

A Multivariate Analysis of Sex Offender Recidivism

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Abstract: *Sex offender recidivism risk is a multifaceted phenomenon requiring consideration across multiple risk factor domains. The impact of treatment involvement and subsequent recidivism is given limited attention in comparison to other forensic mental health issues. The present analysis is a retrospective study of sex offenders treated at a secure facility utilizing a cognitive-behavioral program matched with an untreated correctional sample. Variables studied included demographic, criminal history, offense related, and treatment progress. Recidivism was assessed through arrest data. Multivariate analysis suggests that recidivism is significantly related to quality of treatment involvement, offender demographics, offense characteristics, and criminal history. Successfully treated offenders were significantly less likely to subsequently reoffend. Recidivists were also significantly younger, less likely married, had engaged in more victim grooming or less violent offending behavior, and had significantly more prior property charges. The authors discuss the clinical and policy implications of the interrelationship between treatment involvement and recidivism.*

Keywords: *sex offender; recidivism; treatment response*

Clinicians are often requested to provide information to legal decision makers with regard to options, prognoses, and predictions of recidivism related to sex offenders (Heilbrun et al., 1988; Rogers, Gillis, Dickens, & Webster, 1988). Such opinions are particularly salient given recent judicial (e.g., *Kansas v. Hendricks*, 1997) and legislative action concerning sexual predator, registration, and notification statutes.

Significant recent efforts have been made utilizing perpetrator, crime-specific, and personality factors in the prediction of sex offender recidivism (Schopp, Scalora, & Pearce, 1999). However, methodological inconsistencies (e.g., disproportionate reliance upon institutional samples, poor convergence among studies regarding criteria for recidivism, variation in the duration of follow-up periods and in the composition of sex offender and comparison populations) make it difficult to establish precise base rates as well as to identify a consistent and valid set of risk factors relating to sex offender recidivism (Prentky, Lee, Knight, &

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Cerce, 1997). Despite such methodological difficulties, some convergence has been noted with regard to the predictive value of various risk factors related to recidivism.

The offender's sexual criminal history (including prior sexual offenses, diversity of sex crimes, and age of sexual offending) is most often associated with sexual recidivism. Sexual criminal history (Hanson & Bussière, 1998; Prentky, Knight, & Lee, 1997; Quinsey, Lalumière, Rice, & Harris, 1995) has been found to predict sexual recidivism. Empirical studies also demonstrate a positive relationship between the diversity of sex crimes committed and sexual recidivism (e.g. Abel, Mittelman, Becker, Rathner, & Rouleau, 1988; Gibbens, Soothill, & Way 1981). Meta-analytic researchers have also found an inverse relationship between offender age and risk of reoffense (Hanson & Bussière, 1998).

Concerning other perpetrator characteristics, research shows that marital status and an unstable relationship history are related to sexual reoffense (Abel et al., 1988; Lang, Pugh, & Langevin, 1988; Proulx, Paradis, McKibben, Aubut, & Quimet, 1997; Rice, Quinsey, & Harris, 1991), though not supported in recent meta-analytic research (Hanson & Bussière, 1998). Perpetrator unemployment and employment instability are associated with recidivism for sex offenders in a number of studies (e.g. Maletzky, 1993; McGrath, 1991).

A variety of offense-specific characteristics have also been empirically related to sexual recidivism. Victim selection factors, such as perpetrating a sexual offense on an extrafamilial victim (particularly a stranger), indicate a greater risk to reoffend (Hanson, Steffy, & Gauthier, 1993; Lang et al., 1988; Proulx et al., 1997). Offenders who select older victims have also been found more likely to reoffend relative to those offenders who select younger victims (Hanson & Bussière, 1998). Regarding the relationship of victim gender to sexual recidivism, offenders who choose at least some male victims are more likely to sexually reoffend (Hanson & Bussière, 1998). Some inconsistency has been found related to the level of force used by an offender in the crime. Earlier research indicates that higher levels of force are related to greater risk of recidivism (e.g. Sturgeon & Taylor, 1980), though recent meta-analyses suggest that level of force has only marginal predictive utility (see Hanson & Bussière, 1998).

Though more difficult to obtain, another set of variables involving the deviant sexual interests of the perpetrator have been valuable predictors of sexual reoffending (see Hanson & Bussière, 1998). For example, higher levels of deviant sexual arousal toward children indicate a higher likelihood that an offender would sexually recidivate (Malcolm, Andrews, & Quinsey, 1993; Quinsey, Rice, & Harris, 1995; Rice et al., 1991). Mixed empirical support, however, is available regarding the risk of perpetrators possessing multiple paraphilias or displaying recurrent deviant sexual interests (Abel et al., 1988; McGrath, 1991; Prentky, Knight, et al., 1997; though see Hanson & Bussière, 1998).

