The Risk Principle in Action: What Have We Learned From 13,676 Offenders and 97 Correctional Programs?

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Over the recent past there have been several meta-analyses and primary studies that support the importance of the risk principle. Oftentimes these studies, particularly the meta-analyses, are limited in their ability to assess how the actual implementation of the risk principle by correctional agencies affects effectiveness in reducing recidivism. Furthermore, primary studies are typically limited to the assessment of one or two programs, which again limits the types of analyses conducted. This study, using data from two independent studies of 97 correctional programs, investigates how adherence to the risk principle by targeting offenders who are higher risk and varying length of stay and services by level of risk affects program effectiveness in reducing recidivism. Overall, this research indicates that for residential and nonresidential programs, adhering to the risk principle has a strong relationship with a program's ability to reduce recidivism.

Keywords: *risk principle; community corrections; program effectiveness*

The risk principle, which simply states that the level of supervision and treatment should be commensurate with the offender's level of risk, has been

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confirmed by research in corrections for more than a decade. The first mention of the risk principle by Andrews, Bonta, and Hoge (1990) was followed by a number of meta-analyses that confirmed and supported the importance of focusing on offenders who are higher risk (Andrews et al., 1990; Andrews & Dowden, 1999; Dowden & Andrews 1999a, 1999b, 2000; Lipsey & Wilson, 1998; D. B. Wilson, Gottfredson, & Najaka, 2001; S. J. Wilson, Lipsey, & Derzon, 2003). Even though this research is fairly unequivocal, it is limited. Its limitations stem from the fact that meta-analyses are typically constrained in the measurement of offender risk to the use of an aggregate sample-level measure of risk; that is, most meta-analysts are forced to measure risk by using the percentage of the sample that has a criminal history or a history of a particular type of behavior. Furthermore, the meta-analyst often is not able to code and investigate the impact of adhering to the risk principle above and beyond measuring the percentage of the sample in a particular study that is higher risk.

The current research improves on earlier attempts to assess the importance of the risk principle by analyzing data from two separate studies. Collectively, these studies provide data from 97 programs and a total of 13,676 individual offenders. The current investigation sought to answer the following questions: Are programs that adhere to the risk principle by providing more services and/or referrals for treatment to offenders who are higher risk more effective? Are programs that provide more services and/or supervision to offenders who are higher risk for a longer period of time more effective?

There is considerable empirical evidence that programs that target offenders who are higher risk are more effective in reducing recidivism than those that do not (Andrews et al., 1990; Andrews & Dowden, 1999; Dowden & Andrews, 1999a, 1999b, 2000; Lowenkamp & Latessa, 2005b); however, the questions still remain: Are there aspects of the risk principle that require specific actions by a correctional agency and are those actions meaningful when the appropriate targets for intervention have been selected?

METHOD

Because the data for the current investigation came from two distinct studies, we review the participants from each data set separately. The program-level measures for each study are identical and are, therefore, discussed only once. Similarly, for analyses purposes, the data from Studies 1 and 2 were combined.

STUDY 1

The first set of data in the current analyses was developed from research conducted by Lowenkamp and Latessa (2002) and included offenders served by halfway houses (HWH) and community-based correctional facilities (CBCF) in Ohio. The HWH facilities receive offenders paroled from state institutions or those who are placed under postrelease control (PRC), parole and/or PRC violators placed in a HWH as a sanction, and/or offenders released from a state institution under transitional control. All of the offenders in HWHs were reentering the community following a length of incarceration in a state institution. In contrast, the CBCF programs receive offenders placed under probation supervision. CBCF programs were initially designed to receive offenders who ordinarily would have been sent to prison but were given the opportunity to participate in rehabilitation services offered by the program. The sources of referral for the CBCF programs are the Courts of Common Pleas (i.e., offenders are sentenced directly to CBCFs) whereas the releasing authority (the Department of Corrections) or a parole officer makes HWH placements. The average length of stay (LOS) in the HWHs was 135 days, whereas the average LOS in the CBCFs was 137 days. The offenders were placed in the HWH programs as part of their PRC following a period of incarceration in a state institution. The offenders referred to a CBCF were placed on community control and sent to a CBCF from the court in lieu of a prison sentence.

