

Study on Recidivism Prediction Capability of PCL-R for Criminals in South Korea

Soo Jung Lee

Minjung Kim

Criminological Psychology, Kyonggi University

Psychopathy is known to have a better discriminating capability than any other factors in predicting recidivism. In Western society including Canada, Britain, and the U.S., the meta-analysis of PCL-R, an assessment tool, has been known to have more excellence than any other criminal records, demographic variables or environmental factors, and presents even more excellence than subordinate criteria of MMPI, a self-report test in numerous studies. This study analyzed predicting capability of recidivism through PCL-R scores collected from 82 inmates in prisons in Korea, and 31 offenders on probation under intensive supervision in order to confirm the recidivism prediction capability of PCL-R in Korean offender population. As a result, PCL-R which was developed in the North America still predicts recidivism even of criminals in Korea. This fact suggests that PCL-R will be used very usefully within Korean justice system in which risk assessment issues are not dealt with importance.

Key words : PCL-R, Psychopathy, recidivism, risk assessment, high risk group, low risk group

† 경기대학교 범죄심리학과

Tel : 031-249-9199, E-mail :suejung@hanmail.net

Introduction

According as society has changed sharply recently, criminal characteristics have become more variable and the variation is so serious that it shocks society. According to the '2008 crime analysis' published by the Supreme Public Prosecutor's Office, the number of criminal cases annually committed in Korea is a total of 700,000 and 32.8 % of cases were committed by first convicts, but the cases by ex-convicts reached 47.5 % ('2008 crime analysis', the Supreme Public Prosecutor's Office). In particular, offenders with more than 9 previous convictions reached 140,000(7.1 %). Thus, it can be said for the problem of recidivism to be highly serious. In western countries, development and use of assessment tools for recidivism possibilities have been actively applied in Criminal Justice system, while their activation has been ineffective in Korea until now. However, in Korea too, the need to assess the risk has come to the fore now.

Theoretical Background

The most important factor that should be preceded in order to reduce recidivism is the recidivism risk assessment, which is based on previous criminal behaviors and personal characteristics. Accurate prediction of recidivism enables a classification system to be helpful for

security of facilities and offender management. Also, it enables many kinds of treatment programs to be functional to control recidivism.

There are many kinds of risk assessment tools. Among these, actuarial risk assessment systems are proven to be better for predicting recidivism. Therefore, a similar classification system was developed and used for inmates in Korea (Lee & Yoon, 2003). One of the most popular individual risk factor is psychopathy (Hare, Forth, & Stachan, 1992). For predicting recidivism, psychopathy is known to be superior compared to other factors. The concept of psychopathy first introduced in the forensic context by Cleckley (1988) and further developed by Hare (1991). Hare's Psychopathic Checklist-revised (PCL-R) has become the "gold-standard" for the diagnosis of psychopathy worldwide. Hare (1991) suggested that psychopaths are lacking in empathy or remorse, superficial, deceptive, and unable to form strong emotional bonds with others. They also have a socially deviant lifestyle that includes irresponsible, impulsive behavior, and various criminal behaviors. PCL-R has been translated in several languages (e.g., English, German, or Chinese) (Hare, 1991). Jo and Lee (2008) translated PCL-R in Korean and they conducted the standardization study for PCL-R: Korean version.

The empirical prediction studies (Hare, 1996; Douglas, Ogloff, Nicholls, & Grant, 1999) have proved this and reported the average prediction capability over violence of PCL-R (AUC) to be

around .69. This AUC makes us presume that PCL-R measuring psychopathy has stronger predicting power compared to criminal history with AUC .60. The meta-analysis(Salekin, Rogers, & Sewell, 2006) regarding recidivism confirms the recidivism prediction capability of PCL-R is more robust than any other factors such as demographical variables, environmental factors, past records, past school records and even subordinate scales of MMPI measured in a self-report way.

