User Report

LONG-TERM FOLLOW-UP
OF CHILD MOLESTERS:
RISK PREDICTORS AND
TREATMENT OUTCOME

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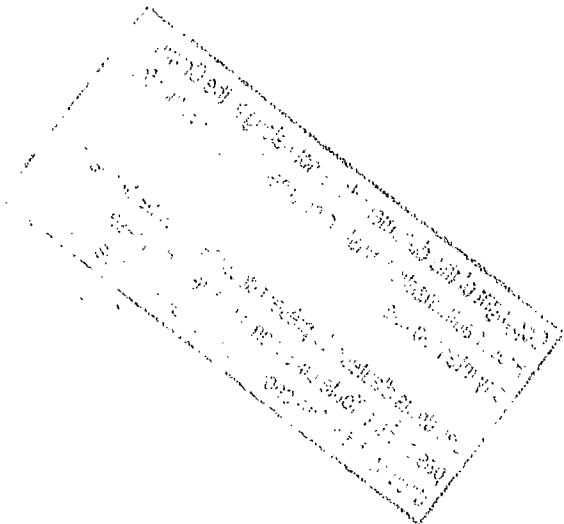
Abstract

The present study examined the long term recidivism rates of
197 child molesters released from prison between 1958 and 1974.
Overall, 42 percent of the total sample was reconvicted for
sexual and/or violent crimes, with 10 percent of the total sample
being reconvicted between 10 and 31 years after being released.
Incest offenders were reconvicted at a slower rate than
homosexual pedophiles, with heterosexual pedophiles showing a
rate intermediate between these two groups. Other factors
associated with increased recidivism were 1) never being married
and 2) prior sexual offenses. Although mental health and
personality test (e.g., Eysenck, MMPI) scores improved with
treatment, neither the pre- nor post-treatment scores were
associated with recidivism. The recidivism rate for the treated
child molesters was similar to the recidivism rate found for
comparison groups of untreated child molesters.

Long-term follow-up of child molesters:
Risk predictors and treatment outcome

The sexual victimization of children is increasingly being recognized as a significant social problem. In recent years, the number of reported sexual offenses has increased, as has the number of sexual offenders in the criminal justice system (Broadhurst & Maller, 1991; Canada, 1990; United States, 1989). One approach to reducing sexual victimization is to provide treatment to identified child molesters. Following Quinsey (1983), the goal of offender treatment should be a reduction in sexual recidivism accomplished by the identification and modification of factors contributing to reoffending. The overall effectiveness of treatment for reducing recidivism remains controversial. Furby, Weinrott and Blackshaw's (1989) review on the treatment of sexual offenders concluded that "we can at least say with confidence that there is no evidence that treatment effectively reduces sex offense recidivism" (p. 25). In contrast, Marshall, in his testimony to the Daubney Committee (1988) stated that there was sufficient research evidence to conclude that treatment programs are available "that will guarantee a remarkable reduction in recidivism" (p. 208) (see also Marshall, Jones, Ward, Johnston, & Barbaree, 1991).

Much of the previous treatment outcome research has focused on either a) changes that occur during therapy, or b) the recidivism rates of various samples of sexual offenders. Several studies have found within-therapy improvements on a variety of measures, including measures of self-esteem, sexual attitudes, and social adjustment (Davis & Hoffman, 1990; Gordon, Bergin, Looman & Templeman, 1989; Lang, Lloyd & Fiqia, 1985; Marques, Day, Nelson & Miner, 1989; Smith, Fransworth, Heaton & Merkel, 1991). Short-term reductions in deviant sexual preferences have also been found in many behavior therapy treatment program (see reviews by Kelly, 1982; Quinsey & Marshall, 1983). The above studies, however, did not collected recidivism information that could empirically link the observed within-therapy changes to subsequent sexual offending.

The second type of outcome study examines the recidivism rates of sexual offenders grouped according to various fixed risk indicators (e.g., offense history) and/or whether or not they received treatment. One of the most consistent predictors of recidivism is a history of prior convictions for sexual offenses (Christiansen, Elers-Nielsen, Le Maire & Sturup, 1965; Fitch, 1972; Frisbie & Dondis, 1965; Hall, 1988; Marshall & Barbaree, 1988; Mohr, Turner & Jerry, 1964; Rice et al., 1991; Romero & Williams, 1983; Tracy, Donnelly, Morgenbesser & Macdonald, 1983). In the above studies, the reconviction rate for a sexual or violent crime averaged about 10% for the child molesters without prior sexual convictions; the reconviction rate was between 20% and 40% for those with prior sexual convictions. The average follow-up period in the above studies was about four years. Other fixed risk indicators includes the number of prior

nonsexual offenses (Abel, Mittelman, Becker, Rathner & Rouleau, 1988; Christiansen et al., 1965; Hall, 1988; Rice et al., 1991; Romero & Williams, 1983; Sturgeon & Taylor, 1980) and never being married (Abel et al., 1988; Broadhurst & Maller, 1991; Fitch, 1976; Rice et al., 1991). Offenders who only select victims within the family appear to be at lower risk than those who have ever selected extrafamilial victims (Frisbie, 1969; Tracy et al., 1983; see also reviews by Quinsey, 1977, 1986).

Although some studies find higher rates of recidivism among the homosexual pedophiles than the heterosexual pedophiles (e.g., Frisbie & Dondis, 1965; Grunfeld & Noriek, 1986; Mohr et al., 1964; Radzinowicz, 1957), other studies fail to find any significant differences (Abel et al., 1988; Marshall & Barbaree, 1988; Sturgeon & Taylor, 1980) between hetero- and homosexual pedophiles. Abel et al. (1988) found particularly high rates of reoffending amongst the child molesters who offended against both sexes, although Frisbie and Dondis (1965) reported the recidivism rates for these undifferentiated pedophiles to be relatively low, similar to the rates for heterosexual pedophiles.

