

HCR-20 VIOLENCE RISK ASSESSMENT SCHEME:

OVERVIEW AND ANNOTATED BIBLIOGRAPHY

(CURRENT UP TO 99/11/19)

PREPARED BY KEVIN S. DOUGLAS

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DESCRIPTION OF THE HCR-20

VIOLENCE RISK ASSESSMENT SCHEME

The HCR-20 (Webster, Douglas, Eaves, & Hart, 1997a; see Webster, Eaves, Douglas, & Wintrup, 1995, for Version 1) is a broad-band violence risk assessment instrument with potential applicability to a variety of settings. The conceptual scheme of the HCR-20 aligns risk markers into past, present, and future. Its 10 Historical factors obviously concern the past. However, the HCR-20 contains 5 Clinical items that are meant to reflect current, dynamic (changeable) correlates of violence. The future is recognized in the 5 Risk Management items, which focus attention on situational post-assessment factors that may aggravate or mitigate risk. The HCR-20 takes its name from these three scales — Historical, Clinical, Risk Management — and from the number of items (20). Table 1 shows the items.

The HCR-20 was developed from a thorough consideration of the empirical literature concerning factors which relate to violence. It attempts to develop professional standards regarding the process and substance of risk assessments. Further, the HCR-20 integrates the experience of clinicians, and is easy to administer, understand, and score. Randy Borum (1996) recently has written about the HCR-20 that “the promise of this instrument lies in its foundation on a conceptual model or scheme for assessing dangerousness and risk; its basis in the empirical literature; its operationally defined coding system...[and] its practical use....The field eagerly awaits new data on this instrument” (p. 950).

Very complicated schemes may not be put to their intended use in the daily practice of risk assessment. Professionals who make risk assessments cannot afford the time to calculate complex weighting co-efficients and discriminant function equations. As such, the HCR-20 is an attempt to merge science and practice by offering an instrument which can be integrated into clinical practice but also is empirically based and testable.

TABLE 1
ITEMS IN THE HCR-20 RISK ASSESSMENT SCHEME

<u>SUB-SCALES</u>	<u>ITEMS</u>
HISTORICAL SCALE	
H1	Previous Violence
H2	Young Age at First Violent Incident
H3	Relationship Instability
H4	Employment Problems
H5	Substance Use Problems
H6	Major Mental Illness
H7	Psychopathy
H8	Early Maladjustment
H9	Personality Disorder
H10	Prior Supervision Failure
CLINICAL SCALE	
C1	Lack of Insight
C2	Negative Attitudes
C3	Active Symptoms of Major Mental Illness
C4	Impulsivity
C5	Unresponsive to Treatment
RISK MANAGEMENT SCALE	
R1	Plans Lack Feasibility
R2	Exposure to Destabilizers
R3	Lack of Personal Support
R4	Noncompliance with Remediation Attempts
R5	Stress

NOTE. ADAPTED FROM WEBSTER, DOUGLAS, EAVES, AND HART (1997A).

RECEIVER OPERATING CHARACTERISTIC (ROC) ANALYSES: AN EMERGING TECHNIQUE IN RISK ASSESSMENT RESEARCH

ROC statistical analysis is summarized here because several of the HCR-20 studies use this analysis, and results are reported in terms of the statistical indexes that ROC produces. Although ROCs have been used in the area of radiology (Lusted, 1978), radar signal detection, and sensory psychology since the 1950s and 1960s (Metz, 1984), they have only recently been introduced into the area of violence risk assessment (Mossman, 1994a, 1994b; Rice & Harris, 1995; Rice, 1997). They are recommended in this area because they are less dependent on the base rate of the criterion variable in the sample (in the present case, violence) than are traditional measures of predictive accuracy derived from 2 x 2 contingency tables (such as false positives and false negatives). Since correlations diminish with departures from base rates of 50%, correlational techniques are not the most effective means to estimate predictive efficiency of risk assessment schemes (Rice & Harris, 1995).

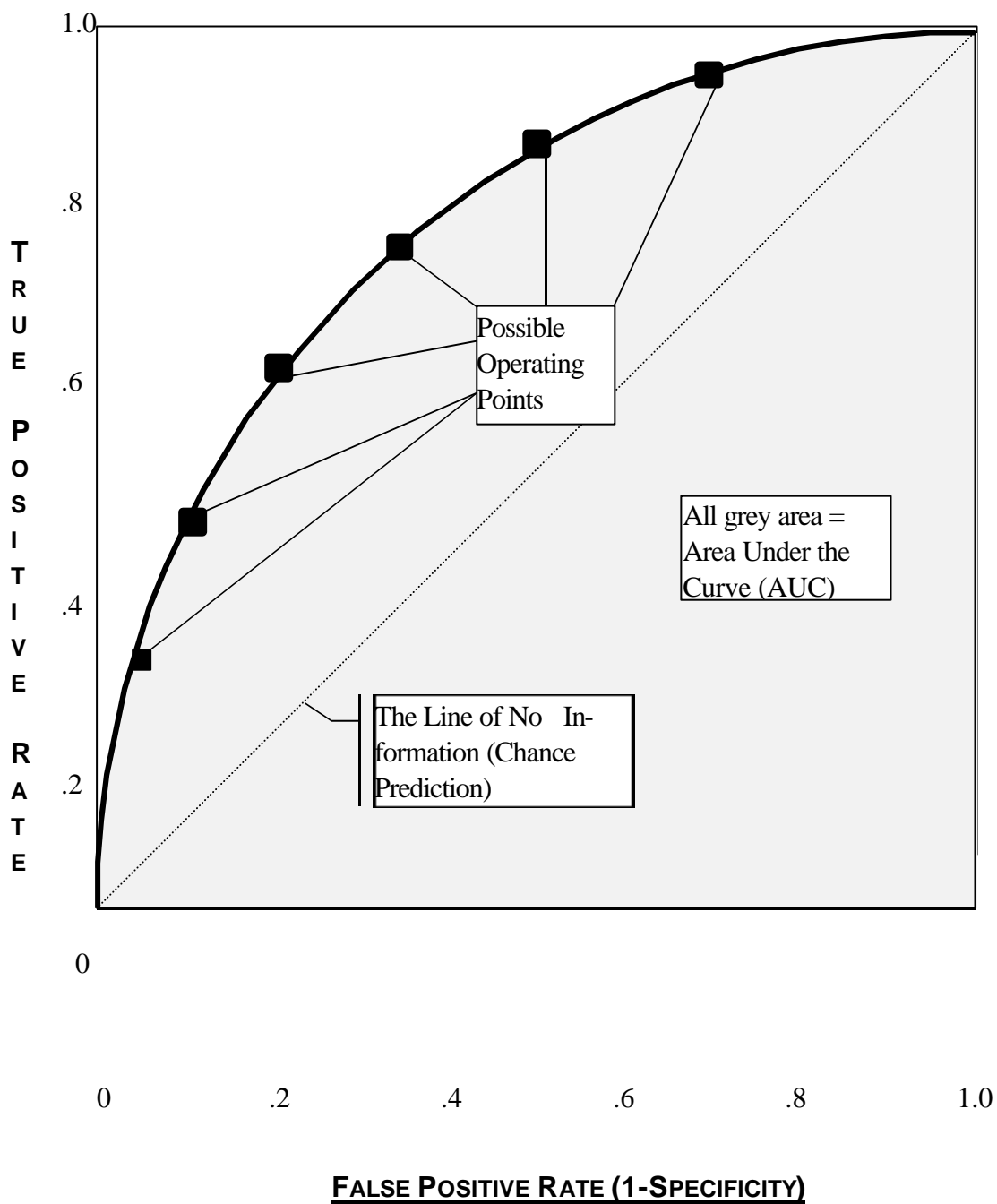
ROC curves allow for the comparison of various thresholds on the predictor measures for offering predictions of violence, an overall index of accuracy which accounts for all possible thresholds, the simple identification of the optimal threshold, and the comparison of two or more predictors (Hsiao, Bartko, & Potter, 1989; Lusted, 1978; Metz, 1984; Mossman, 1994a; 1994b; Mossman & Somoza, 1991; Vida, 1997).