Lally (2003) let 64 psychological experts assess if assessment tools being used in the court were appropriate. All these experts were members registered in the American Board of Forensic Psychology. They assessed the appropriateness of psychological assessment tools by classifying up to six grades according to six individual forensic issues. As a result, in assessing the risk of violence, respondents judged that PCL-R to be the best because evaluation by the 3rd person (professional evaluators) must be more objective and free from any intentional distortion of offenders.

One of studies that analyzed correlation between a recidivism rate and PCL-R was performed with 231 offenders who were released on parole (Hart, Kropp, Hare, 1988). 107 offenders (46.3%) committed re-offending and the recidivism rate that showed correlation with the total score of PCL was .33, with factor 1, .18, and with factor 2, .38. When the researchers classified samples into high score(PCL

score ≥ 34), middle score ($24 \leq$ PCL score < 34), and low score (PCL score < 24) groups according to a PCL total score, cross analysis showed that they committed recidivism accounted for 65.2 % of the group whose PCL is high, 48.9 % in of the middle group, and 23.5 % of the low group. Through a survival analysis, they found that as for the rate of people who did not re-offend for one year after being released, a group whose PCL score was high, the rate was .38, a group whose PCL score was middle, .54, and a group whose PCL score was low, .80. Kroner and Mills(2002) performed a study for predicting recidivism of 206 male prisoners who served a term due to violence. In this study, they looked at correlation between PCL-R score and the case that a person committed recidivism within three years after being released. The correlation between whether to commit recidivism and a PCL-R total score was .30, and between PCL-R total score and cancel of conditional parole was .30 (Kroner & Mills, 2002). The usability of PCL-R regarding recidivism of female criminals was also confirmed (Salekin, Rogers, Ustad & Sewel, 1998). This research produced AUC as a result of ROC analysis was .64. This result confirmed that this AUC had a recidivism prediction capability of significant level. In the survival analysis that measured the re-arrest rate the first 50 days after being released, 40 % of psychopaths re-offended and in case of non-psychopaths only 3 % of them re-offended.

Besides these studies, prediction of PCL-R for recidivism is the most popular research issues across criminal justice systems of many countries. Specifically the Canadian Supreme Court and many U.S. courts generally allowed experts appraisal of the convicts' recidivism risk as propensity evidence. Also in Korea, recently revised criminal codes allow experts testimony on offenders' recidivism risk. Like foreign criminal justice system, the actuarial prediction methods which were developed based on statistical and empirical evidences are applied in Korea.

This study analyzed the prediction capability of recidivism of PCL-R which began to be used for assessing risk of offenders in Korea. 82 prison inmates and 31 offenders on probation were participated in this prediction study. As an index of recidivism, the Grand Office of Prosecution of Korea provided conviction records in a year after sentence of the subjects were all terminated.

III. Methods

1. Subjects

Total samples taken for validation of the PCL-R in the Korean version were collected in 2007 by Jo & Lee(2008). Among validation data of 451, we chose 113 offenders' data which had identification records to follow up recedivism. The subjects' criminal term was terminated and

whose re-conviction records were searched in 2008. The data finally analyzed was reclassified according to kinds of competent authorities (prison or probation office) and also to the location of competent authorities showed in table 1. The number of prison inmates included in the whole samples was 82, and the number of targets who were probated was 31. The average age was 44.15($SD = 11.40$). All subjects were male offenders.

As for characteristics related to crimes of these subjects, crime indices were classified into murder (37 offenders), violence(38 offenders), sexual violence(10 offenders), robbery(8 offenders), theft(8 offenders) and other crimes(12 offenders). The average of all law violation cases from a total of national samples was 4.78 counts($SD =$

Table 1. Distribution for Each Institution for Each Location of Offenders for Survey

Competent authorities	Area	Number of cases
prison	Seoul area	8
	Gyeonggi area	19
	Chungcheong area	14
	Gyeongsang area	15
	Jeolla area	13
	Gangwon area	13
	Subtotal	82
Probation office	Seoul area	31
	Total	113

