Utah Cost of Crime

Sex Offender Treatment (Adults): Technical Report

December 2012

THE UNIVERSITY OF UTAH

Utah Criminal Justice Center

COLLEGE OF SOCIAL WORK
COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES
UTAH COMMISSION ON CRIMINAL AND JUVENILE JUSTICE
S.J. QUINNEY COLLEGE OF LAW

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In the United States (U.S.), more than 30,000 sex offenders participate in court mandated treatment programs annually (McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2009). Offenders are required to participant in treatment for a range of offenses, including lewdness, exhibitionism, sexual assault, sexual abuse of a child, sodomy, and rape. Treatment is provided in both secure and community-based settings and falls, broadly, into the following categories: psychological interventions; drug therapies, either for the purposes of castration or psychological treatment; surgical castration; and educational programming. The majority of sex offender treatment programs rely on group-based, cognitive behavioral approaches grounded in social learning theories (Center for Sex Offender Management (CSOM), 2006). The most common treatment targets are victim empathy (87% secure, 93% community), denial (91% secure, 92% community), and intimacy/relationship skills (84% secure, 91% community) (McGrath et al., 2009). More recently, interventions are structured according to the principles of effective correctional services, which matches offenders to treatment based on their risk-level, criminogenic needs, and learning styles (Andrews & Bonta, 2006; Andrews et al., 2001; Bonta, 2001). In the U.S., interventions provided in secure settings range from five months to four years while community-based programs using treatment approaches last anywhere from eight months to the duration of the offender's life (Daly, 2008). The majority of states that employ community-based approaches use strategies that build upon prison-based programming.

Prior Research

Research on the effectiveness of corrections-based sex offender treatment shows generally positive, though mixed, results. In a meta-analysis of 23 studies, Hanson et al. (2009) found that sex offenders who participated in treatment, either prison- or community-based, had a sexual recidivism rate that was 43% lower than untreated offenders (10.9% vs. 19.2%) and a general recidivism rate that was 34% lower (31.8% vs. 48.3%). Hanson's analysis compared recidivism outcomes between programs that adhered to the principles of effective treatment (risk-needs-responsivity (RNR)) to those that did not and found that the former were associated with larger reductions in recidivism. This latter finding may shed light on the inconsistencies in sex offender treatment research. According to the RNR model, treatment targets should have an empirically-demonstrated relationship to recidivism; however, two of the three most common treatment targets in U.S. sex offender treatment programs (victim empathy and denial) are not associated with recidivism (CSOM, 2006).

Schmucker and Losel (2008) analyzed 69 studies and found that treated sex offenders had a sexual recidivism rate that was 37% lower (11.1% vs. 17.5%) than untreated offenders and a general recidivism rate that was 31% lower (22.4% vs. 32.5%). While this study compared heterogeneous interventions, moderator analyses showed that the only treatments associated with significant changes in recidivism rates were cognitive behavioral and hormonal therapies provided in community-based settings. While previous research confirms the efficacy of community-based programming (McGrath et al., 2009), this finding is difficult to interpret because prisoners in secure settings are generally higher risk than probationers (Schmucker & Losel, 2008). Aos, Miller, and Drake (2006) found that

cognitive-behavioral therapies, for both prison-based offenders (five studies) and probationers (six studies), were associated with lower recidivism rates when compared to untreated offenders. Aos and his colleagues found no effects on recidivism for behavioral (two studies) or insight-oriented (three studies) treatments.
Earlier meta-analyses confirm the positive effect of treatment on recidivism (Alexander, 1999; Hall, 1995; Hanson et al., 2002; Polizzi et al., 1999) although several have been critiqued on the basis of methodological weakness within the primary studies (Losel, 2005). Hall's (1995) analysis of 12 studies showed a 30% reduction in sexual offending for treated offenders, a finding that has been viewed with caution due to Hall's inclusion of studies that used comparison groups comprised entirely of offenders who had refused, or dropped out of, treatment. The lack of methodological rigor in sex offender treatment research has contributed to controversies regarding whether or not such programs are effective. Two early meta-analyses found no positive effect on recidivism outcomes for treated offenders (Furby, Weinrott, & Black, 1989; U. S. General Accounting Office (USGAO), 1996). At the time of their study, Furby et al. (1989) concluded that meta-analysis was impossible because of the dearth of high quality research.