The term “receiver operating characteristic” took its name because it describes the detection, or prediction, “characteristics” of the test, and the “receiver” of the data can “operate” at any given point on the curve (Metz, 1978). ROCs are meant to be applied to data which are comprised of a continuous predictor variable and a dichotomous dependent measure. They take the form of a figure (see Sample ROC, next page, for an example) with the sensitivity (true positive rate [TPR]) of the predictor plotted as a function of the false positive rate (FPR [1-specificity]) (Mossman & Somoza, 1991). For any given level of specificity, the receiver knows the sensitivity. Each point on the curve (which corresponds to a cut-off on the predictor) represents a different trade-off between sensitivity and specificity.

The area under the curve (AUC) of the ROC graph can be taken as an index for interpreting the overall accuracy of the predictor. Areas can range from 0 (perfect negative prediction), to .50 (chance prediction), to 1.0 (perfect positive prediction). A given area represents the probability that a randomly chosen person who scores positive on the dependent measure (in this study, is actually violent) will fall above any given cut-off on the predictor measure, and that an actually non-violent person will score below the cut-off (Mossman & Somoza, 1991). Thus, an area of .75 means that there is a 75% chance that an actually violent person would score above the cut-off for violence on the predictor, and an actually non-violent person would score below the cut-off. AUC values of 0.70 may be considered moderate to large, and .75 and above may be considered large.

FIGURE 1

A SAMPLE ROC CURVE



A SUMMARY OF HCR-20 RESEARCH

STUDY/ SAMPLE	N	MEANS (SD)				VALIDITY INDICES	RELIABILITY INDICES
		HCR TOTAL	H SCALE	C SCALE	R SCALE		
CIVIL PSYCHIATRIC							
DOUGLAS, OGLOFF, NICHOLLS, GRANT (1999) ¹	193	19.0 (5.8)	9.8 (3.4)	4.1 (1.9)	5.1 (2.3)	AUCs = .76 - .80	IRR (TOTAL) = .80 (ICC)
NICHOLLS, OGLOFF, DOUGLAS (1997A) ²	279	20.4 (5.6) ^A 16.6 (5.5) ^B	10.5 (3.4) ^A 8.4 (3.2) ^B	7.4 (1.5) ^A 6.8 (1.7) ^B	5.4 (2.4) ^A 4.7 (2.2) ^B	AUCs = .74 - .78 ^A AUCs = .63 - .77 ^B	SEE ABOVE
ROSS, HART, WEBSTER (1998) ³	131	19.1 (6.2)	8.7 (4.0)	5.6 (1.9)	4.8 (2.1)	AUCs (TOT) = .68 - .75	IRR (H) = .82; α (H) = .74; (C) = .64
FORENSIC PSYCHIATRIC							
BELFRAGE (1998)	43	28.8 (6.2)	13.8 (3.3)	5.5 (2.2)	6.6 (2.0)	NA	IRR (TOTAL) = .81 α (TOTAL) = .95
DERNEVIK (1998)	6*6					NA	IRR = .76 - .96
DERNEVIK ET AL (1999)	8 ¹¹	22.7 (6.5) ¹² 26.3 (6.1) ¹²	N/A	N/A	N/A	MULT R = .66 B/W HCR & FEELING CHECKLIST	N/A
DOUGLAS ET AL. (1998)	175	24.55 (5.8)	12.45 (3.6)	5.47 (2.5)	6.64 (2.3)	ODDS = 2.2 - 3.7	α (TOTAL) = .78 IRR (ICC) = .81
GRANN ET AL. (2000) ⁶	404	N/A	11.8 (3.7)	N/A	N/A	AUCs = .66 - .71	N/A

CONTINUES ON NEXT PAGE WITH MORE FORENSIC SAMPLES AND CORRECTIONAL SAMPLES

STUDY/ SAMPLE	N	MEANS (SD)				VALIDITY INDICES	RELIABILITY INDICES
		HCR TOTAL	H SCALE	C SCALE	R SCALE		
MULLER-ISBERNER & JOCKEL (1997)	100	NA	11.5 (3.6)	5.2 (1.9)	NA	NA	\underline{M} KAPPA (H) = .89 \underline{M} KAPPA (C) = .49
NICHOLLS ET AL. (1999) ¹⁰	125	20.0 (5.3)	11.2 (3.6)	5.1 (2.5)	3.2 (1.2)	AUCs (TOT) = .68 - .77 PEARSON r = .31 - .46	N/A
SCHARIN (1999) ⁶	49	(NOT AVAILABLE AT TIME OF UPDATE – NOV 19, 1999)				ODDS = 9.63	N/A
STRAND & BELFRAGE (IN PRESS)	63 ^B 85 ^A	24.8 (7.0) ^B 25.5 (7.9) ^A	12.9 (3.6) ^B 13.8 (4.2) ^A	5.1 (2.6) ^B 5.0 (2.5) ^A	6.7 (2.9) ^B 6.7 (2.8) ^A	NO DIFFERENCE B/W MEN AND WOMEN ON SCALES	KENDALL'S TAU-B = .67
STRAND ET AL. (1999)	40	26.4 (8.0)	14.4 (4.4)	5.2 (2.5)	6.8 (2.7)	AUC (TOTAL) = .80; COHEN'S \underline{d} = 1.19	KENDALL'S TAU-B = .69
VINCENT (1998) ⁸	125	22.3 (6.3)	11.2 (3.6)	5.0 (2.6)	6.1 (2.1)	ODDS 2.45	N/A
WHITTEMORE (1999)	172					WALD = 9.86	
WINTRUP (1996) ⁴	80	NA ⁵	NA	NA	NA	\underline{M} I = .30	NA
<u>CORRECTIONAL</u>							
BELFRAGE, FRANSSON, & STRAND (1999)	41	26				COHEN'S \underline{d} = 1.70 FOR TOTAL, 1.00 FOR H, 1.14 FOR C, AND 1.22 FOR R	N/A
DOUGLAS & WEBSTER (1999) ⁴	72	NA	11.9 (3.3)	5.0 (2.0)	NA	\underline{I} S = .3 - .5; \underline{M} ODDS (HC) = 4.0	IRR (HC) = .80
DUNBAR (1999)	58	22.2 (9.9)	9.4 (5.7)	6.1 (1.9)	6.7 (2.9)	\underline{I} S (TOT) = .33 TO .63	IRR = .88 TO .94 α = .86 TO 94)
VINCENT (1998)	125	23.6 (6.7)	11.9 (3.8)	4.5 (2.5)	7.3 (1.7)	N/A	N/A
<u>MIXED SAMPLES</u>							
DOUGLAS & BELFRAGE (1999/IN PREP) ⁷						\underline{d} s = (1) .89 - 1.75; (2) .36 - .50; (3) .08 - .44	

NOTE 1. THIS TABLE DOES NOT CONTAIN ALL STUDIES REPORTED IN THE ANNOTATED BIBLIOGRAPHY. SOME STUDIES SUPPLEMENTAL TO MAIN STUDIES WERE NOT INCLUDED. THE METHOD AND RESULTS OF THE STUDIES IN THIS TABLE ARE DESCRIBED IN MORE DETAIL IN THE ANNOTATED BIBLIOGRAPHY THAT FOLLOWS.

