Adhering to the Risk and Need Principles: Does It Matter for Supervision-Based Programs?

Christopher T. Lowenkamp, Ph.D.
Center for Criminal Justice Research, University of Cincinnati
Jennifer Pealer
Department of Political Science & Criminal Justice
Northern Kentucky University
Paula Smith
Division of Criminal Justice, University of Cincinnati
Edward J. Latessa
Division of Criminal Justice, University of Cincinnati

IN THE PAST 20 YEARS, there has been a re-emergence of interest in the effectiveness of correctional treatment programs for offenders. This interest has led to the development of the principles of effective interventions (Gendreau, 1996; Gendreau, French, & Taylor, 2002). Research has now shown a link between these program characteristics and effectiveness (Andrews & Dowden, 1999; Lipsey & Wilson, 1995; Gendreau, 1996; Lowenkamp, 2004: Lowenkamp, Latessa, and Smith, 2006). However, most of these studies have examined traditional residential treatment programs. Therefore, the question remains: Do these principles apply to community non-residential programs such as intensive supervision probation? The current study examines the effects of program characteristics on recidivism using a sample drawn from community non-residential programs to determine if the risk and need principles apply to traditional supervision-oriented programs such intensive supervision probation, electronic monitoring, day reporting, and work release.

Risk, Need, and Treatment Principles

In 1996, Gendreau introduced several principles of effective interventions. These principles may be collapsed into risk, need, responsivity, and treatment. While each is equally important to the provision of sound correctional interventions, we focus on the risk and need principles in this paper. As such, only the risk and need principles are reviewed below; however, readers are encouraged to review other principles related to effective correctional interventions (for a review see Gendreau, 1996; Gendreau, et al., 2002).

The risk principle states that programming should be matched to the risk level of the offenders (Andrews, Bonta, & Hoge, 1990), and higher-risk offenders should receive more intensive programming for longer periods of time to reduce their risk of re-offending. Moreover, and equally important, applying intensive treatment to low-risk offenders may actually serve to increase their risk of recidivism (Andrews, Bonta, and Hoge, 1990 and Lowenkamp & Latessa, 2005). Much research has found support for the risk principle. For example, a meta-analysis conducted by Andrews and Dowden (1999) found that programs that adhere to the risk principle reduced recidivism by 19 percent but programs that violated the risk principle increased recidivism by 4 percent. Similarly, a study of intensive rehabilitation supervision by Bonta, Wallace-Capretta, and Rooney (2000) found a 20 percent reduction in recidivism for higher-risk offenders that received more intensive supervision, but a 17 percent increase for lower-risk offenders. A more recent examination of the risk principle was conducted by Lowenkamp and Latessa (2005) using a sample of adult halfway house participants. Lowenkamp and Latessa found that these intensive programs worked for higher-risk offenders and led to reductions in recidivism from 10 to 30 percent. However, most of these same programs increased recidivism for lower-risk offenders. While the type of offender placed in a correctional program is certainly related to program effectiveness, what a program targets while the offender is in the program is equally important. The need principle, discussed below, gives programs strong guidance regarding what offender needs should be targeted to reduce the propensity of criminal behavior.

Simply put, the need principle identifies appropriate needs to be targeted by correctional interventions in attempting to reduce offender recidivism (Andrews, et al., 1990; Gendreau, 1996). Research has consistently identified certain dynamic correlates of criminal behavior (also known as crimi-

nogenic needs) such as antisocial attitudes, antisocial peers, antisocial personality, poor familial relationships, and low educational or vocational achievement (Gendreau, et al., 1996; Simourd and Andrews, 1994). Research has also indicated that if a correctional intervention or program targets these dynamic risk factors, the reductions in recidivism follow (Dowden & Andrews, 1999a). In a more recent study, Gendreau, et al. (2002) found that the density of criminogenic needs targeted was strongly related to program effectiveness in reducing offender recidivism. Specifically, programs that targeted 4 to 6 more criminogenic than non-criminogenic needs reduced recidivism, on average, by about 30 percent. Programs that targeted 1 to 3 more criminogenic than non-criminogenic needs were associated with a slight increase in recidivism.

