The Utility of Clinical and Actuarial Risk Assessments for Offenders in Pre-Release Psychiatric Decision-Making

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EXECUTIVE SUMMARY

During 1989 and 1990, pre-release psychiatric assessments of 260 violent offenders were completed. Having been at risk for recidivism for up to 7 or 8 years, this study investigated three outcomes: 1) recidivism by type of outcome (violent versus non-violent); 2) recidivism by type of release (parole versus statutory release); and 3) the unique and additive effects of clinical and actuarial risk assessment strategies in predicting recidivism. Overall, 55.1% of the sample recidivated of which 32.7% were for "first violent" offences such as assault, weapons, robbery and threats. The rate of violent recidivism doubled when violence was examined at any point within the follow-up period ("ever violent"; 66.4%). Those who were on statutory release recidivated generally and ever violently more often than those released on parole. Moreover, survival analysis demonstrated that those on statutory release recidivated sooner for overall, first violent, and ever violent measures of recidivism. The additive effects of clinical and actuarial measures was partially supported. These results highlight the importance of clinical judgements but also demonstrate that these judgements should not supercede fully validated risk assessment instruments.

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INTRODUCTION

The accurate prediction of violent recidivism remains a somewhat elusive concept – one that relies on the ability of mental health professionals to integrate clinical judgements of risk with statistical estimates obtained from actuarial risk assessment instruments (Serin, 1995). An important consideration is the risk a particular individual poses to re-offend generally and violently. Consequently, law in Canada requires that offenders convicted of a Schedule I offence (violent or sexual) must undergo a risk assessment prior to hearings for discretionary release. Courts, parole boards, and correctional personnel depend on this information to assist in decisions at key points in the criminal justice process. Due to the impact of these decisions on the offender and society in general, it is imperative that the assessments be reliable and valid. As such, the predictive validity of risk assessment instruments and clinical protocols has generated considerable interest.

Overall, clinical predictions of risk have been consistently weak (Menzies, Webster, & Sepejak, 1985; Pollock, McBain, & Webster, 1989). For instance, concordance among disciplines (psychiatrists, social workers, psychologists, correctional officers, and nurses) in their opinions regarding risk is insubstantial (Sepejak, Menzies, Webster, & Jensen, 1983). Moreover, clinicians' predictions of violence were similar to predictions made by those who code the data (Menzies, Webster, McMain, Staley, & Scaglione, 1994).

Actuarial instruments have demonstrated relatively good predictive power for both general and violent recidivism. The Psychopathy Checklist-Revised (PCL-R; Hare, 1991) correctly classifies 77% of violent men offenders (Harris, Rice, & Cormier, 1991) and is equally efficient at predicting violence among individuals with psychiatric disorders, such as schizophrenia (Rice & Harris, 1992). The Statistical Information on Recidivism scale (SIR; Nuffield, 1982), has demonstrated similarly good predictive power for general recidivism

(Bonta, Harman, Hann, & Cormier, 1996) but somewhat less robust in predicting violent recidivism (Bonta & Hanson, 1995; Serin, 1996).

Predicting the risk an offender poses to recidivate may be enhanced by combining the outcomes from actuarial risk assessments with clinical judgements (Serin, 1995). At the discretion of the clinician, the Violence Prediction Scheme (Webster, Harris, Rice, Cormier, & Quinsey, 1994) for instance, has embedded within it the option of modifying the actuarial results by 10% in either direction.

The purpose of this research was two fold: to determine the outcome of the release decisions among violent offenders and to compare the efficacy of clinical and actuarial assessments in predicting general and violent recidivism. This study is unique in several aspects. First, the clinicians were forensic psychiatrists with extensive experience working with offenders. Second, their contact with the offenders was for risk assessment. Third, they performed comprehensive assessments involving detailed case file information, actuarial scales, and semi-structured interviews. Fourth, the assessments were part of operational practice with none of the promises of confidentiality inherent in research. Finally, all of the offenders referred for assessment were deemed potentially dangerous because of a violent index offence. As such, the sample should yield a high base rate of violent recidivism relative to a random sample of released offenders.