Problems in the research stem partially from public concern over sex offender recidivism, which results in most convicted offenders being sentenced to some form of treatment. Consequently, researchers struggle to find a sample of untreated offenders to use as a comparison group. Given low baseline rates of sex offending, treatment effects are difficult to discern if the study follow-up period is less than three years (Daly, 2008). Heterogeneity in study constructs—including for treatment targets, offender type, and outcome measures—further complicates interpretation of the effects of treatment.

Methods

Inclusion Criteria

A systematic review was conducted, in accordance with the protocol outlined by PRISMA (Moher, Liberati, Tetzlaff, & Altman, 2009), to identify studies for inclusion in this meta-analysis. The research team identified eligibility criteria for population, intervention, setting, outcome, and methodology (see Methods Report for a further explanation of the search strategy). Given Furby's (1989) failure to identify studies of sufficient quality to conduct a meta-analysis, the researchers restricted the search to studies published between 1987 and 2011. Studies had to meet the following criteria to be eligible:

a) The study must evaluate a criminal justice intervention. Primary prevention programs and programs serving non-court involved populations were excluded. Interventions could be chemical, educational, therapeutic, or a combination of those strategies; surgical interventions were excluded. Studies that evaluated containment strategies for managing sex offenders were not eligible if they did not also include a treatment component.
b) Both experimental and quasi-experimental studies were eligible for inclusion. Quasi-experimental studies had to use matching or statistical methods to demonstrate equivalence between the intervention and comparison group. Treatment dropouts were not considered an appropriate comparison group;

comparison groups consisting of offenders who refused treatment were included only if the authors conducted analyses that demonstrated that the groups were similar.

c) Both the treatment group and the comparison/control group must consist of adult offenders (ages 18 years and older) convicted of a sex offense, which could include exhibitionism, sexual assault, sexual abuse, rape, and other offenses classified as sex crimes within local criminal statutes.
d) The study must include a post-treatment measure of recidivism—which could be arrest, conviction, or incarceration—as an outcome. Recidivism data from official sources was preferred, but studies using only self-report recidivism measures were also eligible. Offenses committed while the offender was in a secure facility were not included; however, recidivism during the time that a participant was on community supervision was included. Non-criminal outcome measures—such as measures of treatment targets—were excluded from this analysis.
e) The study must report quantitative results than can be used to calculate an effect size. Given the interest in recidivism, dichotomous data were preferred (e.g. odds ratios). If the study only included continuous measures, effect sizes were calculated and converted into odds ratios (Lipsey & Wilson, 2001) using log odds (see Methods Report).

Retrieving and Screening Studies

The initial literature search identified 3,750 citations, from which researchers pulled 159 studies for further evaluation. Full articles were screened by one researcher, which resulted in 29 studies that met inclusion criteria. Twenty-percent of the full articles (k=30) were double-screened for inclusion by a researcher; all disagreements were resolved through discussion between the two researchers. Six of the included studies were identified as follow-up reports on the same study population and excluded from the analysis. Outcomes were included for only one timeframe from each study. Because the cost model was based on three to five year recidivism rates, the outcome closest to this timeframe was used in the analysis. In total, there were 23 studies included in the final analysis (see Appendix A for PRISMA chart).

Extracting Data

The research team developed a detailed code sheet and manual, which included variables related to study quality, program characteristics, participant characteristics, and treatment variables (see Methods Report for a full description of coding variables). One author coded all of the included studies and entered the data into an Excel spreadsheet. Ten percent (10%) of included studies were double-coded (k=2), by a researcher; discrepancies were resolved through discussion. To assess study quality, the authors used a modified version of The Maryland Scale of Scientific Rigor (Aos, Phipps, Barnoski, & Lieb 2001; Gottfredson, MacKenzie, Reuter, & Bushway, 1997). Studies that received a rating lower than "3" (unmatched comparison group or no comparison group) were excluded. Where studies reported multiple measures of recidivism, researchers selected the broadest measure (e.g. arrest over conviction). Outcome data were collected on both sexual recidivism and general recidivism (including sexual). Too few studies included measures of violent recidivism and non-sexual recidivism to conduct a meta-analysis on those outcomes. Offenders who

dropped out of treatment prior to completion were analyzed as part of the treatment group (even if the authors reported results separately). Studies were classified as secure-based if the intervention took place in a prison, jail, or psychiatric hospital. Studies were classified as community-based if the offenders were on probation or parole at the time of treatment (most commonly this was in a community mental health clinic). Community-based programming that was provided as a planned aftercare component of secure programming was classified as secure-based treatment; community-based programming that was unrelated to prison treatment was classified as community-based, even if the offender had received treatment during incarceration. Studies were coded in terms of treatment type: cognitive-behavioral, behavioral, psychotherapeutic, chemical, combined, and other.

