Chapter 11
Risk-Need-Responsivity (RNR): Leading Towards Another Generation of the Model

Faye S. Taxman, Michael S. Caudy, and April Pattavina

The risk-need-responsivity (RNR) framework offers great promise to the fields of community and institutional corrections. It establishes a framework for providing the appropriate type and level of responses to offenders that is grounded in empirical studies (research) and clinical science. RNR advances correctional practices in a multitude of ways, but most importantly it provides an underlying rationale for what types of treatment programs are needed and who should receive these services. By tying these decisions to improved outcomes, it provides a clearer rationale for how we address factors that contribute to criminal behavior. In the chapters of this book, we presented a conceptual framework that has allowed us to investigate prospects for the migration of the current correctional system, which presently lacks a cohesive model of treatment delivery, to one that is grounded in both empirical and clinical sciences. Moreover, we show that although there are significant gaps in the capacity of the correctional system to deliver RNR programming, we actually have many correctional resources (e.g., evidence-based reviews in support of RNR theory, offender risk and needs assessment tools, and meta-analyses that identify successful programs) needed to inform practice and implementation efforts. We have been able to show how these resources can be adapted and expanded for use in simulation models for the purpose of testing the effects of RNR programming on offender outcomes.

F.S. Taxman (✉) • M.S. Caudy
Department of Criminology, Law and Society, George Mason University,
10900 University Boulevard, Fairfax, VA 20110, USA
e-mail: ftaxman@gmu.edu

A. Pattavina
School of Criminology and Justice Studies, University of Massachusetts Lowell,
One University Ave, Lowell, MA 01854, USA
e-mail: april_pattavina@uml.edu

In this final chapter, we highlight six key conclusions that have emerged from the combined efforts of the authors in this volume to map out and build components of an integrated RNR model to improve offender outcomes. First, there is an expansive body of literature supporting an RNR framework of treatment and program delivery. Second, offender risk and needs assessment instruments can, with some adjustments, be used to identify primary offender risk factors and treatment needs. Third, there is currently a significant treatment gap in services necessary to address offender's primary needs, and this gap contributes to the current high rates of negative outcomes (i.e., recidivism). Fourth, meta-analyses of correctional treatment programs can be used to identify programs that significantly reduce recidivism. Fifth, simulation models that test RNR implementation scenarios on a large scale illustrate substantial reductions in recidivism. Finally, it is possible that RNR programming can be integrated into a system of treatment delivery designed for particular jurisdictions. After reviewing each of these areas, we conclude this book with recommendations for the next generation of RNR research.

Support for the RNR Framework for Offender Treatment Delivery

A strength of any empirically based framework is that, as knowledge expands, the model can be altered and modified to accommodate new findings. The RNR framework is theoretically, clinically, and empirically grounded, with an emphasis on static risk factors, dynamic need factors, and the need for programming that embraces cognitive and behavioral approaches. The RNR framework offers tremendous promise based on several key principles: (1) the risk and need of the offender should drive the type and intensity of programming needed; (2) programming should be built on a cognitive and behavioral framework which has shown to be more effective than other orientations; (3) correctional staff should be part of the treatment regime and therefore must integrate the principles of risk, need, and responsivity into their own interactions with offenders; (4) correctional organizations should model behavioral interventions in their own operations; and (5) correctional culture should embrace concepts of justice, fairness, therapeutic jurisprudence, and behavioral change to facilitate correctional programming and ultimately improve offender outcomes. All together, the RNR framework addresses the whole of the correctional enterprise as well as smaller parts such as treatment or service programs. In doing so, the framework provides a model for building a justice system that is responsive to the human service needs of offenders.

Andrews and Bonta (2010) identify the "central eight" dynamic risk factors that are related to recidivism and posit that if these factors are attended to as part of correctional programming, individual outcomes will improve. The "central eight" are as follows: a history of antisocial behavior, antisocial attitudes and cognitions, antisocial peers, antisocial values, lack of prosocial leisure or recreational times, employment or educational deficits, substance abuse, and dysfunctional families. The first four are considered the most important in terms of recidivism outcomes,
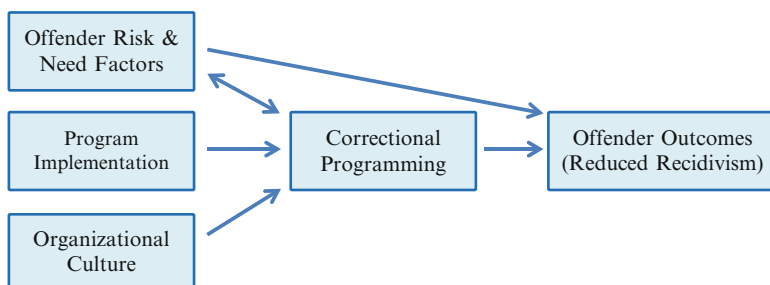
Fig. 11.1 Modified RNR conceptual model

while the later four are of "lesser importance" due to slightly smaller correlation coefficients with recidivism (pp. 498–499). The empirical evidence for each of these factors suggests a correlation with recidivism, but few studies have examined how several of these factors together affect outcomes (see Chaps. 4 and 5). Andrews and Bonta (2010) treat each dynamic need factor as a stand-alone correlate of recidivism instead of examining a spectrum of behaviors or linked conditions that include individual symptoms and characteristics. The consideration of a spectrum of dynamic needs alters the emphasis of the model and allows the RNR model to be more directly tied to responsivity (appropriate correctional programming).

The RNR framework essentially indicates that correctional programming (which is appropriate for risk and need factors) mediates recidivism-related outcomes. While the framework is premised on the direct relationship between individual-level factors (risk and needs) and recidivism, the underlying notion is that participation in appropriate levels of correctional programming will affect offender outcomes. That is, the impact of correctional programming may be moderated by offender-level risk and need factors, as shown above in Fig. 11.1. This alters the original RNR framework to focus on a slightly different empirical question: what type of correctional programming is known to impact recidivism for what type of offenders? And it assumes that changes in the offender's risk and dynamic need factors occur as a result of participation in correctional programming, which also impacts recidivism. In this conceptual model, correctional programming both directly and indirectly contributes to the recidivism outcomes.

Empirical support for this conceptual framework is derived from the large body of research and evaluation studies that test hypotheses regarding the impact of the correctional programming on offender outcomes. In one such study, Landenberger and Lipsey (2005) conducted a meta-analysis of 58 studies on the effect of cognitive-behavioral therapy (CBT) programming on recidivism for both adults and juveniles. The study reported that the recidivism outcomes varied across program features, with better results occurring when (1) the CBT program targeted higher-risk offenders, regardless of any specific need factors; (2) the CBT program included anger control and interpersonal problem solving, regardless of any particular brand of CBT program; and (3) the program was well implemented. Since the study included few individual-level characteristics of offenders other than age, ethnicity, and static risk level, it is unknown whether other demographic or dynamic need factors may

affect offender outcomes as well. Overall, this study supports the underlying premise of the RNR framework; high-risk offenders in well-structured programming will make improvements when the program targets their needs as well as offers evidence-based programming that is implemented with fidelity.