The research that links changeable risk indicators to recidivism has typically focused on deviant sexual preferences. Quinsey, Chaplin & Carrigan (1980) found that short-term recidivism was related to post-treatment measures of deviant sexual preferences, but the treatment effects diminished as the follow-up period increased (Quinsey, 1983). Rice et al. (1991) also found that recidivism in a group of child molesters to be associated with deviant sexual preferences, but recidivism was associated with pre-treatment rather than post-treatment measures. Barbaree and Marshall (1988) found phallometrically assessed sexual interest in children to be associated with recidivism in a group of 35 untreated child molesters. For the treated child molesters, neither pre-treatment nor post-treatment measures of deviant sexual preferences were related to recidivism (Marshall & Barbaree, 1988). One difficulty in using post-treatment sexual preference measures to predict recidivism is that the variance in the sexual preference measure is restricted; few offenders show any deviant arousal at post-treatment when the treatment program is successful.

Methodological problems also cloud the child molester treatment/recidivism literature, making it difficult to interpret. Most of the available studies report the recidivism rates for single groups of treated or untreated offenders. Without comparison groups that can provide a baseline for comparison, it is difficult to isolate the effects of treatment from the confounding effects of location (e.g., Europe versus U.S.A.), previously existing risk indicators, and follow-up methods.

An extensive review of the treatment literature uncovered
only four studies (2 published; 2 unpublished) that used
plausible comparison groups with which to compare the recidivism
rates of treated child molesters (Davidson, 1984; Marshall &
Barbaree, 1988; Rice et al., 1991; Romero & Williams, 1983). The
J. J. Peters Institute (Meyers & Romero, 1980; Romero & Williams,
1983) is unique in having conducted a study that randomly
assigned sexual offenders (mainly child molesters and rapists) to
out-patient treatment or to regular probation supervision.[1]
After a 10 year follow-up period, they found that the recidivism
rates for the child molesters assigned to probation or to
treatment were not significantly different: approximately 10% for
both groups. The rather unstructured out-patient group
psychotherapy provided to the treatment group seemed to have
little effect.

Without the benefit of randomized designs, some studies have
provided well-chosen matched comparison groups. For example,
Davidson (1984) compared the recidivism rate of child molesters
treated in a Canadian Federal Penitentiary to a matched control
group of child molesters selected from the same institution prior
to the inception of the treatment program. Using survival
analysis, he found a lower recidivism rate in the treated versus
the untreated group (.01 versus .06 reconvictions per man year,
respectively). The average follow-up period was five years. The
treatment program evolved over the evaluation period (1974-1982)
but generally it was guided by behavioral theory and targeted a
variety of risk indicators, the most significant being deviant
sexual preferences (Marshall & McKnight, 1975).

Marshall and Barbaree (1988) also found that a group of child
molesters treated in a behaviorally-oriented out-patient program
had significantly lower recidivism rates than an untreated
comparison group. Marshall and Barbaree's (1988) untreated
comparison group comprised child molesters who were assessed at
their clinic, expressed interest in receiving treatment, but did
not receive treatment. The reasons for not receiving treatment
were varied, but, for many of the men, the treatment centre was
too far from their homes in the outlying rural communities.
Their selection criteria for the comparison group allows for the
possibility that no major psychological factors confounded the
treatment/no-treatment selection. The average follow-up period
in Marshall and Barbaree's (1988) study was about 3.5 years.

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[1]   California is currently conducting an evaluation of a relapse
        prevention treatment program in which the offenders are randomly
        assigned to treatment, but only preliminary results from this
        program are currently available (Marques et al., 1989).

Rice et al. (1991), in contrast, found child molesters who have received a behavioral laboratory treatment aimed at reducing age inappropriate sexual arousal reoffended at the same rate as a comparison group who had not received the treatment. All the offenders were extrafamilial child molesters selected from a maximum security psychiatric hospital and were followed for an average of six years. It was unclear what factors contributed to offenders participating in the sexual arousal conditioning, although the group assignment was not random.

The available research has identified several fixed risk indicators, but there is little research linking within-treatment changes to recidivism. The present research contributes valuable information on these topics by examining the long-term recidivism of a group of child molesters who were treated between 1965 to 1973 (Steffy & Gauthier, 1976). The assessment records for this treatment project were extensive enough to allow several broad issues to be addressed: the overall effectiveness of the treatment program could be evaluated by comparisons with matched untreated offenders; the validity of a variety of fixed risk indicators (e.g., offense history) could be tested; and, importantly, the relationship of recidivism to within-treatment changes (e.g., personality questionnaire changes) could also be examined.

Steffy and Gauthier's program was well regarded in its time, and the initial follow-up data were encouraging (Steffy & Gauthier, 1976). The follow-up data in the unpublished report, however, contained weaknesses that diminished the confidence that could be placed in the findings. In particular, the original analyses did take into account that the follow-up period of the control group was longer than for the treated subjects. Considering the lack of data concerning the treatment of child molesters, a revised and updated analysis of this treatment project seemed justified.

This report summarizes comparisons between a treated group of child molesters and two control groups of offenders who were sentenced to the same institution, but who did not receive specific treatment for pedophilia. For the treatment group, extensive information was collected directly from the offenders as well as from institutional files. The information for the control groups came entirely from institutional records.

Method

Subjects

All the men in this study were selected from a provincial correctional institution in Southern Ontario where they had been sentenced to between three and 24 months for a sexual offense against a child.

Treatment group. This group included those child molesters who
were treated between 1965 and 1973 at a newly created treatment
program (Steffy & Gauthier, 1976). Offenders received a short-
term, multimodal treatment program, including aversive
conditioning (shocks to pictures), individual and group
counselling, and other general treatments incorporated within the
therapeutic milieu, e.g., vocational counselling, chaplaincy
services, and after-care. Offenders attended the program for an
average of five months (range 1 to 12 months). Upon leaving the
program, 59% of the offenders obtained voluntary follow-up
services through correspondence, telephone conversations, or
personal visits. Except where indicated, the analyses will focus
on the 106 of the 125 treated offenders for whom recidivism
information was available. These subjects were divided into four
categories according to the sex and relationship of their child
victims: a) males only, b) extrafamilial females, c) heterosexual
incest (related female children only), and d) children of both
sexes. Insufficient information was available to classify one
offender. The classification was based on official records and
sex history interviews conducted as part of the treatment
program. Forty-one percent of the men had also engaged in
exhibitionism. Systematic records of other paraphilias were not
available. Other descriptive information of this sample is
provided in Table 1.

