

Long-Term Follow-up of Exhibitionists: Psychological, Phallometric, and Offense Characteristics

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Exhibitionism has historically been viewed as more of a nuisance than a serious criminal justice matter. Research has demonstrated that the number of exhibitionists who are detected re-offending is a significant under-representation of the number who actually re-offend. The objective of this study was to extend a previous study conducted on exhibitionists, while attempting to solve the limitations described in that study. Two hundred eight exhibitionists were assessed at a university teaching hospital between 1983 and 1996. Archival data were derived from police and medical files. Results indicated that, over a mean follow-up period of 13.24 years, 23.6, 31.3, and 38.9 percent of exhibitionists were charged with or convicted of sexual, violent, or criminal offenses, respectively. Undoubtedly, this is an under-representation of the true rate, as we have no way of knowing how many exhibitionists re-offended and did not get caught. Nevertheless, in the present investigation, sexual recidivists compared with non-recidivists were less educated, scored higher on the Michigan Alcohol Screening Test (MAST), the Psychopathy Checklist, Revised (PCL-R), and the Pedophile Index. Violent recidivists were also less educated and scored higher on the MAST, PCL-R, and the Pedophile Index, and had accumulated a greater number of prior violent or criminal charges and/or convictions. Criminal recidivists were less educated; scored higher on the MAST, Buss-Durkee Hostility Inventory (BDHI), PCL-R, and Pedophile Index; and had accumulated a greater number of prior sexual, violent, and criminal offenses. Finally, the hands-on sexual recidivists accumulated a greater number of prior violent and criminal charges and or convictions than did the hands-off sexual recidivists.

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Exhibitionism is characterized by sexually arousing fantasies or behavior involving the exposure of the genitals to another person who perceives the behavior as inappropriate.^{1,2} Historically, there have been many studies focusing on exhibitionism and its descriptive features.^{3,4} The common assertion was that exhibitionists were harmless, hands-off offenders whose behavior represented more of a nuisance than a serious criminal justice problem⁵ and as a result, the current focus has been on violent sexual assault.² There has been a recent absence of research examining the dynamics of exhibitionism, despite high recidivism rates,^{6,7} poor treatment outcome relative to other sexual offenders,⁷ and significant psychological

harm caused to the victims.^{7,8} Furthermore, the frequency of exposing behavior is very high.^{7,9,10} For example, research has indicated that exhibitionists may account for one-third¹¹ to two-thirds of all sex offenses reported.^{12,13} Moreover, Abel and Rouleau¹⁴ reported that of the 565 offenders in their outpatient clinic, 25 percent had a history of exhibitionist behavior. Cox and Maletzky⁸ indicated that only 17 percent of such incidents are reported, which is consistent with the notion that offending rates are very conservative estimates.^{7,15,16} In fact, virtually all studies in the area of recidivism in sexual offenders stress that the real rates of re-offending are dramatically higher than those that are reported.^{7,9,10}

The relative absence of research on exhibitionism and the methodological problems inherent in previous studies, such as small sample sizes, lack of control groups,¹⁷ and varying definitions of recidivism,¹⁸ have established the importance for conducting an analysis of exhibitionism. Furthermore, findings of co-morbidity among the paraphilias,^{11,19} reports of

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escalating patterns of offending behavior from non-contact sexual offending toward more serious sexual assaults,^{5,20} and the high rates of offending just indicated, have resulted in an increased awareness of the dynamics of exhibitionism.^{7,21}

Nevertheless, there are still few studies conducted on recidivism and exhibitionists. In a retrospective study, Sugarman *et al.*²² analyzed 210 exhibitionists over a 17-year period and found that 32 percent were convicted of a contact sexual offense, while 75 percent were convicted of some type of offense other than exposing. This study,²² although adding to the limited research, lacked a standard assessment battery and was based on relatively unsystematic data collection in clinical practice.¹⁰ Marshall *et al.*⁷ compared two types of treatment of exhibitionists. One treatment approach focused on eliminating deviant sexual preference, and results indicated that 57.1 percent of the untreated men re-offended, whereas 39.1 percent of the treated men re-offended. Furthermore, the data suggested that 91 percent of recidivists had re-offended within four years after discharge. The other intervention based on a broader social/cognitive approach had a recidivism rate of 23.6 percent.

Phallometric assessment has been utilized in the assessment and treatment of exhibitionists based on the assumption that they should display significantly greater deviant arousal to scenes of exposing than to scenes of sexual intercourse. While some studies have supported this notion of a deviant response to images of exposing,^{8,23} other studies have not supported this perspective. For example, Freund *et al.*²⁴ in their examination of courtship disorder were unable to support the notion that scenes of exposing would be sexually exciting to exhibitionists. In fact, the exhibitionists were least likely to show signs of arousal to exposing and showed the greatest arousal to conventional sexual intercourse. Furthermore, Fedora *et al.*²⁵ compared 14 exhibitionists with 21 normal control subjects and found that the responses of the exposer to images of clothed females did not differ from those of the control subjects. The low level of responding to the exhibiting scenes revealed in the study by Fedora *et al.*²⁵ does not support the use of phallometric assessment in exhibitionists.²⁶ More recently, Marshall *et al.*²⁶ analyzed phallometric assessment measures in relation to recidivism and again concluded that preference for exposing scenarios did not correlate with recidivism. Therefore, it was con-

cluded that deviant sexual arousal measures were of little use in the evaluation of risk in exhibitionists.