The RNR framework acknowledges the empirical reality that different correctional programs are better suited than others to address the risk and dynamic needs of different profiles of offenders. The emphasis on "what type of programming works for what profile of offender?" is a question that is still being explored in studies of correctional programming and offender outcomes. As discussed in Chap. 6, correctional programming should be categorized based on the specific dynamic needs it *intends* to address, and these categories should be used to improve the "match" between offender risk and need factors and the program type that the offender is most likely to benefit from. In other disciplines, the emphasis on matching diagnostic characteristics to programming is commonplace. For example, in medicine, certain types of physical therapy are better suited for certain types of problem behaviors. Certain medications are known to treat certain conditions for women instead of men. Yet, in the correctional environment, programming tends to be more "generic" as if all offending behaviors are similar and all offenders are the same. The RNR framework offers an improvement over this "one-size-fits-all" approach by advancing the notion that programming should be tailored to meet the specific risk and need factors of the individual. However, the framework does not provide clear guidance for how the field should achieve this goal. It is for this reason that, in Chap. 6, Crites and colleagues outlined program classification criteria that focus on what risk and need factors should be targeted and how these needs should be addressed.

Group A: *drug dependence on opiates*, *cocaine*, *or amphetamines*. Offenders with drug dependence disorders, particularly on substances that are linked to criminal behavior (see Bennett, Holloway, & Farrington, 2008), should receive cognitive restructuring treatments focused on their drug dependence. The programs may offer cognitive-based treatments to improve decision-making, interpersonal skills, and social skills of the clientele. Once this primary criminogenic need (substance dependency) has been stabilized, other dynamic needs can be addressed.

Group B: *criminal thinking/lifestyle*. Offenders with a spectrum of criminal lifestyle needs (several dynamic needs relating to antisocial attitudes, values, behaviors, and social networks) should receive an emphasis on criminal thinking using cognitive restructuring techniques. These programs may also focus on building interpersonal and social skills.

Group C: *substance abuse and mental health needs*. Offenders who abuse drugs and alcohol but have other stabilizer-related need factors (e.g., employment issues, mental health) should be linked to programming that addresses these specific clinical needs. Once these clinically destabilizing needs have been addressed, programming should focus on interpersonal and social skill development.

Group D: *social and interpersonal skill development*. Offenders with few dynamic needs but other social needs (e.g., mental health, housing instability) should be linked to programming that focuses on social and interpersonal skill development. This focus is intended to address the multiple destabilizing issues.

Group E: *life skills*. Lower-risk offenders with only stabilizer-related needs (e.g., employment issues, low educational attainment) should be linked to programming that will enhance their ability to improve their overall functioning.

Group F: *punishment only*. Low-risk or low-need individuals who do not require any direct services should be designated for punishment/supervision only. These individuals do not have specific needs that can be addressed through programming. They should not be placed into programming that is overly intensive or unnecessary. Also, when programming is not available within a specific jurisdiction, it may be necessary to place offenders with certain dynamic needs in this category instead of using poorly matched programming that may exacerbate their underlying treatment needs. Punishment in this sense may include a number of options with the use of incarceration reserved for higher-risk offenders.

Building on the RNR principles, this schema provides a guide for targeting programs to different configurations of offender risk and need profiles. It is essential to consider static risk factors, the need for programming, and the intensity of programming (number of clinical hours) that may be required to realize significant impacts on recidivism outcomes. This translation of the RNR framework is based around a typology of offender profiles that focuses attention on the primary drivers of criminal behavior. It positions the offender's level of risk and type of dynamic need factors as the central determinants of the level and type of programming.

In this translational framework, there are no "lesser priority" dynamic risk factors as suggested by Andrews and Bonta (2010). Instead the emphasis is on identifying the major drivers of criminal behavior for each individual offender and tying these to evidence-based correctional programming. Given that correctional programming outcomes are highly dependent on addressing dynamic needs, the resulting system creates placement criteria for matching different offenders to different types of programming. This approach is consistent with both the clinical science literature and with focusing attention on certain factors known to affect involvement in criminal behavior.

Offender Risk and Needs Assessment Instruments Should Be Used to Identify Offender Risk Level and Primary Needs

While the RNR framework and the RNR Simulation Tools discussed in this book all stress the importance of distinguishing static risk and dynamic needs, most of the risk assessment tools available in the field fail to do so, at least not as they are currently used. This has created a controversy in the field given that a combined risk and need score is often used to identify risk level for offender classification and even sentencing decisions. This practice of combining risk and needs to calculate a global risk score does little to improve prediction and may contribute to the mismatch between offender needs and programming by overclassifying offenders as high risk (see Austin, 2006; Austin, Coleman, Peyton, & Johnson, 2003). This practice may

also contribute to more severe punishments being levied against justice-involved persons who have behavioral health disorders and other treatment needs. The challenge for risk and needs assessments is how to advance attention to dynamic needs and improve offender outcomes through responsivity without overclassifying individuals with behavioral health treatment needs as high risk.

As noted above, Andrews and Bonta identified the "central eight" dynamic risk factors for recidivism. In their schema, they placed a history of antisocial behavior in the "big four" dynamic risk factors. This history of antisocial behavior is similar to, and often measured as, a history of criminal justice involvement. That is, this is a *static* risk factor that indicates not the type of offense or severity of criminal conduct but rather the number of times (and age of onset) that the individual has been involved in the justice system. Criminal justice risk has long been identified as a predictor of future criminal behavior because "the past predicts the future" (see, e.g., Gendreau, Little, & Goggin, 1996; Gottfredson & Gottfredson, 1987). The inclusion of a history of antisocial behavior as a dynamic need in the RNR framework is problematic and potentially contributes to the practice of combining risk and needs that is currently common within the field of corrections. The process of combining risk and needs has been the subject of considerable critique among scholars in recent years. For instance, in a reanalysis of the LSI-R, Austin (2006) reported that it was the criminal justice risk component, not the dynamic needs, that was predictive of recidivism.

> only a small number of the 54 LSI-R scoring items are useful and most of them are not contributing to the risk assessment process. We also found that compared to the risk groups created by the full LSI-R, the condensed instrument creates risk categories with greater distinctiveness in terms of recidivism. Not only do these items have better predictive ability, but also they reduce the "high risk" category." (Austin, 2006: doi 11/25/2012: http://www.uscourts.gov/viewer.aspx?doc=/uscourts/FederalCourts/PPS/Fedprob/2006-09/index.html)

Analysis of risk and needs assessment tools (referred to as third-generation assessment tools) tends to find that (1) dynamic need factors have lower correlations with recidivism than static risk factors; (2) other variables that are not generally included in risk assessment tools are related to recidivism such as age, gender, and educational attainment; and (3) the scoring of assessment tools that combines risk and need factors is not as efficient as scores that separate risk and needs factors (Andrews & Bonta, 2010; Austin, 2006; Austin et al., 2003; Baird, 2009; Gottfredson & Moriarty, 2006). The concept underlying third-generation risk and needs assessment tools is that the attention to both factors will improve the assessment process. But the designers of third-generation tools were considering the notion of responsivity—using the risk and needs assessment to identify the appropriate programming for a particular person—rather than prediction of recidivism risk alone. Accordingly, these instruments are often misused in the field when the inclusion of needs increases an offender's risk score.