PARTICIPANTS

The offenders placed in an HWH or CBCF program (3,782) were compared to parolees and other PRC offenders that were not placed in one of these residential programs. Each offender in the treatment group was matched to an offender in the comparison group based on the county of supervision, sex, and risk level using a modified version of the Salient Factor Score (SFS; Hoffman, 1983, 1994; Hoffman & Beck, 1974, 1985). Table 1 displays the original Salient Factor Score items and their respective weightings, and the slightly modified version used in the current research. The primary difference between the two scales was the use of employment at arrest, as opposed to the recent commitment-free period.

Table 2 displays the number of CBCF and HWH programs included in the current study and the number of offenders served by each type of program (to calculate the total number of offenders for either group in any particular pro-

TABLE 1: Risk Assessment Factors and Weights

Factors in Salient Factor Score (Hoffman, 1994)	Weight	Factors in Modified Salient Factor	Weight
Prior convictions		Prior arrest	
None	3	None	3
One	2	One	2
Two or three	1	Two or three	1
Four or more	0	Four or more	0
Prior commitments > 30 days		Prior state or federal commitments	
None	2	None	2
One or two	1	One or two	1
Three or more	0	Three or more	0
Age at current offense		Age at current offense	
26 years or older	2	26 years or older	2
20 to 25 years	1	20 to 25 years	1
19 years or younger	0	19 years or younger	0
Recent commitment-free period		Employed at arrest	
3 years since last offense	1	Employed	1
Otherwise	0	Unemployed	0
Probation/parole/escape state at offense		History of community control violations	
No criminal justice status at offense	1	None	1
Otherwise	0	One or more	0
Heroin and/or opiate dependence		History of drug use	
No history	1	History indicated	1
Otherwise	0	No history	0

TABLE 2: Distribution of Programs and Offenders in Study 1 and 2

Program Type	Program *n*	Offender *n*
Community-based correctional facilities[a]	15	1,791
Halfway house[a]	38	1,991
Day reporting[b]	7	412
Intensive supervision probation[b]	30	2,240
Work release[b]	3	206
Other[b]	4	198
Total	97	6,838

a = Study 1.
b = Study 2.

gram, simply multiply the number of offenders listed in Table 2 by 2). As is indicated in Table 2, 15 of the programs included in the current study were CBCF facilities and 38 were HWHs. This represents a total of 53 programs that account for 55% of the programs included in the current analyses. These

53 programs also account for approximately 55% of the offenders in the treatment groups used in the current analyses.

MEASURES

When comparison groups were developed for each of the 53 programs in the current study, an *r* value was calculated between group membership (experimental vs. comparison) and recidivism (measured with these data as any incarceration in a state prison within 2 years of termination date from the program). Independent measures included a series of dummy variables that measured (a) whether two thirds of the offenders in a program's sample were higher risk (moderate or high risk on the modified SFS), (b) the difference in the average LOS between offenders who were lower risk and higher risk, (c) the difference in the average number of services and/or groups provided between offenders who were lower and higher risk, and (d) whether the program was rated as being cognitive behavioral.

The risk measure developed for the prior research involving this sample had four categories: low, low moderate, moderate, and high. For the purposes of the current research, we combined the moderate-risk and high-risk groups into a higher-risk group whereas the low-risk and low-moderate risk categories were combined into a lower-risk group (offenders who were lower risk had a recidivism rate of 17% whereas offenders who were higher risk had a recidivism rate of 40%). If two thirds (66%) of the offenders in a program's sample were categorized as higher risk using this classification method, the program was assigned a code of 1. The cutoff proportion of two thirds was chosen based on prior research conducted by Lowenkamp and Latessa (2005a) and several meta-analyses that examined the effect of the presence of offenders who were high risk in the correctional treatment environment (Andrews & Dowden, 1999; Dowden & Andrews 1999a, 1999b; Lipsey & Wilson, 1998). This prior research indicated that an ample portion of the offenders engaged in treatment should be high risk. A percentage of offenders who are high risk at 50% was examined previously, yet the measures used to determine risk were somewhat limited (Lipsey & Wilson, 1998). Because of the more comprehensive measure of overall risk utilized in the current research, it was determined that two thirds would be a better benchmark for determining an offender population that was high risk. This benchmark may be more realistic as well, in light of common sentencing and placement practices (i.e., the items measured by the risk scale that was constructed are representative of offenders that typically would be sentenced to a secure environment).