Most recently, in a longitudinal study, with a seven-year follow-up, Rabinowitz-Greenberg *et al.*¹⁰ examined 221 exhibitionists assessed between 1983 and 1996 utilizing standard assessment measures. The main objectives of this investigation were to compare recidivists and nonrecidivists on the measures listed in the battery, to examine the probability of escalation in the offense chain, and finally to clarify the differences between hands-on and hands-off sexual offenders. Results indicated that the percentage of offenders who re-offended with a sexual, violent (which was the total of sexual and/or violent offenses), or other criminal offense was 11.7, 16.8, and 32.7 percent, respectively. Specifically, the sexual recidivists were significantly less educated, with more previous sexual and criminal convictions, than were the nonrecidivists. Moreover, the violent recidivists were less educated and had a greater number of prior sexual, violent, and criminal convictions than did the nonrecidivists. Finally, those who re-offended with any criminal offense demonstrated more problems in many areas of functioning. Furthermore, they were significantly younger, less educated, and had more prior sexual, violent, and criminal convictions than did the nonrecidivists. The criminal recidivists also demonstrated higher scores on the Michigan Alcohol Screening Test (MAST²⁷) and the Buss-Durkee Hostility Inventory (BDHI²⁸), lower sexual functioning scores on the Derogatis Sexual Functioning Inventory (DSFI²⁹), and higher psychopathy scores on the Psychopathy Checklist Revised (PCL-R³⁰) than did the nonrecidivists. Phallometric assessment indicated that criminal recidivists scored significantly higher on the pedophile index than did nonrecidivists, indicating greater sexual arousal in response to scenarios involving children. Furthermore, the results indicated that of the 41 sexual recidivists, 14 went on to commit more severe hands-on sexual crimes (i.e., sexual assault). These hands-on recidivists had significantly more prior sexual, violent, and criminal offenses than did the hands-off group. Finally, the hands-on sexual recidivists scored higher on the PCL-R³⁰ and on the Rape and Pedophile Index than did the hands-off group.

The Rabinowitz-Greenberg *et al.*¹⁰ study was notable for the significant follow-up time (mean, ~7 years) and the large number of predictors examined. Nevertheless, one limitation the authors noted was

that the analysis ended on the first incident of recidivism. In other words, if an offender had any other convictions after the index offense, it was not recognized as further evidence of recidivism. The result would therefore be an underestimation of the true recidivism rate and may have distorted the rate of sexual and violent re-offending.

In the current study, we sought to add to the study by Rabinowitz-Greenberg *et al.*,¹⁰ while attempting to overcome some of the limitations described earlier. The predictors of recidivism were examined with all of the same assessment tools, to stay consistent with the previous study. The same subjects were examined with the exception of 13 who were lost. However, in the present investigation we recorded every offense during the follow-up, not just the first reoffense. Thus, this follow-up adds six years to that of Rabinowitz-Greenberg *et al.*,¹⁰ for an average follow-up of 13.24 years. The analysis of recidivism remained the same as described in the previous study and is similar to that in others.³¹⁻³³ Briefly, a definition of sexual recidivism is any charge or conviction for a sexual offense after the index offense. Violent recidivism is any charge or conviction for violent and sexual offenses, and criminal recidivism is any charge or conviction noted in the Canadian Police Information Center's (CPIC) report. It should be stressed that we considered as recidivists only individuals who had been charged or convicted of re-offending. It is evident that this is a major under-representation of all re-offending. This cumulative hierarchy in which each additional category includes the previous category is employed to account for plea bargaining, a common practice, as men would generally prefer to be convicted of virtually any offense other than a sexual assault, and to allow comparison with prior recidivism studies.

Materials and Methods

Participants

The exhibitionist sample consisted of 208 men assessed at the Royal Ottawa Hospital Sexual Behaviors Clinic (SBC) between 1983 and 1996. The mean age of the participants at the time of assessment was 31.12 years (SD = 10.27). Inclusion in the study was determined in one of three ways: (1) patients with exhibitionism diagnosed by a psychiatrist according to DSM criteria, (2) offenders convicted of the offense of exposing by the courts, or (3) self-

referred patients with the problem of exposing. An exclusion criterion for participation in the study was a police record of a charge or conviction of a hands-on sexual offense, before the index offense. Although all participants were referred for assessment, the sample was heterogeneous with regard to treatment and court sentencing. As most of the participants were assessed before receiving treatment or court sentences, the proportion of participants who had been treated could not be ascertained. Of each participant we asked permission to use the results of his assessment for research purposes. In addition, he was informed that not granting this permission would in no way compromise the services that would be provided. Each participant then signed a consent form indicating that he agreed that his results could be used anonymously, as part of group data for research purposes. The SBC is a training and research center for the University of Ottawa. All aspects of the research were approved by the Research Ethics Committee of the Royal Ottawa Hospital.