The controversy over the inclusion of risk and need factors within risk assessment instruments has to do with both the predictive validity of the instrument and the relative role and value that dynamic risk factors contribute. Baird (2009), in his assessment of the evidence for risk assessment tools, comments:
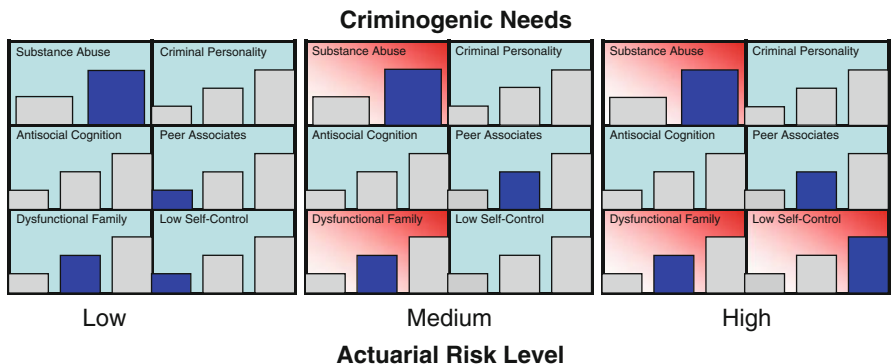
Criminogenic Needs

Fig. 11.2 Using actuarial risk and criminogenic needs to guide responsivity (Taxman, 2006)

> Despite the inclusion of factors without significant relationships to recidivism, these risk models contain enough valid risk factors to attain, in many instances, a modest relationship with various measures of recidivism (see, for example, Flores et al., 2004). Most researchers never ask the next logical question: Would classification results improve if these non-related factors were left out of the instrument? A study of the LSI-R in Pennsylvania (Austin et al., 2003) explored this issue, and produced a dramatic improvement in accuracy using only eight of the 54 LSI-R factors…. Note that the more concise scale not only produced better separation among risk categories, it also dramatically altered the proportion of cases at each risk level, placing more cases in the moderate and low risk categories. This has substantial implications for both release decision making and allocation of resources, including staff supervision and reentry programs and services. In this instance, because the instrument is used by the parole board, the potential impact on individual offenders is especially profound. (Baird, 2009, p. 4 http://cjjr.georgetown.edu/pdfs/ebp/baird2009_Question OfEvidence.pdf)

Baird directly considers the issue that Austin (2006) and others have identified about scoring of risk and needs factors. Baird finds that a total score merely mixes apples and oranges and together it does not provide a good (statistically sound) measure of recidivism risk. In other words, a combined score of risk and need factors makes a difference in terms of how many offenders are placed in different levels of risk as well as the predictive validity of the tool. Both are critical variables that affect the practical utility of risk and needs assessment tools.

Taxman (2006) offers that risk and needs assessment should be considered separately. (Note the original design for the Wisconsin Risk and Needs Assessment Tool had two scores, one for risk and one for needs.) In *Assessment with a Flair*, Taxman argues that risk scores should be used to separate individuals into categories where more structured programming should occur, but the treatment placement should be determined by the dynamic need factor(s). This is consistent with the theoretical logic of the RNR framework.

Figure 11.2 (altered for this model) illustrates the implementation of these principles into a model. Essentially, actuarial risk level should be determined to identify what is the offender's likelihood of further criminal behavior. High-risk offenders should be targeted for treatment-based on the area (s) in which they score moderate or high on criminogenic

needs. That is, the offender needs to be assessed also on the criminogenic needs to identify the drivers to their criminal behavior. The notion is that, similar to treatment placement models, actuarial risk should drive the priority for intensive control and appropriate services, with a focus on selecting programs that address multiple problem areas. "Appropriate" refers to attention to the criminogenic factors that have been identified.

The model presented in the exhibit illustrates how criminogenic factors can exist regardless of risk level. That is, a substance abuser may be low risk due to the fact that he or she does not have a history in the criminal justice system. Other criminogenic factors may exist in that low-risk person, but they are more likely to be low to moderate in severity. As the offender moves along the continuum of risk (moderate to high), then it is more likely that more severe problem behaviors may occur. This is a byproduct of the offender's inability to be a productive, contributing member of society. For example, a high-risk offender may have criminogenic needs relating to self-control, peer associates, ASPD, and substance abuse. The combined treatment and control strategies should be designed to address these issues. The model also suggests that the high-risk offender is more involved in situations, settings, and individuals that are likely to further their criminal conduct. Hence, control and treatment services should be concentrated on this individual to achieve the desired goal of reducing the risk of recidivism. (Taxman, 2006: http://www.uscourts.gov/uscourts/ FederalCourts/PPS/Fedprob/2006-09/accountability.html)

In both the synthetic and the discrete simulation models described in this book, the static risk level is separated from the criminogenic needs or dynamic risk factors for treatment placement. The empirical evidence, as discussed by various scholars (see above), illustrates that static risk factors improve the predictive validity of an instrument, whereas dynamic risk factors add little, but are relevant for case planning/treatment matching. For this reason, applications of the RNR framework need to consider these separately in terms of responsivity. While Andrews and Bonta infer the importance of both risk and needs, common interpretations of the risk principle combine the two.

The finding that static risk alone serves as a more reliable predictor of recidivism than a global risk and needs score affirms the need to distinguish between static risk and dynamic needs in risk prediction and offender classification models. Following the logic of the RNR framework, static risk should be used to identify individuals in need of more intensive services and controls, while dynamic needs should be used to identify potential targets for rehabilitative interventions. Realizing this goal requires that risk assessment tools and practices distinguish static risk from dynamic needs. The RNR Simulation Tool system discussed in Chaps. 5, 6, 7, and 8 applies this logic to provide decision support tools for the field and help practitioners properly utilize the information that is collected through risk and needs assessments.

A Significant Gap in Services Necessary to Address Offender Needs Reduces Effectiveness

In Chap. 2 we established the gap between offender needs and the availability of programming for one dynamic risk factor: substance abuse. This gap is wide, with most offenders not getting services. The implication of this gap is that offenders

with specific needs receive no programming, inappropriate programming, or too little "dosage" of programming to have a considerable impact on recidivism or quality of life. Combined together, this aggravates the problem of recidivism because offenders are often placed in the wrong type or intensity of programming, which results in diminished outcomes and may even be criminogenic (Andrews, 2006; see Chap. 2). The service provision gap problem is also observed for other areas of dynamic needs. For example, for criminal thinking/antisocial attitudes, there is very little direct programming that correctional agencies offer despite increased attention to this correlate of recidivism in recent years (Lipsey, Landenberger, & Wilson, 2007; Taxman, Perdoni, & Harrison, 2007). And there is frequently no direct source of funding for these programs. While correctional agencies are beginning to expand their correctional programming to include criminal thinking interventions (Lipsey et al., 2007; Polaschek, 2011), few correctional agencies routinely offer such programming (Taxman et al., 2007).

As noted throughout this volume, a large part of the reason why responsivity to offender needs has not become a more routine part of correctional practice is the lack of treatment-correctional placement criteria for offenders. Each correctional system has to develop such a process, and it needs to be engrained in sentencing patterns, probation or parole decisions, and other decision-making criteria (e.g., presentence investigations and reports, supervision case plans, correctional case plans) that dominate the criminal justice system in order to be effective. Absent such criteria, individual decision-makers can assess offenders and make placement recommendations based on their own criteria. The advantage of an evidence-based approach is that with the consensus about effective programming comes the general agreement that programs are targeting certain types of dynamic needs or drivers of criminal behavior and subsequently are more likely to improve offender outcomes. In Chap. 6 we outlined the rationale for the RNR Simulation Tool Program-Group Placement Criteria (also discussed above). This and other evidence-driven treatment matching strategies provide a rationale for the placement of offenders into different programs and services. Additional research is needed to test treatment matching strategies designed specifically for justice-involved individuals and to establish clear operational definitions of the primary drivers of recidivism that can be targeted through correctional interventions.

