What Works in Adult Sex Offender Treatment? A Review of Prison- and Non-Prison-Based Treatment Programs

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Abstract: *An evaluation of 21 sex offender prison- and non-prison-based treatment programs was undertaken using the format of the University of Maryland's 1997 report to the U.S. Congress. Eight of the studies were deemed too low in scientific merit to include in assessing the effectiveness of the treatment. Of the remaining studies, approximately 50% showed statistically significant findings in favor of sex offender treatment programs. Of six studies that showed a positive treatment effect, four incorporated a cognitive-behavioral approach. Non-prison-based sex offender treatment programs were deemed to be effective in curtailing future criminal activity. Prison-based treatment programs were judged to be promising, but the evidence is not strong enough to support a conclusion that such programs are effective. Too few studies focused on particular types of sex offenders to permit any type of conclusions about the effectiveness of programs for different sex offender typologies.*

The prevalence of sex offenders in the criminal justice system has increased over the past several years. In some jurisdictions, sexual offenders represent approximately one third of state and prison populations (Norris, 1992). In an attempt to curtail sexual offending, legislatures have introduced several preventive measures (e.g., sex offender registration and community notification of sex offender release). In addition to the legislative response, correctional authorities throughout the United States and other Western nations have introduced institutional sexual offender treatment programs in their facilities in an attempt to prevent recurring sexual deviance among their offenders following release (Marshall, Jones, Ward, Johnston, & Barbaree, 1991). Several attempts have been made to evaluate the effectiveness of prison-based, as well as non-prison-based, treatment programs.

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The interpretation of the findings, however, remains controversial (Barbaree, 1997). For instance, in 1995, Nagayama Hall conducted a meta-analysis consisting of 12 sex offender treatment studies, which compared treated and untreated offenders. The study found that the treated sexual offenders had fewer sexual rearrests (9%) than the sexual offenders in the control group (i.e., the group not receiving treatment) (12%). Furthermore, the research showed that cognitive-behavioral treatment programs were more effective in curtailing future sexual deviance among offenders than hormonal treatment programs, but the programs were not significantly different from each other (Nagayama Hall, 1995). In literature reviews conducted by Marshall, Jones et al. (1991) and Blanchette (1996), the researchers found an apparent benefit of treatment and tentatively concluded that cognitive-behavioral treatment paradigms are encouraging with regard to reducing subsequent offending.

In contrast to the positive treatment effects mentioned above, Furby, Weinrott, and Blackshaw (1989) and Quinsey, Harris, Rice, and Lalumiere (1993) argue that there is no convincing evidence that treatment reduces future sexual deviance. Quinsey and associates (1993) emphasized the lack of treatment effect between treated and untreated sex offenders found in several of the studies in the literature review conducted by Marshall, Eccles, and Barbaree (1991). Similarly, Furby and colleagues (1989) concluded that "unless an effective deterrent is identified, we can expect many sex offenders to repeatedly commit sex offenses" (p. 3).

In summary, as is obvious from the short review above, there is little consistency in the conclusions drawn from meta-analyses and literature reviews with regard to the effectiveness of sex offender treatment on reducing recidivism (Blanchette, 1996; Furby et al., 1989; Marshall, Jones et al., 1991; Nagayama Hall, 1995; Quinsey et al., 1993).

This article attempts to resolve some of these controversies by examining both the quality of the research design and the direction, significance, and size of the effects of sex offender treatment using the assessment technique developed by University of Maryland researchers for the Crime Prevention Report they completed for the U.S. Congress (Sherman et al., 1997). Unlike previous research reviews and meta-analyses, in this article the authors assess both the quality of the research and the direction and significance of the effects for each study examined. The authors use the assessments from 21 studies of prison- and non-prison-based sex offender treatment to draw conclusions about the overall effectiveness of treatment programs for sex offenders in reducing recidivism. As the Maryland researchers did, the authors use their assessments of the individual studies to draw conclusions about "what works, what doesn't, and what's promising." On the basis of the methods scores of the studies and the results of the significance tests, programs are classified as (a) "working" or effective in reducing future criminal activities, (b) "promising" indicating some evidence for effectiveness but the evidence is insufficient at this point in time, (c) "don't know" indicating that there is no evidence to make a conclusion about effectiveness, and (d) "ineffective" for

programs where there is evidence indicating that they are ineffective in reducing recidivism.