During 1989 and 1990, pre-release psychiatric assessments of 260 offenders were completed. As of December 1997, this sample had been at risk for recidivism for up to 7 or 8 years. This study investigated three outcomes: recidivism by type of outcome (violent versus non-violent); recidivism by type of release (parole versus statutory release); and the unique and additive effects of clinical and actuarial risk assessment strategies in predicting recidivism. It was hypothesized that those released on parole would have lower recidivism rates and reoffend less seriously than those on statutory release. Furthermore, actuarial instruments were hypothesized to surpass clinical judgements in their utility for the prediction of recidivism.

METHOD

Psychiatric assessments were completed by psychiatrists at the Clarke Institute of Psychiatry in Toronto, Ontario. All Schedule I offenders presenting for pre-parole review during 1989 and 1990 were included in the present research. The purpose of the assessment was to evaluate the offenders' current emotional stability, the risk they posed to re-offend, and to make recommendations on how to minimize or manage that risk. Risk was determined using three methods: (1) an overall risk appraisal rating that reflected the psychiatrists' clinical perception of risk, (2) a composite clinical score consisting of numerous clinical indicators, and (3) two actuarial risk assessment instruments.

Participants

This study consisted of 260 violent men offenders incarcerated in the Ontario region during 1989 and 1990 and who were referred to the Clarke Institute of Psychiatry for a pre-parole assessment. The index offences ranged from assault to murder. The majority of the sample was single (61.8%). The racial composition was 83.3% Caucasian, 8.2% Black, 6.0% Aboriginal, and 1.3% Oriental.

Measures

Overall Risk Appraisal

The psychiatrists rated the offender on a scale from 0 to 5 reflecting the individuals' probability of re-offending upon release. The scores were interpreted as follows: 0 reflected "no risk to the community"; 1 reflected a "minimal risk to the community"; 2 reflected "no psychiatric contraindication to gradual release as planned"; 3 reflected "management in the community is minimal and likely difficult"; 4 reflected "no optimism regarding his ability to remain crime free"; and 5 reflected "extreme concern about his risk for future violence".

Composite Clinical Score

Nine items thought to predominantly reflect clinical impressions were selected from a list of variables coded from the psychiatrists' clinical files. The presence or absence of these items was coded on a 2-point scale where 0 reflected the absence and 1 the presence of the item. The scores on these items were summed to provide an overall composite clinical score. A higher score on this scale reflects a higher risk. The items are as follows:

1. overall psychopathology in the institution (excellent, poor)
2. overall attitude in the institution (excellent, poor)
3. recent attitude (improving, deteriorating)
4. thought to be preoccupied with weapons, martial arts, or violent media (yes/no)
5. pro-criminal thoughts or attitudes noted (yes/no)
6. lack of insight noted (yes/no)
7. empathy or remorse expressed (yes/no)
8. thought to display antisocial personality disorder (yes/no)
9. other professional opinion (positive, negative)

Actuarial Scales

The SIR (Nuffield, 1982) is a 15-item actuarial scale based on static risk factors used to assess risk of re-offending. Total scores range from –27 to +30 with lower scores reflecting a higher risk of recidivism. The Psychopathy Checklist-Revised (PCL-R; Hare, 1991) measures the degree to which an individual displays the prototypical characteristics of a psychopath, as described by Cleckley (1941). The PCL-R is a 20-item scale consisting of two factors, one representing an antisocial and irresponsible lifestyle and the other representing an affective and interpersonal style. Normally, the PCL-R is completed following

a file review and semi-structured interview. However, following training on the PCL-R, the clinicians performed a clinical judgement regarding the degree to which they thought these individuals displayed psychopathic characteristics (referred to as the PCL-estimate), rather than using the fully validated version of the PCL-R. Each offender was rated by the psychiatrists on a 7-point scale ranging from 0 (no psychopathy noted) to 6 (definite psychopathy noted).