Table 1. OFFENDER CHARACTERISTICS

CHARACTERISTICS	SAMPLE		
	Treated	Control 1	Control 2
Sample size	106	31	60
Release date	1965/1973	1958/1964	1967/1974
Age on admission[1]	32.4 (9.2)	32.4 (10)	34.8 (10.9)
Education			
years of school completed[1]	8.4 (2.6)	–	8.3 (2.7)
WAIS IQ[1]	101 (13)	–	–
Previous sexual convictions*	63%	32%	35%
Previous treatment	60%	–	–
Previous non-sexual convictions	51%	29%	45%
Percent ever married	50%	–	58%
Victim type			
extrafamilial males	30 (28%)	8 (26 %)	19 (32%)
extrafamilial females	45 (42%)	18 (58 %)	19 (32%)
incestuous females	19 (18%)	3 (9.7%)	13 (22%)
males and females	11 (10%)	2 (6.4%)	9 (15%)
unknown	1 (1%)	–	–

[1] Standard deviations in parentheses.
* p < 0.0002
All other comparisons were not significant.

Control Group 1. This group of child molesters were selected from the same institution as the treatment group, but in the years before the treatment program was offered. Although this group controlled for the effects of prison experience (maximum security followed by a transfer to a minimum security setting with a rehabilitation focus), this control group was selected from a different time period and does not control for cohort influences that may result from sentencing practice and other changes.

Of the original 45 offenders, follow-up data were available for 31. Descriptive information for this group is contained in Table 1. This group were matched to the treatment group for age and current offense type, but they had fewer previous sexual convictions than the treatment group. The victim information for this group was based on a review of the offenders' institutional files that was conducted in 1976. The original files for this period were no longer available. The other available information was collected from R.C.M.P. records.

Control Group 2. This group was selected from offenders who were convicted of a sexual offense against a child and sentenced to the same institution at the same time as the treatment group, thus controlling for cohort effects. Group 2 offenders were not transferred to the milieu treatment program, but, instead, remained in the maximum security, protective-custody setting throughout their sentence. This group was identified by reviewing all the institutional case files for 1965 to 1973 that remain in the provincial archives in 1991. (Ninety percent of the files had been eliminated from the archives on a random basis.) The reasons that these offenders were not transferred for treatment were not always recorded, but included some of the following: insufficient time remaining on their sentence, space not currently available, relative already in program, and judged by the program staff to be unsuitable due to age (too old), major mental illness, security risk or other factors. This group was matched to the treatment group on age, education, previous non-sexual offenses, marital status, and victim type (see Table 1). When compared to the treatment group, however, fewer of this group had previous sexual convictions (35% versus 63%) (Chi-square = 11.1, $\underline{df}$ = 1, $\underline{p}$ < .001).

Recidivism measures

Sexual offense recidivism (not general criminal recidivism) was selected as the outcome variable since the intent of the treatment program was to reduce sexual reoffending. The criterion for sexual offense recidivism was reconviction for a sexual and/or violent offense, as indicated by national R.C.M.P. records. Assault convictions were included along with explicitly

sexual offenses since it is common practice for sexual assault charges to be reduced to common assaults through plea bargaining. Charges were not used as an outcome criteria since this information was not consistently recorded. The R.C.M.P. records for most of the offenders were obtained between 1989 and 1991. For 13 offenders for whom the 1989 R.C.M.P. records were not available, R.C.M.P. records that had previously been collected between 1974 and 1976 were used. R.C.M.P. records can be missing for several reasons, including clerical errors, pardons, and death; however, since most of the missing files were from offenders who were over 50 at the time of release, it is likely that the files were removed because the offender was known to have died. (Official death records were not available for this study.)

Predictor Variables

Along with the variables listed in Table 1, there were some additional variables available for members of the treatment group. The original research study included several questionnaire measures that were considered at that time to have possible relationships with sexual offending. The results of all the available measures were analyzed in the current study. The following are the questionnaire measures that were administered at the beginning and the end of treatment:

Minnesota Multiphasic Personality Inventory. The MMPI was scored for the regular validity and clinical scales as well as the following other scales: Pedophilia (Pf) (Toobert, Bartelme & Jones, 1959), Hostility (H), Overt Hostility (HV), Overcontrolled Hostility (OCH), Welsh Anxiety (A), Repression (R), and Ego Strength (Es) scales (for descriptions of these scales see Dahlstrom, Welsh & Dahlstrom, 1975).

Eysenck Personality Inventory. This test contained scales for Neuroticism (N) and Extraversion-Introversion (E), as well as a validity scales, "Lie" (Eysenck & Eysenck, 1968).

Lykken Anxiety Scales. The three measures contained in this scale were Physical Object Anxiety (PO), Social Object Anxiety (SO), and Stage Fright (SF) (Lykken, 1957).

Fenz Anxiety Scales. The three measures contained in this scale were Muscle Tension (MT), Autonomic Activity (AA), and Feelings of Inferiority (FI) (Fenz & Epstein, 1965).

Internal Locus of Control (I-E). This scale provides a general measure of how much individuals perceive themselves as being responsible for their fate (Rotter, 1966).

Initial assessments also provided the following information: an IQ estimate from the Weschler Adult Intelligence Scale (Weschler, 1955), offenders' reports of the number of previous sexual involvements with children, the age range of their victims, any history of exhibitionism, history of own sexual victimization during childhood, and clinical ratings concerning the mental factors that contributed to the offense (alcohol versus emotional) and ratings of the quality of the offenders' relationships with their mothers and fathers. The last two variables were coded on 5-point scales ranging from "very poor" to "very good." No reliability information for these ratings were available.

Program variables

Although the program was similar for most offenders, offenders differed in the a) the number of weeks they spent in treatment, b) how they were released (parole, discharged, another institution), and c) whether they voluntarily attended follow-up sessions that were available.