METHODOLOGY

This assessment of the effectiveness of sex offender treatment is based on research completed in the past 10 years. To identify studies, the authors completed library database searches and contacted individuals working in the area of sex offender treatment to ask them if they knew of other studies that the authors had not included in their assessment. The authors reviewed each study to determine whether it was a study of the impact of sex offender treatment. Process or descriptive evaluations were excluded as well as studies that did not include an outcome measure of recidivism. The review and assessment of the studies focused on the evidence that sex offender treatment reduced recidivism; this was not limited to sexual offense recidivism as some examined any kind of future criminal behavior. The authors' interest was on the effectiveness of the treatment in reducing criminal behavior.

Recidivism is defined in a variety of ways, for example, rearrest, reincarceration, violations of community supervision, and self-reported offenses. Each definition includes different advantages and disadvantages. Taken together, the various measures for defining and measuring recidivism provide a more complete picture of program impact than a single definition alone. Consequently, the authors included studies with various definitions of recidivism.

The 21 studies assessed by the authors were classified as impact evaluations. Even though all of the studies were completed within the past 10 years, the treatment may have occurred earlier. To assess the efficacy of sex offender treatment, the authors first examined the elements of the research design for the internal validity of the study. This provided us with an objective framework to rate the quality of the research design and methods. After this assessment, each study was given a score for methodological rigor.

The methodological rigor scale used in this article is identical to the scale used in the University of Maryland's report to the U.S. Congress in 1997 entitled "Preventing Crime: What Works, What Doesn't and What's Promising" (Sherman et al., 1997). The rigor scale was created in the interests of providing a clear presentation of the quality of empirical research (Sherman et al., 1997). To assess the quality of sex offender treatment, each study was analyzed and given a scientific methods score based on its ability to control extraneous variables, minimize error, and use of appropriate statistical tests (Sherman et al., 1997). The scale provides us with an assessment of the quality of the research design and whether the results of the study can reasonably be used to draw conclusions about the effectiveness of sex offender treatment.

According to the rigor scale, studies could be assigned a scientific methods score of 1 through 5. The scale is defined as follows: (a) a score of 1 indicates that

the study found a correlation between a treatment program and a measure of crime or crime risk factors; (b) a score of 2 indicates that the study found a temporal sequence between the program and the crime or risk outcome clearly observed, or a comparison group was present without demonstrated comparability to the treatment group; (c) a score of 3 indicates that the study included a comparison between two or more units of analysis, one with and one without the program; (d) a score of 4 indicates that the study included a comparison between multiple units with and without the program, controlling for other factors, or a nonequivalent comparison group with only minor differences evident; and (e) a score of 5 indicates that the study used random assignment and analysis of comparable units to program and comparison groups[1] (Sherman et al., 1997).

After reviewing the empirical research on sex offender treatment initiatives and assigning the appropriate scientific methods score, general conclusions were made regarding (a) what works, (b) what doesn't, (c) what's promising, and (d) what we don't know. Similar to the University of Maryland's crime prevention report, the authors used the methods scores and the results of the research (i.e., direction of effects, significance) to draw conclusions about what works. It is difficult to decide where to draw the line in drawing conclusions about what is effective in reducing recidivism. The current state of the evaluation research creates a dilemma in attempting to draw conclusions. Using studies that are scored at Level 5 on the Maryland Scale as the "gold standard" of evaluation design results in relatively low scientific methods scores for most of the available evaluations. Employing a threshold this high, however, would leave little research on which to draw conclusions. As a result, nothing would be identified as working. On the other hand, drawing conclusions about what works on the basis of research scored so low (e.g., Level 1) that the authors are unable to rule out alternative explanations for the results may lead us to conclude that many things work when in fact there is little evidence. Recognizing the problem that Marshall, Jones et al. (1991) identify, that "some reviewers appear to us to set standards for methodological rigor which cannot reasonably be expected to be met in a field so immature" (p. 467), the authors hope that the standards that were used provide the most accurate depiction of the effectiveness of sex offender treatment with regard to curbing recidivism given the current state of the research.

This report, like the Maryland Report, takes the middle road between reaching few conclusions with great certainty and reaching many conclusions with little certainty. In short, this means eliminating from consideration studies that are so methodologically weak that they are scored as a Level 1 on the Maryland Scale. Studies that score at Level 2, however, are not eliminated from consideration. Although they lack strong scientific rigor and cannot provide the sole bases for any conclusions, they do provide some worthwhile information. This is particularly true in program areas that include scant evaluation research. These admittedly weak studies may be the only information that is available in an area. In program areas that are more well researched, Level 2 studies become part of the preponderance of evidence but do not serve as the primary source of evidence.

