Juvenile Recidivism and Length of Stay

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Reducing recidivism is a central goal of the juvenile justice system. The effectiveness of juvenile programs in meeting this goal has been the focus of numerous studies. While many researchers have examined the impact of a broad array of juvenile justice interventions, few have focused exclusively on the effects of lengths of stay or duration of juvenile justice interventions on recidivism. The studies that have included an examination of this relationship have produced mixed and inconclusive results. Neither Saake's (1972) study of length of time spent in a juvenile probation camp school, nor Fagan's (1995) study of youths charged with robbery or burglary, found that longer lengths of confinement reduced subsequent recidivism. Myner et al. (1998) argue that incarceration does not serve as a deterrent for juvenile offenders. They base this conclusion on their examination of the relationship between the length of first confinement and number of subsequent convictions among a sample of male juvenile offenders. The researchers discovered that the longer the length of the initial incarceration, the greater the number of subsequent reconvictions. To explain this finding, they hypothesize that youths may learn criminal behavior from other delinquent juveniles, and additionally, that the impact of labeling may perpetuate criminal behavior. The Virginia Poverty Law Center (Budeiri, 1999) recently reviewed Virginia's juvenile offender population and similarly asserted that incarcerating youths beyond the point of rehabilitation may make youth more dangerous than they were when initially incarcerated and may impede successful community reintegration following release.

Others have reached opposing conclusions. In a study of six groups of juvenile delinquents followed for periods of up to five years, Schaffstein (1967) found that short-term lengths of stay (one year or less) were associated with higher levels of recidivism than longer lengths of stay. Garrity's (1975) study of adult male parolees indicated that the effect of sentence length varied by type of offender. *Pro-social* offenders exhibited low recidivism rates regardless of sentence length, while anti-social offenders fared better with short sentences and those classified as *manipulative* did better with longer sentences. Although focused more on intervention differences rather than length of stay, Gottfredson and Barton (1993) found recidivism to be much higher among non-institutionalized youth than those who had been institutionalized. They concluded that the differences were due to the non-institutionalized group's shorter lengths of stay in large, secure state-run custodial facilities and increased time in community-based settings.

Meta-analyses of studies examining the effects of intervention programs on subsequent delinquency have also found inconsistent patterns that appear dependent on how the amount of treatment was measured and whether institutional or non-institutional programs were evaluated (Lipsey, 1992; Lipsey, 1995; Lipsey and Wilson, 1998). In an update on a previously conducted meta-analysis, Lispey and Wilson (1998) examined

200 experimental or quasi-experimental studies and found three measures of treatment duration that exhibited "strong, independent, but somewhat contradictory relationships with effect size" (Lipsey and Wilson, 1998: 321). While total weeks of treatment was associated with larger effect sizes for non-institutionalized offenders, the mean number of treatment hours per week was negatively correlated with effectiveness (Lipsey and Wilson, 1998). That is, *fewer* contact hours were associated with larger effects. This latter finding was due to the small effects exhibited in low-intensity programs that operate continuously or meet frequently, such as wilderness or challenge programs. For institutionalized juveniles only two measures were strong positive predictors of effect size: integrity of treatment implementation and total weeks of treatment.

The inconclusive findings from these studies may be explained by:

- Concept measurement differences – Length of stay may be measured as a purely incapacitation effect or more in terms of the duration of *treatment*. Furthermore, the length of the sanction may be measured (in weeks) from first to last treatment event, or frequency of treatment contact (mean hours of contact per week) or mean total number of hours of contact.
- Offender differences – Differences in offender types may mediate the effects of length of stay and subsequent recidivism, as is evidenced by studies focused on violent youth; person, property, or drug offenders; and attitudinal differences among youthful offenders.
- Institutional differences – Research findings demonstrate significant differences between non-institutionalized and institutionalized youths in terms of the effects of length of stay on recidivism. Combining these two groups into one analysis masks the underlying effects of treatment duration on re-offending.
- Treatment or intervention differences – While length of stay may be incorporated into the analysis, the primary emphasis of many studies is the impact of various treatment approaches on recidivism.

This Bulletin reports empirical findings on the relationship between length of stay and recidivism in juvenile commitment programs in Florida. Florida's centralized juvenile justice system provides a unique opportunity to study the impact of length of confinement, given the availability of juvenile and adult court recidivism data on all youths released from both non-residential and residential juvenile programs in the state. In addition, there are a wide variety of programs, including state-operated and contracted private providers and various security levels. There is broad variation in lengths of stay ranging from under three months to over 18 months.

Sentence Lengths

Under Florida law, sentences to the Department of Juvenile Justice (DJJ) must be for an indeterminate period of time. A limitation to this is that time served may not exceed the maximum term of imprisonment that an adult would serve for the same offense and that a youth may not be held beyond their 21st birthday (Florida Statutes, Chapter 985). Florida law indicates that:

> "...the duration of the child's placement in a residential commitment program of any level shall be based on objective performance-based treatment planning...The child's length of stay in a residential commitment program may be extended if the child fails to comply with or participate in treatment activities. The child's length of stay in such program shall *not* be extended for purposes of sanction or punishment..." (Florida Statutes (2001) § 985.231(10) (d)).

There are two instances in which a term of confinement is dictated by statute. For maximum risk programs (juvenile prisons) a minimum length of stay of 18 months and a maximum of 36 months is mandated,[1] while boot camp programs require that a minimum of four months be served.[2]

Juvenile Commitment Programs

Florida DJJ utilizes both non-residential and residential programs in its continuum of juvenile justice services for committed youth. Commitment programs provide treatment for the subset of adjudicated delinquents that the juvenile court orders placed under the legal custody of DJJ. In general, the continuum of commitment programs represents a system of increasing restrictiveness or security, treatment intensity, and program cost.

Non-Residential Programs

These programs are designed for youth the court has determined are a minimum risk to public safety and can be treated while remaining in the community. Program models include: day treatment programs, sexual offender programs, and special intensive groups (SIG). SIG programs focus on individual, family and small group counseling while the youth attends school within the community. Day treatment programs are facility-based and services are primarily provided during the day, with some evening hour programming. The educational and vocational components of these programs vary. Some youth continue to attend classes at their local schools, while others participate in educational programs at the facility. Group and individual counseling is also provided at the facility. Sex offender programs provide mental health services and programming designed specifically for juveniles adjudicated of a sexual offense. Therapy focuses on the medical, psychological, and behavioral rehabilitative needs specific to this offender population. Non-residential programs in Florida are all classified as minimum-risk security level programs.