To measure the extent to which a program adhered to the risk principle in terms of duration of treatment, we calculated the difference in the average LOS between the offenders who were lower risk and higher risk. Because the distribution for this measure was highly irregular, with extreme outliers at both ends, we dummy coded this measure. The measure was coded as a 1 if, on average, the offenders who were higher risk stayed in the program longer than or equal to the offenders who were lower risk. We recognize that this measure is somewhat deficient given the differences in the overall program average LOS. Using these values, however, allowed us to make a determination that a program was minimally cognizant of the risk principle and at the very least did not violate the risk principle by keeping offenders who were lower risk in programming longer than offenders who were higher risk. Although the measure may be crude, in the format used it serves as evidence as to whether the program clearly violated the risk principle in terms of program duration.

The next measure captured the difference in the average number of services and/or groups provided between the two categories of risk. If the program, on average, provided at least .5 more services or groups for offenders who were higher risk, the program was coded as a 1, otherwise, this variable was coded as a 0. For example, if Program X provided 1.5 groups on average for the offenders who were higher risk and 1.0 groups on average for offenders who were lower risk, Program X would be given a rating of 1. Services and groups refer to programming for such needs as substance abuse and education although not all services had to target criminogenic needs. Type of treatment was without question an important issue; however, the current research focuses primarily on whether the number of services, and the duration of services, vary by risk level of the offender. The decision to use .5 as the cutoff was somewhat arbitrary; however, we believed that anything less than one half of a service "unit" per offender seemed meaningless. As with program duration, ultimately this variable served as an indicator as to whether the program clearly provided at least a (potentially) meaningful higher amount of services to the offenders who were higher risk.

Each program was coded based on the reported treatment model. To gather this information, program staff members were surveyed as to which type of treatment model guided programming. Those programs where at least two thirds of the staff reported that a cognitive behavioral or behavioral model guided programming were coded as a 1. All other programs were given a value of 0 for the treatment model variable. The purpose of this variable was to determine whether there was a meaningful likelihood that cognitive behavioral or behavioral models were the driving force behind the over-

all treatment modality. Cognitive behavioral therapies (CBT) are designed to specifically address the cognitions, thought patterns, and attitudes that underlie antisocial behavior. These therapies also utilize behavioral reinforcement techniques whereby rewards and consequences are used to solidify behavioral change. Treatment services such as CBT typically differ from "standard" correctional treatment in that most common treatment interventions fail to address cognitions specifically and fail to incorporate behavioral techniques. An example of standard correctional treatment would be unstructured group "talk therapy" discussion designed to share common negative experiences associated with drug use and addiction (among other types of treatment and/or counseling services).

Finally, a variable was coded to identify the treatment setting. Residential programs were given a value of 0 on this measure whereas nonresidential programs were given a value of 1.

STUDY 2

The second set of data come from another study conducted by Lowenkamp and Latessa (2005a) that investigated the effects of several nonresidential programs in the state of Ohio. A total of 44 programs were included in that research. The programs served prison diversion (offenders convicted of a felony where a state prison sentence is a possible penalty) and jail diversion (offenders convicted of a misdemeanor where incarceration in a jail is a possible penalty) offenders, (for more information about the different groups of offenders, see Lowenkamp & Latessa, 2005a). The typical program in the current study was an intensive supervision probation program, and whereas most of the programs were nonresidential (39), some were residential (5).

Participants

These 44 programs provided services to a total of 3,056 offenders. Offenders were matched to regular supervision probationers from each county or municipality running the program, or, for three programs, the offenders served were matched to jail inmates released during the same time period as the treatment group offenders. Offenders were matched on jurisdiction, sex, and risk level using a risk measure developed from collected data.[1] Again, Table 2 shows the distribution of offenders across the different types of programs.