Assessment Procedures

It is important to recognize that this study was not prospective and not theoretically driven. It was based on assessments conducted by the Sexual Behaviors Clinic at the Royal Ottawa Hospital. The assessment battery for sexual offenders was introduced at the Sexual Behaviors Clinic at its inception in 1983 for both clinical and research purposes and is similar to batteries used in other sexual behavior assessment centers. Therefore, the measures utilized are, or have been, clinically relevant for this population.

Alcohol Abuse

The MAST²⁷ is a 24-item self-report inventory used to identify behavior indicative of alcohol abuse. The degree of problems associated with alcoholism is reflected in the total number of "yes" responses. Scores of 5 or 6 are suggestive of alcohol problems and scores of 7 or more are strongly suggestive of alcohol abuse.³⁴ Reliability and validity are well established.^{27,35} The internal consistency is high ($\alpha = .87$), and it is relatively unaffected by age or denial of socially unacceptable characteristics.³⁶ The MAST correlates highly with DSM-III-R criteria for alcohol dependence.³⁷ When inconsistency occurs, the MAST tends to overdiagnose alcoholism. Apart from its extensive use as a screening tool for alcoholism,

the MAST has been incorporated in research with samples of sexual offenders.^{34,38–41}

Hostility

The BDHI²⁸ contains 66 true-false self-report statements that provide a measure of seven constructs representing general hostility: assault, indirect hostility, irritability, negativism, resentment, suspicion, and verbal hostility. The nine-item guilt scale was excluded from the total score. Factor analysis yields two constructs: attitudinal and behavioral. Higher scores indicate the endorsement of more hostile items. A total score of 38 or more is considered high. Among sexual offenders, BDHI scores for rapists have been significantly higher than those for nonoffending control subjects.^{40,42}

Sexual Functioning

The DSFI²⁹ is a self-report measure that assesses dimensions of sexual functioning. The 10 subscales are Information, Experience, Sexual Drive, Sexual Attitude, Psychological Symptoms (also known as the Brief Symptom Inventory [BSI]), Affect, Gender Role Definition, Sexual Fantasy, Body Image, and Satisfaction. The Sexual Functioning Index (SFI) is a global measure derived by summing the 10 subtest scores and providing an overall measure of an individual's level of sexual functioning. Reliability for the subtests is reportedly "quite good."⁴³ Regarding validity, results of a factor analysis identified seven empirical dimensions underlying the DSFI, namely, psychological distress, body image, heterosexual drive, autoeroticism, gender role, satisfaction, and sexual precociousness. The DSFI has been used with large nonforensic samples. Its use with sexual offenders is limited (see Firestone *et al.*⁴²).

Psychopathy

The PCL-R³⁰ consists of 20 clinical rating scales designed to assess behavior and personality characteristics considered fundamental to psychopathy.³⁰ Rigorous testing has indicated that the PCL-R is a psychometrically sound instrument. The reported α -coefficient, aggregated across seven samples of incarcerated males from Canada, the United States, and England, was .87.⁴⁴ Generally, the PCL-R is scored on the basis of a semi-structured interview and collateral information obtained from sources such as official records and psychological assessments. Valid PCL-R ratings can also be made on the basis of high-

quality archival information.^{45,46} The PCL-R is currently being used widely in sex offender research.^{47–49} Factor analysis has consistently yielded two distinct and stable factors representing (1) the degree of personality, interpersonal, and affective traits deemed significant to the construct of psychopathy; and (2) the degree of antisocial behavior and unstable and corrupted lifestyle.^{30,50} Although correlated with one another, both factors exhibit a differential pattern of correlation with other clinical, personality, and experimental variables.^{30,51–53} Using five prison samples and three forensic samples, Hare *et al.*⁵⁰ found that the correlation between the two factors averaged $r = .48$. Previous studies have found the inter-rater reliability and internal consistency of both factors to be high despite the small number of items per factor.^{30,50} For the purposes of categorical scoring, a cutoff of 30 is suggested to discriminate psychopathic from non-psychopathic individuals.³⁰

In the present investigation, the PCL-R was completed retrospectively from the extensive descriptive material contained in medical institutional files by two research assistants who had attended the approved training courses for the PCL-R. A random sample of clinic files was independently rated by each researcher, resulting in satisfactory inter-rater reliability correlation ($r = .85, p < .05$).