Outcome Data

Recidivism in this study was assessed in 3 ways:

1. "overall recidivism: refers to either violent or nonviolent;
2. "first violent" refers to the first re-offence being violent in nature; and
3. "ever violent" refers to ever being convicted for a violent offence during the follow-up period.

For the purpose of this study, violence was defined as any conviction that involved harm, or the potential for harm, to another individual including robbery. In order to determine whether this sample of violent offenders acted violently at some point in the follow-up period (rather than just the first offence being violent) any conviction for a violent act was coded as 'ever violent'. Although this variable does not take into consideration time spent incarcerated for other convictions, it does provide a rough estimate of whether the offender eventually recommits a violent act. The primary source of the outcome data was obtained from the Fingerprint Service of the Royal Canadian Mounted Police (RCMP). The Offender Management System (OMS) at Correctional Service of Canada was consulted if clarification regarding type of release was required.

Procedure

The Fingerprint Serial number (FPS) was obtained from the Clarke Institute of Psychiatry. These numbers were matched with the RCMP and the OMS databases in order to obtain information regarding release decisions and reconvictions. Any event for which the offender was reincarcerated (including technical violations) was coded as a failure and the time (in months) from release to the occurrence of this event was calculated. This failure was then determined to be either violent or non-violent.

RESULTS

Recidivism by Type of Outcome

Of the 260 offenders included in this study, 27 FPS numbers were unidentifiable, 94 were released on some form of parole, 110 were released at the statutory date, 1 was detained until warrant expiry, and 28 remained detained at the time of this follow-up. Of the 205 offenders at risk of recidivating, 55.1% (n = 113) recidivated and 44.9% did not recidivate (n = 92). Overall, 32.7% of those who recidivated (n = 37) committed a violent offence as their first re-offence consisting primarily of assault (51.4%), possession of weapons (18.9%), robbery (13.5%), and threats (8.1%). The incidence of violence doubles (66.4%) when recidivism is measured as "ever violent" of which most were assaults (53.3%), robbery (18.7%), or possession of weapons (10.7%).

Recidivism by Type of Release

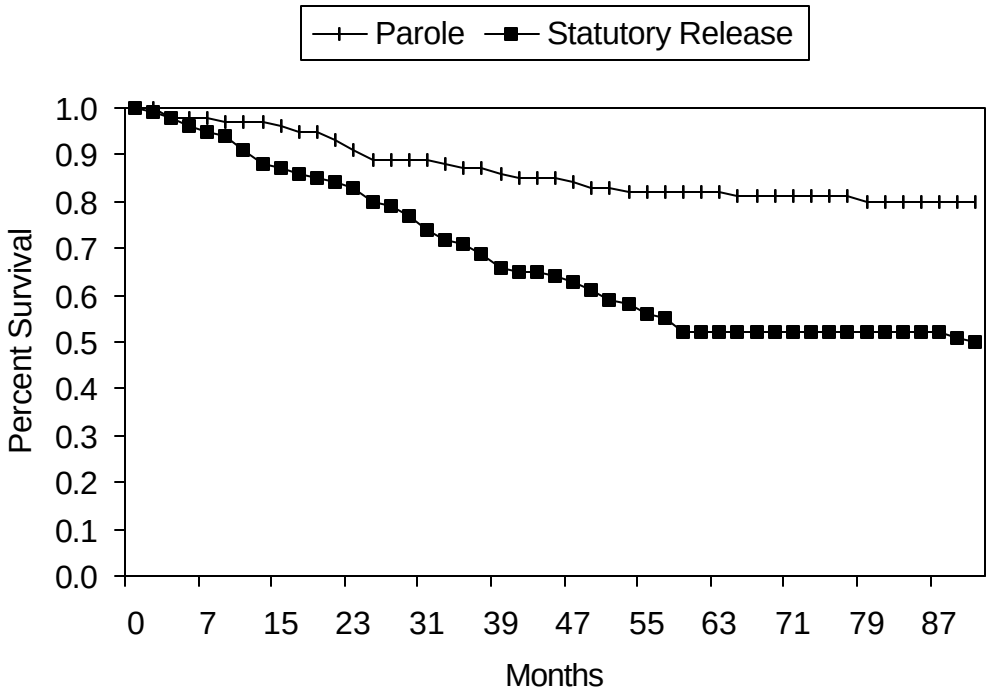
Referring to Table 1, those released on parole recidivated significantly less often than those on statutory release (c^2 = 17.00, p < .001). Although those on statutory release did not commit more violent offences on their first re-offence (c^2 = .15, *ns*) they did commit significantly more violent offences ever in their release history (c^2 = 5.34, p < .05).