Analyses

The ability of the measures to predict recidivism was indexed by several different statistics. Correlation coefficients were used for continuous variables and some dichotomous variables, with some continuous measures collapsed into conceptually meaningful groups based on theory and sample distributions. The variable "previous nonsexual convictions," for example, was coded as "none" or "any". For categorical variables, both Chi-square and survival analysis (e.g., Greenhouse, Stangl & Bromberg, 1989) were used, since these methods are useful in testing slightly different hypotheses. Survival analyses incorporate information concerning both recidivism and time at risk, whereas Chi-square analyses do not include information concerning time at risk (e.g., differences in when reoffenses occurred or different follow-up periods for the different groups). Unless otherwise stated, if an effect is reported as significant (or nonsignificant) based on one of these statistics, the reader can assume that the other statistic provided equivalent results. Due to missing data, the sample size for the different analyses varied slightly.

Results

Out of the total sample of 197 child molesters, 82 (42%) were reconvicted for a sexual and/or violent offense during the follow-up period (extending 31 years for the Control Group 1 offenders). The length of the follow-up period varied according to when the offenders were released: 93% were followed for more than 15 years and 63% were followed for more than 20 years. The

average follow-up period was 19 years for the treatment group, 28 years for Control Group 1, and 20 years for Control Group 2. Using survival analysis to control for the different follow-up periods resulted in a cumulative proportion of 50.3% who had been reconvicted for a sexual offense. The cumulative proportion from survival analysis (50%) is greater than the raw proportion reconvicted (42%) because the cumulative proportion is based on only those subjects who remained at risk.

Figure 1 presents the hazard function that shows the proportion of the sample who were at risk that was reconvicted during each year (e.g., Singer & Willett, 1991). The rate of reconviction was 5.2% per year for the first six years, and then dropped to about 1.8% per year for the next 20 years.

Figure 1.   PROPORTION OF CHILD MOLESTERS RECONVICTED FOR A SEXUAL AND/OR VIOLENT OFFENSE EACH YEAR FOLLOWING RELEASE FROM PRISON (HAZARD RATE).

HAZARD RATE

Percent Per Year

Years After Release

N = 197
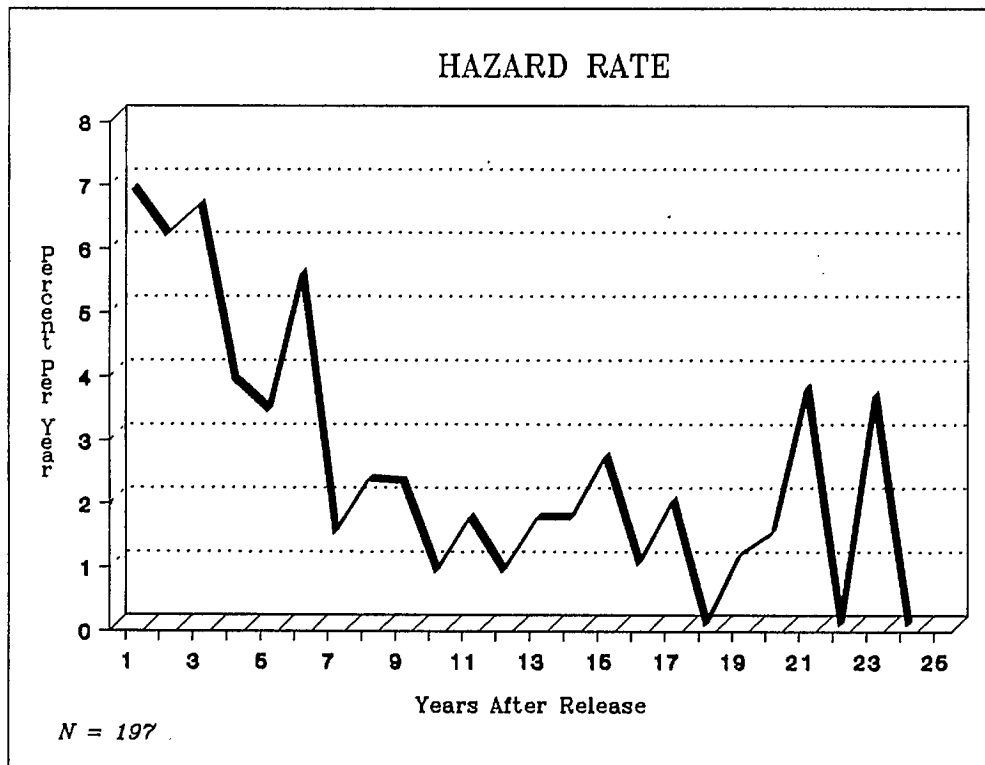
Twenty-three percent of the recidivists were reconvicted more than 10 years after they were released. The fluctuations in the later values (after 20 years) are due to reduced numbers of offenders remaining at risk, and do not represent any special increase in years 21 (two recidivists) and 23 (one recidivist). Hazard rates for periods after 25 years were not included because fewer than 12 offenders remained at risk.

Table 2 presents the relationships with recidivism of the (potential) fixed risk indicators that were obtained from the offenders files.

Table 2. FIXED RISK PREDICTORS OBTAINED FROM FILES

VARIABLE	SAMPLE SIZE	PROPORTION RECONVICTED	CORRELATION WITH RECIDIVISM (0 = NO; 1 = YES)
Age	194		- 0.09
School years completed	163		0.04
Marital status	163		- 0.17*
ever married/common-law (1)	86	0.33	
single (0)	77	0.49	
Prior non-sexual convictions	197		0.07
none (0)	105	0.38	
any (1)	89	0.46	
Prior sexual convictions	197		0.27**
none (0)	97	0.29	
1 (1)	54	0.52	
2 or more (2)	43	0.58	
Victim type[1]			
males only[2]	57	0.61	0.25***
extrafamilial females [2]	82	0.38	- 0.07
intrafamilial females[2]	35	0.23	- 0.17*
males and females[2]	22	0.36	- 0.04

[1] Chi-square (survival) = 15.4, df = 3, $p \leq 0.005$.

[2] These correlations are based on coding the target group as (1) and the other offenders coded as (0).

* $p \leq 0.01$

** $p \leq 0.005$

*** $p \leq 0.001$

Table 3 presents the results from additional variables that were available only for the treatment group (based on their initial assessments).