NOTE 2. IRR = INTERRATER RELIABILITY; HC = TOTAL H SCALE AND C SCALE COMPOSITE WHEN R SCALE NOT AVAILABLE; SUPERScript "A" DENOTES ANALYSES FOR MEN ONLY; SUPERScript "B" DENOTES ANALYSES FOR WOMEN ONLY. "ψ" DENOTES THAT THE SAMPLE IS A SUB-SAMPLE OF ANOTHER STUDY, AND HENCE THE REPORTING OF MS AND SDS IS OMITTED.

¹ SEE ALSO DOUGLAS, OGLOFF, & NICHOLLS (1997A, B)

² SEE ALSO NICHOLLS, OGLOFF, & DOUGLAS (1997B)

³ SEE ALSO KLASSEN (1996)

⁴ SEE ALSO DOUGLAS, WEBSTER, & WINTRUP (1996)

⁵ THE MEAN FOR THE HC COMPOSITE WAS 17.1 (SD = 3.8)

⁶ THESE SAMPLES ARE A COMBINATION OF FORENSIC AND CORRECTIONAL

⁷ THESE ANALYSES ARE BASED ON RE-ANALYSIS OF EXISTING DATA SETS ACROSS THREE SAMPLES, AND HENCE N, DESCRIPTIVE CHARACTERISTICS, AND RELIABILITY CO-EFFICIENTS ARE NOT PROVIDED HERE. THE THREE D SCORE RANGES IN THE VALIDITY INCIDES COLUMN REFER TO CHANGES IN C AND R SCORES OVER TIME, AND NOT TO ANY RELATIONSHIP WITH VIOLENCE.

⁸ THE EFFECT SIZE WAS FOR PREDICTING TIME INSTITUTIONALIZED, NOT VIOLENCE.

⁹ THE EFFECT SIZE HERE WAS FOR PREDICTING DISCHARGE FROM FORENSIC HOSPITAL, NOT VIOLENCE.

¹⁰ THIS SAMPLE ALSO COMPRISES THE ANALYSES FOR VINCENT'S (1999) FORENSIC SAMPLE

¹¹ EIGHT PATIENTS WERE RATED BY 40 CLINICIANS, WHERE EACH PATIENT WAS RATED BY FIVE DIFFERENT CLINICIANS

¹² THE TOP MEAN (22.7) WAS DERIVED FROM PSYCHOLOGISTS; THE BOTTOM MEAN (26.3) FROM PSYCHIATRIC NURSES.

**OVERVIEW OF RESEARCH PROJECTS, PUBLICATIONS, PRESENTATIONS,
AND UNPUBLISHED STUDIES**

CIVIL PSYCHIATRIC SETTINGS

Project Description: James R. P. Ogloff, Isabel Grant; An Investigation of Civil Commitment and Review Panel Decision Making in British Columbia

This was a chart review study of all 279 involuntarily committed persons from a large psychiatric hospital in Western Canada who applied for Review Panel hearings in 1994. Data were collected concerning patients' demographic characteristics, family and childhood history, mental health history, criminal history, and Review Panel hearing outcomes. The majority of patients had psychotic disorders, previous psychiatric hospitalizations, and were unemployed at admission. Over half of patients had previous arrests or convictions. Patients were tracked in the community after their release for an average of 2 years. Follow-up information was gathered from re-hospitalizations to the releasing psychiatric hospital, hospitalization records from 16 general hospitals in the province, provincial correctional records, and Coroner's records.

Scholarly Works

Douglas, K. S., Ogloff, J. R. P., Nicholls, T. L., & Grant, I. (1999). Assessing risk for violence among psychiatric patients: The HCR-20 risk assessment scheme and the Psychopathy Checklist: Screening Version. *Journal of Consulting and Clinical Psychology, 67*, 917-930.

Summary

This study compared the predictive validity of the HCR-20 Risk Assessment Scheme (Webster, Douglas, Eaves, & Hart, 1997a; Webster, Eaves, Douglas, & Wintrup, 1995) and the Psychopathy Checklist: Screening Version (PCL:SV; Hart, Cox, & Hare, 1995). This research includes the 193 patients for whom complete measures were attainable (HCR-20; PCL:SV). Patients were followed into the community for an average of 626 days.

Violence was defined to include a demarcation between physical and non-physical aggression. Physical aggression refers to any attacks on persons. Non-physical aggression includes threats to harm a person, verbal attacks on persons, and "fear-inducing" behaviour such as attacks on objects. Violent crime was coded separately to allow for additional analyses, al-

though typically it would also be coded as physical violence. The three types of violent outcome, then, were (1) any violence; (2) physical violence; (3) violent crime.

The AUCs produced by ROC ranged from .76 (for any and physical violence) to .80 (for violent crime). Odds ratios showed that persons scoring high on the HCR-20 (above the median) were 6 (for any and physical violence) to 13 (for violent crime) times more likely to be violent in the community than persons who scored under the median.

For the PCL:SV, AUCs ranged from .68 (for any violence) to .73 (for physical violence) to .79 (for violent crime). Effects for the PCL:SV were more variable than those for the HCR-20. The odds of violence for those above the median score of the PCL:SV also increased substantially (from approximately 4 to 13 times).

Hierarchical regression analyses revealed that the HCR-20 added to the predictive validity of the PCL:SV, but the converse was not true. Multiple regression analyses of the subscales of the HCR-20 and PCL:SV indicated that only HCR-20 scales predicted rate of violence. The H scale and R scale of the HCR-20 produced the largest effect sizes of all subscales with violence. Implications for research on risk assessment, as well as the clinical assessment and management of violence, are discussed.

Douglas, K. S., Ogloff, J. R. P., & Nicholls, T. L. (1997, June). *Assessing the risk for inpatient psychiatric violence*. Paper presented at the annual convention of the Canadian Psychological Association, Toronto. Symposium moderator: J.R.P. Ogloff.

Summary

This presentation focused on risk for inpatient violence specifically. Inpatient violence was defined in a similar manner as community violence. A distinction was made between physical violence (which required physical contact with victims) and non-physical violence (which included threats of violence and fear-inducing behaviour). Approximately half of patients displayed physical aggression while hospitalized.

AUCs for the H and C Scales composite for inpatient violence ranged from .57 to .65. Odds ratios for inpatient violence averaged approximately 2.0, and for repetitive inpatient violence, 3.0. These values are smaller than those for community violence, and indicate a moderately sized relationship between the HCR-20 and repetitive inpatient violence. The AUCs for the PCL:SV for inpatient violence were similar to those for the HCR-20, ranging from .60 to .64. Odds ratios were comparable to those of the HCR-20, averaging approximately 1.75 for inpatient violence, and 3.0 for repetitive violence.

Nicholls, T. L., Ogloff, J. R. P., & Douglas, K. S. (1997, August). *Comparing risk assessments with female and male psychiatric outpatients: Utility of the HCR-20 and Psychopathy Checklist: Screening Version*. Paper presented at the annual convention of the American Psychological Association, Chicago. Symposium moderator: J.R.P. Ogloff.

Summary

The focus of this research was to compare men and women on community violence risk assessments using the HCR-20 and PCL:SV. Concerning violent and criminal behaviour, a greater proportion of men had histories of crime (including violent crime). On the violence outcome measures, a greater percentage of men compared to women displayed each type of violence.

In predicting violence, the HCR-20 displayed similar levels of AUCs for men and women for any violence and violent arrest (AUCs = .74 - .78). However, the AUC for female physical violence was substantially lower, at .63. The AUCs for the PCL:SV ranged from .63 to .68 for men, and from .48 to .67 for women.