Residential Programs

In the state of Florida, residential commitment programs for juvenile offenders include a wide variety of program types and treatment approaches including: group treatment homes, wilderness camps, sex offender programs, halfway houses, boot camps, youth

[1] Florida Statutes (2001) § 985.313.
[2] Florida Statutes (2001) § 985.309(6)(b).

academies/youth development centers, and juvenile prisons. Florida law divides juvenile residential programs into four security levels described below.

Low-Risk: Youth assessed and classified for placement in programs at this commitment level represent a low risk to themselves and public safety but do require placement and services in residential settings. Children adjudicated for offenses involving firearms, sexual offenses, life felonies or first-degree felonies are ineligible for placement at this level. Youth may have unsupervised access to the community. Approximate per diem cost: $85.00/youth per day.

Moderate-Risk: Youth placed in programs at this commitment level represent a moderate risk to public safety and require close supervision. Facilities are either environmentally secure, staff secure, or are hardware-secure with walls, fencing, or locking doors. Facilities provide 24-hour awake supervision, custody, care, and treatment of residents. Youth may have unsupervised access to the community. Approximate per diem cost: $75.00/youth per day.

High-Risk: Placement in programs at this level is prompted by a concern for public safety that outweighs placement in programs at lower commitment levels. Youth assessed and classified for this security level require close supervision in a structured residential setting. Facilities are hardware-secure with perimeter fencing and locking doors and provide 24-hour awake supervision, custody, care, and treatment of residents. Youth are not allowed access to the community. Approximate per diem cost: $95.00/youth per day.

Maximum-Risk: Youth assessed and classified for this level of placement require close supervision in a maximum-security residential setting based on a demonstrated need to protect the public. Programs or program models at this commitment level include juvenile correctional facilities and juvenile prisons with single cell occupancy except during pre-release transition. Facilities are maximum-custody hardware-secure with perimeter security fencing and locking doors. The programs provide 24-hour awake supervision, custody, care, and treatment of residents. Youth are not allowed to have access to the community. Approximate per diem cost: $125.00/youth per day.

Data and Methodology

Data were compiled from the Florida Department of Juvenile Justice Information System (JJIS), the Florida Department of Law Enforcement's Florida Criminal Information Center (FCIC), and the Florida Department of Corrections (DC). The JJIS system was used to identify a total of 16,779 youth released from commitment programs back to the community or aftercare during the two-year period between July 1, 1998 and June 30, 2000.

Length of stay is operationalized as the number of months spent in the program. This measure is analyzed both at the ratio level and at the ordinal level, as the latter provides more substantive policy-based interpretations of the data. Treatment is "continuous" that

is, integrated into the program regimen, making length of stay and treatment duration equivalent.

Recidivism is defined here as a subsequent juvenile adjudication, adjudication withheld or adult conviction for an offense that occurred within one year of a youth's release to the community or a conditional release program.[3] This is the same definition officially used by DJJ for internal research analyses and reporting. Youths who subsequently re-offended were identified through juvenile offense records in JJIS. For those who reached 18 years of age during the follow-up period or had a case handled in adult court, adult records were obtained from FCIC and DC. Demographic data for these youths were obtained from JJIS and include sex, race, age at first offense, and age at the time of program release. Measures of sex and race are binary, with one equal to male and black, respectively. Age at first offense and age at release are analyzed at both the ratio level, as well as in ordinal groupings. Offense histories were calculated based on data obtained from JJIS. Prior delinquency is operationalized as the number of prior adjudications. The measure is also categorized as follows: 0 to 3 priors, 4 to 6 priors, 7 to 9 priors, and 10 or more prior adjudications. Due to varying recidivism rates by geographical locale, a variable measuring the judicial circuit in which the youth was adjudicated is categorized into northeast, northwest, east, south, and west regions of Florida.

Separate analyses of the effects of length of stay on recidivism are presented for youth released from residential (institutional) and non-residential (non-institutional) programs. A total of 55 non-residential programs and 185 residential programs are included in the current analyses.

Results

Forty-one percent of the youths released from Florida's residential and non-residential commitment programs were re-adjudicated/convicted for an offense committed within one year of program release. Table 1 presents descriptive statistics for the study sample. The average youth in the sample is male (85%), white/other (53%), 13 years of age at the time of his/her first offense, and roughly 16 ½ years of age at program release, with five prior adjudications and an average length of stay of 6.3 months. As noted in Table 1, lengths of stay and recidivism rates vary by residential/non-residential status and security level. The average length of stay for youths released from residential programs is approximately 25 days longer than that served by non-residential youths. Among the residential facilities, mean lengths of stay ranged from a low of a little more than three months for low-risk programs to a high of 19 months for maximum-risk, juvenile prisons. Recidivism rates were lowest for non-residential releases (33% re-adjudicated/convicted) and maximum-risk, residential programs (32% re-adjudicated/convicted), and highest for low-risk and moderate-risk programs (each at 44% re-adjudicated/convicted).

[3] Two alternative measures of recidivism were examined: re-arrest within one year of release and juvenile or adult re-incarceration within one year of release. For both measures, the effect of length of stay was not appreciably different from that found using re-adjudication/conviction as the dependent variable.

INSERT TABLE 1 ABOUT HERE

Table 2 presents mean lengths of stay (in months) for youths released from non-residential and residential programs broken down by sex, race and age. Overall, differences in mean length of stay among demographic groups for non-residential programs are minimal. For residential programs, while there is a clear positive relationship between length of stay and program security level, an inconsistent relationship emerges within demographic characteristics of the youth. Low-risk programs exhibit the greatest differences; males average over one-month shorter lengths of confinement than females, and the oldest youths spend half as many months in confinement as the youngest youths. Among each of the residential security levels, youths who were 10 years of age or younger at the time of their first referral, are on average confined slightly longer than those who were older when they committed their first offense. Similarly, youths 12 years of age and younger at the time of release, exhibit the longest lengths of stay within the moderate-risk and high-risk security levels. There is very little difference in mean length of stay by race.

INSERT TABLE 2 ABOUT HERE

Bivariate Analyses of Recidivism by Length of Stay and Study Variables

The primary objective of the current study is to assess whether length of stay impacts the likelihood that youths will recidivate. In preliminary analyses, associations between length of stay and other potential predictor variables were examined. There is a small, but significant relationship (0.122) between total months served and whether a youth is re-adjudicated/convicted for an offense committed within one year of release from a *non-residential* program. When this relationship is explored for youths released from residential programs, regardless of security level, the number of months a youth is confined is not significantly related to recidivism (see Table 3). Among demographic and legal variables, age at first offense, age at program release, and prior adjudications exhibit the strongest associations with recidivism. Review of the underlying frequency distributions illustrate that both age at first offense and age at release are negatively related to whether a youth is subsequently re-adjudicated/convicted; that is, the younger the youth the more likely they are to recidivate. Furthermore, the more prior adjudications a youth has, the more likely he/she is to be re-adjudicated/convicted. Males are significantly more likely than females to be re-adjudicated/convicted, while blacks are more likely to recidivate than white/other youths.