Table 3. FIXED RISK PREDICTORS OBTAINED FROM TREATMENT GROUP INTAKE ASSESSMENTS

VARIABLE	SAMPLE SIZE	PROPORTION RECONVICTED	CORRELATION WITH RECIDIVISM (0 = NO; 1 = YES)
WAIS Full Scales I.Q.	87		0.04
Relationship with mother	103		- 0.07
absent(1), very poor(1), poor(2)	27	0.52	
fair(3), good(4), very good(5)	76	0.42	
Relationship with father	103		- 0.13 *
absent(1), very poor(1), poor(2)	56	0.54	
fair(3), good(4), very good(5)	47	0.34	
Sexually abused in childhood	89		0.01
yes (1)	44	0.43	
no (0)	45	0.42	
Exhibitionism	102		- 0.12
yes (1)	43	0.37	
no (0)	59	0.49	
Admitted prior sexual offenses	101		0.28 **
none (0)	15	0.13	
1-4 (1)	34	0.41	
5-19 (2)	23	0.52	
20-70 (3)	29	0.59	
Any victims aged 5 or younger	103		0.07
yes (1)	15	0.53	
no (0)	88	0.43	
Only teenage victims (13 to 15 years old)	103		- 0.02
yes (1)	12	0.42	
no (0)	91	0.45	
Alcohol/drug use during offence	56		0.10
yes (1)	32	0.41	
no (0)	24	0.38	

* $p \leq 0.10$
** $p \leq 0.01$

Among the variables that best predicted outcome, offenders were found to be at higher risk for recidivism if they had never

been married, had prior sexual convictions, and admitted to many previous offenses. Offenders who were judged on intake to have a poor relationship with their father showed a (non-significant) tendency to be more likely to be reconvicted that those who had a fair or good relationship (p < .09). The survival function based on subjects classified according to number of previous sexual convictions, displayed in Figure 2, shows that those without previous sexual convictions were at less risk than the other offenders (Chi-square [survival] = 19.2, df = 1, p < .0001). The difference between the offenders who had only one or more than one previous sexual conviction was not significant (Chi-square [survival] = 2.0, df = 1, p =.15).

Figure 2. CUMULATIVE PROPORTION OF CHILD MOLESTERS NOT RECONVICTED (SURVIVAL FUNCTIONS), GROUPED ACCORDING TO NUMBER OF PREVIOUS SEXUAL CONVICTIONS.

Years After Release

No prior (N = 97)   One prior (N = 54)   2 or more (N = 43)
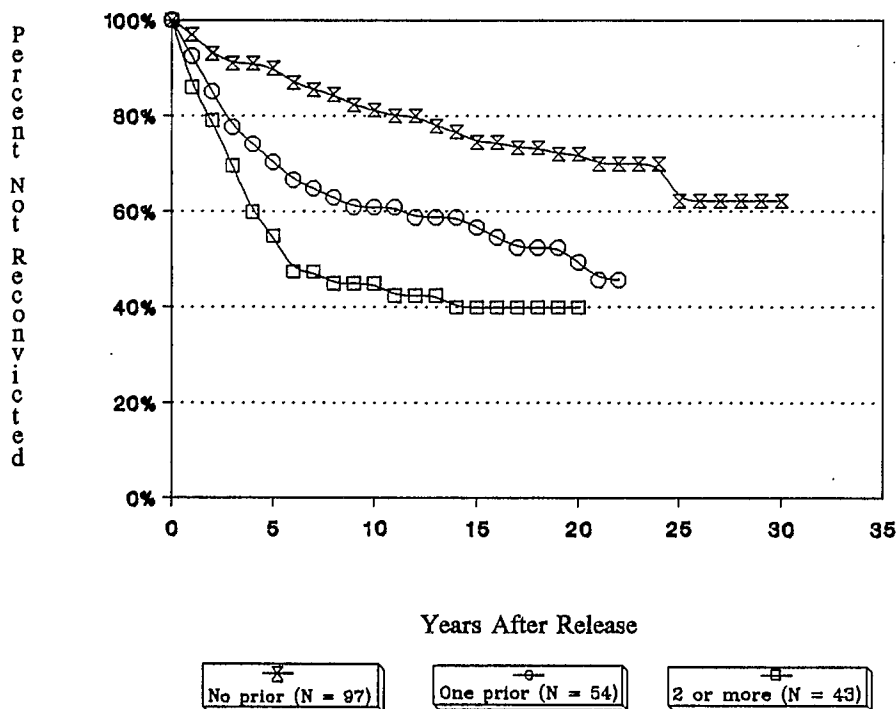
Chi-square = 19.7, p < 0.0001

As shown in Figure 3, the offenders against boys were at significantly higher risk than the incest offenders (Chi-square [survival] = 14.0, _df_ = 1, _p_ = .0002) and the offenders against girls (Chi-square [survival] = 6.1, _df_ = 1, _p_ = .01). There was also a marginally significant difference between the intra-familial and extrafamilial offenders against females (Chi-square [survival] = 3.4, _df_ = 1, _p_ = .09). The mixed group of offenders were not significantly different from the other three groups.

Figure 3. CUMULATIVE PROPORTION OF CHILD MOLESTERS NOT RECONVICTED (SURVIVAL FUNCTIONS), GROUPED ACCORDING TO VICTIM TYPE.