Hence, the research on the risk and need principles indicates that these principles are important to correctional treatment interventions. Intensive treatment programs were more successful in reducing recidivism with higher-risk offenders (Andrews, et al., 1990; Lipsey & Wilson, 1998; Andrews & Dowden, 1999; Lowenkamp & Latessa, 2005). Furthermore, when programs targeted more criminogenic needs, recidivism declined more there (Dowden & Andrews, 1999b; Gendreau, et al., 2002). However, the question remains: "Are the risk and need principles related to the effectiveness of supervision-based correctional interventions in reducing recidivism?"

Research on Supervision-Oriented Programming

There has been some research that indirectly tests the relationship between the characteristics of supervision-based interventions and effectiveness. This research, in summary, did find support for the relationship between treatment and effectiveness for supervision-oriented programs (Petersilia & Turner, 1993; Fulton, Gendreau, Paparozzi, 1996; Bonta et al, 2000; Fulton, Stone & Gendreau, 1994; Aos, Miller & Drake, 2006). For example, in a review of three types of programs within a probation department in Colorado, Johnson and Hunter (1992) found that offenders who received ISP with the cognitive component had lower recidivism rates than offenders who participated in only the supervision probation component. Furthermore, in a multi-site evaluation of ISPs conducted by the RAND Corporation, Petersilia and Turner (1993) found that higher levels of program participation (measured as any employment, any counseling sessions, any community service, and any restitution paid) were associated with a 10 to 20 percent reduction in recidivism.

A recent meta-analysis conducted by Aos, Miller, and Drake (2006) examined the effectiveness of various correctional programs and supervision. They systematically reviewed 34 studies of intensive supervision probation programs that have been conducted within the last 35 years. The analysis revealed that ISPs that incorporated some treatment resulted in an average reduction of 21.9 percent, whereas ISPs that were surveillance-oriented had no impact on recidivism. Accordingly, while research has found that non-residential programs such as ISPs may be effective in reducing recidivism if they incorporate treatment into the services delivered, the exact characteristics that are necessary to reduce recidivism have not yet been tested empirically.

Method

The current study examined 66 community-based correctional programs to determine if adherence to the risk and need principle enhanced effectiveness in reducing recidivism. These programs were jail and prison diversion programs funded by the Community Corrections Act (CCA) in the state of Ohio (for a description of the Community Corrections Act and the programs see http://www.drc.state.oh.us/web/BCS.HTM). The participants were offenders sentenced to community-based correctional programs serving 52 counties during the fiscal year 1999. Offenders served by the CCA programs were compared to offenders that were processed as usual in jail, municipal probation, or prison. Offenders from the treatment group were matched to offenders from the comparison group on sex, risk,[1] and county of supervision. Recidivism data was collected on all offenders, with the follow-up time being two years from the date of placement in a CCA program, placement on municipal probation, release from jail, or release from prison.

TABLE 1:
Distribution of Sample

Group	N	percent
Prison Diversion		
Day Reporting	6	10.1
Electronic Monitoring	2	3.6
ISP	42	76.4
Work Release	2	3.6
Substance Abuse	3	5.5
Jail Diversion		
Day Reporting	3	27.3
Work Release	1	9.1
Residential Treatment	1	9.1
Domestic Violence	1	9.1
ISP	5	45.5

Programs

Table 1 reviews the different sites that were examined for this study. Two types of programs were used in the current study—prison diversion and jail diversion programs that were funded by the Community Corrections Act.

The prison diversion programs included those offenders that were referred by the local court to a CCA-funded program and participated in the CCA programs for at least 30 days. These offenders are sentenced to a term in prison. That sentence is then suspended and the offenders participate in one or more community-based programs. Of the 66 sites examined, 55 (83.3 percent) were prison diversion programs. Of these programs, the predominant program type was intensive supervision probation (42 programs), followed by day reporting (10.1 percent), substance abuse programs (5.5 percent), electronic monitoring (3.6 percent), and work release (3.6).