Table 1. Type of Recidivism by Type of Release

	Recidivism	
	Yes	No
Overall	112	92
Parole	37 (18.14%)	57 (27.94%)
Statutory Release	75 (36.76%)	35 (17.16%)
First Violent	36	76
Parole	11 (9.82%)	26 (23.21%)
Statutory Release	25 (22.32%)	50 (44.64%)
Ever Violent	74	38
Parole	19 (19.96%)	18 (16.07%)
Statutory Release	55 (49.11%)	20 (17.86%)

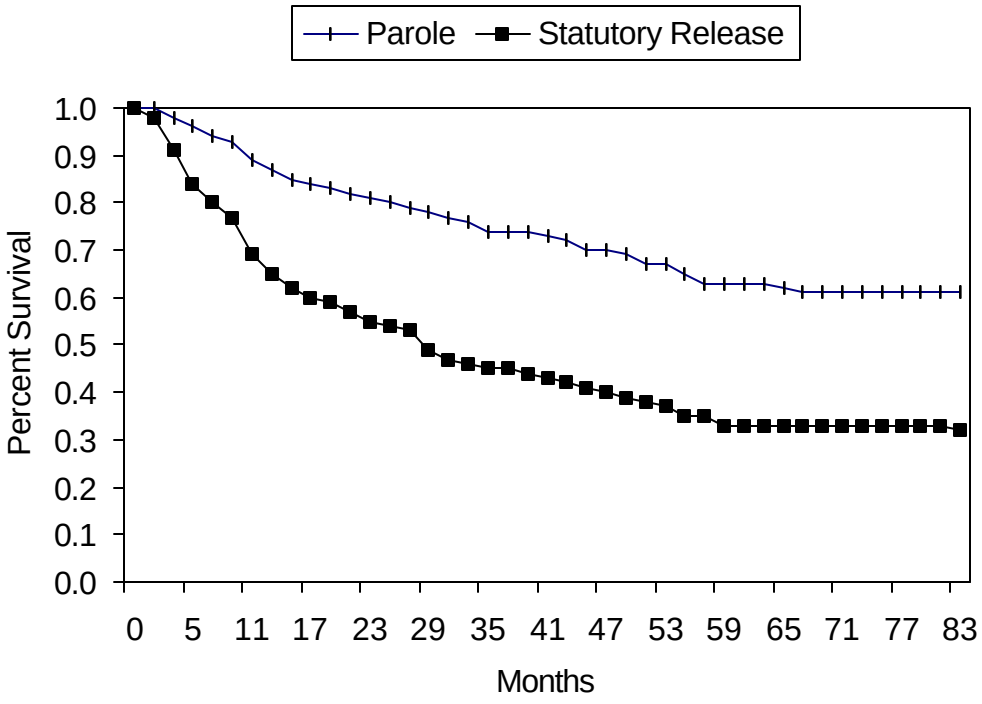
To determine whether those on statutory release differed from those on parole in terms of their rate of recidivism, a survival analysis was performed. This statistical technique was used to determine the average time spent in the community prior to recidivating given certain predictor variables and controlling for unequal time to fail. The Kaplan-Meier method was used to obtain the survival curves and the log rank statistic was used to test difference between the curves. In this analysis three survival curves were performed.