Chi-square = 15.4, p < 0.0015
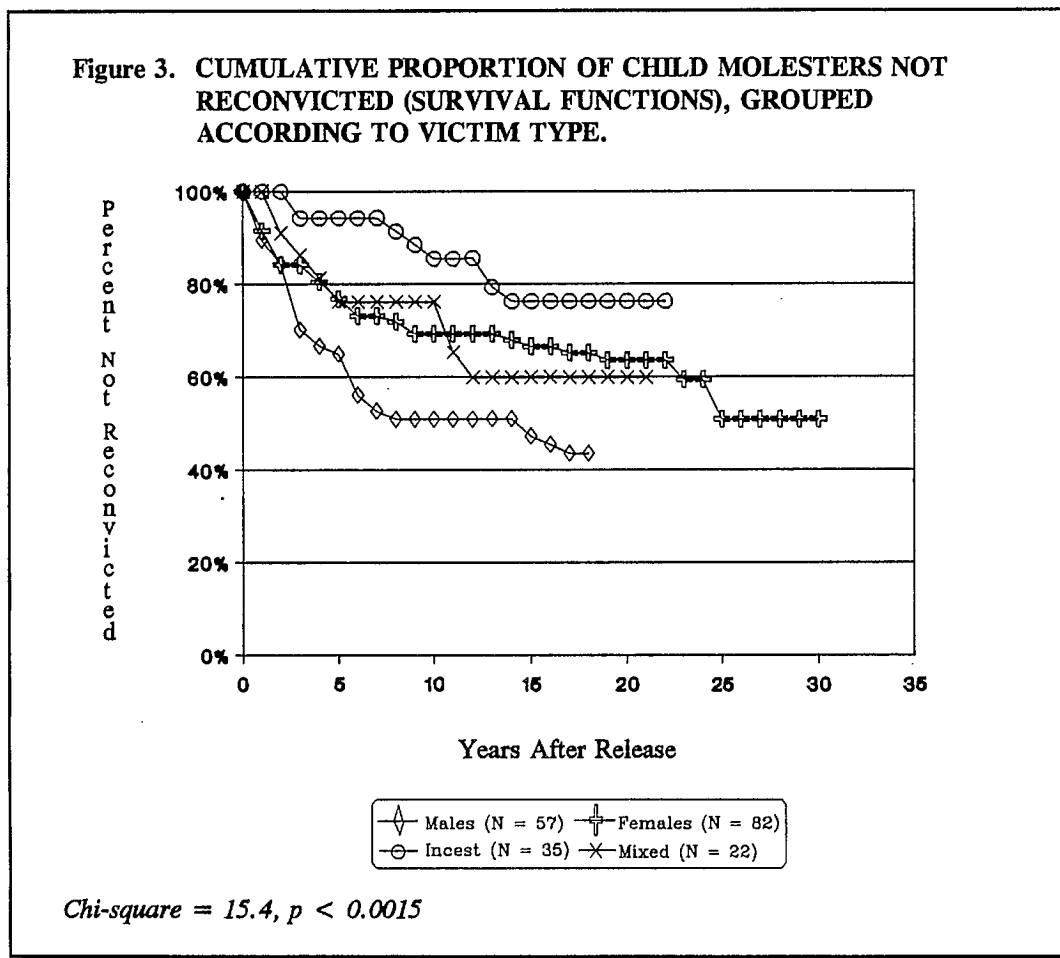
As may be noted in Tables 2 and 3, the variables that were unrelated to sexual recidivism in this sample were the following: the victims' ages, a history of exhibitionism, history of own sexual victimization, poor relationship with mother, alcohol/drug use, previous non-sexual convictions, age upon release,

education, and IQ.   Curvilinear relationships with these variables were also examined and found to be non-significant.

The recidivism rate was not significantly different for the Treatment Group, Control Group 1, or Control Group 2 (Chi-square [survival] = 3.7, df = 2, p = .16).   The proportion who had been reconvicted was .44 for the Treatment Group (47 of 106), .48 for Control Group 1 (15 of 31), and .33 for Control Group 2 (20 of 60). Since the match between the Treatment Group and the control groups was only approximate, an additional analysis was conducted using a comparison group that was matched as closely as possible to the Treatment Group. The comparison group was a subgroup, selected from offenders in Control Group 2 who had sentence lengths of at least five months (otherwise they would not have been transferred to the treatment program) and for whom there was no record that they were considered unsuitable for the program by the prison officials or treatment staff. Even if offenders had a history of pedophilia, and were not referred directly to the sexual deviancy treatment program, they were excluded from the comparison group if they were sent for alcohol abuse treatment. The reason for excluding them was that alcohol and sexual deviancy programs were located in the same area and there were insufficient records to be confident that they were not subsequently transferred to the sexual deviancy program. Comparison group offenders were then matched exactly to the treated offenders on victim type (8 male, 9 extrafamilial female, 7 incest, and 3 mixed), previous sexual convictions (41% of each group) and age (within 10 years, which resulted in an average of 35 years for both groups). If several different control subjects exactly matched a particular treatment group subject on the above variables, the subject selected for the comparison group would be the one who most closely matched the treatment group subject on the following variables: a) previous nonsexual conviction, b) marital status, and c) education. Overall, it was possible to closely match 27 of the Treatment Group with 27 of Control Group 2, with no significant differences on all the above variables (t < 1).

Recidivism analyses of this special comparison found equivalent numbers were reconvicted in each group: eight in the treatment group (30%) and nine in the comparison group (33%) (Chi-square [survival] = .04, df = 1, p = .85).

For the treatment group, recidivism was unrelated to the programs variables of a) number of weeks in treatment, b) type of release (parole, discharge, other institution), and c) whether offenders returned for follow-up. Several different analyses were conducted on the above variables and none approached significance.

The next set of analyses examined within treatment changes on the personality test measures. As can be seen in Table 4,