Table 2. Technical Statistics of Variables Related to Crime

Crime types	Personnel (%)	Offense cases	Personnel (%)	Age when initially booked	Personnel (%)
Murder	37(32.7)	Initial crime	11(9.7)	Below 15 years old	8(7.1)
Violence	38(33.6)	1-5	63(55.8)	15- 19years old	32(28.3)
Sexual violence	10(42.9)	6-10	23(20.4)	20- 24years old	19(16.8)
Robbery	8(8.8)	11-15	7(6.2)	25- 29years old	9(8.0)
Theft	8(7.1)	16-20	3(2.7)	30 years old or more	9(8.0)
Others	12(7.1)	More than 21 cases	1(0.9)	Missing	36(31.8)
		Missing	5(4.4)		
Total	113(100.0)	Total	113(100.0)	Total	113(100.0)

4.46). In case of previous offense history, only 11 offenders were first-time criminals, so most of offenders were analyzed to have previous criminal records. Although there are many offenders not checked due to the limitation of documents, 32 people (28.3 %) had criminal records during their adolescence.

Instruments and Procedure

Measurement Tool

PCL-R is a tool for measuring psychopathy and was developed by Hare (1985, 1991) and then translated into Korean by Jo and Lee (2008). The subordinate scale of PCL-R consists of two factor scores and four section scores. Factor 1 consists of items measuring interpersonal relationships and emotion and factor

2 measures social deviation. As for section scores, section 1 is for the interpersonal relationships, section 2 is for emotion, section 3 is for lifestyle, and section 4 is anti-social behavior. PCL-R (Hare, 1991) consists of 20 items and the total score range is 0 ~ 40. Each item is assessed by score 0 ~ 2 (0 = No, 1 = perhaps, 2 = Yes). The internal consistency of PCL-R is .84, and the reliability between two independent raters (ICC) is .93. PCL-R in the Korean version consists of 20 items like the original PCL-R (Hare, 1991). Hare recommended to use score 30 as a basis for judging a recidivism possibility in case of the North America area, but it is one of the purposes of this study to look for an optimal basis for judgment suitable to Korea.

The internal consistency of all items in PCL-R in the Korean version is .87, and the internal

consistency for 4 section scores consisting of subordinate scales is between .63 and .86. However, the consistency between raters is from .616 to 1,000 and the Pearson correlation and Spearman correlation between totals of two raters are .92 and .91, which shows that this consistency has a very high relation. In order to check the validity evidence of PCL-R in the Korean version, Lee(2008) once checked whether related scales for measuring similar arrests have a correlation with PCL-R in the Korean version.

Survey Procedure

Two samples included in the standardization procedure were collected by the research team of the department of criminological psychology in Kyonggi University. The materials of all subjects were collected by surveying records kept in prisons and probation office firstly and then having an interview with staffs in charge. The material survey performed was progressed by researchers' visits to each prison and probation office in person, reviewing an individual record document, and also having an interview person to person directly. First, only the subjects who consented that researchers would read their own official documents (signed on the letter of consent in writing) and also consented that they would participate in an interview (signed on the letter of consent in writing) participated in this study. The researchers firstly reviewed the individual record documents of the subjects and at this time they reviewed the age, type of

offense, term of imprisonment, family relation, record of previous offense, offense description, psychological test for correction materials, etc. While they had the interview, researchers assessed many variables that could assess the research tools such as the marital status, further detailed content regarding offense, and how an subject considers his own offense (for example, whether he feels guilty, or whether he avoids responsibility) and personality assessment that were not known to them yet, through interviews. After all interviews ended, as a reward for participating in this study, a little compensation was given to the subjects. The recidivism data for the sample was collected from the Supreme Public Prosecutor's Office in August, 2008. In this study, recidivism was defined as prosecution after being released.