INSERT TABLE 3 ABOUT HERE

Of substantive significance to policy makers and juvenile justice professionals is consideration of the varied effects of practical intervals of lengths of stay in juvenile justice facilities. Are youthful offenders effectively served in relatively short periods of confinement (zero to three months)? Is there a threshold at which program instruction begins to take hold? Alternatively, is there a window of opportunity, which if surpassed, results in the detrimental effect of longer lengths of stay increasing the odds of

recidivism? Table 4 presents recidivism rates broken down by five length of stay categories.

INSERT TABLE 4 ABOUT HERE

Increased lengths of stay appear to have very little effect on recidivism rates among youths released from low-risk and moderate-risk residential programs. The rates within each of the five categories fall within a roughly 4 percentage point range for these youths. An interesting pattern emerges for the non-residential, minimum-risk releases and youths discharged from high-risk facilities. For these youths, recidivism rates are lower on the extremes, i.e., 0 to 3 months and 13 or more months (significant at the 0.05 level or lower). Figure 1 provides a graphical representation of these findings. The data would suggest that for a sub-set of youths in non-residential and high-risk programs, short lengths of stay are relatively effective, while another group requires longer confinement periods in order to respond positively. This relationship is explored further using multivariate analyses.

INSERT FIGURE 1 ABOUT HERE

Multivariate Analyses

A significant relationship between length of stay and recidivism is found for youths released from non-residential and high-risk residential programs in bivariate analyses. Whether this relationship remains after controlling for demographic and legal variables, is tested using logistic regression analysis (see Table 5). The results indicate that the number of months a youth is confined is significantly related to the likelihood the youth will recidivate, but only among youths released from residential (as opposed to non-residential programs). Youth who serve 12 months or less in a residential facility are more likely to subsequently be re-adjudicated/convicted than youth confined for 13 months or longer. In comparison to those confined longer, for example, the odds that a youth committed for 4 to 6 months will be re-adjudicated is nearly 1.25 times greater than that of youths incarcerated for 13 or more months. Holding all other individual level factors in the model constant, youths with 4 to 6 month stays have a 56% probability of recidivating following program release. The relative effects of length of stay on recidivism are not as substantial as other significant variables in the model, for example, age at release. The overall logistic model for residential program releases is significant at the 0.001 level using the model chi-square statistic. The model predicts 63.3% of the responses correctly and has a pseudo R^2 equal to 0.11.

INSERT TABLE 5 ABOUT HERE

The multivariate analyses reveal that length of stay has minimal effect on recidivism among youths released from *non-residential* facilities. As such, the analyses now shift to only those youth released from residential programs. Given the significant influence of

sex in initial logistic regression analyses, we examine whether the impact of length of stay varies for male and female juvenile offender populations (see Table 6). The findings for females released from residential programs suggest a pattern similar to that exhibited in Figure 1, in which recidivism is decreased when length of stay is either short (0 to 3 months) or extended (13 months or longer). While length of stay fails to reach statistical significance in the model for female offenders, it does appear to be a significant predictor within the model for male youths. However, the odds that a male youth will recidivate are only increased by roughly 10% when they are confined for one year or less, rather than 13 months or longer. Similar to the overall recidivism predictors identified for residential programs in general, being younger at the time of program release, having more prior adjudications and being black, all significantly increase the odds of males being re-adjudicated/convicted. Race was not a significant predictor of recidivism for female juvenile offenders.

INSERT TABLE 6 ABOUT HERE

Perhaps the most appropriate analysis of the effects of length of stay on recidivism in Florida, is one that examines the effects within security levels, as opposed to globally for all residential programs. As illustrated earlier, there are four distinct residential security levels in Florida's system: low-risk, moderate-risk, high-risk, and maximum-risk programs. The level of security generally increases with the seriousness of the offenders served at that level. Table 7 presents logistic regression analyses for each level. The most notable finding is that for most levels, length of stay appears to have no significant impact on the likelihood to be re-adjudicated/convicted, when controlling for demographic and legal variables. For youth released from high-risk residential programs, however, their term of incarceration does appear to be a significant predictor of their odds to recidivate. This effect is somewhat unique. The graphical representation of this effect in Figure 1, as well as the combination of negative and positive coefficients for length of stay, suggest that a curvilinear relationship may exist between recidivism and length of stay for this pool of relatively serious offenders. The shortest lengths of stay result in a significant negative relationship with the dependent variable; that is, youth released from high-risk programs who are confined for 0 to 3 months are *less* likely to recidivate than those confined the longest, 13 or more months. Moderate lengths of stay (4 to 6 and 10 to 12 months) appear to have the opposite effect. The model is significant at the 0.001 level using the model chi-square statistic. The pseudo R^2 was 0.13 and the model accurately predicted whether a youth would be re-adjudicated/convicted for 64.81% of the youths.

As noted earlier, maximum-risk commitments are intended to be a minimum of 18 months and a maximum of 36 months in duration.[4] Therefore, the ordinal scale used to evaluate the impact of length of stay for lower security level programs, is unsuitable for analysis with maximum-risk releases. Figure 2 depicts the bivariate relationship between length of stay and recidivism for youths released from maximum-risk facilities. As the number of months incarcerated increases, the recidivism rate of youths released also

[4] There were 19 releases from juvenile maximum-risk programs in the database in which the youth served a term less than 18 months.

increases. However, in logistic regression analyses using both a ratio level measure of length of stay (number of months) and an ordinal measure (1 to 17, 18, 19 to 20, and 21 or more months), likelihood to be re-adjudicated/convicted is not significantly related to length of stay for youths released from maximum-risk programs. Prior adjudications is the only significant predictor of recidivism for the highest security level releases.

Summary, Discussion and Policy Implications

Florida data revealed no consistent relationship between length of confinement and recidivism. Length of stay was significant at the bivariate level for non-residential and high-risk program releases, however, in multivariate analyses the effects of length of stay were only significant for youths released from high-risk facilities. Time served in low-risk, moderate-risk, and maximum-risk programs is unrelated to recidivism, after controlling for demographic and legal variables. In comparing female and male juvenile offenders, the effects of length of stay were significant only in the logistic model for males. Shorter lengths of stay for males increase the odds that they will subsequently be adjudicated or convicted for an offense occurring within one year of program release.