Regression analyses showed that, between the HCR-20 and PCL:SV, only the HCR-20 predicted rates of any and criminal violence for both men and women, whereas only the PCL:SV predicted rate of physical violence, and this only for men.

Nicholls, T. L., Ogloff, J. R. P., & Douglas, K. S. (1997, June). *Comparing risk assessments with female and male psychiatric inpatients: Utility of the HCR-20 and Psychopathy Checklist: Screening Version*. Paper presented at the annual convention of the Canadian Psychological Association, Toronto. Symposium moderator: J.R.P. Ogloff.

Summary

The focus of this research was to compare men and women on inpatient violence risk assessments using the HCR-20 and PCL:SV. There were no significant differences in rates of inpatient aggression between men and women. The AUCs for aggression to others for men averaged approximately .61, and for women, .75. A similar difference emerged for the PCL:SV, with the AUCs for men averaging .62, and for women, .74.

These results are important for two reasons. First, they demonstrate the importance of gender in research on risk assessment. Second, they show that, while the HCR-20 (and PCL:SV) did demonstrate a small to moderate sized effect with inpatient violence, its predictive validity was substantially greater for women in this particular sample and setting.

See Also

Douglas, K. S., Ogloff, J. R. P., & Nicholls, T. L. (1997, August). *Violence by psychiatric patients: Validity of the HCR-20 Scheme and the Psychopathy Checklist: Screening Version*. Paper presented at the annual convention of the American Psychological Association, Chicago. Symposium moderator: J.R.P. Ogloff.

Douglas, K. S., Ogloff, J. R. P., & Nicholls, T. L. (1997, June). The role of personality disorders in community violence among civil psychiatric patients. In C. D. Webster (Symposium Moderator), *Personality disorder and violence*. Symposium presented at the Fifth International Congress of the Disorders of Personality, Vancouver, B.C., Canada.

Ogloff, J. R. P., Douglas, K. S., Nicholls, T. N., & Grant, I. (1997, November). *Civil commitment and risk for violence in psychiatric patients*. Paper presented at the annual meeting of the Pinel Institute, Montreal, Quebec, Canada.

Ogloff, J. R. P., Nicholls, T. L., Douglas, K. S., & Grant, I. (1997, May). *Involuntary civil commitment: Risk assessment, sex differences, and review panel decision making*. Paper presented at the Annual Convention of the Law and Society Association, St. Louis, Missouri.

Project Description: Christopher D. Webster, Stephen D. Hart, Derek Eaves

This was a prospective study of 131 persons admitted consecutively to the Intensive Care Unit (ICU) of a large psychiatric hospital in Western Canada. There were 82 (63%) men and 49 (37%) women. The mean age at admission was 36 years ($SD = 12$). The majority of patients were single ($n = 105$; 80%). Only 10% ($n = 13$) of the sample was employed at admission. The mean length of stay on the ICU was 21 days ($SD = 12$). Patients had on average 6.1 ($SD = 6.4$) previous psychiatric hospitalizations. Over half of the sample had schizophrenic or other psychotic disorders as admission diagnoses ($n = 73$; 56%). Approximately one-fifth ($n = 28$) of the sample received diagnoses of personality disorder.

The HCR-20, PCL:SV, and BPRS were completed for each patient. Research assistants coded the H scale items, and attending psychiatrists coded the C and R scale factors. Violence was measured on the unit by use of the Overt Aggression Scale. Patients were also tracked in the community. Subsequent contacts with corrections, police, and hospitals were recorded from archival sources. A research assistant also contacted community “collaterals” (persons who knew the patients and could report on their community behaviour) at three and six months post-release.

Scholarly Works

Klassen, C. (1996). *Predicting aggression in psychiatric inpatients using 10 historical risk factors: Validating the "H" of the HCR-20.* Unpublished bachelor's honour's thesis, Simon Fraser University, Burnaby, British Columbia, Canada.

Summary

In a subset of this sample comprising 50 patients, the 10 Historical variables of the HCR-20 and the 12 items from the PCL:SV were used to predict inpatient violence. Violence included acts of verbal aggression, self-directed aggression, and aggression toward others and objects (as measured by the Overt Aggression Scale). With respect to internal consistency of the HCR-20 H scale, Klassen reported a Cronbach's alpha of .73. Correlations between the H variables and violence averaged .30 across several outcome measures, and controlling statistically for the effects of sex. Of the individual items, substance abuse and psychopathy were most strongly related to violence. The PCL:SV performed similarly to the H Scale, correlating at .26 with ward violence. Part 2 of the PCL:SV, which measures the behavioural aspects of psychopathy, was somewhat more strongly related to ward violence (.33) than were PCL:SV Total or H scores from the HCR-20.

Ross, D. J., Hart, S. D., & Webster, C. D. (1998). *Facts and fates: Testing the HCR-20 against aggressive behavior in hospital and community.* Unpublished manuscript.

Summary

Interrater reliability for the H Scale, based on a subsample of 30 files, was .82. Cronbach's alpha for the H Scale was .74, and for the C Scale, .64. Interrater reliability for the PCL:SV Part 1, 2, and Total was, respectively, .82, .91, .91. In this study, 47% (n = 62) of patients displayed violence toward others while hospitalized. For inpatient violence, the H Scale, C Scale, and HC composite produced AUCs with violence that were greater than chance, ranging from .63 to .68 for any type of aggression. The largest AUC was for the HC composite. The PCL:SV AUC was .61. The HCR-20 H and C scales were related to ward violence with moderate strength in this sample. Survival analyses showed that persons who scored high on the HC composite were twice as likely (62%) to be violent by day 10 post-admission compared to persons who scored low (35%).

For the community phase of the study, 112 patients had been released by the end of the study period, and data were complete for 101 of these patients. Half of the sample displayed violent behaviour in the community, most frequently verbal aggression to others. For the HCR-20 subscales, AUCs for any aggression to others ranged from .58 (C), to .73 (R). For physical

violence, the AUCs averaged approximately .63. The AUC for the HCR-20 Total score was .67. For violent crime, however, the HCR-20 AUC was .75. For the PCL:SV, the AUC for any violence and physical violence was .65, and for violent crime, .70. All AUCs are significantly greater than chance.

FORENSIC PSYCHIATRIC SETTINGS

Project and Scholarly Work

Belfrage, H. (1998). Implementing the HCR-20 scheme for risk assessment in a forensic psychiatric hospital: Integrating research and clinical practice. *Journal of Forensic Psychiatry*, 9.328-338.

Summary

This was a reliability study of the Swedish translation of the HCR-20 (Belfrage & Fransson, 1997). Six clinicians rated the same 43 patients on the HCR-20 and PCL-R. Over half of the sample ($n = 25$; 58%) had an index offence of homicide, and the majority (77%) had previous records for criminal offences. The mean age of patients was 40 (range = 24 - 67). The majority of patients had primary ICD-9 diagnoses of mental disorder (70%), 21% were diagnosed as personality disordered, and 9% received other diagnoses. Approximately half of the sample ($n = 22$; 51%) also had substance abuse diagnoses.

Internal consistency, using Cronbach's alpha, for the H scale was .96, for the C scale was .89, for the R scale was .85. For the total score, Cronbach's alpha was .95. Multivariate interrater reliability analyses, using Kendall's W, produced the following coefficients — Total scale = .81; H scale = .85; C scale = .62; R scale = .56. The HCR-20 correlated with the PCL-R at .64. The Cronbach's alpha for the PCL-R was .95, and Kendall's W was .78.

Project and Scholarly Work

Dernevik, M. (1998). Preliminary findings on reliability and validity of the Historical-Clinical-Risk Assessment in a forensic psychiatric setting. *Psychology, Crime, and Law*, 4, 127-137.