Although extensive literature exists regarding the relationship of static predictor factors (such as criminal history and offense patterns) to sexual reoffending, a

growing literature has emerged examining the contribution of dynamic factors (such as treatment involvement and therapeutic change) and correlating such information with recidivism (Abel et al., 1988; Hanson et al., in press; Quinsey, Harris, Rice, & Cormier, 1998). Fewer studies have actually investigated the relevance of treatment-involvement data in the subsequent recidivism of offenders. This issue is particularly salient regarding sex offender treatment, as various commentators have provided mixed reviews concerning the efficacy of such treatment (Furby, Weinrott, & Blackshaw, 1989; Gallagher, Wilson, Hirschfield, Coggeshall, & MacKenzie, 1999; Hall, 1995; Hanson et al., in press; Marshall, Jones, Ward, Johnson, & Barbaree, 1991; Marshall & Pithers, 1994; Polizzi, MacKenzie, & Hickman, 1999). The available literature reviews and meta-analytic studies (e.g., Gallagher et al., 1999; Hall, 1995; Polizzi et al., 1999) show rather heterogeneous treatment effect sizes upon recidivism but note relatively more success in programs utilizing either cognitive-behavioral or hormonal treatments. The heterogeneous treatment effects upon recidivism are due, in part, to noteworthy studies indicating that treatment had less than the desired outcome on sexual recidivism, with treated groups having either similar or significantly higher sexual-offense reoffense rates than the untreated or refused groups (Marques, 1999; Quinsey, Khanna, & Malcolm, 1998). Recent meta-analytic research (Hanson et al., in press) also finds significantly different recidivism rates among successfully treated sexual offenders and treatment refusers as well as other untreated offenders. Such findings also suggest the need for consideration of the level and nature of treatment involvement when evaluating the impact of treatment response to recidivism.

Despite the voluminous research (especially involving static or historical factors) related to a range of sexual recidivism risk factors, recent meta-analytic analyses (Hall, 1995; Hanson & Bussière, 1998) strongly indicate that the predictive accuracy of any variable would not be substantial enough to justify its use in isolation. To date, limited research has utilized multivariate analyses to assess the relationship between various risk factors (Hall, 1995; Hanson & Bussière, 1998; Kraemer, Salisbury, & Spielman, 1998; Quinsey, Khanna, et al., 1998). In addition, although extensive research developing actuarial measures pertaining to sex offender risk assessment based upon multivariate methods has been performed—for example, Static-99 (Hanson & Thornton, 2000), and the Sex Offender Risk Appraisal Guide (Quinsey, Harris, et al., 1998)—only more recent efforts have also incorporated more dynamic factors (the Sex Offender Need Assessment Rating [Hanson & Harris, 2001]). The purpose of this study is to address this need by assessing the interrelationship between traditional risk-related variables (historical, criminal history, offense-related factors) and more dynamic treatment-related factors to recidivism to better comprehend relationships across various risk factor domains.

PROCEDURE

The authors reviewed records of 194 convicted child molesters (offending against victims 18 and younger) who were released from either a correctional or an inpatient treatment facility in a Midwestern state between 1991 and 1995. Those offenders receiving treatment were housed in a secure inpatient treatment facility under the legal authority of the Convicted Sex Offender Act (1992). The treated sample ($n = 76$) was housed within a 40-bed unit providing intensive cognitive-behavioral services to convicted child molesters and pedophiles who had either volunteered for treatment (approximately two thirds of the treated group) or had been civilly committed by the courts subsequent to completion of sentence (approximately one third of the group). Regardless of admission status, all of the treated offenders included in this follow-up study were eventually released. The average length of stay for this male-only offender treatment program was 28.3 months. The untreated comparison group ($n = 118$) involved a randomly selected sample of sex offenders convicted for similar crimes and incarcerated in the state correctional facilities that were matched based upon release periods. The average follow-up period for both groups was approximately 54 months.

The treatment sample received similar programming within a self-contained treatment program housed within a secure forensic hospital. Treatment activities were provided through a multidisciplinary treatment team. Programming was primarily cognitive-behavioral in orientation, with a majority of interventions provided via a group therapy format that addressed accountability for the offense, victim empathy, human sexuality, psychosocial skills (e.g., anger management, assertiveness training), and relapse prevention. Offenders also received individual therapy related to arousal reconditioning as well as psychiatric supervision of pharmacological treatment of comorbid psychiatric issues.

Trained raters coded offenders' legal, correctional, and treatment records, including presentence reports compiled by probation officers, treatment discharge summaries, police reports of the alleged offenses, and correctional classification studies to obtain relevant information. Information coded from the records included offender demographics drawn from all of the available sources. The raters were blind regarding the recidivism status of the subjects, but could not be practically shielded from information regarding levels of treatment involvement and response.

With regard to demographic characteristics, offender age, marital status (binary coded as married or otherwise), and employment status (binary coded as employed or unemployed) were based upon the offender's condition at the time of arrest for the index offense resulting in incarceration. Offender educational level was based upon the number of years of schooling completed by the offender at the time of arrest for the index crime. Socioeconomic status was determined via Hollingshead's (1971) Two-Factor Index of Social Position.