Sexual Arousal

To assess whether exhibitionists demonstrated deviant sexual preferences and how this might contribute to recidivism,²⁶ we assessed participants with the standard battery of phallometric tests that is used in our clinic on all men charged with sexual offenses. Changes in penile circumference in response to audio/visual stimuli were measured by means of an indium-gallium strain gauge and processed on a computer for storage and printout.

Stimuli Presentation

The order of the stimuli presentation, held constant for all participants, was computer controlled. Participants were presented with one or more of three series of audiotapes. The audiotape battery consisted of vignettes⁵⁴ of approximately 2 minutes duration describing sexual activity varying with respect to age, sex, and degree of consent, coercion, and violence portrayed. Each participant was presented with a full set of tapes containing one vignette from each category and was instructed to allow normal

arousal to occur. The female child series consisted of descriptions of sexual activity with a female partner/victim for eight categories. The male child series consisted of eight corresponding vignettes involving a male partner/victim but also included one scenario involving an adult female partner. For each of the female child and male child series, two equivalent scenarios for each category were included. Categories were as follows: (1) sexual contact initiated by a child (child initiates), (2) mutually agreed on sex with a child (child mutual), (3) nonphysical coercion of a child, (4) physical coercion of a child, (5) sadistic sex with a child, (6) nonsexual assault of a child, (7) consenting sex with a female adult, and (9) sex with a female child relative (incest). The audiotope series used to identify sexual attraction to rape included two scenarios of 2 minutes duration for each of the three categories: (1) consenting sex with an adult female, (2) rape of an adult female, and (3) nonsexual assault of an adult female. No exhibitionist scenes were used.

Scoring

The Pedophile Index was calculated by dividing the participant's highest response to a child-initiates or child-mutual stimulus by the highest response to an adult-consenting stimulus. The Pedophile Assault Index was calculated by dividing the highest response to an assault stimulus involving a child victim (non-physical coercion of child, physical coercion of a child, sadistic sex with a child, or nonsexual assault of a child) by the highest response of the child-initiates or child-mutual stimulus. The Rape Index was calculated by dividing the response to the rape stimulus by the response to the consenting-adult stimulus. The Assault Index was created by dividing the response to a nonsexual assault stimulus by the response to a consenting-adult stimulus. This article reports data on the Pedophile Index and the Rape Index only.

Criminal Offense Histories

Offense information was gathered from the Canadian Police Information Center (CPIC) at the Ottawa Police Station, a national database of criminal arrests and convictions including INTERPOL reports from the Royal Canadian Mounted Police. For an offender to be considered eligible to re-offend, he must have been free to commit a crime, that is, nei-

ther incarcerated nor in secure custody for reasons of mental illness.

Statistical Treatment of the Data

Before statistical tests were performed, data were screened to ensure that the assumptions underlying the tests were met. Outlying cases were detected by using a criterion of plus or minus three standard deviations from the mean or by visual inspection of normal probability plots. Values of outlying cases were adjusted upward or downward according to the direction of the problem. That is, these extreme cases were modified so that they were less deviant (i.e., one unit larger or smaller than the next most extreme score in the distribution). This method is appropriate when case retention is desirable and does not unduly influence the group mean.⁵⁵ To reduce skewness and kurtosis, square root transformations were applied to the Rape Index and the Pedophile Index. The values reported in the tables are post-transformational. In instances of missing data, cases were deleted from the analysis of that variable.⁵⁵ Statistical significance was set at $p < .005$ to correct for spurious findings in the main analyses. For all stepwise regression procedures, Wilks' lambda was used to determine the criteria for entry ($F > 3.84$) or removal ($F < 2.71$) of a variable.

Results

The follow-up period ranged from 1 to 19 years with a mean of 13.24 years ($SD = 3.82$). The percentage of men who re-offended sexually, violently, or criminally over the duration of the follow-up period was 23.6, 31.3, and 38.9 percent, respectively. A life-tables survival analysis was conducted and produced the survival rates over a 20-year period. Figure 1 shows the survival rates of the study population. The percentage of men who were convicted of a sexual, violent, or criminal offense by the seventh year (approximately the midpoint of the follow-up) was 12.6, 18.9, and 29.1 percent, respectively.

Sexual Recidivism

As indicated in Table 1, sexual recidivists were significantly less educated (10.96 versus 12.28 years), and scored significantly higher on the MAST (20.64 versus 7.65), the PCL-R (19.01 versus 13.94), and the Pedophile Index (1.23 versus .76) than the non-recidivists. No other significant differences were found.