Summary

This was a reliability study of the HCR-20. Six clinicians each rated six patients on the HCR-20. Reliability co-efficients ranged from .76 to .96.

Project and Scholarly Work

Dernevik, M., Falkheim, M., Holmqvist, R., & Sandell, R. (1999, July). *Implementing risk assessment procedures in a forensic psychiatric setting: Personal relationships between assessor and the assessed using the Historical-Clinical-Risk-20 scheme*. Paper presented at the International meeting of the American Psychology-Law Society (Div. 41 APA) and the European Academy of Psychology and Law, Dublin.

Summary

The main goal of this study was to evaluate issues related to the process of risk assessment as it pertains to the HCR-20. Specifically, the study evaluated whether “expert” HCR-20 raters (psychologists) differed in their scores from psychiatric nurses. Second, analyses were conducted to determine the extent to which HCR-20 ratings were influenced by clinicians’ feelings towards the patient. The contextual grounding for this approach was drawn from the larger clinical and social psychological literature on biases and heuristics in decision-making.

A total of 8 male patients and 40 clinicians (psychiatric nurses) took part. On average, each patient was rated by five clinicians, and each clinician rated one patient. These patients had serious violent index offences (homicide, rape, assault, arson) and severe mental disorders, as well as personality disorders. They were on average 28 years of age.

The “Feeling Word Checklist” (FWC) was used for clinicians to rate their reactions to the patients they assessed. The FWC is based on a circumplex model with 30 items comprising four dimensions and eight scales, as follows: (1) Helpfulness vs. Unhelpfulness; (2) Closeness vs. Distance; (3) Accepting vs. Rejecting; and (4) Autonomous vs. Rejecting. The FWC predicted HCR-20 scores with $Mult. R = .66$, with feeling Close and Accepting relating to higher scores, and Helpfulness and Autonomy relating to lower scores.

The mean score for the nurse was 26.3 ($SD = 6.1$), whereas it was lower for the “expert” raters ($M = 22.7$; $SD = 6.5$).

As Dernevik et al. point out, the question of whether the relationship between feelings and HCR-20 scores is evidence for biases in clinical decision-making is not clear. There were no outcome data (i.e., subsequent violence). Further, it is possible that clinicians’ feelings are correlative rather than causative of the HCR-20 ratings. Dernevik et al.’s findings, however, emphasize the importance of limiting biases and over-emphasis on personality to the greatest extent possible, and also the potential importance in professional training on the outcome of an assessment. Further, item bias was not directly assessed (i.e., differential item functioning using Item Response Theory).

Project Description: Christopher D. Webster, Stephen D. Hart, & Derek Eaves

This is a prospective study. The HCR-20 was coded on 175 consecutive persons who were coming before a Criminal Review Board for release from dispositions of Not Criminally Responsible an Account of Mental Disorder (NCRMD). The PCL-R was coded with the use of interviews by trained assistants. Psychiatrists who were responsible for providing the Board with a release assessment completed the Brief Psychiatric Rating Scale (BPRS), as well as the Clinical and Risk Management scales of the HCR-20, as part of their assessments. The H scale was coded by assistants on the basis of file and interview information.

The mean age at admission was 33.0 (SD = 9.6). The sample was primarily male (n = 133, 88.7%). The vast majority of participants were unemployed at admission (n = 139, 92.7%). Schizophrenia was the predominant admission Axis I diagnosis (n = 96, 64%). Forty-one patients (27.4%) of the patients received an admission diagnosis of personality disorder. Most patients had been hospitalized in the past (n = 132, 88%), and the majority had previous charges for violent offences (n = 90, 60%). Finally, most patients had a violent index offence (n = 129, 86%). Violence was measured in the hospital with the Overt Aggression Scale, and in the community with arrests records and re-admission to the forensic institute.

Scholarly Works

Douglas, K. S., Klassen, C., Ross, D., Hart, S. D., Webster, C. D., & Eaves, D. (1998, August). *Psychometric properties of HCR-20 violence risk assessment scheme in insanity acquittees*. Poster presented at the Annual meeting of the American Psychological Association, 1998, San Francisco.

Summary

The HCR-20 violence risk assessment scheme was coded on 175 consecutive insanity acquittees appearing before a criminal Review Board. The purpose of the study was to provide data on the descriptive, normative, and reliability characteristics of the HCR-20, and on its relationship to conceptually-related concurrent measures and indexes. The alpha coefficients for the HCR-20 Total, H scale, C scale, and R scale scores, respectively, were .78, .69, .77, and .77. Other indexes also supported the structural reliability of the HCR-20 (i.e., MIC; CITC). For the H Scale, interrater reliability was good ($ICC_1 = .81$; $ICC_2 = .90$). Interrater reliability was not available for the other HCR-20 scales. Test-retest analyses showed that the C and R scales changed (declined) across repeated assessments, as they are expected to.

The HCR-20 was related strongly to the PCL-R, correlating at .60. The H Scale was most strongly related (.76 with PCL-R Total), while the C and R Scales were related with small effect sizes ($r_s = .18$ and $.16$, respectively). The H Scale was more strongly correlated with Factor 2 of the PCL-R, while the C and R Scales were more strongly correlated with Factor 1. The HCR-20 and its scales were related to psychopathology (Brief Psychiatric Rating Scale; various factors). In a conceptually meaningful way. Generally, the C Scale was most strongly related, the R Scale next strongly related, and the H Scale generally unrelated.

Finally, the HCR-20 was related to an index of violence (past violent crimes). Items on the HCR-20 dealing with past violence were removed to avoid inflation of correlation coefficients. Persons scoring above the median of the HCR-20 were significantly more likely than those scoring below the median to have previous violent convictions, previous assault charges, and juvenile records.

Project and Scholarly Work

Grann, M., Belfrage, H., & Tengström, A. (2000). Actuarial assessment of risk for violence: Predictive validity of the VRAG and the historical part of the HCR-20. *Criminal Justice and Behavior*, 27, 97-114.

Summary

This was a retrospective follow-up of 404 forensic patients who had committed violent offences in Sweden, and who were followed up for a period of two years. This study compared to predictive characteristics of the Violence Risk Appraisal Guide (VRAG; Harris, Rice, & Quinsey, 1993) and the H Scale of the HCR-20. The sample was further broken down into two sub-samples or cohorts: 1) 293 violent offenders with ICD-9 diagnoses of personality disorder; 2) 111 violent offenders with diagnoses of schizophrenia.

Across both groups, the AUC of the ROC for the H Scale was .71 (95% CI = .66 - .76). At the cut-off score of 12 on the H Scale (the inflexion point), sensitivity = .71; specificity = .61; positive predictive power = .35, and negative predictive power = .88. For the VRAG, the AUC was .68 (95% CI = .63 - .73). At the cut-off score of 13 on the VRAG (the inflexion point), sensitivity = .50; specificity = .77; positive predictive power = .39, and negative predictive power = .84.

In the personality disordered cohort, the AUC of the ROC for the H Scale was .71 (95% CI = .66 - .76). At the cut-off score of 12 on the H Scale (the inflexion point), sensitivity = .72; specificity = .60; positive predictive power = .38, and negative predictive power = .86. For the VRAG, the AUC was .68 (95% CI = .62 - .73). At the cut-off score of 13 on the VRAG (the inflexion point), sensitivity = .57; specificity = .71; positive predictive power = .40, and negative predictive power = .83.

In the schizophrenia cohort, the AUC of the ROC for the H Scale was .66 (95% CI = .56 - .75). At the cut-off score of 8 on the H Scale (the inflexion point), sensitivity = .88; specificity = .36; positive predictive power = .19, and negative predictive power = .95. For the VRAG, the AUC was .60 (95% CI = .50 - .69). At the cut-off score of 0 on the VRAG (the inflexion point), sensitivity = .68; specificity = .53; positive predictive power = .20, and negative predictive power = .91.

