stewart, 2003), a positive, strengths-based, and restorative alternative to RNR, may better parallel the heterogeneous and capricious nature of juvenile delinquency (Tarolla et al., 2002), given its emphasis on noncriminogenic needs in tailoring treatments and risk management (Ward & Gannon, 2006). The GLM-O assumes that individuals offend because of problems in their methods of pursuing primary human goods (e.g., happiness, relationships/friendships, and mastery of work and/or leisure). The GLM-O underscores that a fundamental aspect of risk assessment is identifying primary human goods salient to an offender and assisting offenders in attaining those goods in meaningful, nonharmful ways (Ward, Mann, et al., 2007; Yates, Prescottt, & Ward, 2010; Yates & Ward, 2008). The holistic orientation of the GLM-O is attractive to clinicians dissatisfied with large correctional organizations’ “emphasis on bureaucratic, cookie-cutter implementation (of RNR) and massive, manualized training of treatment staff and program facilitators” (Andrews et al., 2011, p. 749). Additionally, a growing body of literature supports integration of the GLM-O into intervention planning and delivery as empirical evidence suggests that it can enhance offenders’ motivation and treatment engagement (Simons, McCullar, & Tyler, 2006). For example, Gannon and colleagues (2011) successfully applied a GLM-O treatment approach with mentally disordered sex offenders who, in spite of their complex mental health needs, all completed their treatment in its entirety. Despite these promising empirical findings, several barriers, such as policies and laws that hinder an offender’s reentry into society as well as negative community attitudes toward

treating offenders humanely (Willis, Levenson, & Ward, 2010), frequently impede the adoption of the GLM-O into offender rehabilitation (Willis, Ward, & Levenson, 2014).

Meta-analytic findings reveal that targeting improved emotional well-being—a central tenant of the GLM-O—is associated with reductions in recidivism, but only when treatments adhere to the RNR model (Andrews, 2008; Andrews & Dowden, 2007). Criticisms of the GLM-O commonly arising within the current literature merit discussion as they temper GLM-O advocates' enthusiasm for applying the RNR and GLM-O models simultaneously. Owing to its nascent stages of empirical development, little is known about the manner in which the GLM-O is appropriately operationalized and implemented in practice (Willis, Yates, Gannon, & Ward, 2013). Willis, Prescott, and Yates (2013) acknowledged difficulties in translating the abstract theoretical terminology of the GLM-O—initially not intended for direct use with clients—into clinical practice, which has resulted in discrepancies among practitioners in methods of applying the GLM-O to effectively address criminogenic needs.

Several authors have pointed out that this model lacks the significant research base that supports use of the RNR model in adult and juvenile offenders (Andrews et al., 2011; Andrews & Dowden, 2007). Andrews, Bonta, and Wormith (2011) argued that much of the psychological models of motivation, competency, and autonomy upon which the GLM-O is founded are based on noncriminal populations and that utilization of these principles in the treatment of offenders must be operationalized and tested within criminal populations (Andrews et al., 2011). Additionally, Andrews and colleagues (2011) contended that the GLM-O takes too passive of an approach in promoting prosocial lifestyles within offenders. More specifically, the GLM-O places too much emphasis on the pursuit of well-being, which ignores an individual's understanding of the major risk factors for crime, thus turning a cheek to crime prevention (Andrews et al., 2011). Enhancing an offender's pursuit of human goods may improve an offender's overall well-being, but the route taken for this pursuit may be harmful to society; thus, targeting criminogenic needs may be a more direct and less risky approach to decreasing criminal behavior (Andrews et al., 2011). The RNR model explicitly prescribes the use of interventions focused on modifying criminogenic needs and allows for therapist discretion to address noncriminogenic needs should they impact offender treatment participation and motivation.

The responsivity principle has been employed to address offender motivation in the context of personal problems. However, it is frequently underutilized in addressing offender characteristics that encompass noncriminogenic needs, with its application historically restricted to issues of learning, cognition, language, and culture (Ward, Melser, et al., 2007).

Responsivity. Critics argue that the multiple theoretical bases of the RNR model cloud one's comprehension of the meaningful relationship among the risk, need, and responsivity principles (e.g., Ward, Melser, et al., 2007). The responsivity principle has been operationally defined in multiple ways and historically underresearched in comparison to the risk and needs principles (Kennedy, 2000). For example, responsivity has been defined as treatment readiness (e.g., motivation and goal setting) versus treatment performance (Serin, 1998), general (e.g., behavioral or cognitive-behavioral programming) versus specific (e.g., consideration of cognitive, language, mental health factors; Dowden & Andrews, 2000), and internal (e.g., motivation and participation in treatment) versus external (e.g., counselor and setting characteristics; Kennedy, 2000). The influence of responsivity-related barriers on treatment program failure is empirically supported (see Koehler, Losel, Akoensi, & Humphreys, 2013, for a review of program effectiveness according to responsivity adherence). As noted earlier, when Vieira and colleagues (2009) investigated the effectiveness of specific RNR principles in a justice-involved youth sample, they unexpectedly found that matching youths' responsivity factors did not significantly account for time to recidivate or number of new convictions. However, these findings may simply illustrate the difficulty in separating responsivity factors from criminogenic needs. These and similar findings provoke thoughtful consideration of how the

