Published in final edited form as:
Crime Delinq. 2006 ; 52(1): 28–51.

Risk, Need, And Responsivity (RNR): It *All* Depends

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Abstract

Target populations have always been a thorny issue for correctional programs, primarily in response to the question "what works for whom?" In this experiment of seamless treatment for probationers in two sites, offenders were randomly assigned to the seamless model (drug treatment incorporated into probation supervision) or traditional referral model to services in the community. The experiment blocked on risk level, using a version of the Wisconsin Risk Tool, to measure the differential effects on rearrest and substance abuse. The seamless system model improved treatment participation with greater gains for the high-risk offenders in both sites. Yet, no main effects were observed on drug use or rearrest, although effect sizes illustrate that small effects can be observed for the high-risk offenders and the direction of the effect size demonstrates negative effects for moderate-risk offenders in one of the sites. Part of the failure to observe main effects may be due to instrumentation and measurement problems, namely that many of the substance abusers in the experiment had low severity substance abuse problems and the majority of the offenders were marijuana users which has a weaker crime-drug linkage. Study findings illustrate the importance of theoretically driven and dynamic risk and need measures. The focus on sound dynamic factors may assist with identifying the appropriate target populations for correctional interventions.

Keywords

substance abusers; risk assessment; probation; marijuana users; responsivity

A cornerstone of the "what works in corrections" literature is that high risk offenders are better suited for more intensive, structured interventions. Andrews and Bonta (1998) premiered the concept in the *Psychology of Criminal Conduct*, although researchers have been developing the concept for nearly 50 years. Researchers and program evaluators have since suggested that correctional agencies would be better suited to identify high risk offenders and place those offenders in appropriate services, and that the services themselves need to be multi-dimensional to affect the likelihood of desistence. This is essentially the risk-need-responsivity (RNR) concept where the risk and needs of the offender should drive the selection of an appropriate program that can address the criminogenic factors. The RNR grew out of the treatment classification literature that was developed in the 1960s and 1970s by Lee Sechrest, Ted Palmer, and others. RNR also follows a long tradition in the service research literature where matching was introduced to suggest that offenders (or addicts or those with mental health disorders, depending on the literature) should be linked to appropriate services based on the individual's psychological and social needs.

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Using a services research approach to examine the efficacy of the RNR model requires consideration of how the different components of the model are achieved given individual characteristics of offenders, organizational characteristics of correctional and service agencies, and tools available to measure key components such as risk and need. Looking at all of these components requires consideration of the correctional and treatment processes, and how the services are delivered. Farabee and his colleagues (1999) and Taxman and Bouffard (2000) have identified key areas where correctional treatment has faltered, and these have adversely affected offender outcomes. Three of the key areas are the failure to use sound screening and assessment processes to identify offenders in need of the target population, and to offer clinical programming designed to address criminogenic factors. This article is devoted to examining some of the issues inherent in the RNR concept using an experimental study to test the efficacy of this approach for drug-involved offenders. The study findings illustrate the complexity of the RNR model where the service delivery model may have differential outcomes, but equally important is the selection of appropriate target populations using appropriate measures that identify criminogenic need. In the first section, we will review the history of developing risk and need factors in the criminal justice system, with a discussion of the development of measurement of the static and dynamic risk factors. The next section presents the results from an experiment that examines the RNR principle, and discusses some of the design and measurement issues impacting the outcome from this experiment. Finally, we will discuss some of the issues related to advancing the RNR concept in practice.

Development of Risk and Need Tools

Beginning with the desire to assess the differences between those that were likely to be successful on parole and those that were not, a number of researchers in the 1920s and 1930s identified factors that could be considered risk factors—namely prior arrests and/or incarceration, nature of offense, age, employment record, disciplinary actions in prison, and intelligence levels (see discussion in Glaser, 1998 about the history associated with defining risk factors). The early work focused on parole and for the most part was couched in terms of developing a tool to assist the Parole Board (or release authorities) in the identification of good candidates to return to the community. This work established a precedent regarding the conceptualization and measurement of risk variables with an emphasis on administrative data that tended to describe key events (e.g. arrests, convictions, incarceration, and graduation). The tendency was to measure these events in terms of categorical definitions (e.g. dichotomous, intervals). Risk was defined as historical factors of the offender's involvement in a criminal lifestyle based on the age of first arrest, number of prior arrests, number of incarcerations, and so on. The approach relied upon administrative data that did not involve any behavioral patterns that may impact criminal conduct.

Minor advancements occurred over the next 50 years in the development of risk tools with continuing reliance on data maintained in official records. Attention was generally given to measurement of the severity of the offense, particularly for the purpose of developing sentencing guidelines, which relied on criminal history to consider the type and amount of punishment to dispense. The ranking of the seriousness of the offense was considered a critical factor in determining the sentence, and mitigating and aggravating factors that affected the commission of the crime were also built into the assessment of risk. The consideration of mitigating and aggravating factors is akin to measuring offender behavior but the emphasis is on the commission of the crime instead of the lifestyle, orientation, and psycho-social functioning that may predispose an individual to be involved in criminal conduct.