Here, their findings are given reduced weight relative to those of more scientifically rigorous evaluations.

Similar to the earlier work, the authors categorized sex offender treatment into one of four categories: (a) works, (b) doesn't work, (c) promising, and (d) don't know. Programs in the "what works" category include studies that the authors feel are reasonably certain of reducing recidivism among sex offenders in the kinds of contexts (and the types of participants) in which they have been evaluated and for which the findings should be generalizable to similar settings in other places and times (Sherman et al., 1997). Programs defined as working must have at least two Level 3 evaluations with statistical significance tests showing effectiveness and the preponderance of all available evidence supporting the same conclusions.

Programs classified as not working are those that the authors are reasonably sure are not effective in reducing recidivism (similar participants, times, and places). These programs must have at least two Level 3 evaluations with statistical tests showing ineffectiveness and the preponderance of all available evidence supporting the same conclusions. Promising programs are those for which the level of certainty from available evidence is too low to support generalizable conclusions but for which there is some evidence predicting that further research could support such conclusions.

Programs are defined as promising if they have at least one Level 3 evaluation with significance tests showing their effectiveness in reducing recidivism, and the preponderance of all available evidence supports the same conclusions. Any program not included in one of the above three categories is defined as having unknown effects. In such cases, there is simply not enough research, or not enough research employing adequate scientific rigor, on which to draw even tentative conclusions. Program areas with unknown effects should not be interpreted as ineffective. Succinctly put, the jury is still out.

ASSESSMENT OF THE RESEARCH

In all, the authors assessed 21 sex offender treatment studies. The authors excluded 8 studies that were given a methods score of 1 because these studies were considered too scientifically weak to draw valid conclusions.[2] As shown in Tables 1 and 2, respectively, the studies were classified into treatment provided in prison-based settings (eight studies); and, treatment provided in non-prison-based settings (five studies).[3] The assessed studies vary with regard to the type of sex offender population and the outcome measures used (e.g., sexual recidivism or nonsexual recidivism). Although the authors would have liked to have categorized the studies based on the type of sex offender participating in the program (e.g., high risk, child molesters, exhibitionists), there were too few studies with specific types of sex offenders to give us enough information to draw conclusions about the effectiveness of programs that targeted specific offender typologies.

TABLE 1
STUDIES OF PRISON-BASED SEX OFFENDER TREATMENT PROGRAMS AND RECIDIVISM SHOWING SCIENTIFIC METHODS SCORE AND FINDINGS

Evaluation Study Reviewed	*Methods Score and No. of Cases*	*Effect Size*	*Evaluation Study Findings*
Hanson et al. (1993)	4 *N* = 197	.08 –.23	Child molesters in the treatment program had fewer reconvictions for sexual, violent, or both crimes (44%) than offenders in Control Group 1 (48%) but not compared to offenders in Control Group 2 (33%), NS.
Nicholaichuk et al. (1995)	4 *N* = 579	.45	High-risk sex offenders in cognitive-behavioral treatment had fewer sex offense reconvictions (14.5%) than controls (33.2%), S.
		.06	High-risk sex offenders in cognitive-behavioral treatment had fewer nonsex offenses (32.1%) than program nonparticipants (35.0%), NS.
		.44	High-risk sex offenders in cognitive-behavioral treatment had fewer sex offense reconvictions that resulted in a return to federal prison (6.1%) than program nonparticipants (20.5%), S.
		–.03	High-risk sex offenders in cognitive-behavioral treatment had more nonsexual convictions that resulted in a return to federal prison (7.8%) than nonparticipants (7.1%), NS.
Oregon Department of Corrections (1994)	2 *N* = 257	NR	Participants in intensive residential correctional treatment (7%) and those in outpatient correctional treatment (6%) were reincarcerated less than nonparticipants (individual group difference, NR), NT.
Song and Lieb (1995) Study 1	2 *N* = 787	.09 .50	Sex offenders in a community-based treatment program had fewer sexual rearrests (11%) than offenders who did not participate in the treatment program but were eligible (14%), NS, and offenders who did not participate in the treatment program and were not eligible (31%), S.