Figure 1. Time to "Overall Recidivism" by Type of Release



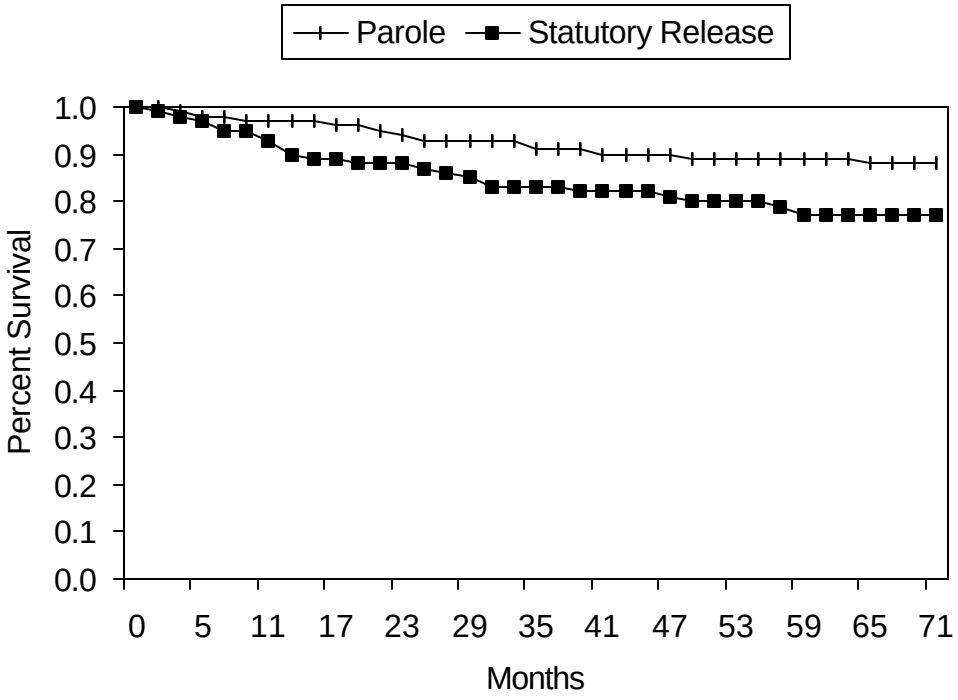
Referring to Figure 1, those on statutory release were less successful than those on parole for "overall recidivism" (c^2 = 20.07, p < .0001). The mean survival time in months was 51 (*SE* = 2) for those on parole and 40 (*SE* = 3) for those on statutory release.

Figure 2. Time to "First Violent" Recidivism by Type of Release



Although the groups did not differ according to the number of offenders who's first recidivism was violent ("first violent"), they did differ according to their time to recidivate. Those on statutory release had a first reoffence of a violent nature sooner than those on parole ($c^2 = 4.23$, $p < .05$; see Figure 2). The mean survival time for those on parole was 61 (*SE* = 2) and for those on statutory release was 51 (*SE* = 2).

Figure 3. Time to "Ever Violent" Recidivism by Type of Release



A similar pattern existed when violent behavior at some point after release was the outcome measure ("ever violent"). Those on statutory release recidivated sooner than those on parole (c^2 = 18.80, p < .0001; see Figure 3), with the mean survival time for those on parole (M = 69; SE = 2) higher than on statutory release (M = 62; SE = 3).

Clinical Risk Assessment

The clinical items listed in Table 2 were independently correlated with the outcome measures. While very few were correlated with overall recidivism, none of them correlated with violent recidivism (both "first" and "ever"). The composite clinical score was calculated by summing the clinical items. The mean composite clinical score was 3.88 (SD = 1.21). While this score was correlated with "overall

recidivism" (r = .24), it was uncorrelated with "first violent" (r = -.06) or "ever violent" (r = .13) recidivism.

In order to strengthen the clinical relation with the outcome measures, a revised composite clinical score was developed using only the items that significantly correlated with the outcome measure (APD, recent attitude, and other professional opinion). The mean score on this revised measure was 1.89 with a standard deviation of .83. Although this revision strengthened the relation with overall recidivism (r = .29) it had no effect on the relation with violent recidivism.

