International Journal of Offender Therapy and Comparative Criminology http://ijo.sagepub.com/

Study Characteristics and Recidivism Base Rates in Juvenile Sex Offender Recidivism

Michael F. Caldwell

Int J Offender Ther Comp Criminol 2010 54: 197 originally published online 23 January 2009

DOI: 10.1177/0306624X08330016

The online version of this article can be found at: http://ijo.sagepub.com/content/54/2/197

Published by:

(\$)SAGE

http://www.sagepublications.com

Additional services and information for International Journal of Offender Therapy and Comparative Criminology can be found at:

Email Alerts: http://ijo.sagepub.com/cgi/alerts

Subscriptions: http://ijo.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

Citations: http://ijo.sagepub.com/content/54/2/197.refs.html

>> Version of Record - Mar 4, 2010

OnlineFirst Version of Record - Jan 23, 2009

What is This?

International Journal of
Offender Therapy and
Comparative Criminology
Volume 54 Number 2
April 2010 197-212
© 2010 SAGE Publications
10.1177/0306624X08330016
http://ijo.sagepub.com
hosted at
http://online.sagepub.com

Study Characteristics and Recidivism Base Rates in Juvenile Sex Offender Recidivism

Michael F. Caldwell University of Wisconsin–Madison

This study reports on the results of a review and meta-analysis of 63 data sets that examine sexual recidivism among juvenile sex offenders. The studies include a total of 11,219 juvenile sex offenders, followed for a weighted mean of 59.4 months (SD = 36.1 months). Recidivism is identified through official records of arrest or conviction. The weighted mean sexual recidivism rate is 7.08% (SD = 3.9%). The weighted mean rate of general recidivism is 43.4% (SD = 18.9%). Studies that examine sexual recidivism during adolescence find monthly sexual recidivism rates that are more than 4 times higher than those found in studies that rely only on adult recidivism records. Neither the level of secured placement (community, residential, or secured custody) nor the use of arrest versus conviction as an outcome significantly influences sexual recidivism rates.

Keywords: juvenile sex offenders; sex offender; recidivism; risk

Laws that apply sex offender registration and community notification to juveniles or that allow juvenile sexual offenders to be civilly committed beyond their juvenile court supervision represent an important public policy trend in the management of juvenile sexual offenders. Since 1996 registration and notification laws have been federally mandated and consequently represent the most comprehensive policies to date intended to reduce sexual violence. Although there is wide consensus on the need for community safety from sex offenders, there also is substantial debate on whether these and other criminal justice responses designed to reduce sexual offending actually do so (Edwards & Hensley, 2001; Levenson, 2003; Levenson & Cotter, 2005a, 2005b; Redlich, 2001; Tewksbury, 2002, 2005; Welchans, 2005).

At least 33 states specifically require juveniles to be included in sex offender registries after a juvenile adjudication or conviction in criminal court (Garfinkle, 2003). Although some registration laws allow for exceptions for juveniles involved in sex with a similar-aged consenting peer, registration laws are typically applied to

Author's Note: Please address correspondence to Michael F. Caldwell, University of Wisconsin–Madison, 1202 W. Johnson St., Madison, WI 53706; e-mail: mfcaldwell@wisc.edu.

categories of offenders without individualized assessment of their risk for future sex offenses. Recently, the Adam Walsh Child Protection and Safety Act of 2006 was signed into law, requiring states to maintain a public database of registered sex offenders, including some juvenile sex offenders.

Laws that target adjudicated juvenile sex offenders are based on an assumption that adjudicated sex offenders differ in important and lasting ways from other delinquents and teens in general. These policies rest on the assumption that sexual offense detection and adjudication identifies a subgroup of sexually misbehaving teens that are distinct from nonadjudicated teens in the risk they pose for persistent sexual violence. Often these public policies have been grounded in questionable or inaccurate assumptions about the risk of juvenile sexual recidivism (Letourneau & Miner, 2005; Zimring, 2004). These misperceptions have tended to flourish, due in part to a lack of empirical information that could place juvenile sex offenders in the context of normative adolescent sexual development and juvenile delinquency.

For many years researchers have pointed out that the base rate of sexual recidivism is one of the most important considerations in assessing risk (Borum, 1996; Doren, 1998; Epperson, Kaul, & Huot, 1995; Letourneau & Miner, 2005; Monahan & Steadman, 1994). A low base rate of sexual recidivism among juvenile sex offenders has several implications for policy makers, researchers, and practitioners. Understanding the meaning of risk factors that identify higher risk juveniles requires some understanding of the typical risk these offenders pose. Low base rates reduce the achievable accuracy of prediction methods, impeding the ability of experts to determine the absolute level of risk that is required in sexually violent person commitment statutes. In addition, the effectiveness of treatment programs designed to reduce sexual recidivism may be difficult to quantify if the target behavior is typically uncommon.

In addition, the relative risk of sexual versus other forms of recidivism may inform public policies that are targeted at improving community safety. For policy makers, the cost of policies that may reduce sexual recidivism must be weighed against the reduction in sexual violence that is achievable through these measures. In addition, all public policies have an opportunity cost because the resources used to implement a policy could have been used for other programs that may have had a greater benefit to community safety. For all of these reasons the general base rate for sexual and general recidivism among juvenile sex offenders is an important consideration.