Long-Term Follow-up of Exhibitionists

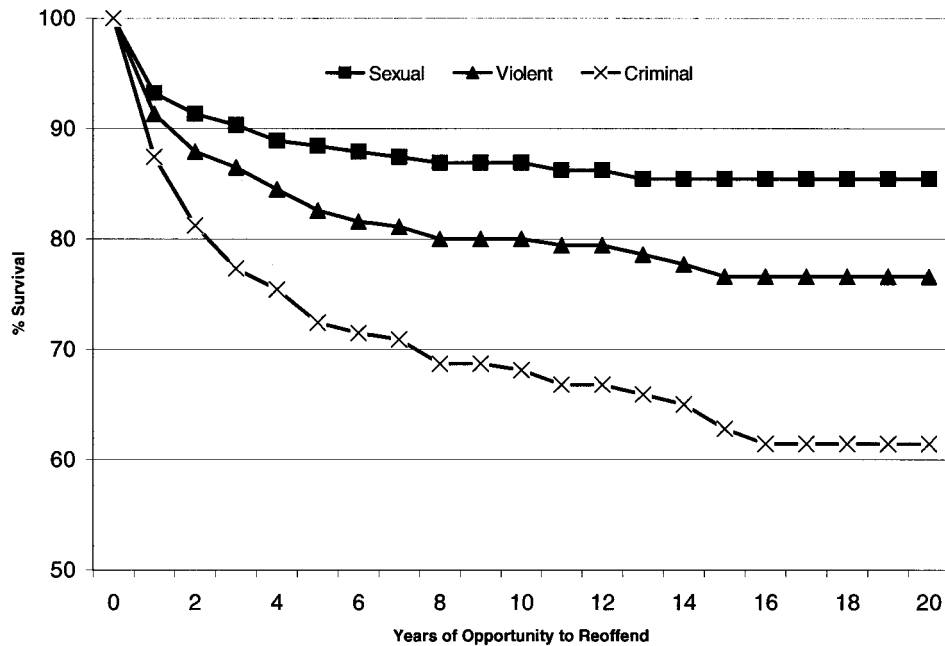


Figure 1. Survival graph showing sexual, violent, and criminal recidivism.

A stepwise discriminant function analysis to assess the combination of factors that most successfully distinguished between the sexual recidivists and the nonrecidivists used the variables of education, MAST, PCL-R, and the Pedophile Index. The result was a significant discriminant function, $\chi^2(2, n = 54) = 17.708, p < .001$, with Pedophile Index and PCL-R being retained for optimal prediction. The procedure correctly classified 69.7 percent of the original group. The area under the receiver operating characteristic (ROC AUC) curve was used to assess the predictive accuracy for the sexual recidivists.⁵⁶ This method is advantageous as it is not constrained by base rates or selection ratios.⁵⁷ Specifically, this analysis significantly predicted the sexual recidivists with a moderate predictive accuracy (ROC area = .72).

Violent Recidivism

Table 1 reveals that violent recidivists were significantly less educated (10.93 versus 12.43 years), and scored significantly higher on the MAST (18.73 versus 7.10), the PCL-R (20.01 versus 12.86), and the Pedophile Index (1.23 versus .72) than did the nonrecidivists. It was also evident that the violent recidivists had a greater history of violent and criminal charges (2.29 versus .54 and 6.71 versus 1.93, respectively). No other significant differences were found.

To assess the combination of factors that most successfully distinguished between the violent recidivists and the nonrecidivists, a stepwise discriminant function analysis was conducted with the variables education, MAST, PCL-R, Pedophile Index, Prior Violent, and Prior Criminal charges and or convictions. The result was a significant discriminant function, $\chi^2(2, n = 54) = 14.132, p < .01$, with Pedophile Index, and PCL-R being retained for optimal prediction. The procedure correctly classified 70.8 percent of the original group and significantly predicted the violent recidivists with a moderate predictive accuracy (ROC = .72).

Criminal Recidivism

As described in Table 1, criminal recidivists had significantly less education (11.04 versus 12.57 years), and scored higher on the MAST (17.41 versus 6.70), BDHI (31.08 versus 26.56), PCL-R (19.55 versus 12.16), and Pedophile Index (1.20 versus .67) than did the nonrecidivists. It was also evident that the recidivists had accumulated significantly more Prior Sexual, Violent, and Criminal Charges and/or Convictions (1.53 versus .36, 2.17 versus .40, and 6.70 versus 1.33, respectively) than the nonrecidivists had. No other significant differences were found.

Table 1 Age, Education, Psychological Tests, Phallometric Measures, and Criminal Offence History of Recidivist and Nonrecidivist Exhibitionists