		.45	Sex offenders in a community-based treatment program had fewer violent rearrests
		.42	(2%) than offenders who did not participate in the treatment program but were eligible (13%), NS, and offenders who did not participate in the treatment program and were not eligible (12%), NT.
		.51	Sex offenders in a community-based treatment program had fewer other felony
		.67	rearrests (7%) than offenders who did not participate in the treatment program but were eligible (25%), S, and offenders who did not participate in the treatment program and were not eligible (32%), NT.
Song and Lieb (1995)	2	.03	Sex offenders in prison-based treatment had fewer sexual rearrests (11%) than
Study 2	*N* = 278		nonparticipants (12%), NS.
		.15	Sex offenders in a prison-based treatment program had fewer violent rearrests (1%) than offenders not participating in the treatment program (3%), NS.
		.04	Sex offenders in a prison-based treatment program had fewer other felony rearrests (5%) than offenders not participating in the treatment program (6%), NS.
Huot (1997)	2	.14	Sex offenders who completed the prison-based treatment program had fewer sexual
	N = 251	.30	offense rearrests (12%), person offense rearrests (6%), and any other offense rearrest
		.17	(11%) than the offenders who never entered treatment (17%, 15%, and 17%, respec-
		.36	tively), S, or who dropped out of treatment (26%, 11%, and 11%, respectively), S.
		.18	
		.03	
Alaska Department of	2	NR	Sex offenders in correctional center treatment had fewer rearrests (*M* = 4.4) than the
Corrections (1996)	*N* = 685		treatment-motivated control group (*M* = 4.9), NS; the unmotivated sex offender control group (*M* = 4.7); and the non-sex offenders control group (*M* = 7.0), NT.

(continued)

TABLE 1 Continued

Evaluation Study Reviewed	*Methods Score and No. of Cases*	*Effect Size*	*Evaluation Study Findings*
Gordon and Nicholaichuk (1996)	2 *N* = 1,421	.07	Fewer sex offenders in a cognitive-behavioral treatment program had reconvictions for a sexual offense (4.7%) than the control group (6.2%), NS.
		.19	Fewer sex offenders in cognitive-behavioral treatment had nonsexual reconvictions (7.8%) than the control group (13.6%), NS.
	n = 196	.29	Of the sex offenders participating in the cognitive-behavioral treatment program, high-risk sex offenders had fewer sexual reconvictions (6.0%) than the high-risk control group (14.6%), S.
		.19	Of the sex offenders participating in the cognitive-behavioral treatment program, high-risk sex offenders had fewer nonsexual reconvictions (8.6%) than the high-risk control group (14.6%), NS.

NOTE: NR = Not reported; NS = Nonsignificant; NT = No statistical test; S = Significant.

Shown in the tables are the references for the studies, the methods score, the total sample size of the study population, the effect size and a short summary of the results, including statistical tests. The studies are arranged in order of the strength of the scientific evidence they provide, with those ranking highest on the scientific methods scale listed first followed in descending order by less methodologically rigorous program evaluations.

The authors calculated the effect sizes for the recidivism measures listed in the fourth column of the tables. Effect size essentially refers to the magnitude of the "effect" of the program on recidivism (Cohen, 1977). Bigger program effects (impacts) imply that the program had a greater effect than smaller effect sizes. One arbitrary criterion used to determine what constitutes a big effect size as opposed to a smaller one is that effect sizes of .20 are small, .50 are medium, and .80 or higher are large.

Prison-based studies. Of the eight studies examined, only two were assessed as sufficiently rigorous to permit us to draw conclusions about whether the treatment was effective. These two studies were assessed at a Level 4 on the Methods Scale.

Hanson, Steffy, and Gauthier (1993) examined the long-term recidivism rates of 197 child molesters released from maximum-security prisons between 1958 and 1974. The follow-up period for both treated and untreated child molesters spanned up to 31 years. The study measured sexual and nonsexual offense recidivism as the outcome variable. Recidivism was determined as a reconviction for a sexual offense, violent offense, or both. The study found that offenders in the treatment program had fewer reconvictions (44%) than offenders who were incarcerated prior to the inception of the treatment program (48%) but not compared to offenders who were sentenced to the same institution, at the same time, as the treatment group but did not participate in treatment (33%). These differences are not statistically significant. This study was ranked at a methodology score of Level 4 on the Maryland Scale.