The next major advancement occurred with the development of the Wisconsin Risk and Needs instrument for probation and parole agencies in the early 1980s (van Voorhis & Brown, 1996). This tool is to guide the supervision of offenders in the community. The Wisconsin tool

altered the focus of risk factors from a prediction of likelihood of success to a prediction of the need for control in the community. The tool was developed for classification purposes (instead of release decisions) specifically to assist the supervision agency to systematically assign offenders to different levels of services for the purpose of achieving the desired goal. The risk factors included in the Wisconsin tool followed the tradition of administrative type data regarding historical, and therefore, static factors—prior arrests, prior incarcerations, prior revocations, educational attainment, and so on. The tool also introduced some "dynamic factors" such as mental health, substance abuse, attitude and orientation, family functioning, criminal peers, employment, and other areas associated with the psycho-social functioning of the offender. In general, most of the variables were treated as categorical indicating lifetime occurance of the event.

The mix of risk and needs in one instrument illustrated how the "past influenced the future," and then how needs could be incorporated into the consideration of risk. Risk essentially represents the past; the assumption is how heavily the past will weigh on the ability of an offender to engage in prosocial activities. Need refers to the degree to which deficits exist, particularly those that affecting propelling the offender to continue criminal behavior. Essentially this refers to the degree to which daily functioning is impaired and involved in criminal (anti-social) behavior. Another way of considering needs is the degree to which the offender has protective factors that can ward against further criminal behavior.

The advancements emanating from the "Wisconsin" tool were the recognition that static risk factors are unlikely used to identify needs where the offender may be more amendable to change. The higher the risk and need level, the greater the expectation that resources should be allocated for such offenders. Resources can range from treatment to oversight and monitoring for the purpose of exercising *control* over the offender to reduce potential harm to the community. Services were considered part of the control strategy but more as a mean to mediate or moderate risk factors.

Since the tool was originally designed to help supervision staff incorporate programs and services to address the dynamic need factors, the tool was frequently described as a resource allocation model where high risk offenders were considered to be in need of more supervision (intensive supervision concept) than others (O'Leary & Clear, 1985). The resource allocation model quickly appeared to mirror a management model in prison where the security and custody goals overtook the goal of addressing risk factors that drive criminal behavior. (For a discussion of management models refer to Sechrest, 1988.) The Wisconsin model is both a management and classification tool which is essentially the predecessor to the RNR.

During the similar time frame that parole release decision and management tools were being developed, efforts were underway to develop classification schemes for treatment programming for offenders. Different taxonomies were created to classify offenders into groups based on the psycho-social factors that influenced criminal behavior. Examples are Warren's six prong offender classification systems: prior-problem orientation, reference group typologies, behavioral classifications, psychiatry oriented, social perception and interaction, and empirical statistical; Quay's classification scheme for juveniles of undersocialized aggression, socialized aggression, attention deficit (immature), and anxiety-withdrawal-dysphasia; Quay's adult scheme of aggressive psychopath, manipulative, situational, inadequate-dependent, and neurotic-anxious; and, Megargee's Minnesota Multiphasic Personality Inventory (MMPI) with ten categories of well-adjusted, well-adjusted underachievers, depressed, extroverted psychopath, submissive anxious, hedonistic manipulator, introverted impulsive, immature hostile, suspicious aggressive, and unstable disturbed. Little headway occurred in the use of these schemes due to the tendency to focus on

management issues in correctional settings such as security level, custody level, or other resource allocation issues.

Sechrest (1988), in reviewing the state of the treatment classification schemes that incorporate concepts of responsivity (matching offender needs to treatment programs), comments that:

> Thus the range of variables employed in classification efforts directed at treatment has been generally narrow: certain personality characteristics, psychopathology, aggressive behaviors, educational level, vocational skills, and a few others. Even the personality characteristics that have been incorporated into treatment have been few and narrow in range: anxiety, impulsivity, social sensitivity, and self-esteem. Perhaps the range of variables tapped in classifying offenders for treatment is only characteristic of the field of intervention more generally. There is not much evidence of better classification for treatment in other areas of human malfunctioning. Still, one wonders why such personality variables as the needs for achievement, power and affiliation; locus of control; stimulus seeking; and the like—all found interesting and useful in other contexts—have not been considered in any evident way in classifying offenders for treatment. One wonders why such important variables as availability of family and other social support, stability of home neighborhood, likely availability of postrelease economic support, or so on are seeming so little reflected in classification systems." (p. 304)

The responsivity concept did not gain much attention during the last several decades mainly as a result of the way in which risk and need factors were conceptualized. As noted by Sechrest, the efforts by Warren, Quay and others to develop a scheme for classifying offenders for treatment programs did not include cross-referencing how the different programs could address the underlying issues. And, during this period of time, most of the treatment programs that evolved tended to be focused on a single problem area such as substance abuse or sexual deviance

An Experiment of RNR Concepts in Probation Setting

The RNR tenet requires that correctional agencies use a valid risk tool, have the ability to identify dynamic factors to address in treatment, and have suitable treatment programs that include clinical and control programmatic components. Over the last two decades more attention has been given to the substance abuse disorders and treatment for said disorders. Both the United States Department of Justice and the National Institute on Drug Abuse have devoted nearly two decades to examine different interventions for drug offenders that include drug courts, diversion programs, residential treatment programs in and out of prison, specialized program programs, and so on (National Institute on Drug Abuse, 1999; National Institute of Justice, 2000). Meta-analysts have generally found that some interventions alter the behavior of the offenders such as those that use cognitive behavior or therapeutic communities therapy for at least 90 days, use drug testing, offer a continuum of care, use sanctions to address compliance issues, and target higher risk offenders (Mackenzie, 2000; Sherman et al., 1987). The appropriate target population for correctional and treatment programs has not been empirically tested, with attention generally given to the politically salable target populations.