Offense-related characteristics (e.g., level of violence, age and sex of victim, use of controlled substances) were drawn from police reports of the index offenses as well as law enforcement interviews of the victims and defendants relevant to the investigations. Victim age was determined at the time of arrest, not at the age when such activity was speculated to have commenced. Physical violence during the offense (binary coded no or yes) was considered to have occurred with the presence of any of the following conditions: threat of physical violence for non-compliance, use of a weapon, physical restraint during offense, or physical assault without a weapon. Substance abuse during the offense (binary coded as no or yes) was determined if either the victim or the offender described the offender as having consumed alcohol or controlled substances as early as 2 hours prior to the offense or during the course of the index offense.

Offender criminal history was drawn from the classification studies and the presentence investigations. Both sources utilize the National Crime Information Computer database for interstate records of offenses as well as local law enforcement contact information. Such cross validation is necessary for criminal history, as some local law enforcement contacts and pending legal activity are often not found within the National Crime Information Computer database.

Concerning the more dynamic or clinically oriented variables, level of responsibility was coded on a 3-point scale based upon issues suggested by Salter (1988). The options (ranging from lowest to highest value) included denial of involvement in offense, partial acceptance of responsibility (e.g., minimized role, involvement, or victim impact), and full acceptance of responsibility. Multiple paraphilia history was coded from the presentence investigations and when available, prior mental health evaluations and treatment intake reports. The presence of a multiple paraphilia history (binary coded variable, yes/no) was noted if the offender described multiple incidences (related to the index offenses or otherwise) of engaging in voyeurism, exhibitionism, procurement and use of child pornography, zoophilia, or fetish-related behavior.

Consistent with prior research (Hunter & Figueredo, 1999; Kraemer et al., 1998), treatment response was determined from statements elicited from discharge documentation written by a multidisciplinary team of mental health professionals. The discharge documentation focused on treatment involvement and level of success in attaining programmatic goals (i.e., responsibility for offense, victim empathy, arousal reconditioning, and relapse prevention) as well as level of restrictiveness in discharge recommendations. Successfully treated offenders were defined as those offenders who had completed the offense-specific goals and who were recommended to subsequent placement in a less restrictive setting (e.g., community-based aftercare via parole or outpatient mental health commitment and community correctional placement). In situations in which the discharge documentation language was either vague or provided limited detail concerning one or multiple treatment goals, deference was paid to the broader statements regarding treatment progress as well as the level of restrictiveness inherent in discharge placement recommendation. The majority of such cases were considered

unsuccessfully treated. Unsuccessfully treated offenders were defined as participants whose discharge documentation indicated premature termination or limited progress in programmatic objectives. Given prior research suggesting the potential influence of the level of treatment involvement (Hanson et al., in press), offenders were considered dropouts within the unsuccessfully treated group if they requested transfer from the treatment program and terminated their involvement within the first 6 months of programming.

Recidivism was defined as including offenders who were released from institutionalization (regardless if under other legal supervision such as probation or parole) or a supervised facility and who subsequently were charged with a felony sexual offense. Recidivism data were derived from reports provided through state and national law enforcement databases describing arrest and prosecution activity related to each offender studied. The use of subsequent charges as an indicator of sexual recidivism is supported by prior research as a better predictor due to its being less likely influenced by plea bargaining to lower or nonsexual charges (e.g., Doren, 1998; Prentky, Knight, et al., 1997).

To evaluate interrater reliability, 20 cases were randomly chosen from each sample and were independently coded by two raters. Interrater reliabilities were determined by calculating Pearson product-moment correlations for continuous variables and the kappa statistic for categorical variables. All variables retained had a reliability of .90 or greater.

RESULTS

Recidivists composed 24.7% ($n = 48$) of the sample studied. The mean amount of time between release and reoffense was 23.66 months ($SD = 20.521$, range = 1 to 99 months). Univariate analysis indicated that the treated child molesters were significantly less likely to reoffend compared to their untreated counterparts, $\chi^2(1) = 4.569$, $p = .033$. Within the treated offender sample, 42.6% of the offenders discharged were found to have positively benefited from treatment to the degree that warranted recommendations of less restrictive alternatives (e.g., discharge to community, outpatient commitment, or outright discharge as a result of positively reaching maximum benefit of treatment). The remaining, unsuccessfully treated offenders were discharged to correctional settings and were ultimately discharged from such settings upon completion of their sentences. To assess whether level of treatment involvement related to subsequent sexual recidivism, the investigators bifurcated the treated-offender sample into three groups based upon discharge summaries and posttreatment recommendations. Univariate analysis, $\chi^2(3) = 11.174$, $p = .011$, indicated that the unsuccessfully treated offenders and dropouts were substantially more likely to recidivate than the successfully treated group (25.0% of unsuccessfully treated recidivated vs. 2.1% of treatment responders).