Analysis

Data were coded into an Excel spreadsheet, which allowed researchers to calculate descriptive statistics for the full sample. The authors then recoded variables, to condense data into comparable units wherein each study contributed only one effect size to each outcome measure, and entered those into *Comprehensive Meta-Analysis* (CMA, version 2). Using CMA, the authors assessed heterogeneity using the *Q* and I-squared statistics (see Results section). The *Q* statistic is a test of the null hypothesis: a significant value ($p>.05$) indicates that the variation between studies was greater than one would expect if the difference could be explained entirely by random error (Borenstein, Hedges, Higgins, & Rothstein, 2009). Because the *Q* statistic is not a precise measure of the magnitude of dispersion between studies, the authors conducted additional analyses to quantify the proportion of variance that could be attributed to differences in study characteristics (such as setting, population, and intervention). The I-squared statistic (values range from 0% to 100%) provides an estimate of how much of the variation between studies can be explained by random error: values near 0 indicate that all of the difference can be explained by random error. Values at 25%, 50% and 75% are, respectively, considered low, moderate, and large heterogeneity (Piquero & Weisburd, 2012; Sedgwick, 2012). Given the range of study characteristics present in this sample, a random effects model, which assumes variability between studies (Piquero & Weisburd, 2010), was used to generate a summary effect size for each outcome measure. All data was coded and transformed into odds ratios, with values above 1 indicating a negative treatment effect and values below 1 indicating a positive treatment effect (i.e. reduced recidivism rates for offenders who participated in treatment).

Results

Sample Characteristics

The majority of studies (k=12) were conducted in Canada. Four studies were unpublished technical reports, conducted by government or private entities, and the remaining studies were published in peer-reviewed journals. One study received a score of five out of five on study quality and the remaining studies (95%) received a score of three or four. The majority of studies (12) evaluated an intervention that was primarily cognitive-behavioral, four studies evaluated interventions that were primarily behavioral and seven evaluated multi-modal interventions that combined elements from different therapeutic orientations.

Both the comparison and intervention groups in all included studies consisted of male offenders. In the majority of studies, the mean age of participants was mid-thirties. Fourteen of the studies evaluated interventions conducted in a secure setting and nine studies evaluated interventions conducted in a community-based setting. The community-based treatment samples included three studies of probationers, three studies of parolees, and two studies of mixed groups. The follow-up period ranged from six months to twenty years. Twenty-one of the studies included a measure of sexual recidivism; twelve used a measure of general recidivism that included sex offenses; three used a measure of general recidivism that excluded sex offenses; six used a measure of violent recidivism; and two used a composite measure of sexual and violent recidivism. Total sample size ranged from 27 to 2,557 and the entire sample describes 4,778 offenders in treatment groups and 5,417 offenders in comparison groups (see Appendix D).

Table 1 Characteristics of studies included in meta-analysis (k=23)

Characteristics	Frequency	(%)
Publication type		
Peer-reviewed journal	19	(83)
Unpublished technical report	4	(17)
Book	--	
Sample location		
U.S.	7	(30)
Canada	12	(52)
Other	4	(18)
Methodological Quality		
5: Random Control Trial (RCT)	1	(4)
4: High quality quasi-experimental[1]	1	(4)
3: Quasi-experimental with testing or matching	21	(92)
Dropouts enumerated	3	(13)

[1]Employs a quasi-experimental research design with a program and matched comparison group, controlling with instrumental variables or Heckman approach to modeling self-selection; May also include RCT with problems in implementation.