Measures

For 33 of the programs an *r* value was calculated between group membership (experimental vs. comparison) and recidivism (measured with these data as any incarceration in a state prison within 2 years of termination date from the program). For the remaining 11 programs, an *r* value was calculated between group membership and recidivism measured as any new arrest after termination and/or release date. The jail diversion program participants were typically offenders who were lower risk who committed lower level offenses. Subsequent incarceration rates were too low to calculate reliable estimates of program effectiveness. All offenders were followed for 2 years posttermination or from their release date.

The other program-level measures (percentage offenders who were higher risk, measures indicating whether a program met the risk principle, and treatment model) included in the current research for this second set of data are identical to those discussed earlier. The residential programs from the current study were given a code of 0 on the setting measure. The nonresidential programs from this study were given a code of 1. There were a total of 57 residential programs and 40 nonresidential programs included in this sample.

Analyses

The measure of program effectiveness in the current investigation is the *r* value between group membership and recidivism. The *r* values reported in this research are correlation coefficients calculated for each program and represent the correlation between group membership and the outcome measure (any arrest for some programs and any incarceration for others although any incarceration was used for 86 of the 97 programs included in this study). The *r* values were transformed to Fisher's Z_r for all calculations (descriptive statistics and weighted least squares [WLS]) and then transformed back to standard form. Weights were used to take into consideration the differing numbers of offenders served by each program.

Several formulae were used for these transformations and the calculation of standard errors and weights.[2] For a more complete discussion, see Rosenthal (1991) and Lipsey and Wilson (2001).

Given the consistencies in the data and measures from Study 1 and 2, we combined the data for the two studies for analyses. To analyze the data, we calculated a series of WLS regression models.[3] Ultimately the model we ended with included the four independent measures reported earlier. These measures were used to predict the *r* values calculated for each program.

RESULTS

The first set of analyses involved calculating descriptive statistics on the independent measures. The number of programs that met each of the principles associated with program effectiveness was low. Only 34 of the 97 programs were coded as using a CBT or other behavioral model. Only 26 of the programs provided more services and/or referrals for offenders who were higher risk, and whereas almost one half the programs kept offenders who were higher risk in programming longer, more than one half kept offenders who were lower risk in programming longer than offenders who were higher risk. Barely one fifth of the programs had more than 65% offenders who were higher risk in their programs. The last measure simply identifies nonresidential programs. A total of 39 programs, or 40%, were nonresidential.

Focusing on the factors that are related to the content and operations of the program, it should come as no surprise that the majority of programs are failing to meet these criteria. Research involving the Correctional Program Assessment Inventory (CPAI; Gendreau & Andrews, 1994), which measures, among other things, the factors noted above, indicates that correctional programs fail miserably, as a group, when measured against the principles of effective interventions (Gendreau & Goggin, 2000; Hoge, Leschied, & Andrews, 1993; Latessa & Holsinger, 1999; Matthews, Jones Hubbard, & Latessa, 2001). So, our findings are consistent with similar research that investigated how closely a program adheres to the principles of effective intervention.

Overall, the 97 programs were associated with a slight increase in recidivism rates relative to the comparison groups ($r = -.03$). Although this increase is small, it is significant at the $p < .05$ level. Turning to the average r values by treatment setting, it was quickly observed that the residential programs were far more effective in reducing recidivism than the nonresidential programs. The residential programs were associated with an average reduction in recidivism of .03 and the nonresidential programs were associated with a substantial increase in recidivism ($r = -.12$). It is apparent from these data that the residential treatment programs were more effective than the nonresidential programs. Regardless, the impact of the risk principle on treatment effectiveness remains our primary concern and interest.

Our next analyses involved calculating a WLS regression model predicting the r values using the program characteristics and setting. The results of these analyses are contained in Table 3. First, note that the overall model is significant, $F(5, 91) = 8.106$, $p < .10$, with an adjusted R^2_{adj} of .27.