As part of a national demonstration project funded by the Office of National Drug Control Policy, an experiment was conducted testing hypotheses about the RNR principle for drug offenders (Taxman, Thanner, & Byrne, 2003; Taxman, Thanner, & Weisburd, 2005; Weisburd & Taxman, 2000). ONDCP provided funds for drug treatment and drug testing services in 12 jurisdictions in the Washington-Baltimore corridor; only three of the jurisdictions had significant fidelity in the implementation of the protocol to be included in an experiment. Funding from the National Institute on Drug Abuse (NIDA) was provided to conduct an

experiment in two jurisdictions that agreed to a blocked random assignment procedure to examine hypotheses about the RNR principle where the treatment included a seamless system of care for drug involved offenders.

The seamless system model involved providing intensive drug treatment services to hard-core offenders (e.g. offenders that had a minimum of two prior arrests), to drug test offenders on a routine basis, to use graduated sanctions for drug involved offenders, and to ensure that offenders are involved in treatment for at least six months. (Refer to Weisburd & Taxman, 2000 or Taxman, Soule, & Gelb, 1999 for a discussion of the model). Each agency used a version of the Wisconsin Risk/Need Instrument to identify the risk level of the offender with offenders placed in two categories: low/medium low and medium high/high risk. All offenders had court orders for drug treament services. The experiment also used a clinician to ensure that the offenders met the DSM-IV criteria for drug involved (abuse/dependency). The Addiction Severity Index (ASI) was used to determine the severity of the drug problem with scores ranging from 0 to .10. Data collection included official records and interviews with offenders approximately 12 months post randomization regarding substance abuse, rearrest, and treatment participation.

The study involved randomly assigning offenders to two groups: treatment (seamless system) and control (traditional referral to treatment in the community. Offenders were blocked on risk level (based on the Wisconsin instrument) where half of the offenders were classified as high-risk (HR) and half were considered moderate-risk (MR). As shown in Table 1, as expected the randomization procedure produced groups that are very similar on baseline social, employment, and criminal background characteristics. Indeed, we find no statistically significant differences between the treatment and control groups on the traits we examined.

Treatment Participation

As expected, there are significant differences between the two randomized groups with respect to treatment participation (see Table 2). While the participation rate in substance abuse treatment services by the treatment group was 94% in Site 1 and 49% in Site 2, it was 32% for the control group in Site 1 and 19% in Site 2. As expected, the seamless model increased the treatment participation rate over the traditional referral model.

Offenders in the seamless system in both sites were able to access treatment sooner than those in the control group (in Site 1 for example, treatment offenders entered treatment within two months of randomization while it took control offenders nearly four months). And, in Site 1, treatment offenders remained in treatment for nearly six months, while control offenders left treatment after only about one month (a significant difference at the .01 level). Furthermore, 70% of the treatment offenders in Site 1 completed treatment successfully as compared to only 30% of the control offenders ($p < .01$). Findings in Site 2 were not as impressive. While treatment offenders in site 2 were able to access treatment sooner, they did not stay in treatment as long as the control group but they did complete treatment at a higher rate than the control group. Treatment in Site 1 was provided on-site at the probation and parole office (and offered jointly by the treatment counselor and the supervision agent), and this could account for the exceptionally high participation rates in this jurisdiction. This contrasts to the significantly lower participation rates in Site 2 where treatment was provided at an off-site facility. Participation in the seamless system where treatment is provided on-site appears to improve offender outcomes– an important service-related finding.

As shown in Table 3 above, the analysis at the subgroup level, shows that in general, offenders assessed as moderate-risk had better treatment participation rates, participated in treatment at higher rates, stayed in treatment longer in Site 1 than the high-risk, But, the high-risk treatment group compared to the control demonstrated marked, and typically statistically significant,

treatment outcomes. In both sites, the high-risk treatment groups had significantly higher treatment completion rates than the high-risk control groups. Impacts on high-risk offender treatment participation and completion rates are important to note in light of the increased potential for harm to the public by high-risk offenders due to their substance abusing behaviors (as presented below; see Thanner & Taxman, 2003).

Drug Use Outcomes

Table 4 illustrates that offenders in both sites continued to use drugs during treatment, and there was no statistically significant differences between those in the seamless system or the control group. The only statistically significant difference was observed in Site 1 where there was reduced alcohol usage compared to the control group.

At the subgroup level, by risk (see Table 5), several statistically significant findings emerged. In Site 2, the high-risk treatment group offenders, as compared to those in the high-risk control group, reported significantly lower rates of alcohol use (43% v. 69%, $p \leq .05$). Upon examining official drug test results conducted by the probation and parole departments at the two sites (table not shown), only two significant findings were found. In Site 2, within the high-risk group, treatment offenders were significantly less likely than control offenders to have a positive urine sample (58% v. 78%, $p \leq .10$). Conversely, in the moderate-risk group, treatment offenders had a significantly higher positive sample rate compared to the control group (72% v. 46%, $p \leq .10$).

While it is not apparent that participation in the seamless system strongly impacts abstinence from drug use, it may in fact affect frequency and intensity of use (results to be reviewed in a later analysis).