Meta-analysis

Sexual recidivism was examined in 21 studies (two of the studies only reported a composite measure of recidivism, that included but was not limited to sexual recidivism; those results are included in the discussion of general recidivism). In 14 of those, results favored treatment (seven were significant at $p<0.05$). The odds-ratios for sexual recidivism ranged from 0.06 to 2.58. The random effects mean odd-ratio was 0.67 (95% CI of 0.51 to 0.89, $p<0.01$), indicating that the treatment groups had significantly lower rates of sexual recidivism than the comparison groups. The *Q* test showed that the distribution of the effect sizes was significantly heterogeneous ($Q=54.67$, $df=20$, $p<0.001$), which was expected given the range of offenders, interventions, and treatment types included in the meta-analysis. The I-squared statistic ($I^2=63.42$) indicated that a moderate amount of the variance can be attributed to actual differences between studies rather than random error.

Following the omnibus meta-analysis (see Appendix B), studies were grouped by setting and recidivism type for further moderator analysis.

Sexual recidivism by setting. Thirteen studies examined sexual recidivism following prison- or secure-based treatment, of which eight showed results that favored treatment (five significant at p< 0.05). The random effects mean odds-ratio was 0.73 (95% CI 0.53 to 0.99, p=0.05), indicating that the lower recidivism rate for the treatment group approaches significance. The *Q* test showed significant heterogeneity between studies (p<0.001). Eight studies examined sexual recidivism following community-based treatment and six showed results that favored the treatment group (three were significant at p< 0.05). The random effects mean odds-ratio was 0.47 (95% CI 0.23 to 0.97, p<0.05) indicating a statistically significant reduction in recidivism for the treatment group. The *Q* test revealed significant heterogeneity (p<0.05). The between groups *Q* test was not significant (*Q*=1.19, *df*=1, p=0.28), however, which indicates that there is no statistically significant difference between secure- and community-based treatment effects.

General recidivism. General recidivism (including sex offenses) was examined in 15 studies (see Appendix C). In 14 of those, results favored treatment (nine were significant at p< 0.05). The odds-ratios for general recidivism ranged from 0.20 to 1.23. The random effects mean odds-ratio was 0.59 (95% CI of 0.47 to 0.74, p<0.01), indicating that the treated offenders had significantly lower rates of sexual recidivism than the untreated offenders. The *Q* test showed that the distribution of the effect sizes was significantly heterogeneous (p<0.01), which was expected given the range of offenders, interventions, and treatment types included in the meta-analysis.

General recidivism by setting. Eight studies examined general recidivism following secure-based treatment and all showed results that favored treatment (five were significant at p<0.05). The random effects mean odds-ratio was 0.55 (95% CI 0.44 to 0.69, p<0.05). Sex offender treatment provided within a secure setting was associated with a significant reduction in general recidivism. The *Q* test was not significant (p=0.06), which means that the null hypothesis was rejected: on this measure, the studies appear similar. Seven studies examined general recidivism following community-based treatment and six showed results that favored the treatment group (two were significant at p<0.05). The random effects mean odds-ratio was 0.63 (95% CI 0.41 to 0.99, p=0.05) indicating that the reduction in recidivism for the treatment group approached significance. The *Q* test was significant (p<0.01). The *Q* test assessing between-group heterogeneity was not significant (*Q*=.318, *df*=1, p=0.57), which suggests that there is no significant difference between the effects of secure- and community-based treatment on general recidivism.

Limitations

The strength of a meta-analysis rests on the comprehensiveness of the search strategy. While the authors sought to identify all eligible studies, the possibility exists, and is in fact likely, that those efforts failed to identify all the extant research on sex offender treatment. In some cases, the researchers were unable to obtain studies that were identified as eligible evaluations. Further, the strength of a meta-analysis is dependent on the quantity and

quality of the available primary research. Overall, this sample contains few randomized studies and a high proportion of relatively weaker study designs, which may inflate the overall effects of treatment on recidivism. Finally, the studies included here reflect significant heterogeneity in terms of offenders, settings, dosage, study quality, and outcome measures. In many cases, the study authors did not provide sufficient information to allow for moderator analyses of relationship between those characteristics and treatment effect. Further, the relatively small sample of included studies made it difficult to conduct moderator analyses where sufficient information was available.

References

Andrews, D. A., & Bonta, J. (2006). *The psychology of criminal conduct (4th edition).* Newark, NJ: Anderson.