Variable	Sexual Recidivism (a)		Violent Recidivism (b)		Criminal Recidivism (c)		t	df	p (One-Tailed)
	Yes	No	Yes	No	Yes	No			
Age (y)	31.65 ± 11.89 (49)	30.80 ± 9.02 (159)	30.62 ± 10.73 (65)	31.17 ± 9.30 (143)	29.94 ± 10.16 (81)	31.68 ± 9.46 (127)	(a) 0.46 (b) -0.38 (c) -1.26	(a) 66 (b) 206 (c) 206	(a) .322 (b) .351 (c) .105
Education (y)	10.96 ± 2.18 (46)	12.28 ± 3.16 (144)	10.93 ± 2.21 (60)	12.43 ± 3.20 (130)	11.04 ± 2.30 (76)	12.57 ± 3.26 (114)	(a) -3.18 (b) -3.73 (c) -3.80	(a) 110 (b) 160 (c) 187	(a) .001* (b) .000* (c) .000*
MAST	20.64 ± 19.22 (22)	7.65 ± 13.03 (94)	18.73 ± 18.70 (30)	7.10 ± 12.56 (86)	17.41 ± 18.26 (37)	6.70 ± 12.23 (79)	(a) 3.01 (b) 3.17 (c) 3.24	(a) 26 (b) 39 (c) 52	(a) .003* (b) .002* (c) .001*
BDHI	30.81 ± 12.50 (47)	27.53 ± 10.96 (152)	30.92 ± 12.39 (61)	27.15 ± 10.78 (138)	31.08 ± 12.32 (77)	26.56 ± 10.45 (122)	(a) 1.73 (b) 2.17 (c) 2.77	(a) 197 (b) 197 (c) 197	(a) .043 (b) .016 (c) .003
DSFI	34.05 ± 12.83 (47)	36.41 ± 13.42 (145)	33.74 ± 12.33 (58)	36.73 ± 13.62 (134)	33.79 ± 12.68 (73)	37.09 ± 13.54 (119)	(a) -1.06 (b) -1.44 (c) -1.68	(a) 190 (b) 190 (c) 190	(a) .146 (b) .076 (c) .048
PCL-R	19.01 ± 7.74 (45)	13.94 ± 8.74 (134)	20.01 ± 8.11 (59)	12.86 ± 8.11 (120)	19.55 ± 8.14 (74)	12.16 ± 7.88 (105)	(a) 3.46 (b) 5.54 (c) 6.09	(a) 177 (b) 177 (c) 177	(a) .001* (b) .000* (c) .000*
Phallometric measures									
Pedophile Index	1.23 ± 0.75 (27)	0.76 ± 0.78 (75)	1.23 ± 0.91 (34)	0.72 ± 0.68 (68)	1.20 ± 0.86 (43)	0.67 ± 0.67 (59)	(a) 2.71 (b) 3.22 (c) 3.56	(a) 100 (b) 100 (c) 100	(a) .004* (b) .001* (c) .001*
Rape Index	0.62 ± 0.83 (47)	0.48 ± 0.51 (140)	0.63 ± 0.76 (63)	0.46 ± 0.51 (124)	0.65 ± 0.73 (78)	0.42 ± 0.49 (109)	(a) 1.10 (b) 1.87 (c) 2.40	(a) 58 (b) 185 (c) 126	(a) .138 (b) .032 (c) .009
Prior charges/ convictions									
Sexual	1.61 ± 3.64 (49)	0.57 ± 1.92 (159)	1.54 ± 3.29 (65)	0.50 ± 1.91 (143)	1.53 ± 3.29 (81)	0.36 ± 1.61 (127)	(a) 1.92 (b) 2.39 (c) 2.98	(a) 56 (b) 84 (c) 105	(a) .030 (b) .010 (c) .002*
Violence	2.18 ± 4.30 (49)	0.75 ± 2.24 (159)	2.29 ± 3.97 (65)	0.54 ± 2.08 (143)	2.17 ± 3.91 (81)	0.40 ± 1.74 (127)	(a) 2.24 (b) 3.35 (c) 3.84	(a) 56 (b) 80 (c) 100	(a) .015 (b) .001* (c) .000*
Criminal	6.04 ± 10.93 (4)	2.62 ± 6.69 (159)	6.71 ± 10.33 (65)	1.93 ± 6.16 (143)	6.70 ± 10.66 (81)	1.33 ± 4.65 (127)	(a) 2.07 (b) 3.46 (c) 4.28	(a) 59 (b) 85 (c) 99	(a) .021 (b) .001* (c) .000*

*p < 0.005.

A stepwise discriminant function analysis was conducted to assess the combination of factors that most successfully distinguished between the criminal recidivists and the nonrecidivists, with education, MAST, BDHI, PCL-R, Pedophile Index, and Prior Sexual, Violent, and Criminal history (CPIC) being the variables. The result was a significant discriminant function ($\chi^2(2, n = 53) = 14.880, p < .01$), with Pedophile Index and MAST being retained for optimal prediction. The procedure correctly classified 74.6 percent of the original group and significantly predicted the criminal recidivists, with moderate predictive accuracy (ROC AUC = .79).