Grann et al. concluded that both the H Scale and the VRAG predicted violence significantly better than chance (except for the VRAG in the schizophrenia group). They comment that the obtained values could under-represent the actual predictive accuracy of the instruments because several items on each scale had to be “approximated.” The sensitivity of the H Scale tended to be greater than that for the VRAG, whereas the specificity of the VRAG tended to be greater. Among the schizophrenia group, only the H Scale was better than chance.

Project and Scholarly Work

Muller-Isberner, J. R., & Jockel, D. (1997, September). *The implementation of the HCR-20 in a German hospital order institution.* Paper presented at the Seventh European Conference on Psychology and Law, Solna, Sweden.

Summary

100 forensic psychiatric patients were rated on the German version of the HCR-20 (which includes 3 variables not in the original version). There were 96 men, and the mean age of the sample was 38.8 years. Only the H and C scales were rated. Most index offences were of a violent nature: homicide (24%); severe bodily harm (21%); violent sexual offences (20%); arson (13%); and 24 other offences. Close to half (43%) of the sample had primary diagnoses of functional psychosis.

Two psychiatrists rated a subsample of 45 offenders, allowing interrater reliability analyses. For the H Scale items, Kappa ranged from .54 to 1.00, with a mean Kappa of .89. In 91% of cases, the two clinicians were within one point on ratings of H Scale total scores. Kappa was not as high for the C Scale, ranging from .33 to .65, with a mean Kappa of .49. In 71% of cases, clinicians were within one point on the C Scale.

Mean H scores were greatest for personality disordered patients with low IQs ($M = 13.6$) and lowest for patients with major brain damage ($M = 9.5$). Homicide offenders ($M = 9.5$) and nonviolent sexual offenders ($M = 8.0$) scored lowest on the H Scale, whereas patients who had committed "violent property offences" scored highest ($M = 13.8$). There were no differences on the C Scale as a function of index offence.

Project and Scholarly Work

Nicholls, T. L., Vincent, G. M., Whittemore, K. E., & Ogloff, J. R. P. (1999, November). *Assessing risk of inpatient violence in a sample of forensic psychiatric patients: Comparing the PCL:SV, HCR-20, and VRAG*. Paper presented at the International Conference on Risk Assessment and Risk Management, Vancouver, British Columbia, Canada.

This study is based on the same data set as Vincent (1998), *infra*, but addressed independent issues. The reader is referred to the annotation of Vincent (1998) for a description of the general methodological factors.

This research assessed the predictive ability of the HCR-20, VRAG, and PCL:SV in terms of inpatient violence of 125 forensic psychiatric patients. The authors carried separate analyses for pre-disposition and post-disposition time periods (i.e., pre- and post Review Board hearing). Violence was categorized as verbal, physical, and “any,” and was coded from detailed files. Analyses included univariate Pearson *r* correlations, ROC analyses, and hierarchical logistic regression analyses.

Pre-disposition violence. For the HCR-20, Pearson *r* values for verbal, physical, and any violence were as follows: .39, .36, .46. These generally were higher than for the VRAG (.22, .07, .21) or the PCL:SV (.25, .26, .32). The AUCs for the HCR-20 were .72, .72, and .77, and again were generally higher than for the VRAG (.62, .66, .69) or PCL:SV (.65, .54, .62). Hierarchical logistic regression showed that the PCL:SV predicted any and physical inpatient violence when entered as alone in Block 1, the VRAG did not add to this on Block 2, and, on Block 3, only the HCR-20 predicted violence (the PCL:SV was no longer significant, nor was the VRAG). Results were not reported for verbal violence.

Post-disposition violence. For the HCR-20, Pearson *r* values for verbal, physical, and any violence were as follows: .31, .31, .36. These generally were higher than for the VRAG (.20, .08, .23) or the PCL:SV (.20, .14, .16). The AUCs for the HCR-20 were .68, .69, and .71, and again were generally higher than for the VRAG (.62, .55, .63) or PCL:SV (.60, .58, .59). Hierarchical logistic regression showed only the HCR-20 predicted any and physical violence (the PCL:SV and VRAG were not significant in any Block). Results were not reported for verbal violence.

Generally, the authors concluded that all measures are useful in a univariate manner for early (pre-disposition) violence, the HCR-20 added incremental validity to the PCL:SV, and the VRAG did not enter regression analyses. For later (post-disposition) violence, the HCR-20 remained useful, whereas the PCL:SV and VRAG were not as useful.

Project and Scholarly Work

Scharin, C. (1999). Bedömning av Dterfallsrisk hos rättspsykiatriskt undersökta personer: En utvärdering av skattningsskalan HCR-20. Unpublished manuscript.

Summary

The Swedish version of the HCR-20 was coded on 49 forensic psychiatric patients. [Sample characteristics unavailable at this time until English translation available]. Proportion of violence in various score categories was calculated for the total HCR-20 score and the H scale alone. Results were as follows: HCR-20 total score from 0-19, 15% violent; total score from 20 to 40, 64% violent. H scale score of 0 to 5 (0% violent), 6 to 10 (31% violent), 11-15 (54% violent), 16 to 20 (80% violent).

Project and Scholarly Work

Strand, S., & Belfrage, H. (in press). Comparison of HCR-20 scores in violent mentally disordered men and women: Gender differences and similarities. *Psychology, Crime and Law*.

Summary

The purpose of this study was to compare the scores on the HCR-20 between male and female forensic patients. Using the official Swedish translation of the HCR-20, all female patients ($n = 63$) who entered a Swedish forensic facility over 10 years were assessed with file, and, where possible, also with interview. Comparisons were made with all 85 male patients admitted to two Swedish forensic hospitals in 1998.

The female sample was younger (30.8 vs. 35.1 years), more often diagnosed with a personality disorder (55.6% vs. 36.5%, specifically borderline [85.7% vs. 25.8%], and less often antisocial [0.0% vs. 25.8%]). Females were less often admitted after committing violent crimes (9.5% vs. 31.8% murder; 17.5% vs. 31.8% other violent crimes), and more often admitted from general psychiatry due to violence (42.9% vs. 2.4%).

There were no differences in scale or total scores between genders. Total score = 24.76 ($SD = 6.95$) female, 25.51 ($SD = 7.92$) male; H scale = 12.94 ($SD = 3.58$) female, 13.81 ($SD = 4.21$) male; C scale = 5.11 ($SD = 2.57$) female, 5.00 ($SD = 2.48$) male, R scale = 6.71 ($SD = 2.85$) female, 6.68 ($SD = 2.80$) male.

There were differences on some of the items, likely reflecting the general differences between genders. Males scored higher on Previous Violence (H1), Young Age... (H2), Substance Use Problems (H5), and Negative Attitudes (C2). Females scored higher on Personality Disorder (H9), Impulsivity (C4), and Stress (R5).

Project and Scholarly Work

Strand, S., Belfrage, H., Fransson, G., & Levander, S. (1999). Clinical and risk management factors in risk prediction of mentally disordered offenders: More important that actuarial data? *Legal and Criminological Psychology, 4*, 67-76.