Nicholaichuk, Gordon, Andre, and Gu (1995) compared the long-term recidivism rates of 296 high-risk sex offenders with a stratified matched sample of 283 incarcerated sex offenders. The follow-up period was, on average, 6 years. The study measured sexual and nonsexual reconvictions as the outcome variable and was assessed at a methodology level of 4. The study found that sex offenders in the Clearwater cognitive-behavioral treatment program had a lower proportion of sexual offenses (regardless of the penalties incurred) (14.5%) compared to the control group (33.2%). Also, the findings indicate that sex offenders in the treatment program had a lower proportion of sexual reconvictions that resulted in a return to federal prison (6.1%) than the control group (20.5%). Both of the findings regarding sexual reconvictions are statistically significant. In regard to nonsexual reconvictions, the treated sex offenders had a lower proportion of nonsexual offenses (regardless of the penalties incurred) (32.1%) than the control group

TABLE 2
STUDIES OF NON-PRISON-BASED SEX OFFENDER TREATMENT PROGRAMS AND RECIDIVISM SHOWING SCIENTIFIC METHODS SCORE AND FINDINGS

Evaluation Study Reviewed	*Methods Score and No. of Cases*	*Effect Size*	*Evaluation Study Findings*
Marques et al. (1994)	4 $N = 602$	.17 .14	Child molesters and adult rapists in a cognitive-behavioral treatment program had fewer sexual rearrests (8.2%) than offenders in the volunteer control group (13.4%), NS, and the nonvolunteer control group (12.5%), NS.
		.27 .04	Child molesters and adult rapists in cognitive-behavioral treatment had fewer other violent offenses (8.2%) than the volunteer control group (17.5%), NT, and the nonvolunteer control group (9.4%), NS.
Marshall and Barbaree (1988)	4 $N = 126$	.51	Child molesters in cognitive-behavioral treatment had fewer sexual offenses (13.2%, M = 1.44) than the nontreatment comparisons (34.5%, M = 1.6 sexual offenses), S.
Marshall, Eccles, and Barbaree (1991)	3 $N = 44$	.36	Exhibitionists participating in a treatment program that intended to modify deviant sexual preferences were reconvicted or charged with a sexual offense less (39.1%) than untreated exhibitionists (57.1%), NS.
Study 1			
Study 2	3 $N = 61$	.70	Exhibitionists participating in a cognitive-behavioral sex offender treatment program were reconvicted or charged with a sexual offense less (23.6%) than the untreated exhibitionists (57.1%), S.
Rice et al. (1991)	2 $N = 58$	–.15	Child molesters in a behavioral treatment program had a higher proportion of sexual convictions (38%) than offenders not participating in the treatment program (31%), NS.

NOTE: NR = Not reported; NS = Nonsignificant; NT = No statistical test; S = Significant.

(35%). Furthermore, treated sex offenders had a higher proportion of nonsexual convictions that resulted in a return to federal prison (7.8%) than the control group (7.1%). However, the findings for the nonsexual offenses were shown not to be statistically significant.

The remaining six studies were all assessed at Level 2 on the Methods Scale. Although the authors examined the results of the research, the authors do not believe that the scientific rigor is sufficient to permit us to draw conclusions about the effectiveness of the treatment on the basis of this research. The Oregon Department of Corrections (1994) conducted an evaluation of its intensive residential Correctional Treatment Program (CTP) and its outpatient Correctional Treatment Services (CTS). Treated and untreated sex offenders were followed for 2 years and the percent who were reincarcerated was recorded. Only the differences in reincarceration rates were reported. Compared to the untreated group, sex offenders in the intensive residential CTP had a 7% reduction in the rate of reincarceration, whereas those given outpatient CTS had a 6% reduction. The evaluation did not report whether the differences in reincarceration rates among all three groups were statistically significant and did not provide a rate of reincarceration for the untreated participants.

Also receiving a score of 2 on the Maryland Scale was Song and Lieb's study (1995, Study 1) comparing the recidivism rates of sex offenders who received the Special Sex Offender Sentencing Alternative (SSOSA) with those who were incarcerated and did not receive treatment. The study followed 787 sex offenders for up to 7 years. Sex offenders in the SSOSA community-based treatment program had fewer sexual, violent, and other felony rearrests (11%, 2%, and 7%) than offenders who did not participate in the treatment program but were eligible (14%, 13%, and 25%) and offenders who did not participate in the treatment program and were not eligible (31%, 12%, and 32%). Significantly fewer clients in the SSOSA community-based treatment group had sexual rearrests compared to the offenders who did not participate and were not eligible for treatment. In addition, significantly fewer sex offenders in the community-based treatment program had felony arrests compared to offenders who did not participate in the treatment program but were eligible.