When studies of juvenile sex offenders report inconsistent findings, differing methodologies or samples may account for the different findings. To understand the meaning of findings in the literature, researchers and practitioners need to know what variables affect the comparability of studies that use varying methodology. Studies vary in many relevant factors, including the location of the study, the source of the participants, the level of supervision and treatment the delinquents have been provided, the age of the studied population, the definition of recidivism, and the source of recidivism information. Some of these issues may affect the comparability of studies. For instance, results from studies that use samples drawn from secured institutions may not be comparable to the results of studies of first offenders placed on probation. To answer these questions, a number of studies with each characteristic must be identified and compared. Although there have been several reviews of juvenile sex offender recidivism studies (Reitzel & Carbonell, 2006; Worling & Cruwen, 2000), to date a meta-analysis of factors that are relevant to the comparability studies has been absent from the literature.

The comparability of studies may be most affected by the way that sexual recidivism is defined. It may be that all studies of sexual recidivism underestimate the actual rate of sexual violence to some extent. It is clear that the vast majority of sexual violence remains undetected by law enforcement (Abbey, 2005), so studies that rely on self-report data are clearly not comparable with those that rely on official records. Studies that use official records of arrests or convictions fail to capture acts that are not detected, as well as those that lack sufficient evidence to justify an arrest or conviction. Variability in local statutes or enforcement policies may affect the comparability of studies that otherwise appear to define sexual recidivism the same way.

However, this last difficulty is compounded with studies that rely on self-reported misconduct. Variation can arise from the way that information is elicited from the participants (Cook, 2002; Koss & Cook, 2005). The coding of self-reported sexual violence and particularly sexual contact obtained without physical force may be particularly subject to data collection methods and may not directly translate to behaviors that would result in adjudication or are considered relevant to public policies. Nonetheless, it is generally believed that self-report methods are the most sensitive to sexual recidivism, with arrest and conviction each respectively less sensitive (Monahan & Steadman, 1994; Quinsey, Lalumiere, Rice, & Harris, 1995). Similarly, studies that use longer follow-up times are logically assumed to detect more recidivism.

This study has three purposes. First, it intends to survey the available data on juvenile sexual recidivism to determine an approximate base rate for sexual recidivism among juvenile sex offenders as a category of delinquent offender. Second, it seeks to establish an estimate of the relative risk of sexual to nonsexual recidivism for juvenile sex offenders. These issues are relevant to public policies that treat juvenile sex offenders as a category of high-risk offenders who pose a disproportionate risk to community safety. Third, it aims to examine methodological factors that may explain differences in recidivism rates across various studies to determine if there are population or study characteristics that are associated with observed rates of sexual recidivism. The latter of these will help to determine what characteristics make studies distinct so that inappropriate comparisons of nonequivalent studies can be avoided.

Method

Samples

Studies were identified with a computer search of PsychLIT, PsychAbstracts, the National Criminal Justice Reference Service of the United States, the library of the Department of Public Safety and Emergency Preparedness of Canada, the library of the Home Office of the United Kingdom, the library of the Government of Australia, Dissertation Abstracts International, and a general Internet search with the Google search engine using the following key terms: juvenile sex(ual) recidivism, adolescent sex(ual) recidivism, juvenile sex, adolescent sex, sexual recidivism, sexual reoffense, sexual offender, juvenile offender, adolescent offender, sexual, and sex(ual) delinquency. Additional searches included the reference lists of previously published articles and unpublished reports. In addition, 11 previously published researchers who have studied sexual offenders were contacted to identify additional sources.

Inclusion criteria were developed to identify studies that used population samples representative of juvenile sex offenders as a category of offender. Inclusion criteria were as follows: (a) The study population was made up of male sex offenders that were under age 18 at the time of the adjudicated sexual offense, (b) juveniles were identified as sex offenders based on an arrest or adjudication for a statutorily defined sexual offense, (c) sexual reoffense was identified through official records (arrest or conviction), (d) the sample was made up of juveniles who were not prescreened and selected because they suffered from severe mental illness or severe developmental delays, and (e) the study was described in sufficient detail that the population, reoffense definitions, and number of sexual reoffenders could be determined. This procedure netted 57 reports on 63 usable data sets. Twenty-eight of these studies were published in peer-reviewed journals. The remainder (n = 29) were unpublished papers, government reports, data sets, or unpublished dissertations. Where several studies reported on the same sample over differing follow-up periods, the report with the longest follow-up time was used.

Variables

Several study characteristics were recorded for analysis. These included the mean age of the participants (typically at the time of admission to the treatment facility), the geographic location of the study (state in the United States or province for studies from Canada and Australia), whether the study tapped a national or local database to identify recidivists, and whether the study was published or unpublished.

Population

The level of secured custody of the population studied was coded into a population source variable. Studies were coded as drawing a community sample if the source of the participants was an outpatient treatment program, outpatient assessment service, or other nonresidential setting. Secured correctional facilities were defined as locked facilities operated by or under contract to a department of juvenile corrections. Residential programs included those that provided treatment in an outof-home residential setting that was not secured.

Outcome Measure

Studies relied on various methods to determine when a participant had recidivated. Studies that relied on a new arrest or filed charge were coded as using arrest to indicate recidivism, whereas those that relied on conviction or return to secured custody for a law violation were coded as using conviction.

Recidivism Time Frame

Studies used a variety of methodologies to identify juvenile sex offenders and recidivists. Forty-eight studies identified juvenile sex offenders retrospectively. In 20 of these studies juvenile sex offenders were identified on the basis of one or more adjudication for a sexual offense that occurred when the participant was a juvenile, and reported recidivism results from a follow-up conducted when participants were adults. These studies reported adult but not adolescent recidivism and were coded as reporting adult time frame recidivism. An additional 28 studies collected recidivism information from both juvenile and adult records and reported recidivism from a mixed juvenile and adult time frame. Three of these reported juvenile and adult recidivism separately and were coded according to the analysis being undertaken. Fifteen studies identified participants as they were adjudicated as juveniles and reported recidivism from juvenile court records. These were coded as reporting juvenile time frame recidivism.