The impact of months served for high-risk offenders is varied. The shortest lengths of stay within this security level result in a decreased likelihood for recidivism. Intermediate periods of confinement, in comparison to the longest lengths of stay for high-risk youths (13 months or more), increase the odds a youth will be re-adjudicated/convicted. A number of competing explanations for these findings are hypothesized. The pattern may indicate that youths who responded positively to the program were released quickly. Alternatively, they may have reached the jurisdictional age limit of the juvenile justice system and were therefore released prior to what would be considered a typical program completion. Research has shown that maturation impacts the likelihood a youth will desist from further involvement in criminal activity and may explain lower rates of recidivism. It is also likely as Garrity (1975) and others have noted, that the impact of length of stay is mediated by the seriousness of the offender. A comparison of the characteristics of youths released after relatively short lengths of stay relative to those incarcerated longer in high-risk facilities, suggests that offender seriousness is indeed related to time served. A smaller percentage of youth committed for zero to three months were 13 years of age or younger at the time of their first offense, than their counterparts confined for 13 months or longer. Those incarcerated longer were also generally older at the time of release, and a much larger percentage of these youths were males in comparison to those released sooner.

The positive impact of longer lengths of stay for high-risk offenders may be due to the fact that facilities at this level have a design length of stay ranging from 9 to 12 months. Longer months served at this level may positively impact outcomes if youth continue in the program longer than the design length of stay. However, as Lipsey points out, these effects are likely due more to duration of *treatment* rather than mere incarceration effects. In fact, in examining differences in program types and corresponding treatment approaches, special needs programs, intensive halfway houses for males, serious habitual

offender programs (SHOP), and sex offender programs exhibit significant length of stay effects on recidivism in multivariate analyses. These effects are not all in the same direction, however. While longer lengths of stay result in decreased odds of re-adjudication/conviction for youths released from special needs, SHOP, and sex offender programs, longer lengths of stay in intensive halfway houses for males actually increase the odds a youth will recidivate.

Identifying a relationship between treatment duration and recidivism may require examining other aspects of juvenile justice programming. Lipsey and Wilson (1998) found that treatment type and the characteristics of the program were important factors in determining effect sizes. The inclusion of measures of program quality, such as provided by the Correctional Program Assessment Inventory (Andrews, 1994; Andrews, 1995), and specific information about the treatment modality employed, may reveal that the impact of length of stay is dependent on program characteristics. Programs employing ineffective treatment modalities would not be expected to decrease recidivism through longer lengths of stay. Rather, increasing the length of confinement under these circumstances may lead to increased recidivism. Studying high quality programs employing treatment methods shown to be effective (e.g., cognitive behavioral approaches) may enable researchers to identify the point at which further treatment produces diminishing returns. Likewise, an examination that compares outcomes relative to offender characteristics may also provide a better understanding of why varying length of stay intervals produce different outcomes. Some youths may be better served in a relatively short period of time in certain program models, while others may need longer treatment intervals to attain similar outcomes. Future research should thoroughly address these issues with an eye toward discerning potential threshold and diminishing returns effects, as well as a curvilinear relationship between length of stay and juvenile recidivism.

Finally, any discussion of length of stay should take into account the associated costs involved. Increasing lengths of stay in hopes of reducing recidivism must be weighed against the costs incurred in implementing such a policy initiative. In the Florida juvenile justice system, the average cost per day for one youth ranges from $85 for low-risk programs to $125 for maximum-risk facilities. Given the very uneven impact of length of stay on recidivism, careful consideration should be given to identifying the specific types of youth who would benefit from increased periods of confinement in juvenile justice programs.

References

Andrews, D.A. (1994) An Overview of Treatment Effectiveness: Research and Clinical Principles. Dept. of Psychology, Carleton University, Ottawa, Canada.

Andrew, D.A. (1995) Assessing Program Elements for Risk Reduction: The Correctional Program Assessment Inventory (CPAI). Dept. of Psychology, Carleton University, Ottawa, Canada.

Budeiri, P. (1999). "Secrecy Shrouds Decisions About Release of Juvenile Major Offenders--Far-Ranging Negative Ramifications Likely". Position Paper published by the Mental Health Association of Viriginia Public Policy and Advocacy. Richmond, VA. July 22, 1999.

Fagan, J. (1995). "Separating the Men From the Boys: The Comparative Advantage of Juvenile Versus Criminal Court Sanctions on Recidivism Among Adolescent Felony Offenders." In J.C. Howell, B. Krisberg, J.D. Hawkins, & J.J. Wilson (Eds.), *Sourcebook on Serious, Violent, & Chronic Juvenile Offenders* (pp. 247-252). Thousand Oaks, CA: Sage.

Garrity, D. (1956). *The Effects of Length of Incarceration Upon Parole Adjustment and Estimation of Optimum Sentence: Washington State Correctional Institution.* Unpublished doctoral dissertation, University of Washington.

Lipsey, M. (1992). "Juvenile Delinquency Treatment: A Meta-Analytic Inquiry into the Variability of Effects." In Thomas D. Cook et al., *Meta-Analysis for Explanation: A Casebook.* New York, NY: Russell Sage Foundation.

Lipsey, M. (1995). "What Do We Learn From 400 Research Studies on the Effectiveness of Treatment with Juvenile Delinquents." In J. McGuire (ed), *What Works: Reducing Re-offending Guidelines From Research and Practice.* (p.63-78) Chichester: John Wiley and Sons.

Lipsey, M & D. Wilson. (1998). "Effective Intervention for Serious Juvenile Offenders: A Synthesis of Research." In R. Loeber & D. Farrington (Eds.), *Serious & Violent Juvenile Offenders: Risk Factors and Successful Interventions.* (pp. 325-328). Thousand Oaks, CA: Sage.

Myner, J., Santman, J. Cappelletty, G. & Perlmutter, B. (1998). "Variables Related to Recidivism Among Juvenile Offenders." *International Journal of Offender Therapy and Comparative Criminology* 42(1): 65-80.

Robison, J., & Smith, G. (1971). "The Effectiveness of Correctional Programs." *Crime and Delinquency* 17(1): 67-80.

Romig, Dennis A. 1976. "Length of Institutionalization, Treatment Program Completion, and Recidivism Among Delinquent Adolescent Males." *Criminal Justice Review* 1:115-119.

Saake, R. *Probation Camp schools and recidivism*. Unpublished doctoral dissertation, University of Southern California, 1972.

Schaffstein, F. (1967). "Success, Failure and the Prediction of Recidivism of Juvenile Delinquents. *Zeitschrift fur die Gesamie Strafrechtswissenschaft* 17: 209-249.