The various simulation projects (the "what if" expert system analyses and discrete models) that have been conducted as part of the development of the RNR Simulation Tool decision support system(s) have assisted in examining questions about the utility of using the RNR approach in assigning offenders to appropriate programming and services. We have used the simulation model approach to demonstrate the impact of the revised decision criteria in terms of offender outcomes (see Chap. 6), and we have used the flexibility and dynamic nature of the simulation models to illustrate the impact on the system over time (see Chaps. 7 and 10). Each model and approach helps to address the three types of impacts discussed in section "RNR Programming Can Lead to Fewer Recidivists: Simulation Findings and Applications" below: impact on recidivism, impact on churning through the system, and impact on the nature and types of services provided to achieve better outcomes.

Evidence-Based Reviews of Correctional Treatment Programs Can Be Used to Identify Programs that Result in Significant Reductions in Recidivism

The simulation methods described throughout this book rely upon and integrate findings from systematic and meta-analytic reviews. In Chap. 7, Caudy and colleagues document the areas where reviews of the effectiveness of correctional interventions have been conducted and report the related effect sizes. The reliance on meta-analysis and systematic reviews ensures that the best available data is used in the simulation models, and it ensures that single site studies or studies of varying rigor are not used to overstate (or understate) the potential effects of using such a program or suite of services. That is, using the best science available adds to the integrity of the simulation model.

The small to moderate effect sizes (ranging from 0 to 30 % relative reductions in recidivism risk) raise a significant question whether providing treatment programming can improve system-level offender outcomes, even when treatment programming quality is high. Austin (2009) argues that the effects of treatment and other programming are limited (looking at the absolute risk reduction numbers) and that increasing the number of offenders in programming will not have a large impact on system-level recidivism outcomes. Instead, Austin (2009) argues there is more to gain from changing policy rather than expanding treatment services. Essentially, the sentiment is that a focus on expanding treatment services, which has an overall small impact on individual-level outcomes, commands attention that would be more effectively given to altering the policies and practices that affect incarceration rates. As discussed in Chaps. 2 and 7, this argument is fostered by current correctional practices, which do not often target offenders for programming under a risk reduction rationale; offenders are frequently misplaced in programming due to limited services and the tendency to use easily accessible services. Unlike the argument put forth by Austin and others, the findings from meta-analyses and systematic reviews and the empirical research on the RNR framework lead us to have confidence that scaling up the use of appropriate treatment will have a considerable impact on recidivism. If program quality is high and a larger portion of the justice-involved population is able to access appropriate services, this will add to the potential impact on recidivism. Changing policies to decrease the size of the incarcerated population is important; however, unmet behavioral health and antisocial cognition treatment needs still represent a key problem within the criminal justice system and are a primary cause of high recidivism rates in the United States.

The controversy over the size of the effect from evidence-based programming is complicated by the poor quality of programming that prevails (Lipsey & Cullen, 2007; Lowenkamp, Latessa, & Smith, 2006). Lowenkamp, Latessa, and Smith (2006) demonstrated how program quality affects recidivism reduction outcomes where better quality programs have better outcomes than lesser quality programs. In their influential study, better quality halfway houses had more positive findings (less

recidivism) than halfway houses that were poor quality and that did not embrace the risk principle of the RNR framework. The quality of program implementation is an essential feature of program effectiveness (Andrews & Dowden, 2005; Gendreau, Goggin, & Smith, 1999).

One central tenet of a therapeutic jurisprudence model is that criminal justice systems should only use programs that are known to have a positive impact on individual offenders since the justice system should ensure that the programming does not contribute to harm. That is, offenders should only be assigned to programs that improve outcomes, and assigning offenders to programs that are unlikely to provide benefits or to harm the individual is a misuse of the legal authority. Therapeutic jurisprudence experts argue that deliberately providing harmful programs is akin to providing cruel and unusual punishment because the intervention is likely to cause more harm than good (Wexler, 1993, 2000). Accordingly, under the umbrella of this tenet of therapeutic jurisprudence, it is essential that we continue to explore the relationship between program quality, program implementation, and program effectiveness in an effort to ensure that all programs offered to justice-involved individuals are capable of producing improved outcomes.

RNR Programming Can Lead to Fewer Recidivists: Simulation Findings and Applications

The results from the decision support components and the discrete event models of the RNR Simulation Tool illustrate the impact of responsivity to offender treatment needs.

Impact on Recidivism: The theoretical question of "what works for whom?" is in need of an answer. This research question has yet to be answered by the existing literature given that many studies do not target specific offender profiles or explore the impact of offender characteristics as moderators of program effectiveness. That being said, simulation modeling allows us to examine how the participation of a certain profile of offenders in a given program or service can affect outcomes.

Typically one looks at the absolute risk reduction that relates to the simple difference between the treatment and control group to determine the effectiveness of a treatment intervention. Another way of measuring treatment effectiveness is to examine the relative risk reduction that indicates the percentage change in the treatment group from the expected base rate (control group). The absolute or relative risk reduction basically creates an indicator of the size of the effect of the treatment. While these are often referred to in the field, two other issues affect the impact on recidivism: (1) the population impact and (2) program quality/implementation. Population impact is an important concept since it draws upon the notion that an intervention will have a greater impact when more of the target population is exposed to the intervention and that there is a benefit to the culture and system when the intervention is incorporated into routine practices. With an estimated 10 % of

offenders currently provided access to treatment services (see Chap. 2; Taxman et al., 2007), improving access to services will have a greater impact on both individual offender and system-level outcomes. It is the latter—the correctional culture—where the greatest impact is likely to occur; when correctional agencies are more comfortable with providing quality treatment programming. Tucker and Roth (2006) note that expanding access and coverage will improve overall outcomes since a larger percentage of the offender population will be exposed to rehabilitative treatment programming. Finally, consideration of program quality/implementation issues are used in the RNR Simulation Tool models to assess the impact under different implementation scenarios.

The "number needed to treat" or NNT is another way to assess the impact of treatment. The NNT is the inverse of the absolute risk reduction and allows one to estimate the number of individuals that must be treated to prevent one negative event (i.e., one recidivist). In Chap. 7, the NNT was calculated using an estimated 0.20 effect of treatment (relative risk reduction) based on meta-analytic findings reviewed by Lipsey and Cullen (2007). The NNT for sanctions (including incarceration) was 33 people punished to prevent one recidivism event compared to 9 from rehabilitative programming (based on an estimated 0.05 effect of sanctions). According to the estimates provided in Chap. 7, by applying the risk, need, and responsivity principles developed in this book (as discussed in Chaps. 6 and 7), we could obtain an NNT of 5. That is, for every five people placed in appropriate correctional programming, this would prevent one recidivism event. For a population of 10,000 offenders, moving from 10 % (based on Taxman et al., 2007) of offenders in treatment to 50 % would result in 475 less victims of crime. As discussed by Caudy et al. (Chap. 7), making the RNR framework a staple of routine correctional practice can have a considerable population-level impact on recidivism.