Table 1 summarizes the demographic and crime-specific data for the recidivism and nonrecidivism groups. Recidivists were significantly younger, $F(1, 192) =$

TABLE 1
UNIVARIATE STATISTICS FOR RECIDIVIST AND NONRECIDIVIST GROUPS

Variable	Recidivist ^a		Nonrecidivist ^b	
	%	(n)	%	(n)
<i>Demographics (time of arrest)</i>				
Mean age at arrest (<i>SD</i>)**	31.54	(10.33)	37.76	(12.37)
Mean years education (<i>SD</i>)	11.23	(1.89)	11.33	(2.42)
Mean socioeconomic status (<i>SD</i>)	4.04	(0.69)	4.12	(0.80)
Race				
Caucasian	66.7	(32)	73.8	(107)
Non-Caucasian	33.3	(16)	26.2	(38)
Marital status**				
Married	54.2	(26)	29.0	(42)
Unmarried	45.8	(22)	71.0	(103)
Employed at arrest	33.3	(16)	33.8	(49)
<i>Criminal history</i>				
Mean age first sex crime (<i>SD</i>)*	29.92	(10.20)	35.15	(12.02)
Mean sexual charges (<i>SD</i>)	0.65	(1.23)	0.57	(1.28)
Mean property charges (<i>SD</i>)**	3.56	(5.89)	1.51	(2.61)
Mean violent charges (<i>SD</i>)	1.38	(2.12)	0.97	(1.92)
First sex offense	66.7	(32)	68.5	(100)
<i>Offending behavior (index offense)</i>				
Grooming of victim	79.2	(38)	76.7	(112)
Penetration	62.5	(30)	62.1	(90)
Physical violence	18.8	(9)	21.9	(32)
Substance abuse	37.5	(18)	28.1	(41)
Mean number of victims (<i>SD</i>)	1.23	(0.55)	1.43	(1.39)
Mean age youngest victim (<i>SD</i>)	9.81	(4.66)	10.18	(3.96)
Extrafamilial victim(s)	62.5	(30)	50.3	(73)
Male victim(s)	25.0	(12)	17.1	(25)
<i>Clinical factors</i>				
Treatment outcome**				
Untreated	72.9	(35)	55.5	(81)
Treatment drop out/terminated	10.4	(5)	6.2	(9)
Completed unsuccessfully	14.6	(7)	16.4	(24)
Successfully treated	2.1	(1)	21.9	(32)
Partial/full responsibility for offending behavior*	53.2	(25)	69.7	(101)
Multiple paraphilia history*	20.8	(10)	33.0	(54)

a. $n = 48$.

b. $n = 146$.

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

9.853, $p = .002$, and were significantly less likely to be married, $\chi^2(1) = 10.037$, $p = .002$. Regarding offending behaviors, recidivists were less likely to report engaging in multiple paraphilias, $\chi^2(1) = 4.264$, $p = .039$, and less likely to have

TABLE 2
CUMULATIVE HIERARCHICAL DISCRIMINANT FUNCTION INFORMATION

<i>Variable Group</i>	χ^2	df	<i>Significance</i>	R ²	F _Δ
D	15.105	6	.019	0.08	
D & CH	23.935	11	.013	.12	1.82
D & CH & OB	29.452	19	.059	.16	0.92
D & CH & OB & CF	34.828	22	.040	.19	1.87

NOTE: D = demographic; CH = criminal history; OB = offending behavior; CF = clinical factors.

TABLE 3
CUMULATIVE HIERARCHICAL DISCRIMINANT FUNCTION
CLASSIFICATION INFORMATION

<i>Variable Group</i>	<i>Percent Correctly Classified</i>		
	<i>Recidivist</i>	<i>Nonrecidivist</i>	<i>Total</i>
D	56.3	68.3	65.3
D & CH	62.5	66.2	65.3
D & CH & OB	60.5	72.3	69.4
D & CH & OB & CF	64.3	73.0	70.9

NOTE: D = demographic; CH = criminal history; OB = offending behavior; CF = clinical factors.

taken either partial or full responsibility concerning the index offenses, $\chi^2(1) = 4.264, p = .039$. Concerning criminal history, recidivists had generally more prior property charges, $F(1, 192) = 11.194, p < .001$, and were significantly younger during their first sexual offense, $F(1, 192) = 7.354, p = .007$. Concerning prior property charges, although the recidivist group had significantly more variance, such a difference was not due to outliers. Also noteworthy was that prior sexual charges did not differentiate between the recidivist and nonrecidivist samples. This was likely due to the fact that nearly 70% of both samples were composed of first time sex offenders.