Recidivism—Across the two sites (see Table 6), no statistically significant differences were found within each site between the respective treatment and control groups regarding rearrest rates (either for a new crime or violation of probation, VOP). In Site 2 the control group tended to remain arrest free longer than did the treatment group. (Note: the experimental design allows the results to be pooled across the two sites. We examined the pooled model which had terms for jurisdiction, risk and group assignment. The interaction terms were tested but found not to be significant and we therefore excluded them from the analysis, as per Fleiss (1982). Jurisdiction and risk were found to be statistically significant in the pooled models.)

As shown in Table 7, at the subgroup level, in Site 1, the high-risk treatment group had a significantly fewer number of overall arrests (.93 to 1.64, $p \leq .05$) in comparison to the high-risk control group. In Site 2, no significant differences were found between the high-risk treatment and control groups, or the moderate-risk groups.

Looking at standardized effect sizes, we can gain an appreciation for the magnitude of the effects found in our study. Effect size is used as a simple way of quantifying (standardizing) the outcome differences between two groups, the treatment group and the control group for example, and is recognized as a measure of observed effectiveness of the intervention. This is particularly important in this study because statistical significance tests are sensitive to sample sizes and have limited utility. Even though Cohen (1988) defines a small effect size to be around .20, a moderate effect size around .50, and a strong effect size around .80, it is important to note that in the criminal justice literature, smaller effect size thresholds are commonly observed (see Phillip, Korinke, Aos, Lieber, 1999).

For example, effect size differences between the treatment and control groups shown in Table 7 are different for high-risk and moderate-risk groups in Site 1. While effect size differences remain positive (treatment group shows improvements over the control group) for the high-

risk group across all arrest variables tested, it appears as though participation in the seamless system yields negative outcomes for the moderate-risk group, which is the hypothesis of the RNR principle. In comparison with the moderate-risk control group, those in the moderate-risk treatment group were arrested at a higher rate, had a greater number of overall arrests, were more likely to be arrested for new crimes, and were arrested sooner.

In comparison, offenders in the high-risk treatment group in Site 1, as compared to the high-risk control group, experienced fewer overall arrests within one year of randomization (54% to 72%), fewer VOPs (25% to 36%), and fewer arrests for new crimes (29% to 36%); again effect sizes are shown to illustrate the magnitude of the difference. The high-risk treatment group remained arrest-free overall an average of 57 days longer (262 days compared to 205 days), received a first VOP an average of 42 days later (327 days compared to 285 days), and remained arrest-free an average of 15 days longer for a new crime (302 days compared to 287 days). In addition, we find small to moderate effects when measuring number of arrests (d = .59), percent arrested (d = .37), percent with a VOP (d = .24), and length of time until first arrest of any type (d = .44), and until a VOP (d = .40). In each case, the treatment group improved relative to the control group.

In Site 2, however, these trends are reversed, with results for high-risk offenders yielding negative effect sizes across all outcomes as compared to moderate-risk offenders who demonstrated only three negative effect sizes. Thus indicating that high-risk offenders did not demonstrate improved recidivism outcomes compared to the moderate-risk counterparts in this version of the seamless system in site 2.

Understanding the RNR principle in this Experiment

As described previously, the seamless system experiment blocked on a recidivism risk factor (high-risk/moderate-risk) using the Wisconsin Risk/Need Tool. This tool, however, is composed of predominantly static (historical) variables, which mask important dynamic factors such as severity of current drug use and anti-social values. The tool did not consider the type of drug of choice for the offenders. That is, the program placement decision uses the assumption that the use of any illicit drug contributes to the criminal behavior (excluding possession) and that treatment for all types of drugs will result in equal benefits. Yet, the drug-crime literature shows more of a causal link between heroin and cocaine and their relationship to criminal behavior (e.g. property crimes, violence, other drug trafficking) (MacCoun, Kilmer, & Reuter, 2003). We were interested in considering these two dimensions within our experiment to determine whether the use of the static risk factors in the Wisconsin Tool and the use of substance abuse as a definition of drug-involvement are adequate to assess the efficacy of the RNR principle, and the impact of these variables on the findings reported above.

The assessment of need in the experiment was carried out by a trained treatment clinician using the drug composite score of the Addiction Severity Index (ASI), a well respected tool that calculates severity of use during a 30 day window for all substances ranging from marijuana to cocaine. Treatment need, therefore, was assessed by the clinician based on overall drug use patterns as opposed to separating out those offenders who were using hard-core substances (heroin and cocaine). Offenders who were assessed as in need of treatment were placed in the seamless model that consisted of a cognitive behavioral intervention geared toward hard-core drug users. Since all of these offenders had a history of drug use and were involved in the criminal justice system (with court orders for treatment), the clinical assessor was inclined to view all offenders as having a special need. As shown in Table 1 above, the average ASI score for offenders in site 1 was .04 (high-risk was .035, moderate-risk was .055), and in site 2 the average ASI score was .025 (high-risk was .02, moderate-risk was .03). Although there are no norms for the ASI, these are generally considered low to moderate severity scores, indicating that offenders would benefit from less intensive treatment needs (McLellan, Cacciola, Kushner,

Peters, Smith, & Pettinati, 1992). In site 1, 27% of the offenders reported cocaine or heroin use while in site 2, 4% reported cocaine and heroin use. The majority of offenders reported alcohol or marijuana as their primary drug of choice.

Recognizing that our measurement of key instrumental variables in our experiment may not have been theoretically sound based on a re-assessment of the drug-crime nexus literature, we did a series of subanalyses to examine the impact of different measures of substance abuse. We separated our sample into two levels of drug severity—the first as to whether the primary drug of choice was heroin/cocaine or not and the second was the severity of the current drug use—by risk levels. We first examined rearrest rates by the blocked risk factor (high/moderate based on the Wisconsin Risk screener) and overall drug use severity over .04 (the mean ASI score). We then examined these findings in comparison to drug severity as measured by heroin/cocaine use in the past 30 days (a hard-core drug using group).