Table 1. Descriptive Statistics

		Min	Max	Mean[a]	S.D.	N
Sex		0	1	0.85	0.36	16779
(female-0, 1=male)	Non-residential	0	1	0.77	0.42	2572
	Residential	0	1	0.86	0.34	14207
Race		0	1	0.47	0.50	16779
(0=white/other, 1=black)	Non-residential	0	1	0.45	0.50	2572
	Residential	0	1	0.48	0.50	14207
Age at First Offense		6.00	17.99	13.17	2.07	16779
	Non-residential	6.18	17.99	13.56	2.01	2572
	Residential	6.00	17.99	13.10	2.07	14207
Age at Release		9.80	22.09	16.67	1.44	16779
	Non-residential	9.80	22.09	16.67	1.47	2572
	Residential	10.35	21.80	16.67	1.43	14207
Prior Adjudications		1	31	4.87	3.06	16779
	Non-residential	1	15	3.33	1.99	2572
	Residential	1	31	5.15	3.14	14207
Length of Stay						16779
(months served)	Non-residential	0	21	6.30	3.40	2572
	Residential (all levels)	0	35	7.08	4.17	14207
	Low-Risk	0	12	3.18	2.42	2368
	Moderate-Risk	0	16	6.41	2.43	8478
	High-Risk	1	26	11.11	4.46	3187
	Maximum-Risk	2	35	19.24	4.35	174
Recidivism[b]		0	1	0.41	0.49	16779
	Non-residential	0	1	0.33	0.47	2572
	Residential (all levels)	0	1	0.43	0.50	14207
	Low-Risk	0	1	0.44	0.50	2368
	Moderate-Risk	0	1	0.44	0.50	8478
	High-Risk	0	1	0.40	0.49	3187
	Maximum-Risk	0	1	0.32	0.47	174

[a] Mean values for dichotomous variables correspond to the total percentage of youths within the indicator attribute (equal to 1).

[b] Recividism is measured as whether youth is subsequently adjudicated/convicted for a crime that occurs within one year of program release.

Table 2. Mean Lengths of Stay in Months Within Security Levels by Sex, Age and Race (Total N)

Demographic Characteristics	Non-Residential	Low-Risk	Moderate-Risk	High-Risk	Maximum-Risk	Total N
Sex						
Female	5.97	4.20	6.38	8.75	0.00	
	(600)	(442)	(1089)	(410)	(0)	(2541)
Male	6.30	3.18	6.41	11.11	19.24	
	(1972)	(1926)	(7389)	(2777)	(174)	(14238)
Age at First Offense						
10 years or younger	6.27	3.99	6.61	11.54	19.68	
	(265)	(319)	(1238)	(568)	(37)	(2427)
11 to 12 years	6.15	3.70	6.44	11.26	19.51	
	(625)	(671)	(2314)	(1040)	(53)	(4703)
13 years	6.46	3.20	6.44	10.89	19.29	
	(513)	(504)	(1806)	(656)	(34)	(3513)
14 years or older	6.31	2.49	6.29	10.83	18.58	
	(1169)	(874)	(3120)	(923)	(50)	(6136)
Age at Release						
12 years or younger	5.67	5.93	6.62	17.33	0.00	
	(36)	(71)	(63)	(3)	(0)	(173)
13 years	5.34	5.04	6.14	11.29	0.00	
	(82)	(165)	(265)	(24)	(0)	(536)
14 years	5.71	3.65	6.21	10.34	0.00	
	(231)	(383)	(832)	(135)	(0)	(1581)
15 years	6.18	3.13	6.39	10.83	19.67	
	(447)	(509)	(1518)	(381)	(6)	(2861)
16 years	6.17	2.87	6.49	10.92	20.00	
	(614)	(544)	(2220)	(707)	(11)	(4096)
17 years	6.58	2.48	6.42	11.10	18.68	
	(644)	(500)	(2163)	(943)	(47)	(4297)
18 years or older	6.64	2.53	6.45	11.44	18.68	
	(518)	(196)	(1417)	(994)	(110)	(3235)
Race						
Black	6.31	3.48	6.41	11.13	19.50	
	(1149)	(1050)	(3955)	(1673)	(106)	(7933)
White	6.29	2.94	6.42	11.11	18.82	
	(1316)	(1247)	(4255)	(1432)	(67)	(8317)
Other	6.31	3.08	6.24	10.66	19.00	
	(107)	(71)	(268)	(82)	(1)	(529)
Overall Mean	6.30	3.18	6.41	11.11	19.24	
Total N	(2572)	(2368)	(8478)	(3187)	(174)	(16779)

Table 3. Associations Between Study Variables and Whether Re-Adjudicated/Convicted by Security Level

Security Level	Length of Stay	Sex (0=female,1=male)	Age at Offense	Age at Release	Race (0=other,1=black)	Number of Prior Adjudications	Total N
Non-Residential	0.122*	0.122***	0.126***	0.186***	0.115***	0.125***	2572
Residential (overall)	0.056	0.102***	0.158***	0.185***	0.115***	0.154***	14207
Low-Risk	0.076	0.141***	0.179***	0.204***	0.151***	0.170***	2368
Moderate-Risk	0.036	0.097***	0.151***	0.191***	0.108***	0.145***	8478
High-Risk	0.098	0.094***	0.197***	0.162***	0.128***	0.224***	3187
Maximum-Risk	0.376	n/a	0.274	0.212	0.038	0.325	174

*p<.05; **p<.01, ***p<.001

Note: The chi-square statistic, Cramer's V, is reported here for each association.

Table 4. Recidivism Rates for Youths Released from Non-Residential and Residential Programs by Length of Stay and Security Level

	Length of Stay in Months					
Security Level	0 to 3	4 to 6	7 to 9	10 to 12	13 or more	x^2 Statistic[a]
Non-Residential	28.4%	35.8%	32.0%	33.1%	26.3%	0.067*
	(539)	(1029)	(604)	(263)	(137)	
Low-Risk	43.7%	43.5%	49.5%	40.4%	0.0%	0.034
	(1502)	(621)	(188)	(57)	(0)	
Moderate-Risk	42.0%	44.7%	44.0%	42.1%	40.3%	0.022
	(536)	(4906)	(2144)	(656)	(236)	
High-Risk	20.3%	43.8%	39.6%	44.0%	37.9%	0.077**
	(59)	(347)	(968)	(845)	(968)	

[a] The chi-square based measure, Cramer's V, is reported here.