In another Level 2 study, Song and Lieb (1995, Study 2) compared the long-term recidivism rates of 119 treated sex offenders with a sample of 159 sex offenders who did not receive treatment. The treated sex offenders participated in a prison-based treatment program located at the Twin Rivers Corrections Center, whereas the untreated sex offenders were incarcerated in Washington State prisons. Sex offenders in the prison-based treatment program had fewer sexual, violent, and other felony rearrests (11%, 1%, and 5%) than offenders not participating in the treatment program (12%, 3%, and 6%); the results were not significant. All of the outcomes from this study were shown not to be statistically significant.

Huot (1997) conducted a study consisting of 251 sex offenders released from Minnesota prisons in 1992 (ranked at a level of 2). Sixty-five sex offenders who completed the prison-based sex offender treatment program were compared to 27

sex offenders who quit the treatment program and 159 sex offenders who never entered the treatment program. After a follow-up of approximately 5 years, sex offenders in the prison-based treatment program had fewer sexual, person, and other rearrests (12%, 6%, and 11%) than the offenders who never entered treatment (17%, 15%, and 17%) or who dropped out of treatment (26%, 11%, and 11%). The rearrest rates for all three categories were significantly lower for the treated sex offenders compared to the offenders who never entered treatment and for those who dropped out of treatment.

In 1996, the Alaska Department of Corrections completed a study that compared the 2-year recidivism rates of 411 treated sex offenders, 74 motivated untreated sex offenders, 100 unmotivated untreated sex offenders, and 100 untreated non-sex offenders. Sex offenders in the Hiland Mountain Correctional Center treatment program had fewer rearrests ($M = 4.4$) than the motivated sex offender control group ($M = 4.9$), the unmotivated sex offender control group ($M = 4.7$), and the non-sex offender control group ($M = 7.0$); the results were not significant.

Also scoring at Level 2 was Gordon and Nicholaichuk's study (1996) comparing the recidivism rates of those sex offenders who had participated in the Clearwater sex offender treatment program between 1981 and 1994 ($n = 257$) with a national sample of sex offenders released from service institutions in 1988 ($n = 1,164$). The Clearwater treatment program incorporates both cognitive-behavioral approaches as well as relapse prevention techniques. The follow-up period for the treated sex offenders was approximately 5 years, whereas the follow-up period for the untreated sex offenders spanned up to 3 years. The study found that sex offenders in the treatment group had fewer sexual and nonsexual reconvictions (4.7% and 7.8%) than the national sample of untreated sex offenders (6.2% and 13.6%). The differences in the reconviction rates between treated and untreated sex offenders were not significant. High-risk sex offenders who participated in the treatment program had fewer sexual and nonsexual reconvictions (6.0% and 8.6%) than the national sample of high-risk sex offenders who did not receive any treatment (14.6% and 14.6%). These differences were significant for sexual reconvictions but not for nonsexual reconvictions.

Overall for the prison-based sex offender treatment program, only the study by Nicholaichuk and colleagues (1995) was above Level 3 on the Methods Score and found significant differences between the treatment and the controls. The effect size was moderate. There were only significant differences between groups for sex offense reconvictions, not for non-sex offense reconvictions. The evidence from the studies assessed at Level 2 is consistent with this finding. The treatment used a cognitive-behavioral model.

Non-prison-based treatment. Shown in Table 2 are the remaining five non-prison-based treatment programs. Four of these studies were assessed at a Level 3 or above. The first study under examination was conducted by Marques, Day, Nel-

son, and West (1994) and received a score of Level 4 on the Maryland Scale. These researchers report preliminary results from a longitudinal study being conducted in California entitled the California Sexual Offender Treatment and Evaluation Project (SOTEP). The treated offenders receive both cognitive-behavioral as well as relapse prevention treatment. Of the 602 child molesters and adult rapists who were eligible to participate in the treatment program, 132 were randomly selected for the treatment group. Of the 132 selected, 98 actually completed either the entire treatment regime or at least 1 year of treatment. Those volunteer treatment participants who were not randomly selected in the treatment group were placed in the volunteer control group (n = 97), another 96 offenders were randomly selected for the nonvolunteer control group. Offenders in all three groups were followed for approximately 5 years. Sex offenders who completed the SOTEP program had fewer sexual and nonsexual rearrests (8.2% and 8.2%) than the offenders in the volunteer control group (13.4% and 17.5%) and the nonvolunteer control group (12.5% and 9.4%). Although the outcomes from this preliminary study seem to favor the treatment group, the percent differences across all groups are not statistically significant.