The jail diversion programs included those offenders that were placed in programming in lieu of serving time in a jail or as part of their sentence to a jail. Across the various jail diversion programs, the majority of the programs were again intensive supervision probation (5 programs), followed by day reporting (27.3 percent), and then work release, residential treatment, and domestic violence (9.1 percent each).

[1] Risk level was determined using a risk measure developed in previous research (Lowenkamp and Latessa, 2002) and includes 13 measures including measures of criminal history, current offense, substance abuse, alcohol abuse, marital status, employment, age, and educational attainment. Recidivism rates for the varying categories of risk, based on a two-year follow up, and using incarceration as the outcome measure were: Low risk—7 percent; Low-Moderate risk—22 percent; Moderate risk—38 percent; and High risk—53 percent. For more details and analysis using arrest as the outcome measure see Lowenkamp and Latessa, 2005.

Offenders

The prison diversion cases were compared to a matched sample of parolees.[2] A total of 5,781 prison diversion cases were compared to an equal number of parolees. While attempts were made to develop comparison groups from regular felony probation caseloads, this was not always possible. We therefore decided to use parole cases since they provided comparison cases for every program.[3] The matched jail diversion cases were compared to jail releases or regular municipal probation cases, depending on the data available within each jurisdiction. We were able to develop jail comparison cases for only three programs (one county). Regular municipal probation cases were used as comparison cases in eight other sites. In total, 707 comparison cases were used as a matched sample for the jail diversion programs (n = 707). Three sites were compared to jail releases, while eight other jail diversion sites were compared to regular municipal probationers.

Table 2 reports the descriptive statistics for the two treatment groups and the comparison cases. For the prison diversion sample, the two groups were relatively similar in racial composition and gender. However, the treatment group was more likely to be single (73 percent) when compared to the comparison group. Furthermore, the comparison group was more likely to have been incarcerated three or more times and was more likely to be under supervision for an offense against a person. When examining the risk category for the offenders, a clear majority of offenders (73 percent) were classified as moderate risk or higher.

When examining the jail diversion sample, we again found the groups similar in regards to race and gender. Sixty-two percent of the treatment group was white compared to 65 percent of the comparison group. Nineteen percent of both groups was female. The groups differ significantly in marital status, prior arrests, prior incarcerations, and offense type. Sixty-one percent of the treatment group was single, with a slightly higher percentage of the comparison group being single (70 percent). Approximately 35 percent of each group had three or more prior arrests, while roughly 20 percent of each group had at least one prior incarceration. In terms of risk, 78 percent of each group is low to low-moderate, with 20 percent being classified as moderate risk.

Review of Program Level Measures

The current study used four measures of program content. Three measures relate to adherence to the risk principle: higher-risk sample, risk supervision, and risk treatment. One additional measure relates to the need principle: referral ratio. All of these measures were developed from data gathered from a database maintained by the State of Ohio Department of Rehabilitation and Correction.

Higher-risk sample was defined as present for a particular program if 75 percent or more of the sample was moderate or high risk. This measure was included to determine if the program was targeting higher-risk offenders, as is indicated by the risk principle.

The next two measures, risk supervision and risk treatment, were developed to determine, if advised by the risk principle, if programs were varying the duration of and services received by risk level. Risk supervision was determined to be present if higher-risk offenders were in the program, on average, longer than lower-risk offenders. For the purposes of the risk supervision factor, any difference where the higher-risk group received longer periods of supervision than the lower-risk group was considered to be evidence of meeting this factor. Programs where the lower- and higher-risk groups had equal lengths of supervision or where the lower-risk group had a longer period of supervision did not meet this factor.

Risk treatment was determined to be present for a particular program if, on average, higher-risk offenders received at least one-half more referrals for services than lower-risk offenders. For example, if the higher-risk offenders, on average, were referred to 2.5 programs and the lower-risk offenders were referred to 2.0 or fewer programs, this criterion was considered to be met by the program.