Table 5. Logistic Regression Predicting Recidivism Among Juvenile Offenders Released from Non-Residential and Residential Commitment Programs in Florida

	Non-Residential			Residential		
	B	S.E.	Odds Ratio	B	S.E.	Odds Ratio
Length of Stay (months)[a]						
0 to 3 months	-0.0464	0.2304	0.9546	0.1916*	0.0765	1.2111
4 to 6 months	0.3325	0.2143	1.3944	0.2233***	0.0660	1.2502
7 to 9 months	0.1436	0.2223	1.1544	0.1760*	0.0695	1.1925
10 to 12 months	0.2039	0.2440	1.2262	0.1837*	0.0789	1.2017
Age at First Referral[b]						
10 or younger	0.0581	0.1623	1.0598	0.1266*	0.0615	1.1350
11 to 12 years	0.0429	0.1228	1.0438	0.0536	0.0502	1.0550
13 years	0.1393	0.1234	1.1495	0.0407	0.0514	1.0416
Age at Release[c]						
12 or younger	0.7651*	0.3863	2.1492	1.2601***	0.1907	3.5257
13 years	1.5299***	0.2668	4.6178	1.1618***	0.1122	3.1958
14 years	1.4102***	0.1868	4.0968	1.2048***	0.0770	3.3360
15 years	0.7296***	0.1568	2.0743	0.9643***	0.0633	2.6229
16 years	0.7180***	0.1426	2.0504	0.7115***	0.0566	2.0371
17 years	0.4759***	0.1427	1.6094	0.3336***	0.0557	1.3960
Prior Adjudications[d]						
4 to 6	0.3314**	0.1037	1.3929	0.3851***	0.0539	1.4697
7 to 9	0.6010***	0.1354	1.8239	0.5608***	0.0577	1.7521
10 or more	0.7270***	0.1871	2.0689	0.8764***	0.0589	2.4021
Male	0.7441***	0.1154	2.1045	0.6799***	0.0551	1.9736
Black	0.4889***	0.0897	1.6305	0.4341***	0.0363	1.5435
Region[e]						
Northwest	0.4492*	0.2047	1.5670	0.2149**	0.0676	1.2398
Northeast	0.1068	0.1293	1.1127	0.2695***	0.0613	1.3093
East	0.0549	0.1447	1.0564	-0.0031	0.0640	0.9969
West	-0.0075	0.1320	0.9925	0.2081***	0.0586	1.2314
Constant	-2.7440	0.2714		-2.5541	0.109	
% Correct Predictions	69.00%			63.30%		
Nagelkerke (pseudo) R^2	0.111			0.109		
Chi-Square (df)	212.24(22)***			1197.71(22)***		
Total N	2568			14179		

[a] Length of stay is an ordinal variable with the reference attribute equal to 13 months or longer.

[b] Age at first referral is an ordinal variable with the reference attribute equal to 14 years or older.

[c] Age at release is an ordinal variable with the reference attribute equal to 18 years or older.

[d] Prior adjudications is an ordinal variable with the reference attribute equal to 0 to 3 prior adjudications.

[e] Region is an ordinal variable with the reference attribute equal to the South region.

*p < .05 **p < .01 ***p < .001

Table 6. Logistic Regression Predicting Recidivism Among Male and Female Juvenile Offenders Released from Residential Commitment Programs in Florida

	Female			Male		
	B	S.E.	Odds Ratio	B	S.E.	Odds Ratio
Length of Stay (months)[a]						
0 to 3 months	-0.1062	0.3163	0.8992	0.2198**	0.0793	1.2458
4 to 6 months	0.2820	0.2738	1.3257	0.2070**	0.0684	1.2300
7 to 9 months	0.0863	0.2800	1.0901	0.1880**	0.0722	1.2068
10 to 12 months	-0.0314	0.3149	0.9691	0.2056*	0.0820	1.2283
Age at First Referral[b]						
10 or younger	0.0110	0.2239	1.0111	0.1351*	0.0644	1.1447
11 to 12 years	0.2803	0.1504	1.3235	0.0255	0.0534	1.0258
13 years	0.1291	0.1411	1.1378	0.0322	0.0553	1.0328
Age at Release[c]						
12 or younger	1.2677	0.9482	3.5527	1.2563***	0.1954	3.5125
13 years	1.4111***	0.3102	4.1004	1.1016***	0.1209	3.0091
14 years	1.2303***	0.2321	3.4222	1.1923***	0.0824	3.2946
15 years	0.8590***	0.2043	2.3609	0.9841***	0.0673	2.6755
16 years	0.6939***	0.1945	2.0015	0.7184***	0.0595	2.0512
17 years	0.4307*	0.1979	1.5384	0.3263***	0.0583	1.3858
Prior Adjudications[d]						
4 to 6	0.3367*	0.1465	1.4003	0.3923***	0.0580	1.4804
7 to 9	0.3741*	0.1620	1.4537	0.5850***	0.0619	1.7950
10 or more	0.7755***	0.1694	2.1717	0.8896***	0.0630	2.4341
Black	0.1507	0.1063	1.1627	0.4730***	0.0388	1.6048
Region[e]						
Northwest	0.1848	0.2165	1.2030	0.2319**	0.0715	1.2610
Northeast	0.3287	0.1966	1.3892	0.2673***	0.0648	1.3064
East	-0.0024	0.2052	0.9976	0.0067	0.0677	1.0067
West	0.2151	0.1956	1.2399	0.2217***	0.0617	1.2483
Constant	-2.4131	0.3672		-1.9076	0.0984	
% Correct Predictions	70.59%			61.97%		
Nagelkerke (pseudo) R^2	0.080			0.101		
Chi-Square (df)	113.32(21)***			957.87(21)***		
Total N	1938			12241		

[a] Length of stay is an ordinal variable with the reference attribute equal to 13 months or longer.

[b] Age at first referral is an ordinal variable with the reference attribute equal to 14 years or older.

[c] Age at release is an ordinal variable with the reference attribute equal to 18 years or older.

[d] Prior adjudications is an ordinal variable with the reference attribute equal to 0 to 3 prior adjudications.

[e] Region is an ordinal variable with the reference attribute equal to the South region.