Marshall and Barbaree (1988) found that child molesters who participated in the cognitive-behavior treatment program had fewer sexual rearrests than the sex offenders who did not receive any treatment. Both groups of offenders were followed for up to 11 years. The recidivism data was obtained not only through official sources (i.e., police records) but also through unofficial reports (i.e., self-reports). Sex offenders in the cognitive-behavioral treatment program had significantly fewer sexual rearrests than the untreated sex offenders (13.2% vs. 34.5%, respectively). This study was ranked at a level of 4 on the Maryland Scale.

Marshall, Eccles, and Barbaree (1991) analyzed recidivism outcomes in two different sex offender treatment studies. The first study (Study 1) included 44 exhibitionists, 23 of which participated in a sexual offender treatment program at the Kingston Sexual Behavior Clinic and 21 of which did not participate in treatment. The study received a score of Level 3 on the Maryland Scale. The treatment program attempted to modify the deviant sexual preferences of the 23 treated sex offenders. Both the treated and untreated sex offenders were followed for approximately 9 years. Exhibitionists participating in the sex offender treatment program were reconvicted or charged with a sexual offense less than untreated exhibitionists (39.1% vs. 57.1%, respectively). However, the differences were not statistically significant.

The second study conducted by Marshall, Eccles, and Barbaree (1991) compared the recidivism rates of exhibitionist offenders in a cognitive-behavioral treatment program with sex offenders who did not receive any treatment and was also evaluated at a score of Level 3 on the Maryland Scale. Like the first study, the treatment program was offered at the Kingston Sexual Behavior Clinic. Unlike the cognitive-behavior treatment group (n = 17), the untreated sex offenders used in this study were the same offenders used in the first study (n = 21). After a 4-year

follow-up, researchers found that the treated exhibitionists were reconvicted or charged with a sexual offense less than the untreated exhibitionists (23.6% vs. 57.1%, respectively). A chi-square analysis comparing the treated and untreated clients from Study 1 with the treated group in Study 2 revealed statistically significant differences that favored clients in the second study.

In conducting the two separate studies, Marshall, Eccles, and Barbaree (1991) found a statistically significant difference between the recidivism rates of sex offenders participating in the treatment program that attempted to modify sexual preferences and the cognitive-behavioral treatment program. More specifically, exhibitionists in the treatment program who attempted to modify deviant sexual preferences (39.1%) were reconvicted or charged with a sexual offense more than exhibitionists in the cognitive-behavioral sex offender treatment program (23.6%).

Rice, Quinsey, and Harris (1991) conducted a study from 1972 to 1983 that included 58 child molesters, half of which received treatment, the other half of which did not. The treated and nontreated child molesters were matched on a number of characteristics. The 29 treated child molesters obtained behavioral therapy, whereas the remaining 29 did not receive any type of therapy. The follow-up period was approximately 6 years. Sex offenders in the behavioral treatment program had a higher proportion of sexual convictions (38%) than offenders not participating in the treatment program (31%), but the results were not significantly different. The study was ranked at a level of 2 on the Maryland Scale.

In summary, four of the non-prison-based sex offender treatment studies were assessed at a Level 3 or above. The study by Marshall and Barbaree (1988) and Study 2 by Marshall, Eccles, and Barbaree (1991) found significantly lower recidivism rates for the treated group compared to the untreated group. Effect sizes were moderate to large. In both cases, the effective program was based on cognitive-behavioral techniques. The studies conducted by Marshall and Barbaree (1988) and Marshall, Eccles, and Barbaree (1991) focused on particular types of sex offenders. For instance, the former examined child molesters, whereas the latter examined exhibitionists.

CONCLUSION

The recent reviews and meta-analyses concerning the efficacy of sex offender treatment provide conflicting viewpoints. Furby and colleagues (1989) and Quinsey and associates (1993) found that there was "no convincing evidence that treatment reduced recidivism" rates among sex offenders (Barbaree, 1997, p. 113). However, the meta-analysis conducted by Nagayama Hall (1995) and the literature reviews conducted by Marshall, Jones et al. (1991) and Blanchette (1996) tentatively conclude that treatment does positively affect recidivism among

treated sex offenders. The findings do not provide a simple answer to the authors' question of the efficacy of sex offender treatment programs.