Impact on Recycling Through the System: Churning through the justice system is commonplace with reported recidivism rates of around 65 % (Langan & Levin, 2002). The most costly impact of recidivism is reincarceration to prison or jail, which is generally more expensive than community-based programming (Pew Center on the States, 2011). Churning through the justice system is clearly problematic because it indicates that the punishment and/or treatment program did not achieve its stated purpose which is to reduce the likelihood of future criminal offending (except for retributive policies which are designed to provide punishment to allow the state to address offending behavior). One component of the RNR Simulation Tool estimates the impact of adhering to the principles of the RNR framework on recycling through the criminal justice system using a discrete event simulation model (see Chap. 10). This model examines the impact of providing treatment services in prison to appropriate offenders and explores the implications of providing RNR-informed treatment for prison populations.

Using reincarceration as the recidivism measure, the discrete event RNR simulation model illustrates positive impacts. Over time the findings from the discrete event model suggest that adhering to the RNR principles would result in a 3.4 % reduction in the number of inmates returning to prison nationwide. By serving

higher-risk offenders, the reduced reincarceration rate would be increased to 5.5 %. By improving the quality of the programming in prison, even without expansion of capacity but solely through increased attention to matching offenders to quality programming, reincarceration rates would be reduced by 6.7 % over the baseline model. This is a conservative approach in that it assumes that one can only participate in one program in prison, and it does not consider that treatment will continue after release from prison. Meta-analytic research (see, e.g., Mitchell, Wilson, & MacKenzie, 2007) suggests an added value of involvement in continuing treatment after release. These findings further illustrate the potential impact of the application of the RNR framework on prisoner reincarceration rates across the United States.

Impact on Services Available in the System: The RNR Simulation Tool is designed to help inform justice agencies about their capacity to provide responsive treatment based on the characteristics of their offender population. As discussed in Chap. 6, the model created a taxonomy of correctional programming based on the primary treatment targets of interventions and the essential features of programs that make them more or less likely to have an impact on recidivism outcomes. In many ways, this taxonomy outlines the range and types of services that are likely to be needed in any correctional setting. The taxonomy outlines the range of programming, but the key issue is that there is likely to be a different distribution of programming in a jurisdiction based on the characteristics of their offender population and the availability of services. The goal of this portion of the tool is to help jurisdictions evaluate their program capacity and plan for future resource allocation to improve the fit between the services they offer and the needs of their justice-involved population.

The RNR Simulation Tool Expert System Can Be Adjusted to Meet the Specific Needs of a Particular Jurisdiction

The RNR Simulation Tool can assist jurisdictions with answering the question of what programming is needed and how much? The tool was designed with the highest degree of flexibility given that many jurisdictions do not have sufficient information on the dynamic needs of their offender population. There are several different approaches that allow jurisdictions to alter the inputs of the simulation model to make the tool outputs more jurisdiction specific: (1) use the national complied database (discussed in Chap. 4) as it exists to give an estimate of the distribution of profiles; (2) use the existing national database and re-weight the file (so it resembles the local jurisdiction) on key demographics such as age, gender, and perhaps ethnicity; or (3) use local data to recreate the profiles using available risk and need information. The potential impact of each of these strategies is depicted in Fig. 11.3. Each of these techniques is provided to allow for the maximum flexibility to meet the needs of the specific jurisdiction.
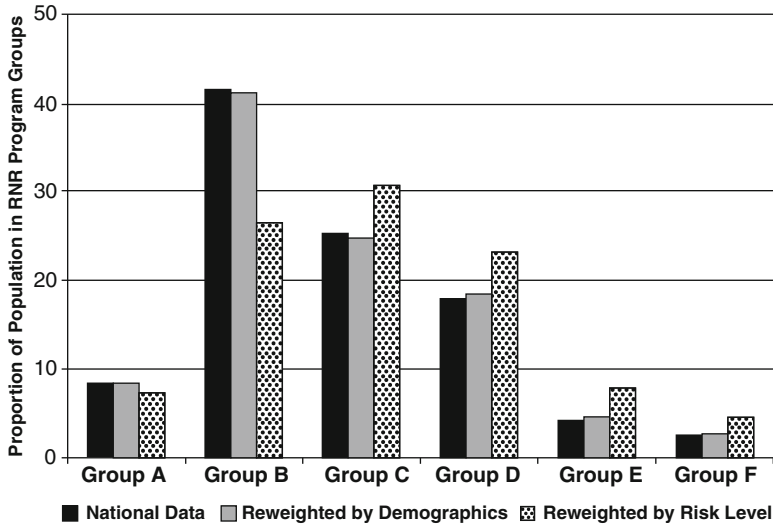
Fig. 11.3 RNR recommended program-group distributions before and after re-weighting

The distribution of programming recommended by the RNR Simulation Tool is depicted in Tables 11.1, 11.2, and 11.3. These recommended distributions are informed by nationally representative data that reflect the prevalence of both static risk and dynamic needs within the offender population. To more accurately inform practice, these capacity recommendations are disaggregated by population type with separate results reported for prisons (Table 11.1), jails (Table 11.2), and community supervision populations (Table 11.3). As displayed in the tables, it is recommended based on the RNR Simulation Tool that between 6 and 10 % of available treatment resources be allocated to address clinical dependence on criminogenic drugs (RNR Program Group A). The largest category of programming (between 40 and 45 % of programming resources) recommended by the RNR Simulation Tool model is RNR Program Group B. Group B programs target criminal thinking and/ or criminal lifestyles using cognitive-behavioral interventions. The second largest target for programming is RNR Program Category C where it is recommended that about 25–30 % of treatment resources be allocated. Group C programs target clinical destabilizers such as substance abuse (not dependence) and mental health disorders. Between 15 and 20 % of treatment resources is recommended for RNR Group D programs which target social and interpersonal skill development (e.g., education, employment, anger management programs), while less than 5 % of program resources are recommended for life skills programs (RNR Program Group E) or punishments only (RNR Program Group F).

The program groups have been designed to facilitate treatment matching and to help jurisdictions better allocate resources to reduce recidivism through responsivity to the primary treatment needs of their offender populations (see Chap. 6). The examples in Tables 11.1, 11.2, and 11.3 are based on national data from several

Table 11.1 Recommended distribution of programming for prison population based on RNR Simulation Tool data

RNR Simulation Tool Programming Group	Criminal justice risk level			
	Low	Moderate	High	Total[a]
A: Dependence on opiates, cocaine, or amphetamines	10.0	9.9	10.4	10.0
B: Criminal thinking/lifestyles	0.0	35.1	75.3	43.1
C: Substance abuse and mental health	34.4	40.4	2.6	28.4
D: Social and interpersonal instability	38.3	13.8	10.9	15.8
E: Life skills	12.8	0.0	0.8	1.7
F: Punishment only	4.5	0.8	0.0	1.0

[a]Table values represent the proportion of the population recommended for each RNR Program Group

Table 11.2 Recommended distribution of programming for jail population based on RNR Simulation Tool data

RNR Simulation Tool Programming Group	Criminal justice risk level			
	Low	Moderate	High	Total[a]
A: Dependence on opiates, cocaine, or amphetamines	6.7	6.3	6.9	6.4
B: Criminal thinking/lifestyles	0.0	42.0	74.5	41.8
C: Substance abuse and mental health	41.5	31.3	4.5	28.4
D: Social and interpersonal instability	32.8	18.8	12.3	19.6
E: Life skills	11.8	0.0	1.7	1.7
F: Punishment only	7.2	1.7	0.0	2.1