Finally, we included a measure relating to the need principle, which tapped the density of services targeting criminogenic needs. This measure was a ratio of referrals target-

TABLE 2:
Descriptive Statistics for Treatment and Comparison Cases

	Prison Diversion Cases				Jail Diversion Cases			
	Treatment		Parole		Treatment		Jail/Probation	
	N	percent	N	percent	N	percent	N	percent
Variable								
White	2,454	48	2,300	45	438	62	460	65
Female	358	7	358	7	134	19	134	19
Single	3,732	73	3,323	65	431	61	495	70
Prior arrest								
0	272	5	736	14	169	24	260	37
1–2	1,679	33	1,241	24	262	37	212	30
3+	3,161	62	3,135	61	276	39	235	33
Prior incarceration								
0	3,219	63	2,336	46	583	83	534	75
1–2	1,629	32	1,724	34	101	14	134	19
3+	264	5	1,052	21	23	3	39	6
Offense type								
Person	730	14	1,318	26	176	25	155	22
Sex	153	3	153	3	1	0	1	0
Drug	1,647	32	1,444	29	22	4	57	8
Property	1,847	36	1,746	35	70	14	62	9
Other	735	14	379	8	438	62	432	61
Risk category								
Low	235	5	235	5	186	26	186	26
Low-moderate	1,192	23	1,192	23	374	52	374	52
Moderate	3,147	62	3,147	62	142	20	142	20
High	538	11	538	11	5	1	5	1

[2] Comparison cases were matched to the treatment cases on gender, county of supervision, and risk category.

[3] Alternate analyses using regular felony probation cases were conducted and are reported in the original report by Lowenkamp and Latessa, 2005.

ing criminogenic needs to referrals targeting non-criminogenic needs. For this measure to be considered present, a program had to make three referrals targeting criminogenic needs for every one referral targeting non-criminogenic needs. For example, a program that referred offenders to substance abuse treatment, employment placement, and cognitive behavioral programming and community service would have met this principle, since the first three referrals listed target criminogenic needs while only one, community service, targets non-criminogenic needs.

Outcome measures included any new arrest for jail diversion cases and any new period of incarceration in prison (for a technical violation or new criminal behavior) for prison diversion cases. The outcome measures differed due to differences in the populations served. Jail diversion cases tend to be lower-level offenders that are not subject to prison for the current offense and often lack a history of incarceration. The base rate of return to prison for this group was fairly low. Therefore, we selected an alternate measure to use for the jail diversion cases. The follow-up time period was consistent across all groups and lasted for two years.

Analysis

For each site, a correlation co-efficient, or r-value, was calculated that represented the magnitude of the relationship between program participation and recidivism. The r-value can be interpreted as the percentage difference in recidivism rates between the treatment (offenders participating in the CCA program) and comparison (offenders on parole, released from jail, or on municipal probation) groups (see Rosenthal, 1991 and Gendreau, Goggin, and Paparozzi, 1996). For example, if the treatment group from hypothetical program A had a 40 percent recidivism rate and the matched comparison group had a 50 percent recidivism rate, an r-value of .10 would be generated (since 50 percent or .50 minus 40 percent or .40 equals .10). Positive r-values indicate recidivism rates that favor the treatment group—that is, where the recidivism rate of the treatment group was lower than that of the comparison group. The opposite is true for negative r-values. Negative r-values favor the comparison group or indicate programs where the treatment group participants had higher recidivism rates than the comparison group. For example, a -.10 would indicate a program where the program participants (treatment group) had a 60 percent recidivism rate (or .60) and the comparison group had a 50 percent recidivism rate (or .50).

We categorized each program based on whether it met the factors listed in the measures section which related to the risk and need principles (high-risk sample, risk treatment, risk supervision, and referral ratio). We then calculated the average correlation coefficient for the programs based on that categorization.