Result

The total offenders whose sentences were terminated so that they had a chance to re-offend were 69 persons. The period while a criminal could commit recidivism was at least 5 months to at most 11 months. The number of offenders who re-offended was 11, which accounted for 15.9 % among all released offenders and the number of offenders who did not re-offend was 58, which accounted for 84.1 %. The number of offenders who re-committed a crime the same or similar to the previous crime

was checked to be 5, which accounted for 45.5 %.

The mean of PCL-R total score of a total of 113 people was 22.23($SD = 8.55$). The lowest score is 3 and the highest score is 39. The mean of factor 1 score was 10.19($SD = 3.98$), whereas the mean of factor 2 score was 10.81($SD = 5.02$). Given distribution over a total score of the PCL-R in the Korean version, the top 25% are those with a score over 30. This shows that the distribution is 3-5 scores higher than a previous study of sexual offenders in Korea(Lee, 2008), otherwise has similar aspects to the scores of general criminals in North America. For checking the recidivism prediction on the Korean version of PCL-R, it will be appropriate to consider the characteristics of the subjects. The mean score of the recidivists was 29.55($SD = 8.55$), and 21.44($SD = 8.21$)

for the non-recidivists ($t=3.10, p<.001$). The mean score of factor 1 for recidivists is 12.91 and 9.90 for non-recidivists ($t=2.43, p<.05$). The differences of mean score of factor 2 between recidivists ($M = 14.82, SD = 5.10$) and non-recidivists($M = 10.37, SD = 4.84$) is slightly more significant than factor 1($t=2.88, p<.005$). Figure 1 showed the distribution of total score PCL-R Korean version between recidivists and non-recidivists.

Non-parametric correlation between PCL-R total score and recidivism was calculated. Correlation coefficient r_{pbis} was .222($p<.001$), which displayed a significant relation between recidivism and a total of PCL-R. That is, a offender with a higher total score of PCL-R were more likely to re-offend. A significant correlation between scores for each factor and recidivism was also checked. Factor 2 ($r_{pbis}=.255$,

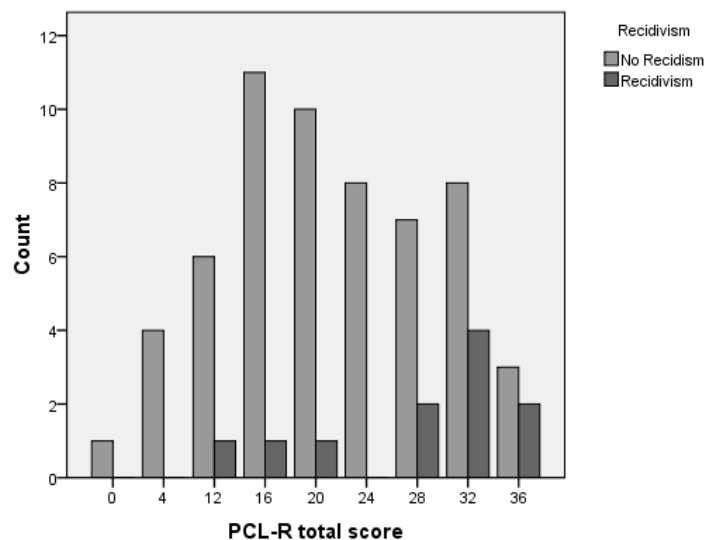


Fig. 1 Distribution of total score of the Korean version of PCL-R

Table 3. Cross Analysis for Predicting Recidivism when the Distinction Basis of PCL-R Was Decided to Be over Score 25

	Yes or Not of psychopath who was assessed in 2007		
	Non-psychopath	Psychopath	Total
No recidivism in 2008	33 (56.9%)	25(43.1%)	58 (100%)
Committed recidivism in 2008	3 (27.3%)	8 (72.7%)	11 (100%)
Total	36 (52.2%)	33 (47.8%)	69 (100%)

$p < .001$) had strong relation to recidivism though factor 1 ($r_{pbis} = .095$, $p = .139$) had not show significant correlation.