[a]Table values represent the proportion of the population recommended for each RNR Program Group

Table 11.3 Recommended distribution of programming for community supervision population based on RNR Simulation Tool data

RNR Simulation Tool Programming Group	Criminal justice risk level			
	Low	Moderate	High	Total[a]
A: Dependence on opiates, cocaine, or amphetamines	6.2	8.4	9.9	8.4
B: Criminal thinking/lifestyles	0.0	38.2	75.0	41.7
C: Substance abuse and mental health	29.7	35.8	2.9	24.7
D: Social and interpersonal instability	36.4	16.3	11.1	18.7
E: Life skills	19.0	0.0	1.1	4.1
F: Punishment only	8.7	1.2	0.0	2.3

[a]Table values represent the proportion of the population recommended for each RNR Program Group

different sources (see Chap. 5); however, these data can be adjusted to reflect the distribution of risk and need profiles within any specific jurisdiction (as discussed in Chap. 8). The translation of the RNR framework into a system-level decision support tool offers meaningful information to guide system planning efforts and to help local and state agencies build up a capacity of treatment providers to address the treatment needs of their justice-involved populations. The potential uses and

implications of this feature of the RNR Simulation Tool are numerous and can have a considerable impact on recidivism rates by increasing capacity to allow more justice-involved persons to receive rehabilitative treatments.

RNR Future Research Directions

Even though the RNR framework has received a considerable amount of empirical attention and support over the last three decades (Andrews, 2006; Andrews et al., 1990; Andrews & Bonta, 2010; Andrews & Dowden, 2006; Dowden & Andrews, 1999a, 1999b, 2000), the authors of this book in their analysis of the field have identified a number of limitations of the existing RNR literature base (see Chap. 4). Our analysis, along with that of others, has explored the nuances of the framework to exalt the empirical foundations and to enhance the transportability of the framework for practical use by correctional and service organizations. In this section we highlight several key areas where further empirical research is needed to augment the RNR conceptual framework. The goal of this discussion is to provide a prospective research agenda for RNR and to facilitate further model refinements and knowledge translation of key findings.

Substance Use Disorders (*SUDs*) *in the RNR Framework*: Despite the high prevalence of substance use, mental health, and co-occurring disorders among individuals involved in the justice system (Lurigio, Cho, Swartz, Graf, & Pickup, 2003; Mumola & Bonczar, 1998; Peters & Bekman, 2007; Staton-Tindall, Havens, Oser, & Burnett, 2011; Steadman, Osher, Robbins, Case, & Samuels, 2009; Taxman et al., 2007), few justice-involved individuals are exposed to evidence-based programs or services. When justice-involved individuals are exposed to programs, the programs are often not well matched to their individual treatment needs (see Chap. 2). As discussed in Chap. 4, the RNR framework (Andrews & Bonta, 2010) does not prioritize substance use as a "big four" criminogenic need. Substance abuse is one of the central eight dynamic risk factors, but is considered to be of lesser importance than those factors related to antisocial history, peers, values, and attitudes. The omission of substance use from the list of criminogenic needs to be prioritized for treatment may be a function of the poor operational definition of this construct. That is, SUDs can vary considerably in terms of the compulsive nature and severity of the disorder, ranging from periodic use to compulsive use. The failure to consider the complexities of the drug-crime nexus and the differential impact of SUDs on recidivism is one limitation of the extant RNR literature base.

The existing literature on the drug-crime nexus needs to be extended to address key issues about the varying nature of drug use patterns in society: clinically defined drug dependence, drug abuse, recreational use, and social uses. A few unanswered questions exist given the dated literature establishing the link between opioid use and criminal behavior (see Ball, Shaffer, & Nurco, 1983; Nurco, Hanlon, & Kinlock, 1991; Nurco, Hanlon, Kinlock, & Slaght, 1984): do offenders diagnosed as drug

dependent have higher recidivism rates than offenders who are classified as abusers or users only? Are some drugs more directly related to recidivism than others? Are criminal justice and/or substance abuse treatment outcomes improved when offenders are matched to levels of treatment intensity based on disorder severity?

In the RNR Simulation Tool models, we have identified clinically diagnosed substance dependence on drugs that have a stronger direct relationship with crime as a primary criminogenic need; "criminogenic drugs" include opioids, cocaine, and amphetamines. Offenders with dependence on these criminogenic substances should be prioritized for treatment and control responses because there is more direct information about relevant and effective treatment for individuals with these addiction disorders. Additional research is needed to provide further empirical support for this more specific operationalization of SUDs within the RNR framework. This reconceptualization also calls attention to the need for more evidence-based screening and assessment practices in the justice system. Prioritizing certain SUDs for treatment requires that these disorders are reliably and consistently identified within the population of offenders and that an infrastructure is in place to provide treatment services to the large portion of the justice population that needs it.

Future research should also explore the adaptability of the RNR framework for guiding substance abuse treatment case planning. The RNR framework has primarily been implemented for criminal justice populations; however, the model may have added utility for non-justice-involved individuals. Additional research is needed to better understand the transportability of the RNR principles to the substance abuse treatment field. Specifically, this research should test whether or not adherence to the RNR principles can lead to improved treatment outcomes for individuals with SUDs. Do substance users fare better when the intensity of treatment services is matched to the severity of their SUDs? Does addressing multiple dynamic needs improve treatment outcomes? Finally, does the use of cognitive-based approaches and tailoring interventions to the strengths of the individual participants improve motivation and success in substance abuse treatment?

Measurement of Dynamic Offender Needs: The RNR framework is grounded in the relationship between dynamic offender needs and recidivism. The need principle stresses that (rehabilitative) interventions should target specific offender needs that are both dynamic (amenable to change) and criminogenic (directly related to recidivism outcomes). A considerable body of empirical research in the field of criminology has been devoted to establishing risk factors for future involvement in antisocial behavior and subsequent contact with the criminal justice system. The extant research generally supports criminal history (static risk) and demographic characteristics such as age and gender as the most robust predictors of continued involvement in offending (Gendreau et al., 1996; Huebner & Berg, 2011; Makarios, Steiner, & Travis, 2010). Extensive research has also explored the relationship between dynamic offender needs (e.g., antisocial cognitions, mental health, family problems, and employment problems) and recidivism outcomes. The results of these studies vary considerably, often depending on how dynamic needs are measured as well as the study design. While some studies find support for dynamic needs as significant

correlates of recidivism, the mechanisms through which these needs impact recidivism remain unclear. Once criminal history and demographics are taken into account, the relationships between dynamic needs and recidivism are often found to be weak or spurious (see Chap. 4, this volume).

One potential explanation for the inconsistent findings regarding the relationship between dynamic offender needs and recidivism is the poor measurement of these constructs. Across third- and fourth-generation risk assessments commonly used in the justice system (e.g., LSI-R, ORAS, and COMPAS), there is a lack of construct validity for many dynamic needs. The use of varying operational definitions of these constructs across tools and settings is problematic for testing the principles of the RNR framework and making generalizations across populations.