Summary

The Swedish version of the HCR-20 was coded on 40 male forensic psychiatric patients in a postdictive study of the HCR-20 and PCL:SV. There were 22 recidivistic patients and 18 non-recidivistic patients who were matched on demographic, clinical, and criminal variables. The rater was blind to recidivism status. Overall, the recidivistic group scored 8 points higher than the nonrecidivistic group (Ms and SDs = 30.77 [7.22]; 22.39 [6.85], respectively). Although not reported, this represents a Cohen's d of 1.19, which is a large effect size. All persons (n = 11/40) with scores above 34 on the HCR-20 recidivated. Interestingly, Strand et al. report that for patients who scored between 24 and 28, prediction was random. However, all recidivistic patients in this scoring range scored 2/2 on R5 (Stress), and this item alone differentiated the two groups (for this scoring range).

The area under the curve of the receiver operating characteristic analysis was .80 for the HCR-20, and .70 for the PCL:SV. Using a cut-off score of 29/40 on the HCR-20, sensitivity was reported to be .89 and specificity .64. With a cut-off of 17/24 on the PCL:SV, sensitivity was .89, and specificity was .59.

Surprisingly perhaps, the items from the Clinical and Risk Management scales were much stronger in separating the two groups than was the Historical scale. Strand et al. point out that this finding may stem from the fact that the patients in their sample, given their offences and dispositions to a forensic hospital, were homogenous on historical factors.

Project and Scholarly Work

Vincent, G. M. (1998). *Criminal responsibility after Bill C-30: Factors predicting acquittal and lengths of confinement in British Columbia*. Unpublished master's thesis, Simon Fraser University, Burnaby, British Columbia, Canada.

Summary

This is a chart review study of 250 persons referred from court to a maximum security forensic institute over the course of five years for the purpose of assessment of criminal responsibility. The focus of this summary is the 125 persons who were found Not Criminally Responsible on Account of Mental Disorder (NCRMD) for their offences. The sample (M age = 34.98; SD = 10.67) was primarily male (82.4%), Caucasian (77.4%), single (88.6%), unemployed (76.4%), and many patients had less than grade 11 education (40.2%). Most patients had committed a violent index offence (77.6%), and most had a primary diagnosis of a psychotic disorder at assessment (66.9%), followed by mood disorder (21.0%)

The purpose of the study was to evaluate which factors predicted (1) verdicts of NCRMD (insanity acquittal) versus guilty, (2) length of confinement and days in the system. The HCR-20 was used for the latter, as a predictor of days in the system and days confined. Also included in such analyses were a variety of criminological, psychiatric, demographic variables, and the Psychopathy Checklist: Screening Version. Hierarchical Cox Proportional Hazards Regression was used as the method of prediction, with time in the system as the dependent measure. After all blocks and variables were entered, the HCR-20 was the only significant predictor, with an $\text{Exp}(B) = .898$ (Odds = 2.45). In particular, the R Scale was the strongest of the three scales. Using a somewhat more liberal approach with a backward elimination entry procedure, one other variable in addition to the HCR-20 entered the equation (offence severity). For a slightly different dependent measure (days until first release), several variables entered the model (using backward elimination): level of violence, number of remand charges, homicidal at offence, age at first mental health contact, PCL:SV, and HCR-20.

Months confined, in the system, and until first release were calculated as a function of low, moderate, and high scores on the HCR-20 (by dividing the total scores into thirds). Months in the system, confined, and until first release, for the LOW group were 32.82, 9.22, and 7.25, respectively. For the MODERATE group, results were 38.68, 18.56, and 13.93, respectively. For the HIGH group, results were 45.47, 40.23, and 30.92, respectively. These findings provide support for the concurrent validity of the HCR-20. The factors it predicted are related to legal concepts of risk and threat.

Project and Scholarly Work

Whittemore, K. E. (1999). *Releasing the mentally disordered offender: Disposition decisions for individuals found unfit to stand trial and not criminally responsible*. Unpublished Ph.D. Dissertation, Simon Fraser University, Burnaby, British Columbia, Canada.

Summary

This is a chart review study of 172 persons either found unfit to stand trial ($n = 50$) or not criminally responsible on account of mental disorder (NCRMD; $n = 122$). The sample (M age = 37) was primarily male (83.14%), Caucasian (80.23%), single (88.37%), and unemployed (79.07%). Most patients had committed a violent index offence (75.58%), and most had a primary diagnosis of a psychotic disorder at assessment (60.47%), followed by bipolar disorder (16.28%).

The purpose of the study was to evaluate which factors predicted criminal review board release decisions (discharge versus custodial detention). A variety of mental health, criminological, and demographic characteristics were used as predictor measures along with the HCR-20 and PCL:SV. Hierarchical logistic regression was used as the method of prediction, with release decision as the dependent measure. For the first review board hearing (patients have regular hearings until released), the H Scale, C Scale, and R Scale were entered in separate blocks. Each was a significant predictor (lower scores relating to discharge), with C and R adding incrementally to H. R was most strongly related to discharge decisions. Additional analyses were carried out to predict subsequent discharge/custody decisions. Three Clinical subscale items (Negative Attitudes, Lack of Insight, and Impulsivity), and one Risk Management scale item (Noncompliance with Remediation Attempts) predicted discharge.

These results suggest that at the first hearing, the Risk Management items were most important for discharge decisions, although the Clinical and Historical items also were predictive. At subsequent hearings, change in mental status (Clinical Scale items) emerged as the more important predictor. Results provide support for the concurrent validity of the HCR-20. Release decisions legally require the Review Boards to take into account the threat posed by the individual, the need to reintegrate the accused into society, and the mental condition of the accused.

Project and Scholarly Work

Wintrup, A. (1996). *Assessing risk of violence in mentally disordered offenders with the HCR-20*. Unpublished master's thesis, Simon Fraser University, Burnaby, British Columbia, Canada.

Summary

This is a chart review study of 80 men remanded to a secure forensic facility. The mean age at admission was 32.6 years ($SD = 10.8$). The majority of patients had been previously hospitalized in a psychiatric setting (77.5%), and most had previous charges or convictions for criminal offences (78.9%). Both the HCR-20 and the PCL-R averaged correlations just below $r=.30$ with several measures of later community violence. The HCR-20 was quite strongly related to subsequent re-admissions to the forensic hospital ($r=.38$) and to psychiatric hospitalizations ($r=.45$). The relationship of the PCL-R to these same outcomes was not as strong, at $r=.25$ and $r=.36$, respectively. However, whether these re-hospitalizations involved violence was not specified.

See also

Douglas, K. S., Webster, C. D., & Wintrup, A. (1996, August). *The HCR-20 risk assessment scheme: Psychometric properties in two samples*. Poster presented at the annual convention of the American Psychological Association, Toronto.

CORRECTIONAL SETTINGS

Belfrage, H., Fransson, G., & Strand, S. (in press). Prediction of violence within the correctional system using the HCR-20 risk assessment scheme. *Journal of Forensic Psychiatry*.

Summary

The HCR-20 violence risk assessment scheme (Version 2) and the Psychopathy Checklist: Screening Version (PCL:SV) were coded on a sample of 41 male inmates from two Swedish maximum security prisons. The two coders were Ph.D. and M.D. level clinician-researchers. This was a prospective study of violence within the correctional institution over an eight month period. The HCR-20 and PCL:SV were coded by use of both file review and clinical interview. The R Scale of the HCR-20 was coded using the “In” option as explained in the manual (Version 2).

The mean age of the participants was 35, and the mean length of incarceration at time of assessment was three years. All participants had a personality disorder (mostly antisocial). Of the 41, 27 were incarcerated for homicide, and 14 for other violent offences. The sample was highly psychopathic, with 30 of 41 inmates being classified as psychopaths.