Table 4. WITHIN THERAPY CHANGES ON PSYCHOLOGICAL MEASURES

MEASURE	PRETREATMENT MEAN	POSTTREATMENT MEAN	t (df)
Rotter Locus of Control	7.8	5.2	5.7 (66) ****
Lykken			
Po	12.7	12.0	2.0 (86) *
So	21.9	19.9	3.0 (86) ***
Sf	7.6	8.0	0.5 (86)
Fenz			
Muscle Tension	1.9	1.9	0.1 (47)
Autonomic Activity	2.0	2.0	0.6 (47)
Feelings of Inferiority	2.7	2.5	3.3 (47) ***
Eysenck Personlaity Inventory			
Extroversion	10.5	12.0	- 4.0 (89) ****
Neuroticism	12.7	9.9	5.8 (89) ****
Lie	2.9	2.8	0.3 (89)
MMPI (raw scores)			
L	3.8	4.0	- 1.2 (90)
F	10.0	6.9	6.3 (90) ****
K	11.4	13.9	- 5.9 (90) ****
Hs	14.0	12.4	3.9 (90) ****
D	24.0	19.2	8.5 (90) ****
Hy	21.9	20.1	4.1 (90) ****
Pd	31.1	29.0	4.5 (90) ****
Mf	27.6	26.4	2.9 (90) ***
Pa	13.1	10.6	6.5 (90) ****
Pt	31.3	27.3	6.7 (90) ****
Sc	33.9	30.2	4.1 (90) ****
Ma	22.1	22.5	- 1.0 (90)
Si	34.4	27.8	6.8 (90) ****
Anxiety	58.1	50.1	7.3 (90) ****
Repression	48.9	46.6	2.8 (90) **
Ego Strength	52.0	57.0	- 6.0 (89) ****
Hostility	54.3	50.8	3.8 (87) ****
Overt Hostility	55.8	50.8	4.8 (87) ****
OCH	52.9	55.0	- 1.9 (87)
Pedophilia (Pf)	10.6	8.6	6.0 (85) ****

* p ≤ 0.05; ** p ≤ 0.01
*** p ≤ 0.005; **** p ≤ 0.001

the treated offenders reported improvement on almost all the personality measures used in the study. The results suggest that

following treatment, the child molesters felt more in control of their lives, more extroverted, less subjective distress, less hostility, less depression, and improved self-esteem in general. These results do not appear to be the result of any simple response bias since the Lie scales (both MMPI and Eysenck) remained essentially unchanged (in the normal range). The increase in the MMPI K scale suggests an increased defensiveness at post-treatment, although the average value of this scale remained with the normal range.

Table 5 presents the correlations between the personality measures and recidivism. Out of 60 possible comparisons, only

MEASURE	PRETREATMENT	SAMPLE SIZE	POSTTREATMENT	SAMPLE SIZE
Table 5. PERSONALITY TEST CORRELATIONS WITH RECIDIVISM				
Rotter Locus of Control	0.21 *	82	0.15	57
Lykken				
Po	0.11	98	0.10	76
So	0.08	98	0.06	76
Sf	- 0.02	98	0.21 *	76
Fenz				
Muscle Tension	- 0.12	63	0.11	42
Autonomic Activity	- 0.23 *	63	- 0.14	42
Feelings of Inferiority	- 0.18	63	0.04	42
Eysenck Personlaity Inventory				
Extroversion	0.03	98	0.01	78
Neuroticism	- 0.03	98	0.03	78
Lie	- 0.01	98	- 0.02	78
MMPI (raw scores)				
L	0.11	98	0.10	79
F	0.00	98	0.14	79
K	0.06	98	0.04	79
Hs	- 0.04	98	- 0.02	79
D	- 0.08	98	- 0.06	79
Hy	- 0.05	98	0.03	79
Pd	0.02	98	0.12	79
Mf	0.15	98	0.20 *	79
Pa	- 0.08	98	0.09	79
Pt	0.03	98	- 0.02	79
Sc	0.07	98	0.15	79
Ma	- 0.04	98	0.04	79
Si	0.05	98	0.04	79
Anxiety	- 0.05	98	- 0.00	79
Repression	0.10	98	- 0.08	79
Ego Strength	0.02	96	- 0.09	79
Hostility	0.05	95	- 0.02	78
Overt Hostility	- 0.01	95	0.05	78
OCH	0.01	95	- 0.08	78
Pedophilia (Pf)	0.09	94	- 0.10	78

* $p \leq 0.05$

four were significant (p < .05, one-tailed). Three correlations would be expected to be significant based on chance alone. The four scales that were most significantly related to recidivism were a) Rotter Locus of Control (pretest), b) Lykken Sf (post-test), c) Fenz Autonomic Activity (pretest), and d) MMPI Mf (post-test). The correlations for these measures were all in the predicted directions, with more problematic scores associated with higher rates of recidivism.

The next set of analyses examined the predictive power of the combined set of the best predictors. A multiple regression was conducted using only those variables that were significant in bivariate correlations: marital status (single, ever married/common-law), previous sexual conviction (0, 1, 2 or more) and victim type (two dummy variables creating three groups - males only, intrafamilial females, other). This analysis did not include subjects from Control Group 1 since their marital history was unknown. When the above four variables were entered simultaneously, the overall regression significantly predicted recidivism (F [4, 157] = 6.0, p < .0005; R = .36, adjusted R^2 = .11). The individual predictors that were significant were a) previous sexual convictions (beta = .19, t [157] = 2.3, p < .025), and b) the dummy variable for male victims only (beta = .21, t [157] = 2.6, p < .01).

An alternate method of examining the predictive ability of the above variables was by combining them into a "risk checklist." The coding was as follows: marital status (single = 1, ever married/common-law = 0); victim type (intrafamilial females = 0, males only = 2, other = 1); and previous sexual convictions (0 = 0, 1 = 1, 2 or more = 2). As shown in Table 6,

Table 6. RELATIONSHIP OF RISK RATINGS TO RECIDIVISM

	RATING SCORE					
	0	1	2	3	4	5
Proportion reconvicted	0.24	0.14	0.39	0.49	0.58	0.77
Sample size	21	29	38	35	26	13

Chi-square = 22.3, df = 5, p ≤ 0.0005

there was a substantial association between the size of the risk rating and eventual reconviction. The correlation between the risk scores and recidivism was .35 (n = 162, p < .001). With the

exception of the lowest two risk categories (0,1), there was a predictable increase in recidivism rates as the risk ratings increased. The overall accuracy of the risk rating scale (collapsing the two lowest ratings) was .72, as measured by the area under the ROC curve (Swets, 1986). This index means that if the risk rating scale was used to determine which of two randomly selected offenders (one eventual recidivist, one not) was going to be reconvicted, there would be a five out of seven chance of correcting identifying the recidivist.

The predictive ability of the personality test items was also examined for the Treatment Group using both multiple regression and checklist approaches. None of the personality test variables improved upon the fixed risk indicators. Various risk checklists (e.g., extreme scores on Mf, I-E, Sf and Fenz AA) developed from the personality tests were also not significantly related to recidivism.