Data Analytic Strategy

The weighted mean rates of sexual and general recidivism were calculated. Univariate ANOVA were used to determine if the sample source (outpatient, residential, or secured facility), and the time frame of the follow-up (juvenile reoffense only, adult reoffense only, or both), effected sexual reoffense rates, mean participant age, or the length of the follow-up. Differences in the mean sexual recidivism rates, participant age, and follow-up times between studies that used different definitions of recidivism (arrest versus conviction) were also examined. A 3 × 3 multivariate ANOVA was used to identify significant interactions between the study variables. To account for the potential for a publication bias the recidivism rates of published studies were compared with those of unpublished reports.

Results

The 63 data sets examined here reported on the reoffense behavior of a total of 11,219 juvenile sex offenders. The weighted mean follow-up period was 59.4 months

(SD = 36.1 months), and the weighted mean sexual reoffense rate was 7.08% (range: 0% to 18%, SD = 3.9%). By contrast, the weighted mean general reoffense rate was 43.4% (range: 10.7% to 79.9%, SD = 18.9%). The weighted mean age of the participants reported in the 63 data sets was 14.8 years (SD = 0.74 years).

The mean age of the sample did not predict general recidivism (F = 0.001, ns) or sexual recidivism (F = 0.79, ns). Studies conducted in the United States (n = 53) reported a mean sexual recidivism rate (8.0%) that was similar to that of studies from other countries (n = 10, 6.4%, F = 1.31, ns) over a similar follow-up time (54.4) months, SD = 30.0 months, for the United States; and a mean of 71.3 months, SD =62.6 months, for other countries; F = 1.91, ns). Similarly, there were no significant differences in the reported rates of sexual recidivism between unpublished studies (n = 29, 7.3%) as compared with published studies (n = 28, 7.7%, F = 0.03, ns), over a similar follow-up period (54.5 months, SD = 34.6 months, for unpublished studies; 60.5 months, SD = 37.9 months, for published studies; F = 0.36, ns).

Table 1 shows the mean rates of sexual recidivism and follow-up time for each of the methodology variables studied. The results of ANOVA for the mean sexual recidivism rate for studies that relied on conviction was not significantly higher than those that relied on arrest (F = 0.32, ns). The source of the population of participants (community, residential, or secured corrections) was also not significantly related to sexual recidivism rates (F = 0.98, ns).

Similarly, ANOVA of the effect of the source of outcome information (juvenile records, adult records, or mixed juvenile and adult records) on sexual recidivism was not significant (F = 0.32, ns). However, studies that relied on recidivism during the juvenile time frame alone reported significantly higher sexual recidivism rates when compared to studies that reported adult time frame recidivism alone (9.9% and 6.5%, respectively, F = 4.44, p < .05). This was particularly striking considering that there was a significant main effect between the source of recidivism information and the length of follow-up (F = 6.01, p < .005). Studies that relied on juvenile time frame recidivism alone used follow-up times that were less than half the length of studies that relied on adult time frame recidivism data. Studies using juvenile recidivism records had a mean follow-up time of 30.5 months (SD = 10.2 months) compared to 73.8 months (SD = 46.5 months; F = 14.72, p < .0005) for studies that exclusively used adult recidivism records.

To further examine these findings a 3×3 multivariate analysis of variance (MANOVA) was conducted. To do this, the sexual recidivism rate, mean sample age, and follow-up months were used as the dependent variables and outcome type, population setting, and recidivism time frame as the independent variables. None of the studied interactions was significant.

For the full sample, the mean length of the follow-up was not significantly related to the sexual recidivism rate (r = .18, ns). The same was true for studies that reported outcomes from the juvenile time frame alone (r = -.13, ns). For studies that included the adult time frame in the outcome, however, the length of the follow-up was significantly

	Number of Studies	Sexual Recidivism, %	Follow-Up Months (SD)	Mean Age (SD)
Recidivism type				
Arrest	52	7.5	57.7 (37.90)	14.7 (0.72)
Conviction	11	8.2	43.9 (19.2)	15.2 (0.78)
Population				
Community	24	7.3	54.8 (30.3)	14.5 ^{a,b} (0.57)
Residential	21	7.1	54.2 (44.3)	15.2 ^b (0.72)
Secured	18	7.9	45.5 (34.2)	15.0 ^a (0.75)
Recidivism time frame				
Juvenile recidivism	15	9.9ª	30.5 ^b (10.2)	14.8a (0.84)
Adult recidivism	20	6.5a	73.8 ^b (46.5)	15.3 ^a (0.77)
Mixed	28	7.6	57.6 (28.5)	14.7 (0.55)

Table 1 Characteristics of Studies of Juvenile Sexual Recidivism (n = 63)

related to the sexual recidivism rate (r = .38, p < .005). Juvenile recidivism studies had a range of follow-up times that was less than half that of adult and mixed studies (20-60 months and 12-220 months, respectively). This limited distribution of follow-up months may have impeded the detection of a relationship between follow-up time and recidivism in juvenile-only studies, or it may be that other methodological issues masked the effects of longer follow-up times on sexual recidivism in these studies.