*p < .05 **p < .01 ***p < .001

Table 7. [redacted]gistic Regression Predicting Recidivism by Program Security Level for Juv[redacted] Offenders Released from Residential Commitment Programs in Florida

	Low-Risk[a]			Moderate-Risk			High-Risk			Maximum-Risk[b]		
	B	S.E.	Odds Ratio	B	S.E.	Odds Ratio	B	S.E.	Odds Ratio	B	S.E.	Odds Ratio
Length of Stay (months)[c]										0.0422	0.0408	1.0431
0 to 3 months	0.5610	0.3028	1.7524	0.0421	0.1653	1.0430	-0.8720**	0.3380	0.4181	--	--	--
4 to 6 months	0.5168	0.3028	1.6767	0.1148	0.1412	1.1216	0.2789*	0.1364	1.3216	--	--	--
7 to 9 months	0.5391	0.3266	1.7145	0.1063	0.1447	1.1122	0.1211	0.0996	1.1287	--	--	--
10 to 12 months	--	--	--	0.0708	0.1602	1.0733	0.2380*	0.1009	1.2687	--	--	--
Age at First Referral[d]												
10 or younger	0.0667	0.1634	1.0690	0.1184	0.0795	1.1257	0.1945	0.1290	1.2147	0.1796	0.5857	1.1967
11 to 12 years	-0.0467	0.1284	0.9543	0.0530	0.0645	1.0544	0.1208	0.1098	1.1284	0.1075	0.5364	1.1135
13 years	0.0443	0.1273	1.0453	0.0381	0.0652	1.0389	0.0532	0.1166	1.0547	-0.1372	0.5840	0.8718
Age at Release[e]												
12 or younger	1.5291***	0.3339	4.6140	1.1403***	0.2760	3.1278	1.1255	1.2314	3.0818	--	--	--
13 years	1.4944***	0.2559	4.4568	1.0608***	0.1468	2.8888	1.3485**	0.4653	3.8518	--	--	--
14 years	1.4376***	0.2135	4.2105	1.1706***	0.0999	3.2238	1.2176***	0.2034	3.3790	--	--	--
15 years	1.0199***	0.1976	2.7729	1.0474***	0.0831	2.8502	0.7104***	0.1357	2.0349	1.5465	0.9480	4.6950
16 years	0.7955***	0.1932	2.2156	0.7393***	0.0748	2.0944	0.6440***	0.1090	1.9041	0.3110	0.6821	1.3648
17 years	0.5768**	0.1954	1.7803	0.3551***	0.0748	1.4263	0.2243*	0.1004	1.2515	-0.4310	0.4410	0.6499
Prior Adjudications[f]												
4 to 6	0.3547**	0.1085	1.4258	0.3715***	0.0700	1.4499	0.4435**	0.1435	1.5582	1.3386	0.8119	3.8138
7 to 9	0.5213***	0.1343	1.6842	0.5021***	0.0741	1.6522	0.7951***	0.1407	2.2146	1.5538*	0.7497	4.7292
10 or more	0.8943***	0.1640	2.4456	0.7909***	0.0768	2.2054	1.1152***	0.1357	3.0501	1.5320*	0.6885	4.6274
Male	0.7488***	0.1297	2.1145	0.6301***	0.0719	1.8778	0.7142***	0.1258	2.0425	--	--	--
Black	0.5967***	0.0898	1.8161	0.4035***	0.0468	1.4971	0.4601***	0.0792	1.5842	-0.3923	0.3711	0.6755
Region[g]												
Northwest	0.1234	0.1809	1.1313	0.1818**	0.0889	1.1994	0.2968*	0.1405	1.3456	-0.6105	0.7418	0.5431
Northeast	0.1014	0.1618	1.1068	0.2878***	0.0805	1.3335	0.3208*	0.1283	1.3783	-0.1248	0.6254	0.8827
East	-0.1338	0.1663	0.8747	-0.0437	0.0842	0.9573	0.1429	0.1295	1.1536	-0.6772	0.6192	0.5080
West	0.2463	0.1705	1.2792	0.1463***	0.0750	1.1576	0.3233**	0.1223	1.3817	-0.0944	0.5886	0.9099
Constant	-3.0107	0.3802		-2.3431	0.1815		-2.8244	0.2160		-2.3991	1.0562	
% Correct Predictions	63.41%			62.88%			64.81%			68.79%		
Nagelkerke (pseudo) R^2	0.134			0.101			0.128			0.132		
Chi-Square (df)	249.68(21) ***			661.46(22) ***			316.16(22) ***			17.17(15)		
Total N	2364			8462			3180			173		

[a] There were no low-risk residential offenders confined for longer than 12 months; therefore the reference attribute for the low-risk logistic model is 10 to 12 months.

[b] There were no female offenders released from maximum-risk residential programs during the study period. In addition, maximum-risk youth were at least 15 years of age at the time of release. Length of stay is measured at the ratio level for this group.

[c] Length of stay is an ordinal variable with the reference attribute equal to 13 months or longer.

[d] Age at first referral is an ordinal variable with the reference attribute equal to 14 years or older.

[e] Age at release is an ordinal variable with the reference attribute equal to 18 years of age or older.

[f] Prior adjudications is an ordinal variable with the reference attribute equal to 0 to 3 prior adjudications.

[g] Region is an ordinal variable with the reference attribute equal to the South region.