Table 8 presents the effect size for the different subgroups for the dependent variable rearrest rate by risk level. (See discussion above regarding the value of effect sizes, particularly when the sample sizes are small.) The seamless intervention—focused on high-risk, hard-core substance abusing offenders—had a small treatment effect for the high-risk group ($d = .20$ and $d = .22$) that was in the correct direction where the high-risk group—offenders with more serious substance abuse as noted by an ASI score greater than .04, responded to the seamless intervention in the manner that was theorized. For the moderate-risk group, a group inappropriately placed in the intervention, a negative effect was found ($d = -.18$ for the drug-use group as a whole; and $d = -.46$ for the risk group). As hypothesized, the seamless intervention for the moderate-risk group did not address the criminogenic factors. These findings suggest that more attention in the RNR model should be given to considering the nature of the criminogenic need (in this case, the severity of substance abuse and the type of drug of choice) and the appropriateness of said interventions.

Discussion

The efforts to develop solid risk tools and treatment classification schemes have been affected by the swinging pendulum of criminal justice policy and practice over the last half a century. Much of the early efforts were undertaken to improve practice by using science to develop new tools to classify and then assign offenders to services that will address criminogenic risk that affect the involvement in criminal behavior, the basic RNR principle. Meta-analysis findings have contributed to an understanding of the program components that are more likely to lead to improved offender outcomes such as programs that involve a continuum of care (e.g., more than two stages or program components), those that have at least 90 days of treatment programming, those that select offenders that are appropriate for the services, and those that use cognitive behavioral or therapeutic community strategies (see Mackenzie, 2000; Sherman et al., 1997). With the exception of the framework provided by Andrews and Bonta (1998), little advancements have occurred in measuring criminogenic risk and need factors for the purpose of identifying appropriate program or service placements.

The issue of appropriate target population has dogged the field for the last 30 years. Programs are only going to be successful if the appropriate offenders are placed in them. The seamless system model was developed to provide intensive treatment services for offenders dependent on illicit substances. The experiment then provided an opportunity to test some aspects of the RNR principle, and to shed light on the issues related to target populations. That is, by blocking on risk level, we were testing whether the intervention could achieve equal or differential results for different types of offenders as determined by a risk screening tool. The risk tool used is a popular and prevalent tool in the field. And, by using a clinician to assess substance abuse, we believed that we had adequately measured the two key factors in the formula, namely risk and

substance abuse. The intervention was designed to be a comprehensive package that addressed the need for intensive treatment services and compliance management. In many ways, this intervention mirrors the components espoused by the "what works" literature with treatment, testing, and sanctions (Sherman, et al., 1997, Mackenzie, 2000; Taxman, 2002; Taxman, Thanner, & Weisburd, 2005).

The experimental findings were as expected regarding treatment participation—those assigned to the seamless system treatment intervention were more likely to attend treatment, to stay in treatment services for longer, and to graduate from treatment in both sites. The findings did not achieve the hypothesized effect in terms of continuing drug use during the intervention and rearrest—no main effect differences were observed. While statistically significant findings were not observed for the subgroups determined by risk, the effect sizes support the hypothesized effect, although a small effect, for the high-risk group in Site 1. A re-examination of the key measures of substance abuse need—redefining the variable based on severity of the use or the drug of choice as either cocaine or heroin—found that the effect sizes were in the expected direction. That is, high-risk offenders were found to have lower recidivism than offenders with other drug using patterns or less serious offenders. While the clinical assessment of substance abuse should have sufficed to define the target population, it appears that the type of drug use and severity of current use might actually be better than the traditional measures of drug use.

Historically risk and need were defined in terms of the existence of a condition, with some attention to the degree of involvement. Finding from this study suggest that more attention should be given to the conceptualization and measurement of criminogenic risk and need variables. Since offender risk is generally measured by the presence of certain involvement (e.g number of prior arrests, convictions, incarcerations, probation violations, flight, and so on), this counting may not indicate the persistence of the offending behavior. And, in today's environment, the degree of involvement in the criminal justice system may only be camflouged by system process variables such as the explosion of arrests for particular behavior (namely drug related offenses), patterns of policing in certain key geographical areas, and increasing rates of conditions of release for probationers and paroles that have contributed to increasing technical violation rates (Gabbidon & Greene, 2005). That is, risk may be more a reflection of the visibility of a given offender or the degree of criminal justice activity in a given community than the persistence and intensity of the behavior, the potential harm, or the degree of culpability. The static risk measure does little to assist us in understanding the persistence of the offending behavior.