In addition to using shorter follow-up times, juvenile recidivism studies included participants that were significantly younger than adult recidivism studies. To examine the relative roles of the age of the sample and the time frame of recidivism in predicting sexual recidivism rates, a hierarchical regression was used. To do this, the mean participant age and the months of follow-up were entered on the first step, followed by the recidivism time frame variable (juvenile-only vs. adult-only records), to predict the sexual recidivism rate. The results of this analysis (Table 2) found that the mean participant age was not a significant predictor of recidivism, but the time frame of recidivism was significant, after accounting for follow-up months and mean participant age. In fact, the time frame of recidivism accounted for more than 24% of the variance in sexual recidivism rates. Thus, these data showed important differences between studies of adult outcomes and those that focused on outcomes from the juvenile time frame.

To quantify the difference in juvenile versus adult recidivism rates the monthly sexual recidivism rates of studies that used only juvenile recidivism information were compared to studies of similar length that exclusively used adult recidivism information. The 14 studies that relied on juvenile recidivism over 36 months or less (M = 28.4, SD = 7.5 months) were compared to the 12 studies that relied on adult recidivism over

a. Difference significant at p < .05.

b. Difference significant at p < .005.

	R ² Change	F Change	Standardized Beta	Significance (p)
Step 1	.02	0.35		.711
Follow-up months			.07	.708
Mean age			.12	.524
Step 2	.24	9.86		.004
Follow-up months			.39	.049
Mean age			.21	.204
Adult vs. juvenile			61	.004

Table 2 Hierarchical Linear Regression to Predict Sexual Recidivism Rate

36 months or less (M = 29.3, SD = 12.1). The mean monthly general and sexual recidivism rates were calculated for the two groups. The results show that the studies that tracked adolescent sexual recidivism had a mean monthly sexual failure rate that was more than 4 times higher than that found in the studies that tracked adult recidivism (0.837 vs. 0.197, respectively, F = 12.00, p < .005). By contrast the mean monthly general recidivism rate for the adolescent recidivism studies was 1.44% per month compared to 1.62% per month for adult recidivism studies (F = 2.94, ns).

It is possible that some of the difference between adolescent-only recidivism and adult recidivism was due to greater adult mobility, resulting in greater attrition in studies that measured adult recidivism. To examine this, the adult recidivism rates of studies that relied on state or local databases to measure recidivism were compared to those that relied on national databases. Presumably, migration across national boundaries would be lower than migration out of state or local jurisdictions, resulting in higher recidivism rates in the former. The analysis showed very similar adult recidivism rates in the two types of studies: 8.28% for national studies versus 7.20% for state or local studies (F = 0.64, ns). In addition, if adult mobility tends to significantly reduce detected recidivism, studies of adult sex offenders should tend to find lower sexual recidivism rates than studies of juvenile sex offenders. In fact, juvenile studies generally report lower sexual recidivism rates than do adult sex offender recidivism studies (Caldwell, 2002; Letourneau & Miner, 2005; Zimring, 2004).

Discussion

This study examined the effect of several methodological variables on the observed rate of sexual recidivism in juvenile sex offenders. The only variable studied here that significantly affected sexual recidivism rates was the age status of the offenders during the follow-up time frame. Studies that collected recidivism data exclusively during adolescence from juvenile records found higher monthly rates of sexual recidivism than did studies that collected recidivism data from adult records, over a relatively short time frame.

This result may be due to higher detection and apprehension or prosecution rates for adolescents. Juveniles may simply be less skilled at concealing their offenses. However, this explanation runs counter to the general finding that juvenile sexual recidivism rates are lower than those of adult sex offenders.

The most probable explanation for this finding is that the risk of reoffending behavior is highest in the time frame most proximate to the last offense. There are a number of variables that may play a role in this. First, participants studied during the adult time frame may have received more treatment than those studied in the juvenile time frame. However, these results were the same for studies of treated sex offenders and studies of cohorts of juveniles that may have received limited or no treatment. Recent studies of the effectiveness of sex offender treatment for juveniles have reported mixed results (Driessen, 2002; Hanson, Broom, & Stephenson, 2004; Reitzel & Carbonell, 2006). It seems unlikely that the magnitude of the difference in sexual recidivism rates seen here could be primarily due to differences in the length of treatment.

A second possibility is that juveniles alter their sex offending behavior in response to developmental maturity. Although it is clear that developmental forces play a significant role in adolescent antisocial decision making in general (Cauffman & Steinberg, 2000), and sexual behavior specifically (Abbey & McAuslan, 2004; Halpern, Udry, Campbell, & Suchindran, 1993; Sisk, 2006; Sisk & Foster, 2004; Udry, 1988; White & Smith 2004), exactly what aspects of adolescent development are most salient to sexual aggression and how they change to generate more adaptive sexual behavior in adulthood is not well understood. However, the results reported here lend support to the view that developmental issues play a dominant role in adolescent sexual misconduct. In this view, sexual behavior is relatively stable within a developmental stage such as adolescence (intra-developmental stage continuity) but changes with the transition to a new developmental stage such as young adulthood (inter-developmental stage discontinuity).

Although it is indisputable that not all arrests result in conviction, the significance of the difference between these outcome measures may not be as great as supposed. A wide variety of variables impact on sexual recidivism rates, and several appear to account for more of the variance than this outcome measure. Recent data indicate that 95% of felony charges result in a guilty plea without trial (United States Department of Justice, Bureau of Justice Statistics, 2005). If these data hold for sexual recidivism, the combination of relatively low rearrest rates and very high conviction rates may account for the finding reported here. If relatively few juvenile sex offenders are rearrested for a sexual offense and the vast majority are convicted, the amount of variance due to attrition during criminal justice processing should be small, and could be masked by other variables.