*p < .05 **p < .01 ***p < .001

Figure 1. Recidivism Rates by Length of Stay and Security Level

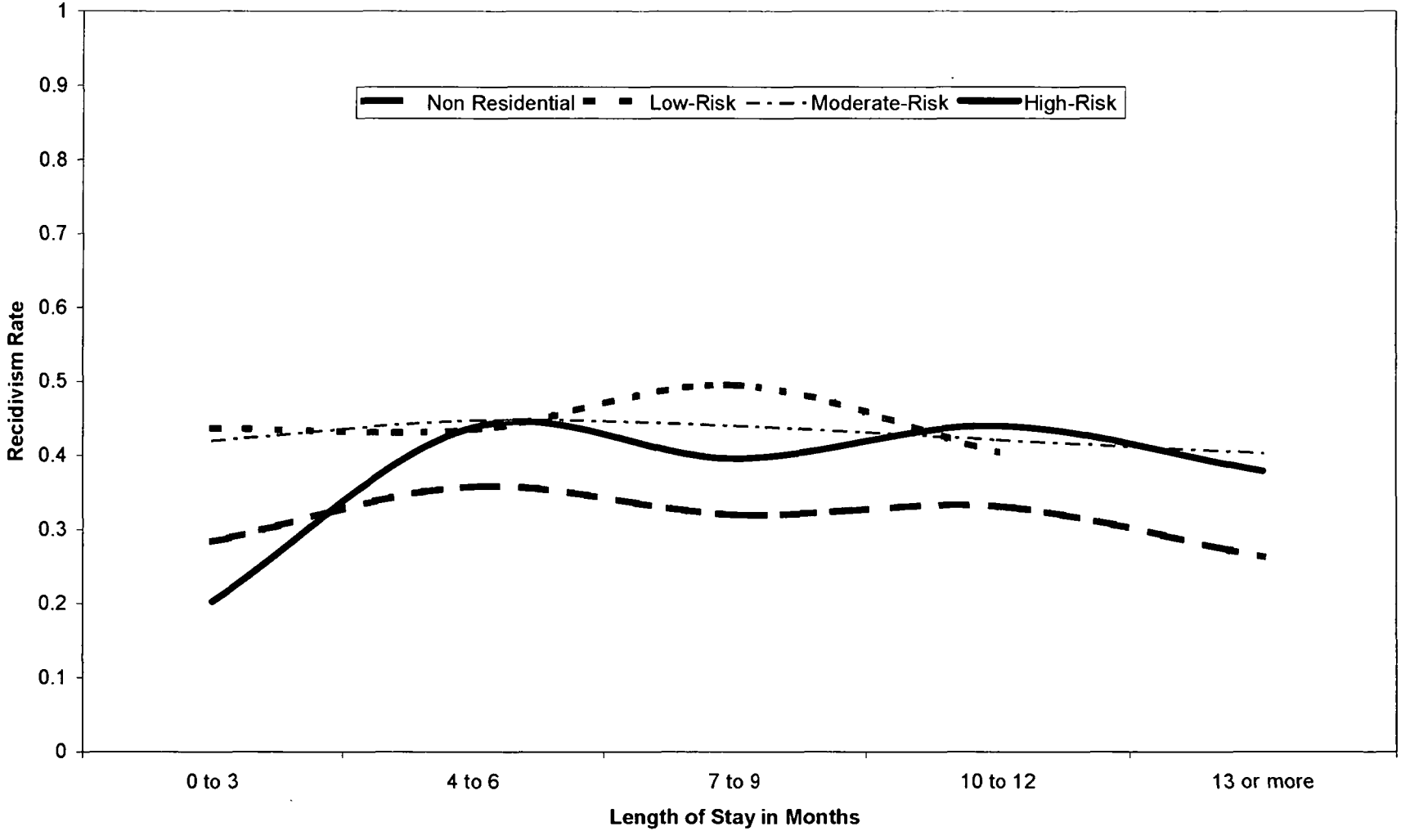
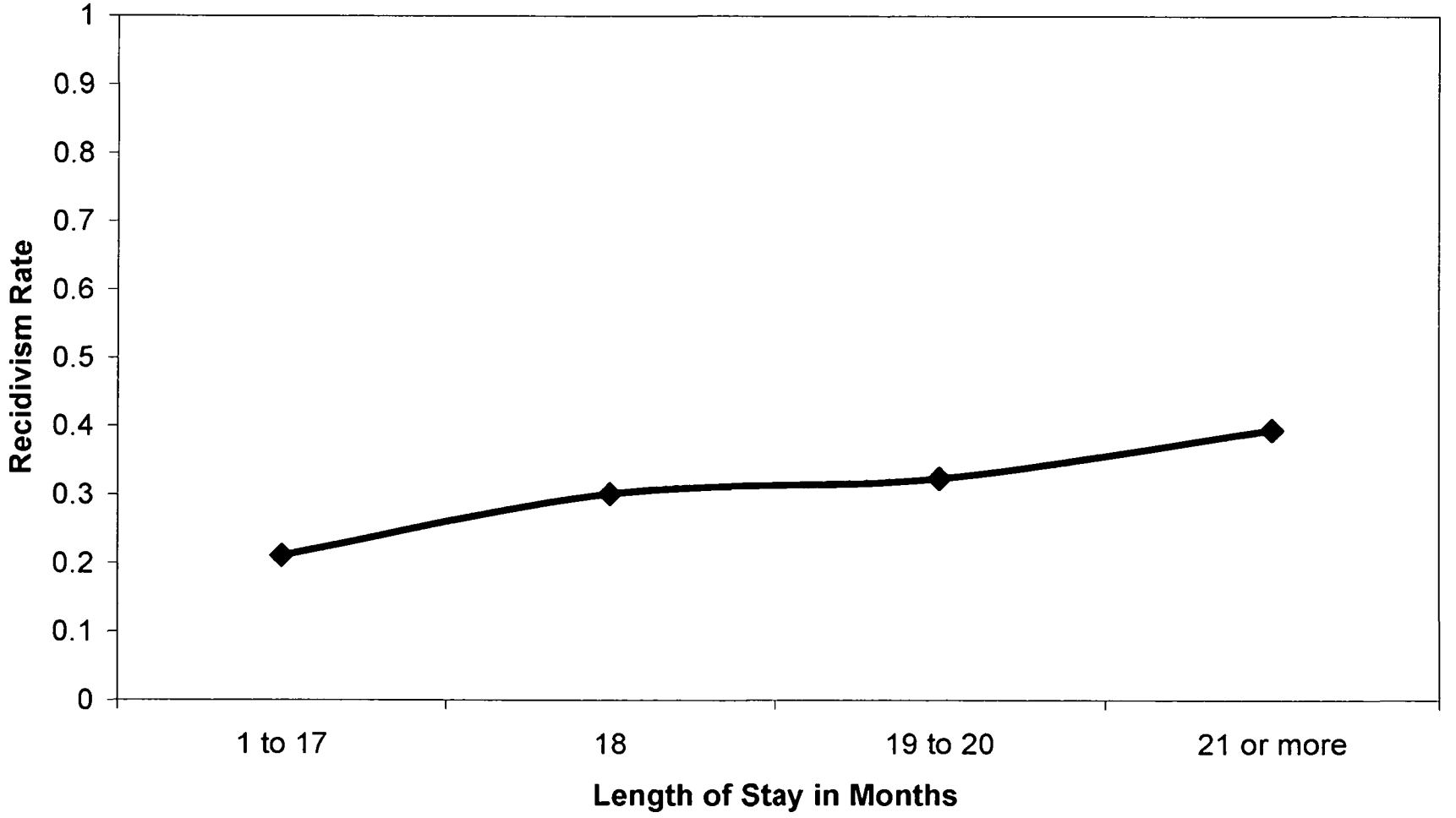


Figure 2. Recidivism by Length of Stay for Youths Released from Maximum-Risk Juvenile Facilities



	0 to 3	4 to 6	7 to 9	10 to 12	13 or more
Non Residential	28.4%	35.8%	32.0%	33.1%	26.3%
Low-Risk	43.7%	43.5%	49.5%	40.4%	n/a
Moderate-Risk	42.0%	44.7%	44.0%	42.1%	40.3%
High-Risk	20.3%	43.8%	39.6%	44.0%	37.9%

	1 to 17	18	19 to 20	21 or more
Maximum-Risk	21.1%	30.1%	32.4%	39.5%