Aos, S., Miller, M., & Drake, E. (2006). *Evidence-based public policy options to reduce future prison construction, criminal justice costs, and crime rates* (Document 06-10-1201). Olympia, WA: Washington Institute for Public Policy.

Aos, S., Phipps, P., Barnoski, R., & Lieb, R. (2001). The comparative costs and benefits of programs to reduce crime, v. 4.0. Olympia, WA: Washington State Institution for Public Policy.

Bonta, J. (2001). Offender rehabilitation: From research to practice: 1997-2001. Cat. No. JS4-1/1997-1. Ottawa, Canada: Public Works and Government Services Canada.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. West Sussex, United Kingdom: Wiley & Sons.

Center for Sex Offender Management. (2006). *Understanding treatment for adults and juveniles who have committed sex offenses*. Silver Springs, MD: Author.

Daly, R. (2008). *Treatment and reentry practices for sex offenders: An overview of states*. New York: Vera Institute of Justice.

Drake, E. (2009). Evidence-based public policy options to reduce crime and criminal justice costs: Implications in Washington state. *Victims & Offenders, 4(*2), 170-196.

Furby, L., Weinrott, M. R., & Blackshaw, L. (1989). Sex offender recidivism: A review. *Psychological Bulletin, 105*(1), 3-30.

Hall, G. C. N. (1995). Sexual offender recidivism revisited: A meta-analysis of recent treatment studies. *Journal of Consulting and Clinical Psychology, 63*(5), 802-809.

Hanson, R. K., & Bussiere, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology, 66*(2), 348-362.

Hanson, R. H., Bourgon, G., Helmus, L., & Hodgson, S. (2009). The principles of effective correctional treatment also apply to sexual offenders: A meta-analysis. *Criminal Justice and Behavior, 36*(9), 865-891.

Lipsey, M. W., Landenberger, N. A., & Wilson, S. J. (2007). *Effects of cognitive-behavioral programs for criminal offenders*. Oslo, Norway: The Campbell Collaboration.

Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage.

Lipton, D., Martinson, R., & Wilks, J. (1975). *The effectiveness of correctional treatment: A survey of treatment evaluation studies*. New York: Praeger.

Losel, F. (1995). The efficacy of correctional treatment: A review and synthesis of meta-evaluations. In *What works: Reducing reoffending—Guidelines from research and practice*, ed. J. McGuire, 79-111. New York: Wiley & Sons.

MacKenzie, D. (2006). What works in corrections: Reducing the criminal activities of offenders and delinquents. New York: Cambridge University Press.

McGrath, R. J., Cumming, G. F., Burchard, B. L., Zeoli, S., & Ellerby, L. (2009). *Current practices and emerging trends in sexual abuser management: The Safer Society 2009 North American Survey*. Brandon, VT: The Safer Society Press.

Moher, D., Liberati, A., Tetzlaff, J., Altman D. G, & The PRISMA Group. (2009). *Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement*. PLoS Med 6(7):0 e1000097.

Piquero, A. R., & Weisburn, D. (2010). *Handbook of quantitative criminology*. New York: Springer.

Polizzi, D. M., MacKenzie, D. L., & Hickman, L. J. (1999). What works in adult sex offender treatment? A review of prison- and non-prison-based treatment programs. *International Journal of Offender Therapy and Comparative Criminology, 43,* 357-374.

Schmucker, M., & Losel, F. (2008). Does sexual offender treatment work? A systematic review of outcome evaluations. *Psicotherma, 20*, 10-19.

United States General Accounting Office. (1996). *Sex offender treatment: Research results inconclusive about what works to reduce recidivism*. Report to the Chairman, Subcommittee on Crime, Committee on the Judiciary, House of Representatives. Washington, DC: Author.

Included Studies

Note: The studies marked with an asterisk (*) were included in the analyses. Studies without an asterisk are eligible but statistically dependent.

*Abracen, J., Looman, J., Ferguson, M., Harkins, L., & Mailloux, D. (2011). Recidivism among treated sexual offenders and comparison subjects: Recent outcome data from the Regional Treatment Centre (Ontario) high-intensity sex offender treatment programme. *Journal of Sexual Aggression, 17*(2), 142-152.

*Bakker, L., Hudson, S., Wales, D., & Riley, D. (1999). *And there was light: Evaluating the Kia Marama Treatment programme for New Zealand sex offenders against children*. Unpublished report.