Hands-off Versus Hands-on Sexual Recidivism

Another objective of this analysis was to investigate whether the exhibitionists who sexually recidivated would do so in an escalation in seriousness of the offense chain. In other words, we wanted to determine whether it is possible to predict the exhibitionists who would eventually commit a hands-on sexual offense. To approach this question, all sexual recidivists (n = 49) were examined, and it was found

that 19 subjects had escalated to a physical sexual assault, whereas 30 subjects had remained hands-off offenders. Some examples of the hands-on offenses were sexual touching, sexual exploitation, sexual interference, and sexual assault. Some examples of hands-off offenses consisted of indecent exposure, gross indecency, and corrupting morals. The distinction between the hands-off and hands-on offenders was determined by CPIC records. When an offender committed both a hands-on and a hands-off sexual offense during the follow-up, he was considered a hands-on sexual offender, which was the more dangerous classification. Table 2 features the comparisons between the two groups. Because there were relatively few comparisons in this analysis, the level of significance was set at p < .05. The analyses revealed that the hands-on recidivists accumulated significantly more Prior Violent and Criminal Charges and/or Convictions (3.95 versus 1.06 and 9.95 versus 3.57, respectively) than did the hands-off offenders. No other significant differences were found.

In the stepwise discriminant function analysis to assess the combination of factors that most success-

Long-Term Follow-up of Exhibitionists

Table 2 Age, Education, Psychological Tests, Phallometric Measures, and Criminal Offence History of Hands-on and Hands-off Recidivist and Nonrecidivist Exhibitionists

Variable	Hands-on Recidivism, <i>n</i>	Hands-off Recidivism, <i>n</i>	<i>t</i>	<i>df</i>	<i>p</i> (One-Tailed)
Age (y)	32.05 ± 11.53 (19)	31.40 ± 12.30 (30)	0.19	47	.427
Education (in years)	11.61 ± 2.50 (18)	10.54 ± 1.88 (28)	1.66	44	.052
MAST	20.22 ± 20.19 (9)	20.92 ± 19.35 (13)	-0.08	20	.468
BDHI	29.68 ± 13.05 (19)	31.57 ± 12.30 (28)	-0.50	45	.309
DSFI	33.69 ± 13.81 (18)	34.28 ± 12.44 (29)	-0.15	45	.441
PCL-R	20.13 ± 5.69 (18)	18.27 ± 8.87 (27)	0.79	43	.219
Phallometric measures					
Pedophile Index	1.42 ± 0.67 (10)	1.12 ± 0.79 (17)	1.00	25	.163
Rape Index	0.76 ± 1.16 (17)	0.54 ± 0.58 (30)	0.87	45	.194
Prior charges/convictions					
Sexual	2.63 ± 5.41 (19)	0.97 ± 1.63 (30)	1.31	20	.104
Violent	3.95 ± 6.21 (19)	1.06 ± 1.82 (30)	1.97	20	.032*
Criminal	9.95 ± 14.91 (19)	3.57 ± 6.59 (30)	1.75	23	.046*

**p* < 0.05.

fully discriminate between hands-on and hands-off sexual recidivists, we used the variables Prior Sexual, Prior Violent, and Prior Criminal offenses (CPIC). The result was a significant discriminant function ($\chi^2(1, n = 49) = 5.36, p = .021$), with only prior violent recidivism being retained for optimal prediction. The procedure correctly classified 67.3 percent of the original group revealing a predictive accuracy that was low (ROC AUC = .58) and not statistically significant.

Discussion

Any discussion of recidivism rates in sexual offenders must first acknowledge that official rates of recidivism are very conservative estimates of the actual number of offenses committed.^{58,59} On a similar note, it should be acknowledged that any reference throughout the paper to recidivism or nonrecidivism refers to those cases that were detected by the authorities. Furthermore, the present study consisted of 208 exhibitionists who were referred to the Royal Ottawa Hospital's Sexual Behaviors Clinic, the majority of whom had never been incarcerated. It is likely that these offenders were less antisocial than those in other exhibitionism recidivism studies,^{7,22,26} which may affect the recidivism rates.

The present study examined recidivism in exhibitionists and is a follow-up to the initial study by Rabinowitz-Greenberg *et al.*¹⁰ As mentioned, the original study used the conventional method of recording recidivism based on the first offense after the index and found that, over a 15-year period (average, 6.84 years), recidivism rates were 11.7, 17.6, and 34.4 percent for sexual, violent, and criminal of-

fenses, respectively. The present study, which includes an extra six years, for an average follow-up of 13.24 years and in which every offense was recorded during the analysis, revealed recidivism rates of 23.6, 31.3, and 38.9 percent, for sexual, violent, and criminal offenses respectively, by the 19th year. The increased rate of recidivism in the present investigation is undoubtedly the result of both the increased length of follow-up and the fact that any offense after the index offense was counted. Examining every offense during the follow-up period more accurately reflects recidivism rates, while also examining an offender's life risk.