To determine the relative and incremental contributions of various classes of predictors to the multivariate model of sexual recidivism, a hierarchical linear discriminant analysis was conducted by assessing the cumulative impact of adding a variable group to each subsequent analysis. As noted in Table 2, the amount of variance accounted for grew incrementally as the variable classes were added to the analyses. Comparison of variance accounted for between each level of the analysis did not reveal significant differences across each level of the analysis. With the exception of the offending behavior variables, the inclusion of the different variable classes resulted in significant discriminant functions. Further, and as indicated in Table 3, a rising number of sex offenders were classified with the

TABLE 4
STANDARDIZED STRUCTURE AND CANONICAL WEIGHTS FROM
THE LINEAR DISCRIMINANT ANALYSIS OF RECIDIVIST AND
NONRECIDIVIST SEX OFFENDER GROUPS (FULL MODEL)

<i>Variable</i>	<i>Structure Weight</i>	<i>Standardized Canonical Weight</i>
Marital status (arrest)	.381	.499
Prior property charges	-.445	-.486
Treatment involvement	.247	.453
Age (arrest)	.448	.449
Age first sex offense	-.201	.358
Multiple paraphilia history	.052	.322
Partial/full responsibility for offense	.366	.318
Prior violent (nonsexual) charges	.150	-.206
Extrafamilial victims	-.133	-.187
Substance abuse (index offense)	-.079	-.169
Socioeconomic status	.274	.166
Number of victims alleged (index)	.074	.159
Male victim(s) (index)	-.125	-.123
Offender race	.063	-.122
Penetration	-.133	-.110
Employed (arrest)	.050	.076
First sexual offense	.075	-.054
Violent offending behavior	.291	.030
Offender grooming behavior	.263	.021
Age youngest victim (index offense)	.126	-.011
Prior sexual charges	-.128	-.006
Education level	.048	.000

growing discriminant functions, with the number of recidivists classified showing relatively larger increases. For the full model, including all of the variable groupings (i.e., demographic, criminal history, offending behavior, and clinical factors), the linear discriminant analysis, $\lambda = .811$, $\chi^2(22) = 34.828$, $p = .040$, accounted for 18.92% of the between groups variance and correctly reclassified 70.9% of the cases (64.3% of the recidivists and 73.0% of the nonrecidivists). As shown in Table 4 and graphically depicted in Figure 1, the variables that contributed to this model were similar to those that had had significant bivariate relationships with the recidivism category. In summary, consistent with both the bivariate and multivariate portions of the present analysis, recidivists were less likely to be married, tended to have more prior property-related criminal charges, and were younger (both at arrest and when sexual criminal behavior commenced). Clinical variables that emerged in the final multivariate model indicated that recidivists were less likely to have been involved (or involved successfully) in the offense-

Recidivist	Nonrecidivist
-.868 ^	.266 ^
-1	+1
Less likely married (arrest)	More likely married (arrest)
More prior property charges	Fewer prior property charges
Less likely involved and successful in treatment	More likely involved and successful in treatment
Less likely to report multiple paraphilias	More likely to report multiple paraphilias
Younger age first sex crime	Older age first sex crime
Younger at time of arrest (index)	Older at time of arrest (index)
Less likely to admit responsibility for index offense	More likely to admit responsibility for index offense

Figure 1 Graphical Depiction of Group Centroids of Canonical Discriminant Functions of Recidivist and Nonrecidivist

specific treatment programming, were less likely to have stated partial or full responsibility for their involvement in the index offenses, and were less likely to have reported involvement in multiple paraphilias.

DISCUSSION

The present findings are consistent with prior research suggesting a significant relationship between subsequent sexual recidivism and nonsexual criminal history (Broadhurst & Maller, 1992; Hall, 1995; Hanson & Bussière, 1998; McGrath, Hoke, & Vojtisek, 1998; Quinsey, Rice, et al., 1995), offender age both at first sexual offense and recent index offense (Abel et al., 1988; Marshall & Barbaree, 1988; Marshall, Barbaree, & Eccles, 1991; Proulx et al., 1997), and marital status (Hanson & Bussière, 1998). The short period of time between release from supervision and violent reoffense was also consistent with other studies (Prentky, Lee, et al., 1997; Quinsey, Rice, et al., 1995). Contrary to other research, however, prior sexual criminal history was not found to be a statistically significant predictor (Hall, 1995; Hanson & Bussière, 1998; Prentky, Lee, et al., 1997; Quinsey, Lalumiere, et al., 1995). Such a finding might be explained by the predominant presence of first time convicted sex offenders within the total sample.

The clinical outcome data presented are consistent with prior literature strongly suggesting a positive relationship between involvement in a cognitive-behavioral, offense-specific programming and risk reduction (e.g., Gallagher

et al., 1999; Hall, 1995; Polizzi et al., 1999). In addition to participation, the present findings indicate that the quality of treatment involvement was related to recidivism. It is difficult to assess, however, whether the impact of treatment programming upon recidivism is due to treatment effectiveness or to higher risk offenders' being more likely to be terminated from intervention. Further, the results presented above indicating higher overall prior criminal history for the recidivist group imply that attrition from treatment tended to involve such higher risk offenders, consistent with Marques, Nelson, West, and Day (1994). Such matters related to attrition highlight the complex issues inherent to interpreting treatment outcome and recidivism data. Though related, a determination of successful treatment involvement should not automatically be viewed as synonymous with a decrease in risk of recidivism.