Jo and Lee(2008) suggested PCL-R total score 25 as the cutoff score for recidivism in their standardization study for PCL-R Korean version. Thus, we performed a cross analysis in order to check if the cutoff score of ‘over score 25’ produced from sex offenders properly predicts the recidivism of inmates. The results as shown in Table 3 were produced, among people who

committed recidivism, 72.7 % were the people who were assessed to be psychopaths whose total scores were over 25 in the Korean version of PCL-R. That is, although every psychopath does not commit recidivism, around 72.7% among people who commit recidivism after being released from a prison is a psychopath. This was statistically significant. $X^2(1, N=69) = 3.25$, $p < .05$.

Of course, the cutoff score produced from sex offenders, which is score 25, predicted recidivism

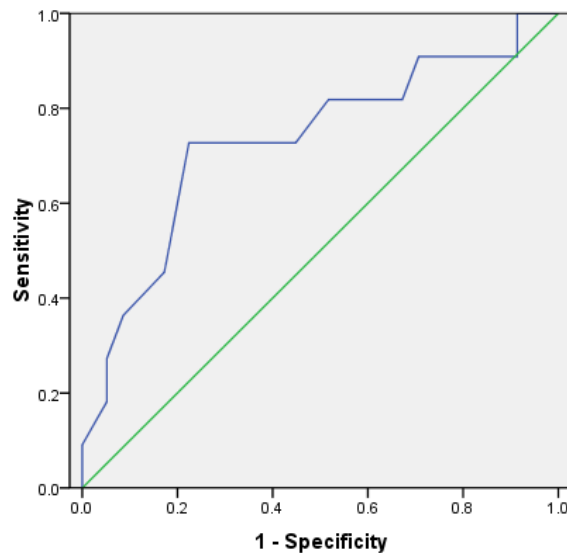


Fig. 2. A ROC analysis regarding a total score of the PCL-R Korean version

Table 4. Result of ROC Analysis for Producing the Final Distinction Basis of PCL-R in the Korean Version

	AUC	S.E.	Sig.	95%		Sensitivity	1 - Specificity
				Confidence interval			
				Lower Bound	Upper Bound		
Score 23	.639	.088	.145	.466	.813	.727	.448
Score 24	.639	.088	.145	.466	.813	.727	.448
Score 25	.648	.088	.121	.475	.821	.727	.431
Score 26	.683	.087	.056	.513	.853	.727	.362
Score 27	.708	.086	.029	.540	.877	.727	.310
Score 28	.708	.086	.029	.540	.877	.727	.310
Score 29	.734	.085	.014	.568	.901	.727	.259
Score 30	.752	.084	.009	.586	.917	.727	.224
Score 31	.752	.084	.009	.586	.917	.727	.224
Score 32	.678	.096	.063	.490	.865	.545	.190
Score 33	.641	.099	.140	.448	.834	.455	.172

significantly, but we also found a better cutoff score, based on the recidivism of general crimes. Therefore, Data were analyzed on ROC analysis. Figure 2 showed a ROC analysis regarding a total score of the PCL-R Korean version and the AUC was .675. This means the PCL-R Korean version has good probability of prediction.

We also produced the efficient cutoff point

for recidivism in the PCL-R Korean version. It was confirmed that the recidivism in one year after being released was predicted better when the cutoff score produced as a result of ROC analysis is 30. With this cutoff score, AUC reached .752, which shows relatively excellent accuracy(Table 4). When the cutoff score was 30, sensitivity was .727 and specificity was .776.

Table 5. Logistic Regression Analysis of PCL-R for Classification of Risk Group with Recidivism Possibility

	B	S.E.	Wald	df	Significant probability	Exp(B)
PCL-R	.775	.066	11.785	1	.000	.824
Constant	.055	.002	26.907	1	.000	

In order to measure PCL-R Korean version distinguishing the group of people who committed recidivism, a logistic regression analysis was performed with reconviction as the outcome measure. As a result, the accuracy probability for predicting the potential class of inmates in this model reached 82.4 %(Table 5).