Sexual Recidivism

Typically, the ability to discriminate sexual recidivists from nonrecidivists has been poor in previous studies.^{10,31,42,60} In the present investigation, the groups were adequately differentiated. Specifically, the sexual recidivists were less educated, demonstrated more pathology related to alcohol abuse, and showed more psychopathy (PCL-R), than the nonrecidivists. The original study indicated that phallometric assessment was not valuable in discriminating sexual and violent offenses; however, the present study found that sexual recidivists, in comparison to nonrecidivists, not only scored higher on the Pedophile Index, but on average were well within the clinical range. It is not evident why the recidivists demonstrated deviant sexual arousal to child stimuli and not to adult stimuli. It seems that a significant number of our subjects were particularly attracted to children and not to adults. There is no information that would allow us to speculate whether this is unique to

our sample of exhibitionists or is a characteristic of most exhibitionist samples. Nevertheless, there is a significant body of literature that has demonstrated that the Pedophile Index is sensitive to recidivism in sexual offenders, whereas the Rape Index is not.^{31,42,59}

Violent Recidivism

The violent recidivists were less educated; had more difficulty with alcohol abuse, higher levels of psychopathy, and significantly more sexual deviance on the Pedophile Index; and had a greater history of violent and general criminal offenses than did the nonrecidivists.

Criminal Recidivism

Criminal recidivists, when compared with nonrecidivists, were less educated; demonstrated a greater problem with alcoholism, more difficulty with hostility, higher levels of psychopathy, and more deviant sexual responses; and had a greater prior criminal history (e.g., sexual, violent, and criminal).

The MAST was valuable in differentiating between the sexual, violent, and criminal recidivists and nonrecidivists. This finding is consistent with the literature that indicates alcoholism as a serious dynamic risk factor in sexual offending.^{61,62} It is interesting to note that both groups, recidivists and nonrecidivists, had significant alcohol problems. The BDHI was relatively insensitive to recidivism, showing significant differences only for overall criminal re-offending, and even then the scores were not in the clinical range. The PCL-R was valuable in discriminating between recidivists and nonrecidivists in all the re-offending categories (i.e., sexual, violent, and criminal). These results add to the growing body of literature reporting that psychopaths are at a higher risk for recidivism than are non-psychopaths.^{44,49} Although the recidivists demonstrated more psychopathic traits than did the nonrecidivists, the average scores were well below Hare's criterion (≥ 30 ; Ref. 30). This is not surprising given that exhibitionists may be less antisocial than other sex offenders.¹⁰

The use of phallometric assessment continues to be controversial.^{63,64} Some prior research has demonstrated that erectile measures of sexual preference for exhibitionists are of questionable value when evaluating risk to re-offend.^{26,65} This analysis revealed that the Pedophile Index was valuable in discriminating the sexual, violent, and criminal recidi-

vists from the nonrecidivists, supporting the findings of at least one major meta-analysis.⁵⁹ The outstanding finding in the present investigation was that each type of recidivist (i.e., sexual, violent, and criminal) met the criteria for sexual deviance (over 1.0), whereas the nonrecidivists did not. It is not readily apparent why this should be the case in the violent and criminal recidivists, but the large sample size or potential for plea bargaining may be related to these results. Nevertheless, the results indicate that exhibitionists who show sexual interest in children, as measured by phallometric assessment, are at a significant and increased risk for sexual, violent, and criminal re-offending, compared with those who do not show deviant sexual arousal.

Not surprisingly, previous criminal history as evidenced by police records was very useful in differentiating recidivists from nonrecidivists in our group of exhibitionists. This has been demonstrated in various investigations of re-offending in men who have mental health problems.⁶⁶⁻⁶⁸

Hands-on Versus Hands-off

As indicated in the original study,¹⁰ several variables discriminated between the hands-on and hands-off group (e.g., PCL-R and Phallometric Assessment). However, the current data revealed that only prior criminal history (Violent and Criminal) discriminated between the two groups, with the hands-on offenders accumulating more prior offenses. Although this finding is consistent with other research,²² it is somewhat surprising that with the increased follow-up and frequency of offenses, other measures in the present investigation did not evidence sensitivity.

The present study has several limitations. Specifically, only offenses that came to the attention of the authorities were considered. Therefore, the final results are undoubtedly an under-representation of the true recidivism rate. In addition, only a small number of static variables were considered in the investigation. More current theorizing and research suggest that dynamic features, such as attitudes supportive of sexual offending and antisocial lifestyle, should be considered in any recidivism assessment.^{32,69} Unfortunately, these considerations were beyond the scope of the present study. Finally, the small number of subjects in some of the analyses (e.g., hands-on versus hands-off offenders) requires that the results be viewed with some caution.

There are several noteworthy findings in the present investigation. It is suggested that the use of any offense after the index offense should be the standard in recidivism research. It is clear that this resulted in a detection of increased re-offending in our population of recidivists. Perhaps the most important finding is that exhibitionism is not a benign act and should be dealt with seriously. Men who exhibit may be at high risk for more serious offensive behavior. It is apparent that approximately 39 percent of our sample went on to commit other offenses, with approximately 31 percent committing a sexual or violent offense. Furthermore, it is evident that we have the technology that may assist in detecting those at higher risk to re-offend. It appears that, with exhibitionists at least, phallometric measures are a sensitive tool and may be particularly useful when paired with the PCL-R and previous criminal history.

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