*Barnoski, R. (2006). *Sex offender sentencing in Washington state: Does the prison treatment program reduce recidivism?* (Research Report No. 06-06-1205). Olympia, WA: Washington State Institute for Public Policy.

Clarke, M. (2010). *The impact of prison-based treatment on sex offender recidivism: Evidence from Minnesota*. St. Paul, Minnesota: Minnesota Department of Corrections.

*Duwe, G., & Goldman, R. A. (2009). The impact of prison-based treatment on sex offender recidivism: Evidence from Minnesota. *Sexual Abuse: A Journal Of Research And Treatment, 21*(3), 279-307.

*Friendship, C., Mann, R. E., & Beech, A. R. (2003). Evaluation of a national prison-based treatment program for sexual offenders in England and Wales. *Journal Of Interpersonal Violence, 18*(7), 744-759.

*Hanson, R. 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*(2), 87-96.

*Hanson, R. K., & Nicholaichuk, T. (2000). A cautionary note regarding Nicholaichuk et al. (2000). *Sexual Abuse: A Journal Of Research And Treatment, 12*(4), 289-293.

*Hanson, R. K., Steffy, R. A., & Gauthier, R. (1993). Long-term recidivism of child molesters. *Journal Of Consulting And Clinical Psychology, 61*(4), 646-652. doi: 10.1037/0022-006x.61.4.646

*Looman, J., Abracen, J., & Nicholaichuk, T. P. (2000). Recidivism among treated sexual offenders and matched controls: Data from the Regional Treatment Centre (Ontario). *Journal Of Interpersonal Violence, 15*(3), 279-290.

Marques, J. K. (1999). How to answer the question: Does sex offender treatment work. *Journal Of Interpersonal Violence, 14*(4), 437-451.

Marques, J. K., Day, D. M., Nelson, C., & West, M. (1994). Effects of cognitive-behavioral treatment on sex offender recidivism: Preliminary results of a longitudinal study. *Criminal Justice and Behavior, 21*(1), 28-54.

*Marques, J. K., Wiederanders, M., Day, D. M., Nelson, C., & van Ommeren, A. (2005). Effects of a relapse prevention program on sexual recidivism: Final results from California's Sex Offender Treatment and Evaluation Project (SOTEP). *Sexual Abuse: A Journal of Research & Treatment, 17*(1), 79-107.

*Marshall, L. E., Marshall, W. L., Fernandez, Y. M., Malcolm, P. B., & Moulden, H. M. (2008). The Rockwood Preparatory Program for sexual offenders: Description and preliminary appraisal. *Sexual Abuse: A Journal Of Research and Treatment, 20*(1), 25-42.

*Marshall, W. L., & Barbaree, H. E. (1988). The long-term evaluation of a behavioral treatment program for child molesters. *Behaviour Research and Therapy, 26*(6), 499-511.

*Marshall, W. L., Eccles, A., & Barbaree, H. E. (1991). The treatment of exhibitionists: A focus on sexual deviance versus cognitive and relationship features. *Behaviour Research and Therapy, 29*(2), 129-135.

*McGrath, R. J., Cumming, G., Livingston, J. A., & Hoke, S. E. (2003). Outcome of a treatment program for adult sex offenders: from prison to community. *Journal Of Interpersonal Violence, 18*(1), 3-17.

*McGrath, R. J., Cumming, G. F., Hoke, S. E., & Bonn-Miller, M. O. (2007). Outcomes in a community sex offender treatment program: A comparison between polygraphed and matched non-polygraphed offenders. *Sexual Abuse: A Journal of Research & Treatment, 19*(4), 381-393.

*McGrath, R. J., Hoke, S. E., & Vojtisek, J. E. (1998). Cognitive-behavioral treatment of sex offenders. *Criminal Justice & Behavior, 25*(2), 203-225.

Nicholaichuk, T., Gordon, A., Gu, D., & Wong, S. (2000). Outcome of an institutional sexual offender treatment program: A comparison between treated and matched untreated offenders. *Sexual Abuse: Journal of Research and Treatment, 12*(2), 139-153.

Olver, M. E., Wong, S. C. P., & Nicholaichuk, T. P. (2009). Outcome evaluation of a high-intensity inpatient sex offender treatment program. *Journal Of Interpersonal Violence, 24*(3), 522-536.