Risk Assessment Implications

An important finding in these data is that studies that report adult outcomes for juvenile sexual offenders differ in important ways from those that report short-term outcomes during adolescence. This is consistent with findings that delinquents in general are at higher risk for offending during their adolescent years and tend to desist from offending in early adulthood (Chung, Hill, Hawkins, Gilchrist, & Nagin, 2002; Moffitt, 1993; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996; Piquero et al., 2001). The results reported here indicate that the risk of sexual recidivism differs between the adolescent and adult time frames. As a result, studies that examine short-term recidivism of juvenile sex offenders may not be comparable to those that study delayed recidivism in adulthood. This finding also suggests that the development of adolescent sexual misconduct may differ from the process that is relevant to persistent adult sexual offending. Thus, variables that predict repeated sexual misconduct in an adolescent may differ from those that predict persistence into adulthood, and a variety of factors may serve as turning points that result in desistance from sexual offending. This finding further suggests that risk assessment methods that were validated using short-term juvenile recidivism data are unlikely to produce valid risk estimates when applied to adults who last sexually offended as an adolescent. Risk factors that have proven reliable predictors of adolescent recidivism should not be assumed to be valid in predicting adult sexual offending, and vice versa.

Limitations

These results were limited to studies that used official records to define recidivism. Although this approach had the advantage of providing policy-relevant results, it undoubtedly missed some episodes of sexual violence. Also, within the two categories of the definition of recidivism (arrest versus conviction), there may have been substantial variation. The behavior that may lead to an arrest or conviction in one jurisdiction may be commonly handled informally, or may not be an offense at all, in another. However, jurisdiction-specific effects on sexual recidivism rates were not found in this study. Thus, these results provide important information that is relevant to recent public policies that target adjudicated juvenile sex offenders.

Policy Implications

The resources devoted to reducing sexual recidivism in adolescent sex offenders are considerable. In addition to the direct costs of imposing sex offender registration and similar laws, there are opportunity costs when resources used to implement these policies are not available to devote to other programs. These results indicate that juvenile sex offenders' known rate of sexual recidivism is low. In addition, the rate of nonsexual recidivism was consistently much higher than that of sexual recidivism. The weighted mean general recidivism rate was nearly 6 times that of the weighted mean sexual recidivism rate.

It is widely acknowledged that very few adolescents who engage in sexual violence are detected and labeled as sex offenders (Abbey, 2005). As a result, the potential for sex offender registration and notification laws to reduce sexual violence among adolescents appears to be quite limited. Recent studies have also found that the overwhelming majority of adult sex offenses are committed by individuals that were not known to be juvenile sexual offenders and raises questions as to whether juvenile sex offenders pose a risk of adult sexual recidivism that is significantly different from that of other serious delinquent offenders (Atcheson & Williams, 1954; Caldwell, 2007; Caldwell, Zempke, & Vitacco, 2008; Zimring, Piquero, & Hayes, 2006; Zimring, Piquero, & Jennings, 2007). The results presented here suggest that policies that impose long-term restrictions on juvenile sex offenders in an effort to reduce sexual violence will target the minority of detected sexually aggressive adolescents who will account for a small fraction of future community sexual violence in any case.

At the same time, the findings here suggest that short-term interventions that bring adolescent sex offenders' behavior under control have more potential efficacy. The far higher monthly sexual recidivism rate during adolescence as compared to adulthood suggests that interventions that target juvenile sex offenders during their teen years may have greater impact by targeting a period when juvenile sex offenders are at higher risk.

These findings also underline the importance of treating adolescent sex offenders in developmentally sensitive ways. Cognitive changes related to brain development, hormonal changes related to the onset of puberty, the role of family and peer relationships, judgment, impulse control, bonds to school and other pro-social groups, and the response to social stressors such as child abuse could all play an important role in repeated adolescent sexual misconduct but may have little influence on persistent adult sexual offending (Cauffman & Steinberg, 2000; Halpern et al., 1993; Levesque, 2000; Sisk, 2006; Sisk & Foster, 2004; Udry, 1988). As a result, developmentally sensitive interventions, targeted over a short time frame, are apt to be more effective and to have fewer unintended negative effects.

This study contributes to the growing body of research that documents that important developmental transitions affect the nature and stability of adolescent sexual behavior. Although it is clear that important developmental transitions occur, it is less clear what elements are key to that transition. With the current trends in public policy in mind, further study into the development, change, and desistance of adolescent sexual misconduct is imperative.

References

References marked with an asterisk indicate studies included in the meta-analysis.

Abbey, A. (2005). Lessons learned and unanswered questions about sexual assault perpetration. Journal of Interpersonal Violence, 20(1), 39-42.

Abbey, A., & McAuslan, P. (2004). A longitudinal examination of male college students' perpetration of sexual assault. Journal of Consulting and Clinical Psychology, 72(5), 747-756.

*Allan, A., Allan, M. M., Marshall, P., & Kraszlan, K. (2003). Recidivism among male juvenile sexual offenders in Western Australia. Psychiatry, Psychology and Law, 10(2), 359-378.