Despite continued reaffirmation of static risk factors related to sexual violence, clinicians are challenged by the integration of dynamic treatment-related factors with static factors heavily supported within the literature (e.g., Elbogen, Mercado, Tomkins, & Scalora, 2001; Quinsey, Harris, et al., 1998). The issue of response to supervision becomes more critical in the assessment of subsequent risk of reoffense. Recent research concerning dynamic predictors of sexual recidivism indicates that various contextual factors enhance risk assessment, including levels of compliance with supervision (such as substance abuse) or relapse-prevention strategies addressing self-management strategies and cognitions supportive of sexually assaultive behavior (Hanson & Harris, 2000). The dearth of applicable information synthesizing relevant static and therapeutic variables highlights the current state of the art in risk assessment and suggests that clinicians may be much better at monitoring risk than at mediating or modifying it (Borum, 1996; Quinsey, Khanna, et al., 1998), although some recent developments are promising (e.g., Hanson & Harris, 2001). Unfortunately, clinicians involved in the risk assessment of sex offenders engaged in treatment do not have the luxury of solely applying actuarially determined static factors. Civil commitment, community notification processes, and treatment-termination decision making, for example, require review of the impact of therapeutic intervention and other dynamic processes upon level of risk. Clinicians' ability to weigh the contribution of therapeutic intervention to incremental predictive accuracy within review contexts is hindered by equivocal literature concerning the impact and effectiveness of treatment (Quinsey, Khanna, et al., 1998). Although the determination of empirically relevant factors of recidivism is critical, the ability of clinicians to accurately utilize contextually relevant risk-assessment data is an open question (Elbogen et al., 2001; Skeem, Mulvey, & Lidz, 2000). Obviously, all risk assessment decisions are based upon conditional models of prediction, often requiring consideration not only of individual and historical cues but also of contextual and environmental factors that either mitigate or enhance risk (Heilbrun, 1997; Skeem et al., 2000). Recent research suggests that the manner in which clinicians integrate historical and dynamic risk information concerning treatment outcome and static risk factors may be as critical as the quality of the information itself (Heilbrun, 1997;

Heilbrun et al., 1988). The results obtained from this study indicating a significant interrelationship between treatment involvement and recidivism underscore the need for further attention to the pertinent contextual and dynamic risk cues relevant to such risk communication concerning offenders involved in therapeutic activity.

Several methodological weaknesses in this study are worthy of consideration. Given jurisdictional differences concerning sex offender disposition and supervision, the generalization of these results should be made cautiously. In addition, the dependent variable of sexual recidivism, verified through charges noted in interstate law enforcement records, poses its own shortcomings, as researchers have shown such an indicator to underestimate the base rate for sex offense recidivism (e.g., Doren, 1998). Also noteworthy, although this sample contained both involuntarily committed and “voluntary” offenders within the treatment group, a substantial majority of the offenders studied committed offenses against children. Another confounding variable is the role of supervision within the successfully treated sample. The successfully treated sexual offenders were disproportionately released to less secure settings involving a more gradual reacclimation into the community, compared to the unsuccessfully treated subjects who were more likely to have been released into communities without supervision. Unfortunately, the level and nature of postrelease supervision could not be included in the present analysis as a covariate. Obviously, the role of supervision as a mediating factor concerning sex offender recidivism requires additional study.

This institutionalized group of offenders, based upon criminal history and offense-related factors, appears at higher risk than community samples studied (e.g., Romero & Williams, 1985). Further, the recidivism rates obtained are substantially higher than other institutionalized offenders studied under similar follow-up periods, as the present sample had a 24.7% rearrest rate for sexual offenses compared to the 13.4% rate found by the meta-analytic research of Hanson & Bussière (1998), suggesting the present samples' being a higher risk group. Consistent with other research, however, the recidivism rates within the sample increased significantly with the length of the follow-up period (Doren, 1998; Prentky, Lee, et al., 1997).

This study considered multidisciplinary clinical team judgments regarding offender treatment success and found a significant relationship between such judgments and subsequent recidivism, contrary to previous research in this area (Quinsey, Khanna, et al., 1998; Seto & Barbaree, 1999). It should be noted, however, that the clinician judgments studied involved the tabulation of discharge decisions made as well as a description of risk assessment information documented toward discharge. Although the benefit of this approach is obvious in terms of its relationship to actual decisions that take place in the processing of offenders, individual clinicians were not directly surveyed for their opinions, *per se*. However, more detailed inquiry regarding the relevant contribution of treatment to various process variables warrants further inquiry to better assess the role of such dynamic risk factors.

Although the present findings support the need for multivariate risk assessment models involving a range of historical, offense-related, and dynamic treatment-related variables, continued empirical inquiry is needed. Additional research is needed to assess the impact of a variety of treatment-related conditions, including comorbid mental health (Raymond, Coleman, Ohlerking, Christenson, & Miner, 1999) and substance abuse conditions as well as other clinically relevant factors such as offense-specific cognitions and fantasy activity (e.g., Bumby, 1996). More empirical research concerning the relative contributions of supervision versus treatment in risk reduction is necessary. Such attention is warranted given recent commentary that asserts the need to view sexual offending as similar to other volitional behaviors and argues that sexual offending is better managed via enhanced supervision and relapse prevention models (Hanson & Harris, 2000).