Results

Figure 1 reveals the r-values for the programs categorized by whether they met the risk and need program factors described earlier. The first set of bars represents the average r-values by whether the program met the criterion "higher-risk sample," which again indicated that 75 percent or more of the sample was higher (moderate or high) risk. Only 15 programs met the criteria for higher-risk sample. Programs that met this factor, our proxy measure for targeting higher-risk offenders, resulted in an average *decrease* in recidivism of 5 percent across the 15 programs. Comparatively, programs that did not adhere to this criterion were associated with a 2 percent *increase* in recidivism on average.

Our second measure relating to the risk principle was risk supervision. The 19 programs that met this measure were associated with a four percentage point decrease in recidivism. Programs that did not meet this criterion, that is, where the program length did not vary by risk level, had no impact on recidivism.

The third set of bars represents the average reductions in recidivism based on the "risk treatment" measure. On average, programs where higher-risk offenders received more referrals than lower-risk offenders reduced recidivism by 7 percent. Programs that did not meet this criterion (i.e., lower-risk offenders received more referrals or there was no difference in referrals among risk levels) only saw a 1 percent reduction in recidivism.

Finally, our last measure, referral ratio, which related to the need principle, was associated with program effectiveness. Programs (n = 16) where 75 percent of the referrals were treatment-oriented and targeted criminogenic needs reduced recidivism, on average, by 11 percent. Programs that did not have a 3 to 1 referral ratio favoring services targeting criminogenic needs increased recidivism, on average, by 3 percent.

Prior research has shown that program characteristics have cumulative properties, indicating that as program content and capacity increases, reductions in recidivism are greater (Lowenkamp & Latessa, 2002). Therefore we calculated the average r-value across the four-point factor score. There were 9 sites that did not meet any of the criteria. The average r-value for these sites was −0.13, indicating that these programs were associated with an increase in recidivism rates of 13 percent. When programs (35 sites) met one or two factors, there was a decrease in recidivism of 3 percent. Finally, when programs (n = 4) adhered to three or

FIGURE 1

Average r-value by Risk and Need Principles Program Factors

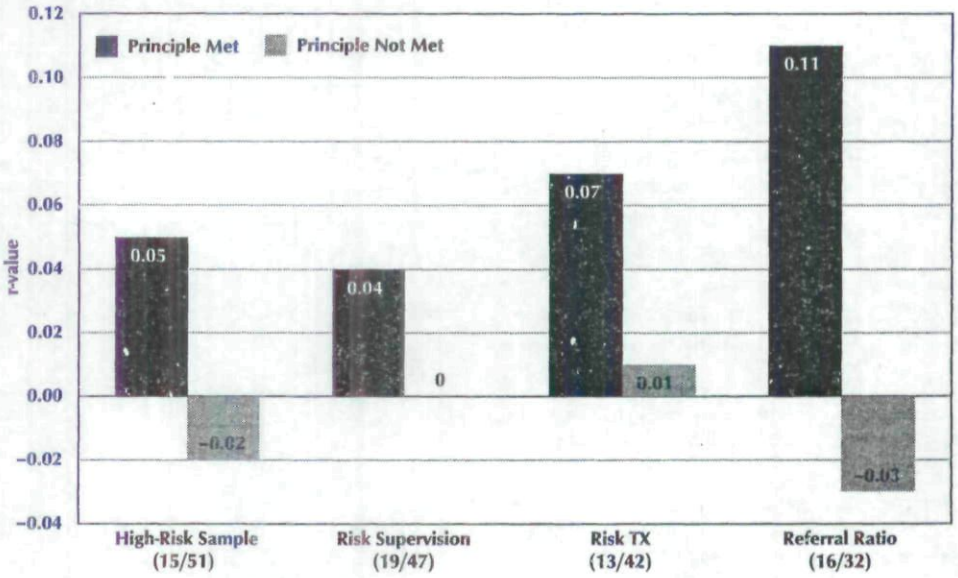
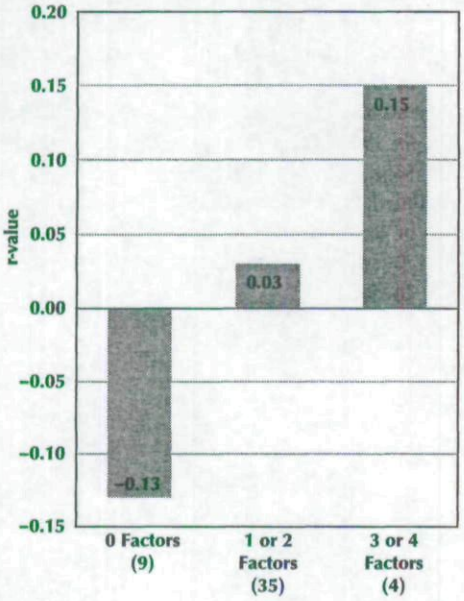