*Procter, E. (1996). A five year outcome evaluation of a community-based treatment programme for convicted sexual offenders run by the probation service. *Journal of Sexual Aggression, 2*(1), 3-16.

*Rice M. E., Quinsey V. L., & Harris G. T. (1991). Sexual recidivism among child molestors released from a maximum security psychiatric institution. *Journal of Consulting & Clinical Psychology, 59*(3), 381-386.

*Robinson, D. (1995). *Impact of cognitive skills training on post-release recidivism among Canadian federal offenders* (Research Report No. R-41). Ottawa, Canada: Correctional Service Canada.

*Ruddijs, F., & Timmerman, H. (2000). The Stichting ambulante preventie projecten method: A comparative study of recidivism in first offenders in a Dutch outpatient setting. *International Journal of Offender Therapy and Comparative Criminology, 44*(6), 725-739.

*Wilson, R. J., Cortoni, F., & McWhinnie, A. J. (2009). Circles of Support & Accountability: A Canadian National replication of outcome findings. *Sexual Abuse: A Journal of Research & Treatment, 21*(4), 412-430.

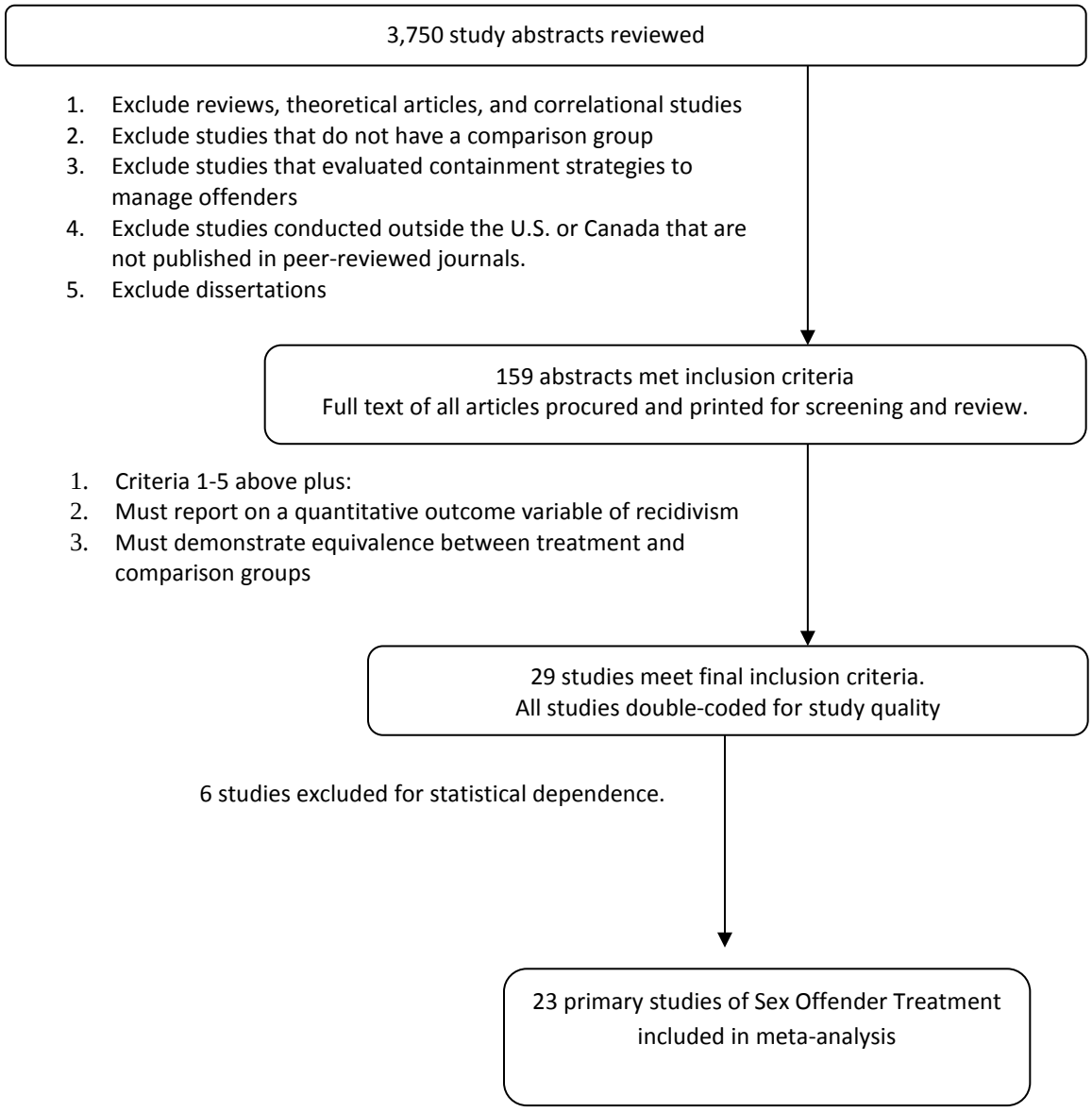
*Wilson, R. J., Picheca, J. E., & Prinzo, M. (2005). *Circles of Support & Accountability: An evaluation of the pilot project in south-central Ontario* (Research Report No. R-168). Ottawa, Ontario, Canada: Correctional Service of Canada.