Starting with the first independent measure listed, Table 3 reveals that nonresidential programs were apparently much less effective than residential

TABLE 3: Weighted Least Squares Results Predicting *r* Values

Variable	*b*	*SE*	*p*	β
Constant	–.05	.02	.01	.00
Nonresidential setting	–.09	.02	.00	–.27
Cognitive behavioral model	.04	.02	.05	.10
Higher risk offenders	.09	.03	.00	.21
Risk principle Tx	.06	.02	.00	.17
Risk principle supervision	.03	.02	.08	.12

$F(5, 91) = 8.106, p < .10, R^2_{adj} = .27.$

programs. This is not surprising given the differences in the type of programs. In general, the nonresidential programs would be electronic monitoring, day reporting, or intensive supervision. Programs of these types have, in the past, been shown to be associated with null or iatrogenic effects (Gendreau & Goggin, 1996). In contrast, the residential programs were developed to provide services to reduce offender risk (Lowenkamp & Latessa, 2002). The effects were not negligible—nonresidential programs were associated with an average reduction in recidivism that is 9 points smaller than for residential programs. Given that our dependent measure is an *r* value between group membership and a dichotomous outcome measure, *r* can be interpreted as the percentage point difference between the two groups in terms of the outcome measure (for greater detail, see the discussion on the binomial effect size display [BESD] in Rosenthal, 1991, and Lipsey & Wilson, 2001). Of greater importance and interest, however, is the fact that each of the program content factors is significant at $p < .10$.

The second measure in Table 3 controlled for the type of treatment the program reported to be the guiding philosophy or core of programming and/or services provided. The relationship between treatment type and program effectiveness was significant and in the direction indicating that those programs reported to be cognitive behavioral or behavioral were more effective than those reporting some other treatment modality.

The third measure in Table 3 captures whether 66% or more of the program's participants were higher risk. The relationship between this measure and outcome is the strongest for the substantive predictors. This finding is consistent with previous research, especially those meta-analyses that assessed the impact of the sample's risk level on outcome (Dowden & Andrews, 1999a, 1999b; Lipsey & Wilson, 1998). Also of importance is the fact that the two other measures implicated by the risk principle were significantly related to program effectiveness. Programs that provided at least .5 more units of service or referrals to offenders who were higher risk compared to offenders

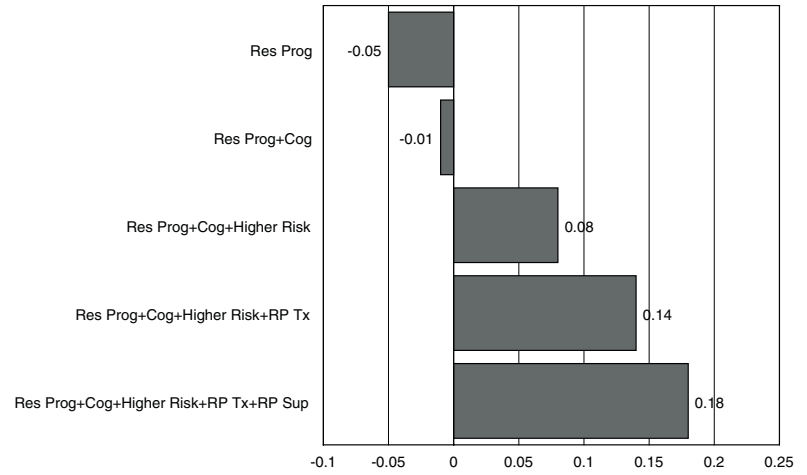

FIGURE 1 Predicted *r* Value Based on Adherence to Risk Principle and Treatment Type for Residential Programs

NOTE: Res Prog = Residential Program, Cog = Cognitive Behavioral or Behavioral Program, Higher risk = 66% or more of sample higher risk, RP Tx = more services for offenders who were higher risk, RP Sup = Longer or equal length of stay (LOS) for offenders who were higher risk.

who were lower risk were more effective as were those that kept offenders who were higher risk in the program as long as or longer than offenders who were lower risk. These effects are net the effects associated with treatment type and the risk composition of the offenders served by the program.

Figure 1 illustrates the cumulative effects of meeting the criteria for the measures used in the WLS model. This first figure pertains to residential programs only and indicates that with the addition of each of the criteria a program's effectiveness continues to increase. Figure 1 indicates that a program's effectiveness climbs from an *r* value of –.05 (indicating an increase in recidivism rates) to an *r* value of .18 (indicating an 18-percentage-point reduction in recidivism rates relative to the comparison group) as a program continues to meet each of the criteria specified. Targeting offenders who are higher risk continues to be an important factor as indicated in Figure 1; however, there are apparently other factors that are of importance too. Each of the factors under investigation contributes substantive and significant increases in a program's effectiveness.