FIGURE 2
Average r-value by summed 4 point factor score



more factors, there was a 15 percentage point reduction in recidivism.

Summary

A recent report from the U.S. Department of Justice indicated that the number of offenders under correctional supervision reached an all-time high at the end of 2003 (Glaze, 2004). This continued growth in the offender population causes concern for many agencies, especially given the fact that some recidivism estimates for probation samples are as high as 65 percent (Petersilia, 1985). However, unlike 25–30 years ago, research has identified certain program characteristics that work to reduce the probability of re-offending. While many studies have examined the relationship between programming and recidivism, most of these studies focused on programs that were residential and/or were traditional treatment programs. The current study is one of the first to examine the relationship between program characteristics and effectiveness using community non-residential programs such as intensive supervision probation. The analyses yielded by the current study provide support for the relationship between program characteristics, relating to the risk and need principles, and a program's effectiveness in reducing recidivism. All of the programs in this study were supervision-based programs that differentially adhered to the risk and need principles. The analyses revealed that these intensive programs were more successful for the higher-risk offenders. When at least 75 percent of the population was classified as high risk, there was a 5 percent decrease in recidivism compared to a slight increase in recidivism for programs that incorporated more low-risk offenders. Furthermore, when examining the relationship between risk level and supervision, programs that required higher-risk offenders to be in the programs for a longer period of time saw a 4 percent reduction in recidivism, while those that had a one-size-fits-all approach had no effect on recidivism. Programs that had more referrals for higher-risk offenders reduced recidivism by 7 percent, whereas programs that did not have more referrals for this population only saw a marginal reduction in recidivism. Finally, programs in which 75 percent or more of the referrals were for treatment programming had an 11 percent reduction in returns to prison. Programs in which more than 25 percent of their referrals were non-treatment increased recidivism by 3 percent.

Overall, when examining the cumulative nature of the measures, we found that the more factors a program adhered to the more effective it was in reducing recidivism. Programs that did not meet any of the four criteria increased recidivism by 13 percent, programs that met one to two factors decreased recidivism slightly, and programs that met at least 3 factors decreased recidivism by 15 percent. None of the programs met all four factors.

Based on these findings it appears that the risk and need principles are important factors to consider when developing and/or operating a correctional intervention that is non-residential and traditionally based on supervision. These findings can assist programs in increasing effectiveness and, when taken in the aggregate, public safety. Implementing such strategies is no simple task and would require the adoption and use of a sound risk and need assessment, training of staff, and the availability of relevant and validated treatment programs. While this research does not resolve these issues or tackle these barriers, it does underscore the importance of meeting the risk and need principle when our correctional goal is to reduce recidivism.

References

Andrews, D.A., & Dowden, C. (1999). A meta-analytic investigation into effective correctional intervention for female offenders. *Forum on Corrections Research*, 11, 18–21.

Andrews, D.A., Bonta, J., & Hoge, R. (1990). Classification for effective rehabilitation: Rediscovering psychology. *Criminal Justice and Behavior*, 17, 19–52.

Andrews, D.A., Zinger, I., Hoge, R., Gendreau, P., & Cullen, F. (1990b). Does correctional treatment work? A clinically relevant and psychologically informed meta-analysis. *Criminology*, 28, 369–404.