REFERENCES

- Abel, G. G., Mittelman, M., Becker, J. V., Rathner, J., & Rouleau, J. L. (1988). Predicting child molesters' response to treatment. *Annals of New York Academy of Sciences*, 528, 223-234.
- Borum, R. (1996). Improving the clinical practice of violence risk assessment. *American Psychologist*, 51, 945-956.
- Broadhurst, R. G., & Maller, R. A. (1992). The recidivism of sex offenders in the Western Australian prison population. *British Journal of Criminology*, 32, 54-80.
- Bumby, K. M. (1996). Assessing the cognitive distortions of child molesters and rapists: Development and validation of the MOLEST and RAPE Scales. *Sexual Abuse: Journal of Research and Treatment*, 8(1), 37-54.
- Convicted Sex Offender Act, Neb. Rev. Stat. § 29-2922 (1992).
- 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.
- Elbogen, E. B., Mercado, C., Tomkins, A. J., & Scalora, M. J. (2001). Clinical practice and violence risk assessment: Availability of MacArthur Risk Factors. In D. Farrington, C. R. Hollin, & M. McMurrin (Eds.), *Sex and violence: The psychology of crimes and risk assessment* (pp. 38-55). New York: Routledge Kegan Paul.
- Furby, L., Weinrott, M. R., & Blackshaw, L. (1989). Sex offender recidivism: A review. *Psychological Bulletin*, 105, 3-30.
- Gallagher, C. A., Wilson, D. B., Hirschfield, P., Coggeshall, M. B., & MacKenzie, D. L. (1999). A quantitative review of the effect of sex offender treatment on sexual reoffending. *Corrections Management Quarterly*, 3(4), 19-29.
- Gibbens, T. C. N., Soothill, K. L., & Way, C. K. (1981). Sex offenses against young girls: A long-term record study. *Psychological Medicine*, 11, 351-357.
- Hall, G. C. N. (1995). Sexual offender recidivism revisited: A meta-analysis of recent treatment studies. *Journal of Consulting and Clinical Psychology*, 63, 802-809.
- Hanson, R. K., & Bussière, 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. K., Gordon, A., Harris, A. J. R., Marques, J. K., Murphy, W., Quinsey, V. L., et al. (in press). First report of the collaborative outcome data project on the effectiveness of psychological treatment for sex offenders. *Sexual Abuse: A Journal of Research and Treatment*.
- Hanson, R. K., & Harris, A. J. R. (2000). Where should we intervene? Dynamic predictors of sexual offense recidivism. *Criminal Justice and Behavior*, 27(1), 6-35.