Figure 2 displays the impacts of the differing factors for nonresidential programs. Note that in general the nonresidential programs are not as effective as the residential programs; although, based on the WLS model, neither type of program was associated with a reduction in recidivism on average.

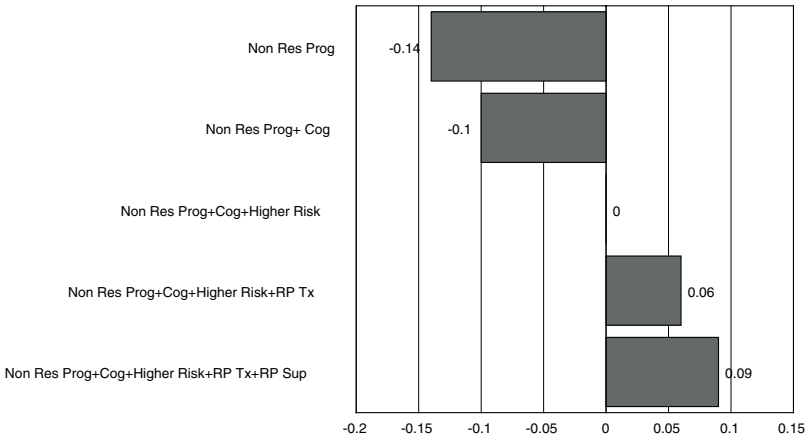

FIGURE 2 Predicted *r* Value Based on Adherence to Risk Principle and Treatment Type for Nonresidential Programs

NOTE: Non Res Prog = Nonresidential Program, Cog = Cognitive Behavioral or Behavioral Program, Higher risk = 66% or more of sample higher risk, RP Tx = more services for offenders who are higher risk, RP Sup = Longer or equal length of stay (LOS) for offenders who were higher risk.

However, it is again the case that with nonresidential programs, effectiveness in reducing recidivism was achieved when the factors implicated by the risk principle were followed.

The results of these analyses, taken together, show a consistent pattern. The correctional programs included in these analyses, whether residential or nonresidential, showed increases in recidivism rates unless offenders who were higher risk were targeted and provided more services for a longer period of time.

DISCUSSION

Traditionally, outcome studies of correctional interventions and programs provided limited direction for correctional practitioners. However, more recent research by Andrews (1999), Gendreau (1996), and others (Lipsey, 1992, 1999a, 1999b; Palmer, 1995; S. J. Wilson et al., 2003) have led to the formulation of some important principles, one of which is the risk principle. This principle states that our most intensive correctional treatment and intervention programs should be reserved for offenders who are higher risk (Andrews et al., 1990). *Risk* in this context refers to those offenders with a

higher probability of recidivating. Placing offenders who were lower risk in structured programs (whether treatment or supervision oriented) clearly demonstrates that recidivism can actually be increased (Andrews & Dowden, 1999; Bonta, Wallace-Capretta, & Rooney, 2000; Hanley, 2002; Lowenkamp & Latessa, 2002). There are several possible reasons for this.

First, placing offenders who are lower risk with offenders who are higher risk provides an environment in which individuals who are lower risk learn antisocial behavior that is modeled for them, and form new peer associates, many of whom are more likely to support and reinforce criminal behavior. Second, placing offenders who are lower risk in these programs also tends to disrupt their prosocial networks; in other words, the very attributes that make them lower risk become interrupted, such as school, friendships, employment, family, and so on (Lowenkamp & Latessa, 2004). Third, increased supervision, along with more stringent conditions (such as frequent drug testing), increases the likelihood that violations will occur.