Another common practice in measuring risk is the current charge or conviction offense as the main criteria for program eligibility. The legal charge is often believed to be a proxy for both the severity of the offense and the severity of the offender (with the assumption that offenders with more risky behaviors will engage in crimes that result in more serious charges). A recent review of convictions by Sevigny and Caulkins (2004) in their analysis of drug offenders in state prison systems found that the conviction charge did not adequately describe the role of the offender in the commission of the crime. State prisoners were found to have conviction charges consisting of 26% for simple possession, 16% possession with intent to distribute, 55% trafficking, and 3% for other drug charges. The roles in the commission of the crime were distributed differently including importer (3.7%), manufacturer/grower (3.5%), money launderer (1.3%), wholesale dealer (10.3), bodyguard/debt collector (5.2%), retail seller (30.7%), peripheral role (2%), user/possessor of over ten units (12%), user/possessor under ten units (18%), and other functional role (13.7%)—a different distribution than the conviction offense. Additionally, the researchers found that 20% of the state drug offenders reported involvement with firearms and 24% of the state drug offenders had prior convictions for violent offenses. Contrasting the conviction charge to the role in the commission of a crime or the

severity of the offending behavior, the researchers reported that charge is often rather misleading in terms of the actual nature of the offender's behavior. Criminal justice process variables such as prosecutorial discretion in charging decisions, plea bargaining, and revocation practices affect the validity of the charge/conviction as a measure of risk.

In our experiment, we did not have independent measures of risk to measure the validity of the risk tool. While the Wisconsin tool did separate offenders based on high-risk and moderate-risk for future criminal behavior, the measure could not detect the persistence or severity of the behavior or the role in the commission of the crime—all dynamic risk factors. An emphasis on measuring the persistence of the behavior, which is similar to clinical judgment regarding the impairment of daily functioning, might provide more validity to the risk and assist in further differentiating offenders. Instead of counting involvement, the focus would be more on density of criminal behavior. For example, in a risk screening tool that we developed for the Maryland Division of Parole and Probation, one of the key variables was the number of arrests within a two year window. This variable captures both the presence of an event but also the commitment of the offender to a criminal career (Taxman, Shepherdson, & Byrne, 2004). Other dynamic criminogenic risk factors that might be pursued are marital status/stable family relationships, chronological age, attitudes and values, and nature of peer associations (Laub and Sampson, 2004).

This experiment has illustrated that the measurement of needs is critically important in applying the RNR principle, and that attention should be given to different factors that are more closely aligned to the criminogenic nature of the behavior. While substance use is illicit behavior (in the United States at least), some aspects of substance use may affect criminal behavior and others may not (except the tautology that possession or use is a violation of the law). The research literature demonstrates the linkage between heroin and cocaine use (see MacCoun, Kilmer, & Reuter, 2003 for a discussion of the literature), and other findings indicate that offenders that indulge in using these substances and have high risk scores are more responsive to the seamless intervention. Yet many of the offenders in our sample used marijuana or were not current users but had histories of alcohol and marijuana use. The seamless system intervention did not appear to work for these individuals.

Our findings suggest some instrumentation errors in the definition of needs to reflect the underlying factors that affect criminal behavior. Onset describes the beginning of a pattern of behavior whereas persistence indicates the degree to which daily functioning is affected by the behavior. Many needs that have been identified for offenders such as housing, mental health, spirituality, attitudes, values, and so on may or may not be related to criminal conduct. Yet, the assessment of the presence of these needs should be as to whether the condition may create persistent or recurrent social or interpersonal problems that propel the offender to a criminal conduct. While providing services for offenders in areas that may improve their overall life circumstances (e.g., providing education, providing clothing) is valid on humanitarian or ethical reasons, the expectation that addressing these needs will reduce criminal behavior is not scientifically sound since it the literature has not established a statistical relationship between these variables and the criterion of interest (rearrest or recidivism).

The study findings indicate that the measurement of risk and need factors might benefit from a life course perspective regarding issues of onset and persistence. The traditional discussion has been about individual characteristics or traits that are static (past) and dynamic (variable, temporal) with an attention to those factors have been found through research to be linked to criminogenic behaviors. The implication from this study is that more attention may be needed to consider specific characteristics of dynamic risk and need factors. Table 9 illustrates how risk and need factors that might be defined as dynamic. And, the utility of an individual factor may actually depend on whether that factor is in fact a hindrance for an individual or an attribute

(protective or resilient). As such it probably makes sense to review the existing literature on key factors that historically have been shown to be known risk and need factors as a means to illustrate the complexity of the issues.

Much of the meta-analysis findings have been devoted to identifying programs or programmatic components that improve offender outcomes (Landenberger & Lipsey, 2004; Lowenkamp & Latessa, 2005). This approach, while valuable, fails to recognize that a key component is the target population—the program components must be designed to address the need and risk factors that offenders present. This study has identified that the traditional classification of substance abuser may be too generic and that there are differences based on the drug of choice and the severity of impact on daily functioning. We have contributed to a slowly growing literature that begins to tease out more dynamic measures that can be used by program developers to develop theoretically sound programs. A continuous need exists for the research community to devote studies to both understanding the characteristics of dynamic factors and crafting match-making techniques that are feasible to be used by correctional practitioners. This is the challenge in advancing the RNR principle.

Acknowledgements

This article was supported by National Institute on Drug Abuse under grant #R01-DA-10705 and the National Institute of Justice #96CEVX0017. The views expressed are those of the authors and do not reflect the views of any governmental agency.