- *Atcheson, J. D., & Williams, D. C. (1954). A study of juvenile sex offenders. American Journal of Psychiatry, 111, 366-370.
- *Auslander, B. (1998). An exploratory study investigating variables in relation to juvenile sexual re-offending. Unpublished doctoral dissertation, Florida State University.
- Borum, R. (1996). Improving the clinical practice of violence risk assessment: Technology, guidelines and training. American Psychologist, 51(9), 945-956.
- *Boyd, N. (1994). Predictors of recidivism in an adolescent sexual offenders' population. Unpublished doctoral dissertation, University of Wisconsin-Madison.
- *Brannon, J., & Troyer, R. (1995). Adolescent sex offenders: Investigating adult commitment-rates four years later. International Journal of Offender Therapy and Comparative Criminology, 39(4), 317-326.
- *Bremmer, J. F. (1992). Serious juvenile sex offenders: Treatment and long-term follow-up. Psychiatric Annals, 22, 326-332.
- *Broadhurst, R., & Loh, N. (2003). The probabilities of sex offender rearrest. Criminal Behaviour and Mental Health, 13, 121-139.
- Caldwell, M. (2002). What we do not know about juvenile sexual reoffense risk. Child Maltreatment: Journal of the American Professional Society on the Abuse of Children, 7, 291-302.
- *Caldwell, M. (2007). Sexual offense adjudication and recidivism among juvenile offenders. Sexual Abuse: A Journal of Research and Treatment, 19, 107-113.
- Caldwell, M., Zempke, M., & Vitacco, M. (2008). An examination of the sex offender registration and notification act as applied to juveniles: Evaluating the ability to predict sexual recidivism. *Psychology*, Public Policy, and Law, 14(2), 89-114.
- Cauffman, E., & Steinberg, L. (2000). (Im)maturity of judgment in adolescence: Why adolescents may be less culpable than adults. Behavioral Sciences and the Law, 18, 741-760.
- Chung, I., Hill, K., Hawkins, J., Gilchrist, L., & Nagin, D. (2002). Childhood predictors of offense trajectories. Journal of Research in Crime and Delinquency, 39(1), 60-90.
- *Community Change Consultants. (1998). Evaluation report: Male adolescent program for positive sexuality. Melbourne: Victorian Government, Department of Human Services.
- Cook, S. (2002). Self-reports of sexual, physical, and nonphysical abuse perpetration: A comparison of three measures. Violence Against Women, 8, 541-565.
- Doren, D. M. (1998). Recidivism base rates, predictions of sex offender recidivism, and the "sexual predator" commitment laws. Behavioral Sciences and the Law, 16(1), 97-114.
- *Doshay, L. J. (1943). The boy sex offender and his later career. Montclair, NJ: Patterson Smith.
- *Driessen, E. (2002). Characteristics of youth referred for sexual offenses. Unpublished doctoral dissertation, University of Wisconsin-Milwaukee.
- Edwards, W., & Hensley, C. (2001). Contextualizing sex offender management legislation and policy: Evaluating the problem of latent consequences in community notification laws. International Journal of Offender Therapy and Comparative Criminology, 45(1), 83-101.
- Epperson, D., Kaul, J., & Huot, D. (1995). Minnesota Sex Offender Screening Tool-Revised (MnSOST-R): Development, performance, and recommended risk level cut scores. St. Paul: Minnesota Department of Corrections.
- *Epperson, D., Ralston, C., Fowers, D., DeWitt, J., & Gore, K. (2006). Actuarial risk assessment with juveniles who offend sexually: Development of the Juvenile Sexual Offense Recidivism Risk Assessment Tool-II (JSORRAT-II). In D. Prescott (Ed.), Risk assessment of youth who have sexually abused (pp. 118-169). Oklahoma City, OK: Woods & Barnes.
- *Frazine-Putnam, E. S. (2002). An evaluation of an early intervention residential treatment program on recidivism rates of adolescent sexual offenders. Unpublished doctoral dissertation, University of Memphis.
- Garfinkle, E. (2003). Coming of age in America: The misapplication of sex-offender registration and community-notification laws to juveniles. California Law Review, 91, 163-208.

- *Gfellner, B. M. (2000). Profiling adolescent sex offenders: Offending history, personal characteristics, treatment and recidivism. Brandon, Manitoba: Research Report, Sex Offender Treatment Advisory Group.
- *Gretton, H., McBride, M., Hare, R., O'Shaughnessy, R., & Kumka, G. (2001). Psychopathy and recidivism in adolescent sex offenders. Criminal Justice and Behavior, 28(4), 427-449.
- *Gretton, H., Rajlic, G., & Clift, R. (2008, April). Assessing risk of re-offending among adolescents who have sexually offended. Paper presented at the Fifth Annual Forensic Psychiatry Conference, Vancouver, British Columbia.
- *Hagan, M., Cho, M., Gust-Brey, K., & Dow, E. (2001). Eight-year comparative analyses of adolescent rapists, adolescent child molesters, other adolescent delinquents, and the general population. International Journal of Offender Therapy and Comparative Criminology, 45, 314-324.
- Halpern, C., Udry, R., Campbell, B., & Suchindran, C. (1993). Testosterone and pubertal development as predictors of sexual activity: A panel analysis of adolescent males. Psychosomatic Medicine, 55, 436-447.
- Hanson, K., Broom, I., & Stephenson, M. (2004). Evaluating community sex offender treatment programs: A 12-year follow-up of 724 offenders. Canadian Journal of Behavioural Science, 36, 87-96.
- *Hecker, J., Scoular, J., Righthand, S., & Nangle, D. (2002, October). Predictive validity of the J-SOAP over 10-plus years: Implications for risk assessment. Paper presented at the annual meeting of the Association for the Treatment of Sexual Abusers, Montreal, Quebec, Canada.
- *Hiscox, H., Witt, P., & Haran, S. (2007). Juvenile Risk Assessment Scale (JRAS): A predictive validity study. The Journal of Psychiatry and Law, 35, 503-539.
- *Kahn, T., & Chambers, H. (1991). Assessing re-offense risk with juvenile sexual offenders. Child Welfare, 70(3), 333-346.
- *Kahn, T. J., & Lafond, M. A. (1988). Treatment of the adolescent sex offender. Child and Adolescent Social Work, 5, 135-148.
- *Kennedy, W. A., & Hume, M. P. (1998). Juvenile sex offender program reduces recidivism. Brown University Child and Adolescent Behavior Letter, 14, 1-4.
- *Kennedy, W. A., Light, M., & Caminez, M. (2004). False positives among adolescent sex offenders: Concurrent and predictive validity of the Millon Adolescent Clinical Inventory. Journal of Offender Rehabilitation, 39(4), 1-13.
- Koss, M. P., & Cook, S. L. (2005). More data have accumulated supporting date and acquaintance rape as significant problems for women. In R. J. Gelles & D. R. Loseke (Eds.), Current controversies on family violence (2nd ed.). Thousand Oaks, CA: Sage.
- *Knopp, F. H. (1985). Recent developments in the treatment of adolescent sex offenders. In E. M. Otey & G. D. Ryan (Eds.), Adolescent sex offenders: Issues in research and treatment (pp. 11-27). Washington, DC: National Institute of Mental Health.
- *Knopp, F. H. (1991). The youthful sex offender: The rationale & goals of early intervention & treatment. Orwell, VT: Safer Society Press.
- *Lab, S. P., Shields, G., & Schondel, C. (1993). Research note: An evaluation of juvenile sexual offender treatment. Crime & Delinquency, 39(4), 543-554.
- *Letourneau, E. J., & Armstrong, K. (in press). Recidivism rates for registered and nonregistered juvenile sexual offenders. Sexual Abuse: A Journal of Research and Treatment.
- *Letourneau, E. J., Bandyopadhyay, D., Sinha, D., & Armstrong, K. (in press). The influence of sex offender registration on juvenile sexual recidivism. Criminal Justice Policy Review.
- Letourneau, E. J., & Miner, M. H. (2005). Juvenile sex offenders: A case against the legal and clinical status quo. Sexual Abuse: Journal of Research and Treatment, 17(3), 293-312.
- Levenson, J. S. (2003). Community notification and civil commitment of sex offenders: A review of policies designed to combat sexual violence. Journal of Child Sexual Abuse, 12(3/4), 17-52.
- Levenson, J. S., & Cotter, L. (2005a). The impact of sex offender residence restrictions: 1,000 feet from danger or one step from absurd? International Journal of Offender Therapy and Comparative Criminology, 49(2), 168-178.