- Hanson, R. K., & Harris, A. J. R. (2001). A structured approach for evaluating change among sexual offenders. *Sexual Abuse: Journal of Research and Treatment, 13*(2), 105-122.
- Hanson, R. K., Steffy, R. A., & Gauthier, R. (1993). Long-term recidivism of child molesters. *Journal of Clinical and Consulting Psychology, 61*, 646-652.
- Hanson, R. K., & Thornton, D. (2000). Improving risk assessments for sex offenders: A comparison of three actuarial scales. *Law and Human Behavior, 24*(1), 119-136.
- Heilbrun, K. (1997). Prediction versus management models relevant to risk assessment: The importance of legal decision-making context. *Law and Human Behavior, 21*, 347-359.
- Heilbrun, K., Bennet, W. S., Evans, J. H., Offutt, R. A., Reiff, H. J., & White, A. J. (1988). Assessing treatability in mentally disordered offenders: A conceptual note. *Behavioral Sciences and the Law, 6*, 479-486.
- Hollingshead, A. B. (1971). Commentary on "The indiscriminate state of social class assessment." *Social Forces, 49*, 563-67.
- Hunter, J. A., & Figueredo, A. J. (1999). Factors associated with treatment compliance in a population of juvenile sexual offenders. *Sexual Abuse: A Journal of Research and Treatment, 11*(1), 49-67.
- Kansas v. Hendricks, 117 S. Ct. 2072 (1997).
- Kraemer, B. D., Salisbury, S. B., & Spielman, C. R. (1998). Pretreatment variables associated with treatment failure in a residential juvenile sex-offender program. *Criminal Justice and Behavior, 25*(2), 190-202.
- Lang, R. A., Pugh, G. M., & Langevin, R. (1988). Treatment of incest and pedophilic offenders: A pilot study. *Behavioral Sciences and the Law, 6*, 239-255.
- Malcolm, P. B., Andrews, D. A., & Quinsey, V. L. (1993). Discriminant and predictive validity of phallometrically measured sexual age and gender preference. *Journal of Interpersonal Violence, 8*(4), 486-501.
- Maletzky, B. M. (1993). Factors associated with success and failure in the behavioral and cognitive treatment of sexual offenders. *Annals of Sex Research, 6*, 241-258.
- Marques, J., Nelson, C., West, M., & Day, D. M. (1994). The relationship between treatment goals and recidivism among child molesters. *Behaviour Research and Therapy, 32*, 577-588.
- Marques, J. K. (1999). How to answer the question "Does sex offender treatment work?" *Journal of Interpersonal Violence, 14*, 437-451.
- Marshall, W. L., & Barbaree, H. E. (1988). The long-term evaluation of a behavioral treatment program. *Behaviour Research and Therapy, 26*, 499-511.
- Marshall, W. L., Barbaree, H. E., & Eccles, A. (1991). Early onset and deviant sexuality in child molesters. *Journal of Interpersonal Violence, 6*, 323-335.
- Marshall, W. L., Jones, R., Ward, T., Johnson, P., & Barbaree, H. G. (1991). Treatment outcome for sex offenders. *Clinical Psychology Review, 11*, 465-485.
- Marshall, W. L., & Pithers, W. D. (1994). A reconsideration of treatment outcome with sex offenders. *Criminal Justice and Behavior, 21*, 10-27.
- McGrath, R. J. (1991). Sex offender risk assessment and dispositional planning: A review of empirical and clinical findings. *International Journal of Offender Therapy and Comparative Criminology, 35*, 328-350.
- McGrath, R. J., Hoke, S. E., & Vojtisek, J. E. (1998). Cognitive-behavioral treatment of sex offenders. *Criminal Justice and Behavior, 25*(2), 203-225.
- Polizzi, D. M., MacKenzie, D. L., & Hickman, L. J. (1999). What works about sex offender treatment? A review of prison- and nonprison-based treatment programs. *International Journal of Offender Therapy and Comparative Criminology, 43*(3), 357-374.
- Prentky, R. A., Knight, R. A., & Lee, A. F. (1997). Risk factors associated with recidivism among extrafamilial child molesters. *Journal of Clinical and Consulting Psychology, 65*, 141-149.
- Prentky, R. A., Lee, A. F., Knight, R. A., & Cerce, D. D. (1997). Recidivism rates among child molesters and rapists: A methodological analysis. *Law and Human Behavior, 21*(6), 635-659.
- Proulx, J., Paradis, Y., McKibben, A., Aubut, J., & Quimet, M. (1997). Static and dynamic predictors of recidivism in sexual aggressors. *Sexual Abuse: A Journal of Research and Treatment, 9*, 7-27.

- Quinsey, V. L., Harris, G. T., Rice, M. E., & Cormier, C. A. (1998). *Violent offenders: Appraising and managing risk*. Washington, DC: American Psychological Association.
- Quinsey, V. L., Khanna, A., & Malcolm, P. B. (1998). A retrospective evaluation of the regional treatment centre sex offender treatment program. *Journal of Interpersonal Violence, 13*(5), 621-644.
- 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. 114-137). Thousand Oaks, CA: Sage.
- Quinsey, V. L., Rice, M. E., & Harris, G. T. (1995). Actuarial prediction of sexual recidivism. *Journal of Interpersonal Violence, 10*, 85-105.
- Raymond, N. C., Coleman, E., Ohlerking, F., Christenson, G. A., & Miner, M. (1999). Psychiatric comorbidity in pedophilic sex offenders. *American Journal of Psychiatry, 156*(5), 786-788.
- Rice, M. E., Quinsey, V. L., & Harris, G. T. (1991). Sexual recidivism among child molesters released from a maximum security institution. *Journal of Consulting and Clinical Psychology, 59*, 381-386.
- Rogers, R., Gillis, J. R., Dickens, S. E., & Webster, C. D. (1988). Treatment recommendations for mentally disordered offenders: More than roulette? *Behavioral Sciences and the Law, 6*(4), 487-495.
- Romero, J. J., & Williams, L. M. (1985). Recidivism among convicted sex offenders: A 10-year follow-up study. *Federal Probation, 49*(1), 58-64.
- Salter, A. S. (1988). *Treating sex offenders and victims: A practical guide*. Newbury Park, CA: Sage.
- Schopp, R. F., Scalora, M. J., & Pearce, M. (1999). Expert testimony and professional judgment: Psychological expertise and commitment as a sexual predator after *Hendricks*. *Psychology, Public Policy, and Law, 5*(1), 120-174.
- Seto, M. C., & Barbaree, H. E. (1999). Psychopathy, treatment behavior, and sexual recidivism. *Journal of Interpersonal Violence, 14*, 1235-1248.
- Skeem, J. L., Mulvey, E. P., & Lidz, C. W. (2000). Building mental health professionals' decisional models into tests of predictive validity: The accuracy of contextualized predictions of violence. *Law and Human Behavior, 24*(6), 607-628.
- Sturgeon, V. H., & Taylor, J. (1980). Report of a five-year follow-up study of mentally disordered sex offenders released from Atascadero State Hospital in 1973. *Criminal Justice Journal, 4*, 31-63.

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