Table 2. Correlation Matrix of Clinical and Actuarial Items with Recidivism

	Overall Recidivism	1st Recidivism Violent	Ever Violent
Clinical Items:			
Overall psychopathology	.02	-.01	.17
Overall attitude	.06	-.06	.01
Recent attitude	.18*	.00	.01
Preoccupation	-.05	-.03	.03
Criminal thoughts	.11	-.11	-.11
No insight	-.06	-.10	.11
Remorse	.10	-.05	.05
APD	.24**	.06	.05
Other professional opinion	.14*	.01	.08
Composite clinical score	.24**	-.06	.13
Composite -revised	.29**	.05	.09
Risk statement	.07	.00	.08
Actuarial:			
SIR	-.36**	.08	-.11
PCL - estimate	.14*	-.01	.16

* $p < .05$, ** $p < .001$

The clinicians' global rating of risk was correlated with the outcome measures to determine whether their impressions were accurate. The mean risk statement score was 2.41 (*SD* = 1.96) and was unrelated to any of the outcome measures. Based on this global rating of risk, the clinicians' were not accurate in predicting outcome.

Actuarial Risk Assessment

The mean SIR score for this sample was 0.13 (*SD* = 9.22; range of scores from -22 to 25). The SIR was significantly correlated with 'overall recidivism' (*r* = -0.36; see Table 2), however it was unrelated to both measures of violent recidivism.

It is worth noting that the liberal method of measuring violent recidivism ("ever violent") did shift the relation with the SIR in the expected direction (from 0.08 to -0.11).

The mean PCL-estimate was 3.11 with a standard deviation of 1.00 (range of scores from 0 to 6)[1]. The PCL-estimate correlated significantly with overall recidivism (*r* = 0.14) but was unrelated to both measures of violent recidivism. Therefore, the actuarial assessments, similar to the composite clinical score, were related to overall recidivism but not violent recidivism.

Intercorrelations

In order to determine whether the actuarial and the clinical assessments were independent, the scales were inter-correlated. Referring to Table 3, with the exception of the relation between the composite-revised and both the PCL-estimate and risk statement, all measures of risk were highly intercorrelated.

[1] Clinicians rated 2 out of the 260 offenders as high in psychopathic characteristics.

This suggests that the measures are somewhat consistent with each other but not independent pieces of information. This is in fact expected since specific items (e.g., lack of remorse, lack of insight) might contribute to more than one of the measures. The reduced intercorrelation with the use of the revised-composite score suggests that it may be better able to predict outcome when combined with other risk measures.

Table 3. Intercorrelations Amongst the Actuarial and Clinical Scales

	SIR	PCL-estimate	Risk statement	Composite
SIR	1.00			
PCL-estimate	-.37**	1.00		
Risk statement	-.30**	.15*	1.00	
Composite	-.43**	.29**	.33**	1.00
Composite-revised	-.26**	.13	.13	.62**

* $p < .05$, ** $p < .0001$

Predicting Recidivism

The risk measures that demonstrated some independence were entered into a logistic regression to determine their independent and additive ability in predicting "overall recidivism". This procedure was not followed for predicting violent recidivism since the predictors were unrelated to those outcome measures. Thus, the following variables were entered: risk statement, revised composite clinical score, SIR, and the PCL-estimate.

To assess the ability of the clinical predictors on their own (risk statement and composite-revised) to predict overall recidivism, a forward logistic regression was performed. The revised composite clinical score was the only variable to significantly predict overall recidivism ($c^2 = 19.39$, $p < .0001$) with an odds ratio of 2.27. The ability of the model consisting of only the revised composite clinical score to accurately predict recidivism was 53.2%.

To assess the ability of the actuarial instruments on their own (SIR and PCL–estimate) to predict overall recidivism a forward logistic regression was performed. The SIR was the only variable to significantly predict overall recidivism ($c^2 = 26.38$, $p < .0001$) with an odds ratio of 0.92. The ability of the model consisting of only the SIR score to predict the occurrence of recidivism was 68.3%, stronger than the revised composite clinical score on its own.