The only initial assessment variable of interest was the self-report of the number of previous sexual offenses. The total number of admitted offenses correlated .45 with the total number of official prior sexual convictions. When the number of admitted offenses was collapsed into four ordinal categories (one, two to four, five to nineteen, 20 or more), the correlation with official prior sexual convictions (none, one, two or more) was .55. In multiple regression analyses, admitted previous offenses predicted reconvictions in a manner equivalent to official convictions records. Neither variable significantly contributed to predicting recidivism once the other variable was entered in the regression equation. The relative magnitude of the regression coefficients varied according to how the variables were coded (in the .20 range for both).

Discussion

The present results support previous research that child molesters are at risk for reoffending for many years (Soothill & Gibbens, 1978). The greatest risk period appears to be the first five to ten years, but child molesters appear to be at significant risk for reoffending throughout their life. Fifty percent of this sample was eventually reconvicted, with 23% of the recidivists being reconvicted more than 10 years after they were released. The present research underlines the importance of long-term survival analyses in evaluating treatment outcome for child molesters. Although treatment was associated with clinically significant improvements in many measures and the short-term results of the treatment program appeared promising (Steffy & Gauthier, 1976), long-term survival analyses showed no significant differences between the treated child molesters and the untreated comparison groups.

The present study confirmed several risk indicators that have long been identified as important for child molesters (e.g., Frisbie & Dondis, 1965; Mohr et al., 1964; Radzinowicz, 1957). These risk factors included previous sexual offenses (official records and self-report), never being married, and victim type. In this study, offenders who selected only male victims were the most likely to be reconvicted, followed by offenders who selected any extrafamilial females. Offenders who selected only related females were the least likely to be reconvicted for a subsequent sexual offense.

A common factor underlying the above risk indicators may be an enduring sexual preference for children (e.g., Rice et al., 1991). Although all the offenders in this sample had been sexually involved with children, not all of the them would have a primary and/or sole sexual interest in children. It is widely recognized that the degree of sexual interest in children varies among men who have been sexually involved with children, and that the primary sexual interest of many convicted child molesters is in adult females. Sexual preferences for children are most likely to be found in homosexual pedophiles, and less in heterosexual pedophiles and incest offenders (in that order) (Barbaree & Marshall, 1989; Marshall, Barbaree, & Christophe, 1986; Lang & Frenzel, 1989; Quinsey, 1986). Almost all homosexual pedophiles who have previous sexual convictions would be expected to have a sexual preference for boys (Freund & Watson, 1991). As well, those with deviant sexual preferences would be the ones least likely to be married. With the exception of the undifferentiated pedophiles, who may be expected to show deviant sexual preferences, the recidivism rates were consistent with the expected degree of sexual interest in children (highest for unmarried men with a history of previous sexual offenses against male children and lowest for married, incest offenders with no previous record).

Although reconviction rates were used as the criteria for recidivism in the present study, there are reasons to assume that reconvictions underestimates the rate of reoffending. Reconviction is determined by two general factors: offending and detections. It is widely recognized that only a fraction of the sexual offenses against children result in the offender being convicted (e.g., Abel et al., 1987). If all the offenders reoffended, and the detection rate was 20%, then the observed reconviction rate would be expected to be 20% (observed reconviction rate = reoffending rate X detection rate). If the observed reconviction rate was 50% (as was the case in present study), and the detection rate was less than 50% (which is highly likely), then the expected reoffense rate would be 100%, if all the offenders were reoffending (expected reoffending rate = [observed reconviction rate]/[detection rate]). Consequently, the proportion of child molesters in the present study who

reoffended would be expected to be greater than 50%, but the precise proportion is difficult to estimate. All the men could have reoffended, but only half got caught. It seems plausible, however, that a significant proportion of child molesters do not reoffend and that most of the persistent offenders were detected by the long-term follow-up used in the present study.

The treatment program examined in this study seemed effective in improving the general adjustment of the child molesters for the short term. The improvements on almost all of the mental health and personality measures were consistent and large enough to be clinically significant. This improvement in well-being, however, appeared to have little relationship to long-term sexual recidivism. In the outcome research on the treatment of criminal offenders, improvements in self-esteem have been associated with either no change or, occasionally, with increases in criminal recidivism, unless the improvements in self-esteem were associated with reductions in attitudes supportive of crime (e.g., Wormith, 1984). In the present study, measures of procriminal sentiments (e.g., Andrews & Wormith, 1984) or attitudes supportive of adult-child sex (e.g., Abel et al., 1989) were not available to test the potential interaction between self-esteem and criminogenic attitudes.

The treatment program was designed in the 1960's and, consequently, was not informed by the subsequent developments in the field during the following decades, such as relapse prevention (Laws, 1989), and various cognitive-behavioral techniques (Abel et al., 1981; Marshall, Laws & Barbaree, 1990). Nevertheless, the program was similar to many programs that are currently operating (Wormith & Hanson, in press). It targeted a variety of risk indicators, including deviant sexual preferences, and provided follow-up services for those offenders willing to return for additional treatment. Both the treatment directors and the front line staff reported that the program was delivered with integrity and that they had high expectations that the program would be effective in reducing recidivism. The reasons for the program's failure are hard to identify since so little is known about effective treatment for sexual offenders. In retrospect, however, the program could have been improved by employing more structured procedures for addressing deviant sexual attitudes and deviant sexual preferences, by using anti-androgen drugs for the most high risk cases (Marshall, Jones, Ward, Johnston, & Barbaree, 1991), and by incorporating relapse prevention techniques (e.g., Laws, 1989).

In order to determine whether individual sexual offenders have benefitted from treatment, it is necessary for the offender to show reductions in changeable risk indicators. In the present study, risk for recidivism was associated with several fixed risk indicators; however, none of the changeable variables were

associated with recidivism. The identification of such treatable risk indicators remains a priority in the research on sexual offender treatment. Several variables worth considering in future research include criminogenic needs (e.g., Andrews et al., 1990), deviant sexual attitudes, self-control of deviant sexual preferences, and substance abuse. Since many child molesters are at risk to reoffend throughout their life, long-term follow-up is crucial for both researchers and treatment providers.

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Author's notes

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