- Levenson, J. S., & Cotter, L. (2005b). The impact of Megan's Law on sex offender reintegration. Journal of Contemporary Criminal Justice, 21(1), 49-66.
- Levesque, R. (2000). Adolescents, sex, and the law. Washington, DC: American Psychological Association.
- *Liedecke, D., & Marbibi, M. (2000). Risk assessment and recidivism in juvenile sexual offenders: A validation study of the Static-99. Austin: Texas Youth Commission.
- *Martinez, R., Flores, J., & Rosenfeld, B. (2007). Validity of the Juvenile Sex Offender Assessment Protocol-II (J-SOAP-II) in a sample of urban minority youth. Criminal Justice and Behavior, 34, 1284-1295.
- *Milloy, C. D. (1994). A comparative study of juvenile sex offenders and non-sex offenders. Olympia: Washington State Institute for Public Policy.
- *Miner, M. (2002). Factors associated with recidivism in juveniles: An analysis of serious juvenile sex offenders. Journal of Research in Crime and Delinquency, 39(4), 421-436.
- *Miner, M. H., Siekert, G. P., & Ackland, M. A. (1997). Evaluation: Juvenile Sex Offender Treatment Program, Minnesota Correctional Facility-Sauk Centre. Minneapolis: University of Minnesota.
- Moffitt, T. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. Psychological Review, 100, 674-701.
- Moffitt, T., Caspi, A., Dickson, N., Silva, P., & Stanton, W. (1996). Childhood-onset versus adolescentonset antisocial conduct problems in males: Natural history from ages 3 to 18 years. Development and Psychopathology, 8, 399-424.
- Monahan, J., & Steadman, H. (1994). Violence and mental disorders: Developments in risk assessment. Chicago: University of Chicago Press.
- *Nisbett, I., Wilson, P., & Smallbone, S. (2004). A prospective longitudinal study of sexual recidivism among adolescent sex offenders. Sexual Abuse: A Journal of Research and Treatment, 16(3), 223-234.
- *Parks, G. A. (2004). Juvenile sex offender recidivism: Typological differences in risk assessment. Unpublished doctoral dissertation, Walden University.
- Piquero, A., Blumstein, A., Brame, R., Haapanen, R., Mulvey, E., & Nagin, D. (2001). Assessing the impact of exposure time and incapacitation on longitudinal trajectories of criminal offending. Journal of Adolescent Research, 16(1), 54-74.
- *Prentky, R., Harris, B., Frizzell, K., & Righthand, S. (2000). An actuarial procedure for assessing risk with juvenile sex offenders. Sexual Abuse: A Journal of Research and Treatment, 12(2), 71-93.
- Quinsey, V. L., Lalumiere, M. L., Rice, M. E., & Harris, G. T. (1995). Predicting sexual offenses. In J. C. Campbell (Ed.), Assessing dangerousness: Violence by sexual offenders, batterers, and child abusers (pp. 114-138). Thousand Oaks, CA: Sage.
- *Rassmussen, L. (1999). Factors related to recidivism among juvenile sexual offenders. Sexual Abuse: A Journal of Research and Treatment, 11(1), 69-85.
- Redlich, A. D. (2001). Community notification: Perceptions of its effectiveness in preventing child sexual abuse. Journal of Child Sexual Abuse, 10, 91-116.
- Reitzel, L. R., & Carbonell, J. L. (2006). The effectiveness of sexual offender treatment for juveniles as measured by recidivism: A meta-analysis. Sexual Abuse: A Journal of Research and Treatment, 18, 401-422.
- *Santman, J. (1998). A taxonomic model of juvenile sexual offender recidivism. Unpublished doctoral dissertation, California School of Professional Psychology.
- *Schmidt, F., & Heniz, L. (1999). Treatment success of a community based program for young adolescent sex offenders. In B. K. Schwartz (Ed.), The sex offender (Vol. 3, 18.1-18.8). Kingston, NJ: Civic Research Institute.
- *Schram, D. D., Milloy, C. D., & Rowe, W. E. (1991). Juvenile sex offenders: A follow-up study of re-offense behavior. Olympia: Washington State Institute for Public Policy.
- *Seabloom, W., Seabloom, M., Seabloom, E., Barron, R., & Hendrickson, S. (2003). A 14 to 24-year longitudinal study of a comprehensive sexual health model treatment program for adolescent sex offenders:

- Predictors of successful completion and subsequent criminal recidivism. International Journal of Offender Therapy and Comparative Criminology, 47(4), 468-481.
- *Sipe, R., Jensen, E., & Everett, R. (1998). Adolescent sexual offenders grown up. Criminal Justice and Behavior, 25(1), 109-125.
- Sisk, C. L. (2006). New insights into the neurobiology of sexual maturation. Sexual and Relationship Therapy, 21(1), 5-14.
- Sisk, C. L., & Foster, D. (2004). The neural basis of puberty and adolescence. Nature Neuroscience, 7, 1040-1047.
- *Smets, A. C., & Cebula, C. M. (1987). A group treatment program for adolescent sex offenders: Five steps toward resolution. Child Abuse and Neglect, 11, 247-254.
- *Smith, W. R. (1984). Patterns of re-offending among juvenile sex offenders. Seattle: Juvenile Sexual Offender Program, University of Washington.
- *Smith, W., & Monastersky, C. (1986). Assessing juvenile sexual offenders' risk for re-offending. Criminal Justice and Behavior, 13, 115-140.
- *Steiger, J. C., & Dizon, C. (1991). Rehabilitation, release, and re-offending: A report on the criminal careers of the division of juvenile rehabilitation class of 1982. Olympia, WA: Juvenile Offender Research Unit, Department of Social and Human Services.
- Tewksbury, R. (2002). Validity and utility of the Kentucky sex offender registry. Federal Probation, 66(1), 21-26.
- Tewksbury, R. (2005). Collateral consequences of sex offender registration. Journal of Contemporary Criminal Justice, 21(1), 67-82.
- *Texas Youth Commission. (1999). Archive: Specialized correctional treatment archive. Retrieved March 8, 2004, from http://www.tyc.state.tx.us/archive/programs/special_treat_99.html#introduction
- Udry, R. (1988). Biological predispositions and social control in adolescent sexual behavior. American Sociological Review, 53, 709-722.
- United States Department of Justice, Bureau of Justice Statistics. (2005). Felony convictions in state courts. In Sourcebook of criminal justice statistics online. Retrieved January 7, 2007, from http:// www.albany.edu/ sourcebook/pdf/t5462002.pdf
- *Vandiver, D. (2006). A prospective analysis of juvenile male sex offenders: Characteristics and recidivism rates as adults. Journal of Interpersonal Violence, 21(5), 673-688.
- *Viljoen, J. (2008, April). Assessing risk of re-offending among adolescents who have sexually offended. Paper presented at the Fifth Annual Forensic Psychiatry Conference, Vancouver, British Columbia.
- *Viljoen, J., Scalora, M., Cuadra, L., Bader, S., Chavez, V., Ullman, D., et al. (2007). Assessing risk for violence in adolescents who have sexually offended: A comparison of the J-SOAP-II, J-SORRAT-II, and SAVRY. Criminal Justice and Behavior, 35(1), 5-23.
- *Waite, D., Keller, A., McGarvey, E., Wieckowski, E., Pinkerton, R., & Brown, G. (2005). Juvenile sex offender re-arrest rates for sexual, violent nonsexual and property crimes: A 10-year follow-up. Sexual Abuse: A Journal of Research and Treatment, 17(3), 313-331.
- *Walker, G. (1998). Victoria a world leader in working with teen sex offenders. Victoria, Australia: Department of Human Services.
- *Weibush, R. G. (1996). Juvenile sex offenders: Characteristics, system response, and recidivism. Washington, DC: National Criminal Justice Reference Service.
- Welchans, S. (2005). Megan's Law: Evaluations of sexual offender registries. Criminal Justice Policy Review, 16(2), 123-140.
- White, J. W., & Smith, P. H. (2004). Sexual assault perpetration and reperpetration: From adolescence to young adulthood. Criminal Justice and Behavior, 31(2), 182-202.
- *Wolk, N. (2005). Predictors associated with recidivism among juvenile sexual offenders. Unpublished doctoral dissertation, University of Houston.
- *Worling, J., & Cruwen, T. (2000). Adolescent sexual offender recidivism: Success of specialized treatment and implications for risk prediction. Child Abuse and Neglect, 24(7), 965-982.

- Zimring, F. E. (2004). An American travesty: Legal responses to adolescent sexual offending. Chicago: University of Chicago Press.
- *Zimring, F., Piquero, A., & Hayes, S. (2006). Sexual offending during early adolescence: Does it predict future sexual offending? Unpublished manuscript.
- *Zimring, F., Piquero, A., & Jennings, W. (2007). Sexual delinquency in Racine: Does early sex offending predict later sex offending in youth and young adulthood? *Criminology and Public Policy*, 6(3), 507-534.