In order to determine the additive nature of the clinical and actuarial risk measures, all were entered simultaneously into a forward logistic regression. The results demonstrate that the SIR and the revised composite clinical score were significant predictors of overall recidivism. The SIR entered first ($c^2 = 25.67$, $p < 0.0001$) with an odds ratio of 0.93, followed by the addition of the revised composite clinical score ($c^2 = 11.67$, $p < 0.001$) with an odds ratio of 1.95. The accuracy of predicting recidivism using the model consisting of these two variables was 74.2%. Thus the combination of an actuarial instrument with a rough estimate of clinical impressions was more accurate in the prediction of recidivism than either on it's own.

DISCUSSION

Consistent with other literature on recidivism and type of release (Grant, 1996; Motiuk, Belcourt & Bonta, 1995; Larocque, 1998) the results of this study suggest that those who are released on parole recidivate less often and survive longer in the community both overall and violently than those on statutory release. This supports the practice of detaining higher risk individuals until statutory release and granting those of lower risk conditional release. Whether these findings are inherent in the type of release the offender is being granted or in the offender himself cannot be determined with this type of analysis. However, suffice it to say that it is likely an interaction between the type of release and some other personality/lifestyle component of the offender that determines what type of release they get and the likelihood of being successful.

Just over half of this sample of high risk and violent offenders recidivated during the course of the seven year follow-up period. One-third of the sample's first re-offence was violent while two-thirds of the sample committed another violent offence at some point during the follow-up period. Clearly this sample of men are at an extremely high risk of not only recidivating but of being violent in the future.

Since clinicians are often criticized for their inability to accurately predict recidivism this study was designed to compare two ways for the clinician to determine risk. The first was to use a global assessment of risk that the clinicians rated on a scale from 0-5. This method was compared to the second method, which was to create a composite clinical score derived from several clinically-based items coded from the psychiatrists' clinical files. The results illustrated that in the prediction of overall recidivism, the revised-composite score was more effective than the global statement of risk. However, the low level of concordance suggests that this method is not highly accurate at predicting overall recidivism.

In the prediction of 'overall recidivism' the SIR outperformed the PCL-estimate. This unusual finding emphasizes a fundamental problem with the manner in which psychopathy was assessed and is supported by two counterintuitive

results. The first was a low correlation between the PCL-estimate and both general and violent recidivism. Extensive research (see Hare, 1998, for review) has consistently demonstrated that the PCL-R is strongly related to overall and violent recidivism. Second, given the high base rate of violence in this sample it is expected that a similarly high base rate for psychopathy would be noted. The clinicians, however estimated that only 2 individuals were high in psychopathic characteristics when base rates (20-30%; Hare, 1998) would project that at least 52-78 offenders would meet that criteria. The psychiatrists drastically underestimated the prevalence of psychopathy by using a short cut, resulting in reduced predictive accuracy. Thus, the results imply that clinical impressions of psychopathy should not be used as a replacement to the fully validated and standardized PCL-R assessment.

The results from the prediction analysis suggest that if either clinical or actuarial assessment had to be used in isolation, the greater accuracy of the SIR would render it the better choice. However, the results also suggest that clinical judgements can improve the prediction of overall recidivism in a meaningful way when combined with the SIR. This is supported by two findings: 1) the revised-composite clinical score entered into the forward regression following the SIR and 2) the accuracy of prediction increased by 6% over the SIR alone with a 3% reduction in discordance rates.

Understanding that the primary purpose of clinical assessments is not the accurate prediction of dangerousness (Monohan, 1996), this study set out to determine the extent to which clinical assessments can augment actuarial instruments in the prediction of risk. Although actuarial risk assessments continue to outperform clinical assessments alone, this study highlights the importance of merging the two practices to augment accuracy. Future research should address the impact of clinical judgements on the prediction of violence when compared to fully validated actuarial instruments.

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