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Table 1

Self-report Baseline Characteristics by Site, Risk Level, and Randomization

	SITE 1				SITE 2			
	High-Risk		Moderate-Risk		High-Risk		Moderate-Risk	
	TX	Control	TX	Control	TX	Control	TX	Control
Black, %	*87*	*97*	*93*	*97*	*85*	*87*	*81*	*78*
Male, %	*83*	*90*	*80*	*73*	*90*	*93*	*88*	*81*
Married, %	*10*	*7*	*4*	*7*	*13*	*7*	*16*	*8*
Avg. Age, years (SD)	*32 (8)*	*30 (10)*	*33 (10)*	*34 (9)*	*28 (7)*	*27 (8)*	*28 (9)*	*28 (9)*
%Alcohol past 30 days	*53*	*60*	*43*	*60*	*53*	*62*	*66*	*63*
%Drugs past 30 days	*43*	*47*	*50*	*43*	*29*	*35*	*34*	*43*
%Incarcerated past year	**83*	*76*	**70*	*40*	*72*	*80*	*56*	*61*
%Employed	*76*	*57*	*53*	*65*	*69*	*62*	*69*	*80*
Avg Days worked past 30 (SD)	*11 (12)*	*9 (10)*	*11 (11)*	*13 (11)*	*14 (12)*	*13 (12)*	*14 (12)*	*16 (11)*
Avg Number of prior arrests (SD)	*8.8 (8.7)*	*7.3 (5.0)*	*4.9 (3.7)*	*5.3 (4.0)*	*7.5 (6.4)*	*6.4 (6.3)*	*3.7 (2.7)*	*3.8 (3.4)*
Mean ASI Drug Severity Score (SD)	*.04 (.08)*	*.03 (.05)*	*.06 (.08)*	*.05 (.07)*	*.02 (.04)*	*.02 (.04)*	*.04 (.08)*	*.01 (.04)*
Mean ASI Employment Severity Score (SD)	*.76 (.21)*	*.86 (.14)*	*.71 (.30)*	*.72 (.25)*	*.69 (.23)*	*.65 (.30)*	*.56 (.30)*	*.59 (.31)*
N	*30*	*30*	*30*	*30*	*39*	*45*	*32*	*36*

** $p \leq .05$

* $p \leq .10$ (Significance tests within Risk Group)

Table 2

Treatment Outcomes at follow-up by Site and Randomization

	SITE 1		SITE 2	
	Treatment	**Control**	**Treatment**	**Control**
TREATMENT				
Any treatment participation (not AA/NA)	*94*	***32	*49*	***19
Length of time to treatment, days (SD)	*51* (*72*)	***106 (85)	*158* (*119*)	*189* (*108*)
Length of time in treatment, days (SD)	*163* (*141*)	***39 (74)	*156* (*138*)	*196* (*177*)
Completed treatment or in 90 days, %	*70*	***30	*39*	***15
N	*52*	*56*	*49*	*54*

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

Table 3

Treatment Outcomes by Site, Risk, and Randomization

	SITE 1					
	High-Risk			**Moderate-Risk**		
	TX	**Control**	**Sig.**	**TX**	**Control**	**Sig.**
Any treatment participation (not AA/NA)	89	29	.00	100	36	.00
Length of time to treatment, days (SD)	48 (64)	123 (99)	.02	55 (80)	90 (72)	.24
Length of time in treatment, days (SD)	131 (148)	25 (45)	.00	199 (125)	53 (93)	.00
Completed treatment or in 90 days, %	56	21	.01	85	38	.00
N	28	28		25	27	
	SITE 2					
	High-Risk			***Moderate-Risk***		
	TX	***Control***	***Sig.***	***TX***	***Control***	***Sig.***
Any treatment participation (not AA/NA)	50	21	.02	48	16	.02
Length of time to treatment, days (SD)	179 (130)	188 (116)	.88	130 (103)	189 (111)	.35
Length of time in treatment, days (SD)	141 (117)	241 (170)	.14	178 (166)	129 (188)	.64
Completed treatment or in 90 days, %	43	21	.08	33	8	.04
N	28	29		21	24	

Table 4

Drug Use Outcomes at follow-up by Site and Randomization

	SITE 1		SITE 2	
	Treatment	**Control**	**Treatment**	**Control**
DRUG USE				
Self-report use of any drug (not alcohol), %	73	72	51	58
Self-report use of alcohol, %	60*	77	*55*	*70*
Self-report use of cocaine, %	37	40	*18*	*19*
Self-report use of marijuana, %	49	51	*43*	*53*
Self-report multiple drug use, %	39	38	*41*	*57*
N	52	56	*49*	*54*

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

Table 5

Self-Report Use of Drugs in past 12 months by Site, Risk and Randomization

	Moderate-Risk							
	TX	**Control**	**Sig.**	**ES**	**TX**	**Control**	**Sig.**	**ES**
% Self-report use of any drug (not alcohol)	68	72	.48	.08	79	73	.61	−.12
% Self-report use of alcohol	62	76	.28	.30	58	77	.18	.41
%Self-report use of cocaine	40	28	.38	−.25	33	52	.20	.38
%Self-report use of marijuana	44	60	.33	.32	54	41	.38	−.26
%Self-report multiple drug use	38	39	.95	.02	42	52	.23	.20
N	28	28			25	27		
	Moderate-Risk							
	TX	***Control***	***Sig.***	***ES***	***TX***	***Control***	***Sig.***	***ES***
%Self-report use of any drug (not alcohol)	46	59	.37	.26	57	58	.94	.02
%Self-report use of alcohol	43	69	.05	.54	71	71	.97	0
%Self-report use of cocaine	25	24	.94	.02	10	13	.76	.09
%Self-report use of marijuana	36	52	.23	.32	52	54	.91	.04
%Self-report multiple drug use	39	59	.15	.40	43	54	.17	.22
N	28	29			21	24		