tenuous theoretical relationship among risk, need, and responsivity principles impacts treatment effectiveness—a particularly salient issue for the juvenile justice system, given that youth can be highly resistant to change if treatments do not appropriately address their criminogenic and noncriminogenic needs (Vitopoulos et al., 2012).

Practice Criticisms

The impact of the RNR model may not be completely realized if it is inappropriately applied. For example, fourth generation risk/need-assessment instruments (e.g., Correctional Offender Management Profiling for Alternative Sanctions [COMPAS; Brennan, Fretz, & Wells, 2003]; the Offender Intake Assessment of Correctional Service Canada [OAI; Motiuk, 1997]; and the Level of Service (LS)/CMI [Andrews, Bonta, & Wormith, 2004]) provide for more accurate matching—in comparison to first-, second-, and third-generation risk/need assessments—of an individual's criminogenic needs to treatment. However, the promise of fourth generation risk-assessment tools may be realized only if assessment findings are applied as designed (Luong & Wormith, 2011). Scarce literature exists examining the degree to which case management plans are driven by risk/need-assessment findings in an attempt to increase treatment efficacy (Luong & Wormith, 2011). Bonta, Rugge, Scott, Bourgon, and Yessine (2008) found that probation officers were least likely to discuss with probationers criminogenic needs associated with emotional problems, but more likely to discuss family and marital criminogenic needs. Similarly, Flores, Travis, and Latessa (2004) explored application of risk/need assessments to case management practices and found that a great majority of correctional staff implemented the YLS/CMI—but only slightly more than half actually utilized the component scores to guide their treatment decisions—and that YLS/CMI needs were not associated with planned treatments.

Luong and Wormith (2011) postulated that the underutilization of risk/need assessment in case management may reflect underlying pessimism among correctional staff regarding the influence of criminogenic needs-based plans on recidivism. Further, inadequate training of staff in the use of risk/need assessment may also impede successful translation of risk/need-assessment results into practice, such that assessors overclassify needs, especially in common problem areas for justice-involved youth (Luong & Wormith, 2011). Overidentification of intervention targets for low-risk offenders may exemplify correctional staff bias toward particular types of treatments and assumptions of treatment efficacy, thus promoting iatrogenic effects of unneeded treatments, such as deviancy training (Dishion & Tipsord, 2011; Gatti et al., 2009). However, these biases may cause staff to ignore other, more relevant needs identified by a risk/needs-assessment tool that might be integral in tailoring youths' specific treatment services and intensity level to best meet their criminogenic and noncriminogenic needs.

Conclusion

If applied appropriately, the RNR model can be instrumental in reducing recidivism among justice-involved youth on both individual and system-wide levels. The RNR model has advantages for juvenile justice and adult correctional systems overall because it promotes better allocation of services; specifically, by applying more resources to moderate- and high-risk offenders, systems will keep lower risk cases out of intensive, costly correctional services that may cause more harm than good (Andrews et al., 2011). The RNR model also promotes recidivism reduction on an individual level, as treatments are tailored to each youth's unique risk and needs profile, thereby maximizing his or her potential to respond to treatment and increase prosocial pursuits instead of fueling criminal pursuits (Andrews et al., 2011).

It is important to note that the mechanisms through which the RNR model may reduce recidivism individually and systematically may not operate identically for both juvenile and adult offenders. During

adolescence, gradual neurodevelopmental processes coupled with rapid and pervasive contextual changes in self-identity and drive for social acceptance among peers increase youths' incentive-reward motivation - heightening their sensation seeking for salient rewards (Luciana, Wahlstrom, Porter, & Collins, 2012; Squeglia, Jacobus, & Tapert, 2009). Given that neurodevelopmental changes are gradual and reward circuitry is highly influenced by experiences that offer salient rewards, youth are cognitively ill-equipped to maturely consider possible adverse consequences associated with risky behaviors (Luciana et al., 2012), thus increasing their vulnerability to involvement within the juvenile and/or criminal justice system. Professionals should consider these developmental differences as they implement RNR strategies with youth, as such knowledge may provide insight into what might influence a youth offender's engagement and response to assigned treatments as well as on fluctuations in their likelihood of reoffense during physical, emotional, and psychological maturation.