Aos, S., Miller, M., & Drake, E. (2006). *Evidence-based adult corrections programs: What works and what does not.* Olympia: Washington State Institute for Public Policy.

Bonta, J., S. Wallace-Capretta, and J. Rooney, (2000). A Quasi-Experimental Evaluation of an Intensive Rehabilitation Supervision Program. *Criminal Justice and Behavior*, 27, 312–329.

Community Corrections Act. (Retrieved 5/30/2006). www.drc.state.oh.us/web/bcs.htm

Dowden, C., & Andrews, D.A. (1999). What works for female offenders: A meta-analytic review. *Crime and Delinquency*, 45, 438–452.

Fulton, B., Gendreau, P., & Paparozzi, M. (1996). APPA's prototypical intensive supervision program: ISP as it was meant to be. *Perspectives*, 19(2), 25–41.

Fulton, B., Stone, S. & Gendreau, P. (1994). *Restructuring intensive supervision programs: Applying "what works."* Lexington, KY: American Probation and Parole Association.

Gendreau, P. (1996). The principles of effective interventions with offenders. In A.T. Harland (ed.), *Choosing Correctional Options that Work: Defining Demand and Evaluating the Supply.* (pp. 117–130). Thousand Oaks, CA: Sage.

Gendreau, P., French, S., & Taylor, A. (2002). *What works (what doesn't) revised 2002: The principles of effective correctional treatment.* Unpublished manuscript, University of New Brunswick, St. John, New Brunswick, Canada.

Gendreau, P., Goggin, C., & Paparozzi, M. (1996). Principles of effective assessment for community corrections. *Federal Probation*, 60(3), 64–70.

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

Glaze, L.E. (2004). *Probation and parole in the United States, 2003.* Washington DC: U.S. Department of Justice.

Johnson, G., & Hunter, R. (1992). *Evaluation of the specialized drug offender program for the Colorado Judicial Department.* Boulder, CO: University of Colorado at Boulder, Center for Action Research.

Lipsey, M.W. (1992). Juvenile delinquency treatment: A meta-analytic inquiry into the variability of effects. In T.D. Cook, H. Cooper, D.S. Cordray, H. Hartmann, L.V. Hedges, R.J. Light (eds.) *Meta-analysis for explanation: A Casebook* (pp. 83–127). New York: Russell Sage.

Lipsey, M.W., & Wilson. D.B. (1995). Reply to comments on Lipsey and Wilson (1993). *American Psychologist*, 50, 113–115.

Lipsey, M.W., & Wilson, D.B. (1998). Effective intervention for serious juvenile offenders: A synthesis of research. In R. Loeber & D.P. Farrington (eds.), *Serious and Violent Juvenile Offenders: Risk Factors and Successful Interventions.* (pp. 313–345). Thousand Oaks, CA: Sage.

Lowenkamp, C.T. (2004). *A program level analysis of the relationship between correctional program integrity and treatment effectiveness.* Unpublished doctoral dissertation, University of Cincinnati.

Lowenkamp, C.T. & Latessa, E.J. (2002). *Evaluation of Ohio's community based correctional facilities and halfway house programs.* Technical Report. University of Cincinnati.

Lowenkamp, C.T. & Latessa, E.J. (2005). Increasing the effectiveness of correctional programming through the risk principle: Identifying offenders for residential placement. *Criminology and Public Policy*, 4, 501–528.

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

Petersilia, J. (1985). Probation and felony offenders. *Federal Probation*, 49, 4–9.

Petersilia, J. & Turner, S. (1993). Evaluating intensive supervision probation/parole: Results of a nationwide experiment. *Research in Brief.* Washington DC: National Institute of Justice.

Rosenthal, R. (1991). *Meta-analytic procedures for social research (revised).* Newbury Park: Sage.

Simourd, L. & Andrews, D.A. (1994). Correlates of delinquency: A look at gender differences. *Forum on Corrections Research*, 6, 26–31.

Copyright of Federal Probation is the property of Superintendent of Documents and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.