Table 6

Recidivism Outcomes at follow-up by Site and Randomization

	SITE 1		SITE 2	
	Treatment	**Control**	**Treatment**	**Control**
RECIDIVISM				
%Any arrest	*55*	*58*	*43*	*36*
Mean number of Arrests (SD)	*.98 (1.18)*	*1.27 (1.30)*	*.71 (1.0)*	*.70 (1.3)*
Days to first arrest (SD)	*248 (132)*	*236 (138)*	*268 (133)*	**302 (105)*
%Violation of Probation (VOP)	*18*	*25*	*12*	*16*
Days to first VOP (SD)	*336 (70)*	*314 (106)*	*335 (86)*	*332 (83)*
%Arrest for new Crime	*37*	*33*	*41*	*33*
Days to first New Crime Arrest (SD)	*278 (134)*	*288 (127)*	*273 (131)*	**308 (103)*
N	*52*	*56*	*68*	*81*

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

Table 7

Arrest Outcomes for 12-month period following baseline by Site, Risk and Randomization

	Moderate-Risk							
	TX	**Control**	**Sig.**	**ES**	**TX**	**Control**	**Sig.**	**ES**
% Any arrest	*54*	*72*	*.17*	*.37*	*57*	*44*	*.39*	*−.25*
Mean number of Arrests (SD)	*.93 (1.05)*	*1.64 (1.35)*	*.04*	*.59*	*1.05 (1.36)*	*.93 (1.17)*	*.74*	*−.09*
Days to first arrest (SD)	*262 (122)*	*205 (138)*	*.11*	*.44*	*230 (143)*	*266 (134)*	*.36*	*−.26*
%Violation of Probation (VOP)	*25*	*36*	*.17*	*.24*	*10*	*15*	*.24*	*.15*
Days to first VOP (SD)	*327 (76)*	*285 (128)*	*.14*	*.40*	*348 (62)*	*343 (68)*	*.78*	*.08*
%Arrest for new Crime	*29*	*36*	*.19*	*.15*	*48*	*30*	*.88*	*−.37*
Days to first New Crime Arrest (SD)	*302 (120)*	*287 (126)*	*.65*	*.12*	*248 (145)*	*289 (130)*	*.29*	*−.30*
N	*27*	*28*			*25*	*28*		
	Moderate-Risk							
	TX	***Control***		***Sig.***	***TX***	***Control***	***Sig.***	***ES***
%Any arrest	*49*	*40*		*.44*	*35*	*31*	*.67*	*−.08*
Mean number of Arrests (SD)	*.95 (1.2)*	*.76 (1.4)*		*.52*	*.42 (.62)*	*.64 (1.3)*	*.38*	*.21*
Days to first arrest (SD)	*255 (138)*	*285 (116)*		*.28*	*282 (127)*	*324 (86)*	*.13*	*−.39*
%Violation of Probation (VOP)	*19*	*18*		*.93*	*3*	*14*	*.15*	*.39*
Days to first VOP (SD)	*316 (108)*	*327 (86)*		*.61*	*360 (30)*	*338 (79)*	*.15*	*.36*
%Arrest for new Crime	*49*	*34*		*.19*	*31*	*31*	*.97*	*0*
Days to first New Crime Arrest (SD)	*255 (138)*	*296 (114)*		*.15*	*295 (121)*	*324 (86)*	*.27*	*−.28*
N	*37*	*45*		*31*	*36*			

Table 8

Rearrest Rates and Effect Sizes for Different Substance Abuse Measures by Randomization

	N	Treatment Group	Control Group	Effect Size
Severity of Drug Use ASI > .04				
High-Risk/Severity, %	49	50	60	.20
Moderate-Risk/Severity, %	48	50	41	−.18
Cocaine or Heroin As Primary Drug of Choice				
High-Risk/Cocaine/Heroin Use, %	17	60	71	.22
Moderate-Risk/Cocaine/Heroin Use%	25	70	47	−.46

Table 9

Risk Needs Conceptual Definitional Matrix

	RISK FACTORS	**NEEDS FACTORS**
NON-CRIMINOGENIC	Historical, non-changing factors that are not independently related to future criminal involvement.	Variable, temporal factors that are not independently related to future criminal involvement.
	Non-criminogenic Static Risk Variables	**Non-criminogenic Dynamic Needs Variables**
	• Having an incarceration history • Having an institutional escape history • History of alcohol problem • History of drug problem • Prior mental health treatment	• Less than high-school education • Unable to maintain licit employment for more than a year • Frequent address changes • Active psychosis • Socially isolated
CRIMINOGENIC	Historical, non-changing factors that are statistically predictive of future criminal involvement	Variable, temporal factors that are statistically predictive of future criminal involvement; factors, that when altered, affect the likelihood of future criminal offending
	Criminogenic Static Risk Variables	**Criminogenic Dynamic Needs Variables**
	• Having multiple arrests • Having an arrest under the age of 16 • Having a prior adult conviction • Ever suspended or expelled from school	• Currently or frequently unemployed or fired • Current financial problems • Criminally involved family member or spouse • Residence in a high-crime neighborhood • Criminally involved friends and associates • Current alcohol problem • Current drug problem for cocaine and heroin • Multiple Arrests during a 2 year window • Poor attitude toward current sentence, authority, convention, and supervision experience
	Criminogenic Dynamic Risk Variables	
	• Multiple arrests in a short period of time • Role in commission of criminal behavior • Criminal orientation • Criminally involved peers or family • Failure to appear for a supervision appointment during current sentence	