The results from this study indicated that even when some form of CBT is provided it is not sufficient. Offenders who are higher risk must also be provided more services and kept in programming longer to have appreciable effects on outcome. Based on these findings the following recommendations are in order:

- Correctional programs need to utilize objective and standardized assessment tools to identify appropriate offenders for highly structured programs. Although we did not investigate the relationship that this practice has with program effectiveness in the current study, prior research indicates that standardized and actuarial assessments are the best method to use for accurate prediction of offender risk (Bonta, Law, & Hanson, 1998; Grove, Zald, Lebow, Snitz, & Nelson, 1995; Hanson & Bussiere, 1998). Without such assessments, programs would likely target the wrong offenders.
- Length of programming and supervision needs to be clearly tied to levels of risk. Offenders who are lower risk are best served with more traditional levels of supervision, whereas offenders who are higher risk should be kept in programming longer to address their risk factor and needs. Although this concept seems straightforward, very few programs in this study met this principle. Furthermore, unpublished data (Latessa, 2005) on 362 CPAI assessments indicates that only 7% of the programs assessed vary the intensity of programming by risk level and only 2% vary duration by risk level.
- Offenders are not higher risk because they have a particular risk factor, but rather because they have a multitude of risk factors. Accordingly, a range of services and interventions should be provided that target the specific crime-producing needs of the offenders who are higher risk. Multiple services are required for offenders who are higher risk.
- Obviously there are a number of factors that should be considered when sentencing offenders, including severity of offense, harm to the victim, and other mitigating and aggravating circumstances. However, this research has some

clear implications for sentencing, especially when judges are considering conditions for supervision. To have the greatest impact on recidivism, length of supervision and services provided should be clearly tied to an offender's risk level. Sentencing guidelines may often provide difficulty in implementing any number of effective correctional practices.

- To tie sentencing and related decisions to risk level, judges (and postsentencing agencies) need to utilize a validated risk assessment method that meaningfully differentiates between offenders who are high risk and low risk. As important, sentencing judges need to have at their disposal correctional intervention options that are appropriate for the risk level of the offenders being processed. In turn, correctional agencies (those that are strictly supervisory and/or control oriented and those that offer rehabilitative services) will benefit from internally incorporating the risk principle whenever possible. The results of the research presented above demonstrate the increased effectiveness of programs and agencies that ensure those that need the most, receive the most. Although sentencing takes a multitude of factors into account, benefits may be gleaned by ensuring that judges have a variety of valid assessment information at their disposal and know how to fully utilize it.

As with any research study, there are limitations to this research. First, the programs investigated include only programs from Ohio and only programs that serve adult offenders. Second, the outcome measure used, for the majority of programs, was limited to return to prison for any reason. Third, the data come from studies that used quasi-experimental designs. Fourth, the follow-up period for recidivism was limited to 2 years. Even with these limitations, this research provides important information that (a) confirms the fact that very few correctional programs are meeting the risk principle when assessing adherence with data on services provided and LOS, (b) indicates that programs that do adhere to the risk principle are apparently more effective than those that do not, (c) directs future researchers interested in assessing the importance of the risk principle, and (d) helps correctional programs in making changes that might increase their effectiveness in reducing the recidivism of offenders they serve.

NOTES

1. This score included the following factors: arrest history, felony arrest history, incarceration history, violent offense history, sex offense history, drug problems, alcohol problems, employment status at arrest, age, marital status, current offense type, current offense level, and history of or current community supervision violations. The scoring of this measure, the cutoff scores for the risk categories, and the recidivism rates for those categories are contained in Lowenkamp and Latessa (2005b). In summary, however, the risk score was composed of 13 factors with a range of 0 to 15 with a mean of 7.4. The correlations between the risk score and any incarceration and any arrest were .35 and .31, respectively.

2. Formula 1 (r to Zr):

$$Z_r = .5 \ln\left[\frac{1+r}{1-r}\right]$$

Where r = the correlation coefficient and ln = the natural logarithm (e).

Formula 2 (Z_r to r):

$$r = \frac{e^{2Z_r} - 1}{e^{2Z_r} + 1}$$

Where Z_r = the Fisher transformed value of r and e = approximately 2.718.

Formula 3 (calculation of standard error):

$$se = \sqrt{\frac{1}{n-3}}$$

Where N equals the total number of cases.

Formula 4 (calculation of weight for analyses):

$$w = \frac{1}{se^2}$$

3. The WLS models were estimated using SPSS syntax developed and presented by Lipsey and Wilson (2001).

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