In the field, dynamic needs are often measured very differently across justice agencies depending on what assessment instruments are used. For instance, antisocial attitudes, a "big four" criminogenic need, are measured differently by the LSI-R, ORAS, and COMPAS instruments. While the LSI-R and COMPAS assessments only use attitudinal measures, the ORAS also includes behavioral measures in its operationalization of the antisocial attitudes construct. In fact, this construct is even operationalized differently across two assessment batteries within the ORAS. And while the LSI-R operationalizes this construct with only four items, the ORAS includes eight items and the COMPAS includes eleven items. Within these three risk assessments, there are four different ways to operationalize the same antisocial attitudes construct. This lack of construct validity, as well as a lack of measurement harmonization, is a barrier to the implementation of the RNR conceptual framework and limits the generalizability and transportability of research that explores the relationship between these dynamic needs and recidivism outcomes.

Future RNR research should explore the robustness (or lack thereof) of the relationship between dynamic offender needs across assessment instruments and diverse data sources. The goal of this research should be to establish standardized conceptual and operational definitions of need constructs and to establish a strong empirical literature base concerning the relationship between these needs and offender outcomes. Additional empirical attention is also need to better understand the mechanisms through which these dynamic needs impact recidivism. This is critical in light of the various instruments, the various ways in which key constructs are measured, and potential utility of each variable. This line of research is relevant to both practice and policy. Adherence to the need principle of the RNR model is only possible if needs are adequately defined and measured, and this information about individual needs is available to guide treatment matching and case planning strategies. Establishing clear definitions of these constructs and their empirical link to offender outcomes is a necessary step in the process of moving the RNR model from research into practice.

Developing and Testing Treatment Matching Strategies: The use of treatment matching strategies is scarce in the criminal justice system. More often than not, justice-involved individuals with treatment needs are assigned to correctional interventions based on programming availability, professional judgment, and/or characteristics of their instant offense. These program assignment practices are not evidence-based

and often lead to a mismatch between offender treatment needs and the type or intensity of programming that is received. The RNR framework predicts that this mismatch between offender treatment need, which can be defined as a combination between static and dynamic risk, and programming is a primary cause of treatment failures and recidivism. Future research is needed to develop and test different treatment matching strategies that embrace the RNR principles and can be successfully implemented in justice settings.

This line of inquiry should explore differential offender outcomes for those who are correctly matched to levels of care and those who are not. Correctly matched treatment at the individual level should adhere to all three of the RNR principles: treatment should target high- and moderate-risk offenders, be targeted to specific criminogenic needs while also taking into account other clinically relevant offender needs, and should employ evidence-based treatment techniques such as CBT. Treatment matching strategies must also take into account other key program features to ensure that the available programming has the potential to lead to improved offender outcomes that are sustainable over time. The development of effective treatment matching strategies requires attention to key program features including dosage (frequency and duration), setting, intensity, and implementation fidelity.

Under the larger umbrella of treatment matching, the issue of program dosage is of particular salience and an area where future research is needed. Limited empirical research has explored this topic, but the research that has been done has found that dosage is an important mediator of program effectiveness (see, e.g., Bourgon & Armstrong, 2005). Based on their work assessing the effectiveness of one program within one facility, Bourgon and Armstrong (2005) suggested that the dosage of programming needed to affect recidivism varies depending on the severity of risk and needs. More specifically, they recommended that 100 hours of programming was sufficient to reduce recidivism for moderate-risk offenders with few needs, while over 200 hours of programming was needed for higher-risk or multiple need offenders. They also reported that 300 hours of programming was needed for offenders with both high static risk and multiple dynamic needs. A number of unanswered questions remain, such as whether this dosage of time can be delivered through one program or conversely via portions of several programming experiences. Future research should focus on developing a sound conceptual definition of dosage and testing the relationship between dosage and programming outcomes across a more generalizable set of programs and samples.

The development and empirical testing of treatment matching strategies is a necessary next step for the RNR framework. Most extant empirical tests of the framework have used very general definitions of "appropriately" or "inappropriately" matched treatments (see, e.g., Andrews et al., 1990). Exploring the nuances of the relationship between treatment matching, treatment dosage, treatment completion, and recidivism is essential for informing effective correctional practice. If the framework is to be successfully integrated into the field of corrections, specific, tangible guidelines need to be developed to inform practice.

Understanding the Role of Demographics in the RNR Framework: Actuarial risk assessments have been developed to be demographically neutral, as discussed in

Chap. 4. Specifically, these assessment instruments have been designed to limit the potential for extralegal bias in the prediction of risk for future offending. While excluding race and ethnicity from the risk prediction equation is important for limiting the potential for racial bias in the prediction of risk, excluding key demographics such as age and gender from the RNR framework is potentially problematic. Gender, age, and ethnicity are particularly relevant from a responsivity standpoint within the RNR framework, but they may also play an important role as key moderators of the relationships specified within the framework. The conditioning effects of age and gender in particular on the relationships between risk, needs, program outcomes, and recidivism are important avenues for future empirical investigation.

Understanding whether or not some needs are more salient as recidivism predictors for males relative to females or for younger offenders relative to older offenders is important for informing responsivity and for moving the RNR framework forward. It is also necessary for the field to continue to explore "what works for whom?" Are some correctional interventions more effective for some subgroups relative to others? How can programs be adapted to be culturally relevant and responsive to the diverse characteristics of the offender population? These are questions that warrant further investigation within the field.

Future research should focus on testing the moderating influence of demographics on the relationship between risk and recidivism, the relationship between dynamic needs and recidivism, the relationship between program participation and program success, and the relationship between program participation and recidivism. Answering these questions with empirical data will enhance the transportability of the RNR framework into everyday practice. Gaining a better understanding of what works best for whom is a critical next step for the RNR framework.

Conclusion

The RNR framework has served as a primary model for moving research into practice in the field of corrections over the last two decades. RNR offers a parsimonious conceptual framework that combines several evidence-based practices and calls attention to the need for a correctional system that is responsive to the human service needs of the offender population. While the framework has received considerable empirical attention and support, several aspects of the framework are in need of further research to advance the utility of the RNR framework to practice and policy. In this book, several refinements to the RNR framework are being used, but further work is needed. Answering the questions outlined within this chapter will advance the transportability of the framework for informing practice.

The RNR framework offers great promise for improving outcomes across the justice system, but the current evidence base tempers this promise to some degree. Continued expansion of the literature base and research underlying the RNR framework is needed. Some important directions for future inquiry include an expansion of the literature concerning the effectiveness of correctional interventions for

reducing recidivism and improving offender outcomes, improved operationalization and measurement harmonization of key RNR constructs, a better understanding of the conditioning effects of age and gender on the theoretical relationships proposed within the RNR framework, exploration of the nuances of the relationship between SUDs and recidivism within the framework, and the development of evidence-based treatment matching strategies that translate the RNR principles into everyday correctional practice. Each avenues of future research has important implications for theory, practice, and policy.

References

Andrews, D. A. (2006). Enhancing adherence to Risk-Need-Responsivity: Making quality a matter of policy. *Criminology and Public Policy, 5*(3), 595–602.

Andrews, D. A., & Bonta, J. (2010). *The psychology of criminal conduct* (5th ed.). Cincinnati, OH: Anderson.

Andrews, D. A., & Dowden, C. (2005). Managing correctional treatment for reduced recidivism: A meta-analytic review of programme integrity. *Legal and Criminological Psychology, 10*, 173–187.