Previous and current research support the application of the RNR model to juvenile justice systems in an attempt to reduce youth recidivism (Luong & Wormith, 2011; Vieira et al., 2009). Additionally, the emergence and evolution of youth risk/need-assessment instruments based on the RNR model provides for consistency in assessment of youth across multiple juvenile justice settings (Hoge & Andrews, 2002). Its merit is questioned by theoretical criticisms and practical application weaknesses; however, these theoretical criticisms are not fatal to the model's existence and can be addressed through supplemental theoretical development, especially research that defines the relationship and interplay of its three component principles.

Ward, Melser, et al. (2007) write that, as "Andrews and Bonta (2003) have frequently stated, open-ended critical inquiry is an essential part of the correctional enterprise" (p. 226). Acknowledgment, discussion, and evaluation of the shortcomings of the RNR model should allow for refinement of its scientific reliability and validity, strengthen the humanistic approach to offender rehabilitation, and further the juvenile justice systems' rehabilitative mission to break the cycle of adolescent delinquency and adult criminal involvement (DePadilla, Perkins, Elifson, & Sterk, 2012).

In closing, we put forth the following research and implementation recommendations with the hope that they may both rectify the shortcomings of applying the RNR model to the juvenile justice system and advance the juvenile justice system's approach to protecting the welfare of youth and the public (Vincent, 2011).

For each RNR principle, the following avenues of future research and implementation are recommended:

1. Risk
 - a. Consideration of the developmental processes that heighten youths' risk taking, but also decrease their incentive-reward motivation as they mature are warranted when interpreting a youth's performance on any standardized risk-assessment tool over time.
 - b. Results of studies evaluating the impact of the RNR framework in reducing youth recidivism suggest that future research should focus on gender-sensitive approaches to risk/need assessment and treatment planning (Vitopoulos et al., 2012). Modifications should be considered to current approaches for interpreting youth risk-assessment results to ensure that they are appropriate for female youth given qualitative differences in adolescent females' presentation of mental health problems (Cauffman, 2004; Chitsabesan & Bailey, 2006), aggression, and violence in comparison to adolescent males (Conway, 2005; Odgers et al., 2005; Thompson & McGrath, 2012). Further, female youths' exclusion from large scale empirical research establishing norms and psychometric properties for particular risk-assessment tools (Covington, 2007) warrants additional research to establish female-specific norms and psychometric properties for youth risk-assessment tools.

2. Needs

- a. Dual consideration of both criminogenic and noncriminogenic needs may increase youths' engagement in treatment. Incorporating facets of other rehabilitation theories, such as the GLM-O incentive-reward (Ward & Gannon, 2006; Ward & Stewart, 2003), may assist in identifying noncriminogenic needs (e.g., self-esteem) that, if addressed in treatment, may increase a youth's trust in assigned treatments and confidence in their ability to successfully reintegrate into society following rehabilitation.

3. Responsivity

- a. Systematic exploration is warranted to identify common responsivity factors pertinent to youth, especially ethnic and/or cultural responsivity factors (Andrews et al., 2006), that may augment youth's engagement in and completion of treatment.
- b. Initiatives to shift case management practices in favor of matching treatment resources with the youths' specific criminogenic and responsivity needs may conserve scarce treatment resources and appropriately allocate resources to youth with higher risk needs (Vieira et al., 2009) while diverting lower risk youth away from increased exposure to the justice system (Dishion & Tipsord, 2011; Gatti et al., 2009).

With regard to translating the RNR model into practice, the following avenues of future research and implementation are recommended:

1. Staff training initiatives in risk assessment should educate professionals on accurately comprehending norms and associated margins of error pertaining to particular youth risk-assessment instruments (Thompson & McGrath, 2012). Hopefully, more thorough training on the application of the RNR model to offender case management will promote positive staff attitudes toward youths' potential for change and staff's practice of influencing youth change (Luong & Wormith, 2011).
2. Frequent auditing of staff members' fidelity to risk assessment and treatment protocols should be conducted, as research shows that treatment fidelity is essential to effective intervention in the juvenile justice system (Lipsey, 2009).
3. Available meta-analytic literature identifying "what works" in juvenile justice programming (e.g., Lipsey, 2009; Lipsey, 2014; Lipsey et al., 2010) can provide general guidance on modifying and creating policies and programs that are successful in translating RNR principles into practice. Lipsey (2009) has identified broad types of interventions that lead to appreciable reductions in youth recidivism and has noted groups of youth offenders for whom these types of programs are most effective. When selecting interventions to address each youth's unique RNR profile, professionals should use such meta-analytic findings to ensure an empirically supported choice. Additionally, treatments assigned to youth should allow for modification, given adolescent development over time and the associated changes in youths' likelihood of reoffense and treatment responsiveness. Most importantly, such assigned interventions should be continually reevaluated in the context of a youth's response to treatment.

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