Eight of the 41 (19.5%) inmates were violent in the prison. The C Scale, R Scale, HCR-20 Total Score, PCL:SV Part 2, and PCL:SV Total Score differentiated between the violent and non-violent groups. The HCR-20 Total score was 33.4 in the violent group, and 24.6 in the non-violent group. All HCR-20 R Scale items were significantly greater among the violent group than the non-violent group. The H Scale was not predictive of violence, except for Item H10. In the group of 30 psychopaths, the R Scale and HCR-20 Total score were significantly higher in the violent inmates. Four of the five R Scale items were higher in the violent psychopaths compared to the non-violent psychopaths.

Results imply that the HCR-20 (and the PCL:SV) are predictive of violence by inmates within correctional institutions. Even among a sub-group of psychopaths, the HCR-20 distinguished between violent and non-violent inmates. The authors comment that the H Scale was not predictive in this sample because inmates (being maximum security violent inmates) were homogeneous with respect to most historical factors. The Clinical and Risk Management factors did, however, provide for a means of separating violent from non-violent inmates. These results are consistent with those of Strand et al. reported above. The results of the study, though limited by a small sample, provide support for the importance of risk management concerns for high-risk violent offenders.

Project and Scholarly Work

Douglas, K. S. & Webster (1999). The HCR-20 violence risk assessment scheme: Concurrent validity in a sample of incarcerated offenders. *Criminal Justice and Behavior*, 26, 3-19.

Summary

The HCR-20 violence risk assessment scheme was coded in a sample of 72 Canadian, male, federally-sentenced, maximum security offenders who had been referred to a regional health centre of the Correctional Services of Canada. The concurrent validity of the HCR-20 was assessed through comparison to other instruments (the Psychopathy Checklist - Revised; Violence Risk Appraisal Guide) and to the presence of several past indexes of violent and antisocial behavior. Only the H and C scales could be coded because no offenders had yet been released. This was a postdictive study.

The interrater reliability of the H and C combined scores was .80. Correlations between the number of previous violent charges and the H scale, C scale, and their combination ranged from moderate to large.¹ The Historical scale correlated at $r=.50$ with previous violence (with the "previous violence" item removed from the H scale), the Clinical scale at $r=.30$, and the combined total at $r=.44$. The VRAG correlated at $r=.20$ with previous violence, and the PCL-R's correlation with past violence was $r=.41$.

Scores above the median of the HCR-20 increased the odds of the presence of various measures of past violence and antisocial behavior by an average of four times. The main limitations of this research were a small sample and a retrospective design.

See also

Douglas, K. S., Webster, C. D., & Wintrup, A. (1996, August). *The HCR-20 risk assessment scheme: Psychometric properties in two samples*. Poster presented at the annual convention of the American Psychological Association, Toronto.

¹ According to Cohen (1992), a moderate size correlation is $r=.30$, and a large correlation is $r=.50$.

Project and Scholarly Work

Dunbar, E. (1999). *A psychographic analysis of violent hate crime perpetrators: Aggressive, situational, and ideological characteristics of bias motivated offenders*. Manuscript under Review.

Summary

This study was not a validation study of the HCR-20, but rather an analysis of the characteristics of hate-motivated violent offenders in California, and comparison of this group to other offenders. The HCR-20 was used as a measure of violence risk for this purpose. The HCR-20 was coded from files of 58 hate-motivated criminals. Most of the offenders were male ($n = 53$, 91.4%), with a mean age of 24.5 ($SD = 8.07$). Most offenders were Latino (48.3%), followed by Euro-caucasian (32.8%) and African American (15.5%). Close to half were unemployed (45.5%). The majority of the offenders had substance use problems (58.6%), and many (22.4%) had received past psychiatric treatment. The vast majority of offenders had previous convictions (87%) and a history of violence (60%). All offenders had violent, hate-related index offences.

Analyses on the HCR-20 included correlations with the PCL-R, with violent offences, and with the Cormier-Lang crime severity scales. The HCR-20 did not correlate with the seriousness of the index offence (although there is no clear reason to expect it to). Correlations between the HCR-20 total score and indices of past crime and violence ranged from .33 to .63. For the H scale, the range was .39 to .68, for the C scale, .30 to .56, and for the R scale, .19 to .45. In general, the correlations were above .40, and many were above .50.

This study is consistent with findings from Canadian violent offenders (see Douglas & Webster, 1999, above) in terms of the relationship with violence. Although the study included post-dictive analyses (as did Douglas & Webster, 1999), the effects are generally large, often exceeding .50, and ranging to .68. The findings support the concurrent validity of the HCR-20, and support the effort of doing larger scale research on the HCR-20 in American criminal offenders.

MIXED SETTINGS

Douglas, K. S., & Belfrage, H. (1999/in prep.). **The Clinical and Risk Management Scales of the HCR-20 Violence Risk Assessment Scheme: Evaluation of Change in Scores across Time.** In K. S. Douglas, C. D. Webster, D. Eaves, S. D. Hart, & J. R. P. Ogloff (Eds.), *The HCR-20 Violence Risk Management Companion Manual*. Vancouver, British Columbia: Mental Health, Law, and Policy Institute, Simon Fraser University.

Summary

This study was a re-analysis of data that exist from three sample (two cited in this bibliography) for the specific purpose of assessing the degree of change in the Clinical and Risk Management scale and item scores across time and repeated assessments/codings. There were two forensic samples (Belfrage, unpublished raw data; Douglas et al., 1998) and one civil psychiatric sample (Douglas et al., in press).

In Sample 1 (n = 193 civil psychiatric patients), it was possible to compare C scale and item scores at admission and discharge. Each item declined significantly, and the total score declined from 7.21 to 4.05. All drops in scores were large, as assessed by Cohen's d (d s ranged from .89 to 1.75). At admission, 48% of the sample scored in the 8 to 10 range; at discharge, only 3% did so. In Sample 2 (n = 175 forensic patients), all C and R items declined, although the drops were not as large as in Sample 1. For the C Scale total score, Cohen's d (.36) indicated a smallish size drop, and for the R Scale, a moderate sized drop (.50). In Sample 3, the C scale did not decline, but the R scale did so moderately (d = .44). It is possible that in Sample 3, being drawn from a Swedish forensic facility, that the patients were not as acutely disturbed upon admission (in Sweden there is no such concept as "Not Guilty by Reason of Insanity" and people are "sentenced" to treatment in the hospital somewhat liberally), and hence change was not observed.

These findings support the conceptualization of the C and R Scales as dynamic (changeable), and hence as appropriate targets for risk management and violence reduction interventions. The fact that the scores changed without direct efforts to change specific HCR-20 factors suggests that declines may be greater with intervention strategies tailored to dynamic HCR-20 risk factors.

See also

Douglas, K. S. (1999). HCR-20 violence risk assessment scheme: "International validity" in diverse settings. In J. Monahan (Chair), Violence risk assessment: Scientist-practitioner approaches in diverse settings. Symposium presented at the International joint conference of the American

HCR-20 Review and Annotated Bibliography

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AN INVITATION AND REQUEST

We invite any and all qualified persons to carry out research on the HCR-20. Our hope is to understand its psychometric properties as well as possible, and this requires empirical investigation at different sites and in various diverse samples.

We ask any persons who may have carried out research on the HCR-20 to please forward a copy of any presentations, manuscripts, or publications that emerge therefrom. Documents may be sent to the address below. We aim to keep this annotated bibliography as current as possible, with as much existing research as possible.

Thank You!

HOW TO CONTACT US

Address

Mental Health, Law, and Policy Institute
Simon Fraser University
8888 University Drive
Burnaby, British Columbia
Canada, V5A 1S6

Phone and Facsimile

Phone: (604) 291-5868
Facsimile: (604) 291-3427

Electronic Mail

mhlpi@sfu.ca

World Wide Web

<http://www.sfu.ca/psychology/groups/mhlpi/hcr-20.htm>

Psychological Assessment Resources, Inc.

<http://www.parinc.com>