The authors assessed 21 studies designed to examine the impact of sex offender treatment on recidivism. Eight studies were assessed as too low in scientific merit to be used in drawing conclusions about the effectiveness of sex offender treatment. Of the 13 studies remaining under examination, approximately 50% (six studies) showed statistically significant findings in favor of treatment programs (Gordon & Nicholaichuk, 1996; Huot, 1997; Marshall & Barbaree, 1988; Marshall, Eccles, & Barbaree, 1991; Nicholaichuk et al., 1995; Song & Lieb, 1995, Study 1).

What works? Based on our criteria, the authors concluded that non-prison-based sex offender treatment programs using cognitive-behavioral treatment methods are effective in reducing the sexual offense recidivism of sex offenders. At least two studies, judged to be of scientific merit, demonstrated a significant reduction in recidivism for those who participated in the programs: Marshall and Barbaree's (1988) study of child molesters and Marshall, Eccles, and Barbaree's (1991) study of exhibitionists. A third study, also of sufficient scientific merit, found child molesters and adult rapists who participated in the cognitive-behavioral treatment had lower recidivism in comparison to the control groups; however, this difference was not statistically significant (Marques et al., 1994).

Furthermore, of the six studies (including both prison-based and non-prison-based treatment) that showed a positive treatment effect, four incorporated a cognitive-behavioral approach (Gordon & Nicholaichuk, 1996; Marshall & Barbaree, 1988; Marshall, Eccles, & Barbaree, 1991; Nicholaichuk et al., 1995). Therefore, cognitive-behavioral treatment programs appear to be effective in reducing recidivism among sex offenders.

What's promising? Of the two prison-based sex offender treatments that scored above a 3 on the Maryland Scale, one found significant effects for the clients participating in the cognitive-behavioral treatment program (Nicholaichuk et al., 1995). Although this finding does not provide sufficient evidence to suggest that cognitive-behavior treatment is effective at curbing sexual reconviction among imprisoned sex offenders, the authors believe that of the two most rigorous treatment programs identified, the cognitive approach is promising. Our review identified the study by Nicholaichuk and associates (1995) as providing evidence that treated sex offenders had significantly fewer sex offense reconvictions, and fewer reconvictions leading to a return to prison, than untreated sex offenders. However, the program did not appear to have an impact on nonsexual recidivism. The authors identified six other studies of prison-based sex offender treatment programs, but they were assessed as having relatively low scientific merit. The results did consistently show that the treated groups had lower levels of recidi-

vism; however, because the scientific merit is so low, the authors are cautious about giving the results much weight in the decision about effectiveness.

What we don't know. There are too few studies focusing on particular types of sex offenders (e.g., exhibitionists, child molesters, adult rapists, and high-risk sex offenders) to enable the authors to draw conclusions about the effectiveness of the programs for different types of sex offenders. This is important to consider when attempting to draw conclusions about what is effective for reducing recidivism among sex offenders. More specifically, sexual offenders vary with regard to the type and number of victims they target. For instance, a study of adult rapists found that, on average, a rapist had attacked 7.5 victims, whereas the average number of attacks among child molesters was found to be at least 10 times that number (i.e., approximately 75 victims per offender) (Abel, Cunningham-Rather, Becker, & McHugh, 1983, as cited in Norris, 1992, p. 29). The authors cannot assume that programs that are effective with exhibitionists will automatically transfer and be effective with rapists or child molesters.

Any conclusions drawn from this review must remain tentative. With a heterogeneous population, it is difficult to provide general conclusions about the effectiveness of sex offender treatment programs. Future research should attempt to address the methodological weaknesses presently found in sex offender research (e.g., small sample sizes, lack of randomization, lack of comparison/control groups, and poor use of control variables to adjust for group differences). Perhaps the most important question refers to whether there are differences in the types of offenders who will benefit from cognitive-behavioral treatment. At this point, the research cannot answer this question.

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NOTES

1. Sherman and colleagues (1997) provide a more in-depth analysis of the criteria for using the scientific methods score to evaluate the efficacy of crime prevention and treatment programs.

2. The studies conducted by Bingham, Turner, and Piotrowski (1995); Dizon (1994); Dwyer and Myers (1990); Lang, Pugh, and Langevin (1988); Prentky, Lee, Knight, and Crece (1997); Romero and Williams (1985); Swanson and Garwick (1990); and Vermont Center for Prevention and Treatment of Sexual Abuse (1996) were ranked at the bottom of the Maryland Scale for scientific rigor (i.e., scored at Level 1), and thus were not included in this program evaluation.

3. Note that Song and Leib (1995) and Marshall, Eccles, and Barbaree (1991) each include two studies.

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