Andrews, D. A., & Dowden, C. (2006). Risk principle of case classification in correctional treatment. *International Journal of Offender Therapy and Comparative Criminology, 50*(1), 88–100.

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*(3), 369–404.

Austin, J. (2006). How much risk can we take—The misuse of risk assessment in corrections. *Federal Probation, 70*, 58–63.

Austin, J. (2009). The limits of prison based treatment. *Victims and Offenders, 4*, 311–320.

Austin, J., Coleman, D., Peyton, J., & Johnson, K. D. (2003). *Reliability and validity study of the LSI-R risk assessment instrument*. Washington, DC: Institute on Crime, Justice, and Corrections at The George Washington University.

Baird, C. (2009). *A question of evidence: A critique of risk assessment models used in the justice system*. Madison, WI: National Council on Crime and Delinquency.

Ball, J. C., Shaffer, J. W., & Nurco, D. N. (1983). The day-to-day criminality of heroin addicts in Baltimore: A study in the continuity of offense rates. *Drug and Alcohol Dependence, 12*, 119–142.

Bennett, T., Holloway, K., & Farrington, D. (2008). The statistical association between drug misuse and crime: A meta-analysis. *Aggression and Violent Behavior, 13*(2), 107–118.

Bourgon, G., & Armstrong, B. (2005). Transferring the principles of effective treatment into a "real world" prison setting. *Criminal Justice and Behavior, 32*(1), 3–25.

Dowden, C., & Andrews, D. A. (1999a). What works for female offenders: A meta-analytic review. *Crime and Delinquency, 45*, 438–451.

Dowden, C., & Andrews, D. A. (1999b). What works in young offender treatment: A meta-analysis. *Forum on Corrections Research, 45*, 438–452.

Dowden, C., & Andrews, D. A. (2000). Effective correctional treatment and violent reoffending: A meta-analysis. *Canadian Journal of Criminology, 42*, 449–467.

Flores, A. W., Travis, L. F., & Latessa, E. J. (2004). *Case classification for juvenile corrections: An assessment of the Youth Level of Service/Case Management Inventory (YLS/CMI), executive summary* (98-JB-VX-0108). Washington, D.C.: U.S. Department of Justice.

Gendreau, P., Goggin, C., & Smith, P. (1999). The forgotten issue in effective correctional treatment: Program implementation. *International Journal of Offender Therapy and Comparative Criminology, 43*(3), 180–187.

Gendreau, P., Little, T., & Goggin, C. (1996). A meta-analysis of the predictors of adult offender recidivism: What works! *Criminology, 34*(4), 575–607.

Gottfredson, S. D., & Moriarty, L. J. (2006). Statistical risk assessment: Old problems and new applications. *Crime & Delinquency, 52*(1), 178–200.

Gottfredson, M. R., & Gottfredson, D. M. (1987). Decision making in criminal justice (Vol. 3). New York, NY: Springer.

Huebner, B. M., & Berg, M. T. (2011). Examining the sources of variation in risk for recidivism. *Justice Quarterly, 28*(1), 146–173.

Landenberger, N. A., & Lipsey, M. W. (2005). The positive effects of cognitive-behavioral programs for offenders: A meta-analysis of factors associated with effective treatment. *Journal of Experimental Criminology, 1*, 451–476.

Langan, P. A., & Levin, D. J. (2002). *Recidivism of prisoners released in 1994*. Washington, DC: Bureau of Justice Statistics.

Lipsey, M. W., & Cullen, F. T. (2007). The effectiveness of correctional rehabilitation: A review of systematic reviews. *Annual Review of Law and Social Science, 3*, 297–320.

Lipsey, M. W., Landenberger, N. A. & Wilson, S. J. (2007). Effects of cognitive-behavioral programs for criminal offenders. *Campbell Systematic Reviews*. Retrieved from http://campbell-collaboration.org/lib/project/29/.

Lowenkamp, C. T., Latessa, E. J., & Smith, P. (2006). Does correctional program quality really matter? The impact of adhering to the principles of effective intervention. *Criminology and Public Policy, 5*(3), 575–594.

Lurigio, A., Cho, Y., Swartz, J., Graf, I., & Pickup, L. (2003). Standardized assessment of substance-related, other psychiatric, and comorbid disorders among probationers. *International Journal of Offender Therapy and Comparative Criminology, 47*, 630–652.

Makarios, M., Steiner, B., & Travis, L. F. (2010). Examining the predictors of recidivism among men and women released from prison in Ohio. *Criminal Justice and Behavior, 37*(12), 1377–1391.

Mitchell, O., Wilson, D. B., & MacKenzie, D. L. (2007). Does incarceration-based drug treatment reduce recidivism? A meta-analytic synthesis of the research. *Journal of Experimental Criminology, 3*(4), 353–375.

Mumola, C. J., & Bonczar, T. P. (1998). *Substance abuse and treatment of adults on probation, 1995*. Washington, DC: Bureau of Justice Statistics.

Nurco, D. N., Hanlon, T. E., & Kinlock, T. W. (1991). Recent research on the relationship between illicit drug use and crime. *Behavioral Sciences & the Law, 9*(3), 221–242.

Nurco, D. N., Hanlon, T. E., Kinlock, T. W., & Slaght, E. (1984) Variations in criminal patterns among narcotic addicts in Baltimore and New York City, 1983–1984. *Friends Medical Science Research Center*.

Peters, R. H., & Bekman, N. M. (2007). Treatment and reentry approaches for offenders with co-occurring disorders. In R. B. Greifinger, J. Bick, & J. Goldenson (Eds.), *Public health behind bars: From prisons to communities* (pp. 368–384). New York: Springer.

Pew Center on the States. (2011). *State of recidivism: The revolving door of America's prisons*. Washington, DC: The Pew Charitable Trusts.

Polaschek, D. L. (2011). Many sizes fit all: A preliminary framework for conceptualizing the development and provision of cognitive-behavioral rehabilitation programs for offenders. *Aggression and Violent Behavior, 16*, 20–35.

Staton-Tindall, M., Havens, J. R., Oser, C. B., & Burnett, M. C. (2011). Substance use prevalence in criminal justice settings. In C. Leukefeld, T. P. Gullota, & J. Gregrich (Eds.), *Handbook of evidence-based substance abuse treatment in criminal justice settings* (pp. 81–101). New York, NY: Springer Science + Business Media.

Steadman, H. J., Osher, F. C., Robbins, P. C., Case, B., & Samuels, S. (2009). Prevalence of serious mental illness among jail inmates. *Psychiatric Services, 60*(6), 761–765.

Taxman, F. S. (2006). Assessment with a flair: Offender accountability in supervision plans. *Federal Probation, 70*(2), 2–7.

Taxman, F. S., Perdoni, M. L., & Harrison, L. D. (2007). Drug treatment services for adult offenders: The state of the state. *Journal of Substance Abuse Treatment, 32*(3), 239–254.

Tucker, J. A., & Roth, D. L. (2006). Extending the evidence hierarchy to enhance evidence-based practice for substance use disorders. *Addiction, 101*, 918–932.

Wexler, D. (1993). Therapeutic jurisprudence and the criminal courts. *William & Mary Law Review, 35*(1), 279–299.

Wexler, D. (2000). Therapeutic jurisprudence: An overview. *Thomas M. Cooley Law Review, 17*, 125–135.