Zgoba, K. M., & Levenson, J. (2008). Variations in the recidivism of treated and nontreated sexual offenders in New Jersey: An examination of three time frames. *Victims & Offenders, 3*(1), 10-30.

*Zgoba, K. M., & Simon, L. M. J. (2005). Recidivism rates of sexual offenders up to 7 years later: Does treatment matter?. *Criminal Justice Review, 30*(2), 155-173.

APPENDIX A: Search Results

Search: Title and Abstract
Search Limiters: Date Range
(1987-2011), English



APPENDIX B: Table of Included Studies

Author	Date	N in Each Group		Study Design	Sexual Recidivism		General Recidivism[1]	
		Treatment	Control		Odds-Ratio	95% CI	Odds-Ratio	95% CI
Abracen et al.	2011	63	55	Matched	1.25	0.37, 4.18		
Bakker et al.	1999	238	281	Convenience	0.33	0.19, 0.57		
Barnoski	2006	432	432	Convenience	1.72	0.81, 3.65	0.92	0.54, 1.59
Duwe & Goldman	2009	1020	1020	Matched	0.67	0.50, 0.90	0.69	0.58, 0.83
Friendship et al.	2003	647	1910	Convenience	0.93	0.53, 1.62		
Hanson et al.	1993	106	60	Convenience	1.60	0.82, 3.09		
Hanson & Nicholaichuk	2000	245	218	Convenience	0.47	0.29, 0.76	0.43	0.30, 0.60
Hanson et al.	2004	403	321	Matched	1.07	0.70, 1.61	0.98	0.73, 1.32
Looman et al.	2000	89	89	Matched	0.29	0.15, 0.55	0.56	0.30, 1.07
Marques et al.	2005	172	184	Random	1.13	0.61, 2.09		
Marshall & Barbaree	1998	68	38	Convenience	0.29	0.11, 0.76		
Marshall et al.	1991	23	21	Convenience			0.48	0.15, 1.61
Marshall et al.	2008	94	86	Matched	0.21	0.02, 1.97	0.31	0.10, 0.98
McGrath et al.	1998	71	32	Matched	0.08	0.01, 0.70	0.28	0.10, 0.81
McGrath et al.	2003	105	90	Convenience	0.48	0.25, 0.95	0.53	0.30, 0.93
McGrath et al.	2007	104	104	Matched	0.86	0.28, 2.64	1.23	0.70, 2.16
Procter	1996	51	43	Matched	0.40	0.07, 2.29		
Rice et al.	1991	29	29	Matched	1.39	0.49, 4.03		
Rjuddis & Timmerman	2000	56	56	Matched	2.58	0.28, 23.83	0.80	0.34, 1.92
Robinson	1995	189	46	Random			0.46	0.19, 1.10
Wilson et al.	2005	60	60	Matched	0.26	0.07, 1.01	0.52	0.24, 1.10
Wilson et al.	2009	18	19	Matched	0.07	0.00, 1.23	0.20	0.07, 0.62
Zgoba	2005	495	223	Convenience	0.84	0.49, 1.44	0.42	0.27, 0.64
Total Sample = 10,195								

[1]General recidivism includes sexual offenses