Discussion

Results of this study provide consistent with those of many other studies regarding PCL-R in North America. This fact suggests a very important point because PCL-R developed in the North America area still predicts recidivism properly when PCL-R is progressed for the criminals in Korea. It enables us to confirm that PCL-R can be very useful even in the Korean criminal justice system that never assessed the recidivism possibility of offenders in a quantitative way to reflect it on the judicial decision-making until today. It also enables us to improve condition of classification and treatment system within correction facilities.

From the point of psychological measurement view, PCL-R secured relatively excellent reliability and validity evidences. The findings of this study argue that a criminal group with high total PCL-R scores has a high possibility of recidivism just as in countries outside of Korea. This result causes us to deny clearly that since crimes in Korea have own characteristics, assessments

generally used in foreign countries can be applied.

Although the cutoff point 'over 25 scores' produced from the previous study of recidivism of sex offense could predict recidivism to a degree, the best cutoff score was 30 for the general crimes in this study. This is a limitation shown generally in a series of studies that explore the distinction basis of a tool for prediction of recidivism. That is, due to an error from the indicator of standard referred to, which is recidivism, it could be highly possible for such a result to be produced. First, the reason that produces-cause of an error like this is that hidden crimes are not included in official records when the judicial organization tracks recidivism. Due to this, the sensitivity of distinction basis can be damaged.

Furthermore, the length of period that recidivism is tracked is a problem. When tracking time is short like in this study, there can be cases where some of criminals are included in a high risk group when they are substantially presumed, but they do not commit recidivism due to an insufficient probation period. This also has a negative influence on the sensitivity of a tool predicting recidivism. The longer the period that criminals are observed because they can commit recidivism becomes, the higher the recidivism rate becomes, which was confirmed also in the study of Harris and et. al (2003). The sex offenders who were assessed to be high risk groups since they got more than

score 6 in Static-99 showed 39 % of recidivism rate when they were observed for 5 years, and for 10 years, they showed 45 %, and for 15 years, 52 %. Although the observation period against recidivism possibility varies from at least 2-3 years after release from prison to at most 10 years, generally many researchers recommend at least 5 years of observation period (Lee & Kim, 2005). However, this study has a limitation that it had an observation period of less than one year. Due to this short observation period, recidivism rates were so low that the statistical sensitivity of PCL-R might be underestimated.

References

- 2008 Crime Analysis (2008). the Supreme Public Prosecutor's Office.
- Lee, S. J., & Kim, G. O. (2005). Correct understanding of recidivism rate of sex offense and seeking for preventive measures for recidivism. *The Korean Journal of Social and Personality Psychology*, 19, 83-99.
- Lee, S. J., & Yoon, O. G. (2003). Assessment and use measure of crime risk. *The Korean Journal of Psychology*, 22, 99-126
- Lee, S. J. (2008). Prediction and risk assessment of recidivism by sex offender. *The Journal of Probation* (scheduled to be published).
- Lee, J. H., Lee, S. J. (2007). *Preliminary study for establishing the human right friendly psychological treatment system within correction facilities*. Human Right Division, Justice Department, The Korean Society for Forensic Psychologists.
- Jo, E., & Lee, S. J. (2008). *Expert Instruction of 2nd version of Hare's PCL-R*. Hakji Publishing company.
- Cleckley, H. (1988). *The Mask of Sanity*, 5ed., St Louis: Mosby.
- Douglas, K. S., Boer, D. P., & Hamilton, J. (1999, May). *The validity of the Personality Assessment Inventory in a sample of incarcerated federal offenders*. Poster session presented at the Annual Meeting of the Canadian Psychological Association, Halifax, NS.
- Douglas, K. S., & Webster, C. D. (1999). *Assessing risk of violence in mentally and personality disordered individuals* in Roesch R., Hart, S. D., & Ogloff, J. R. (Eds)". *Psychology and Law: The State of the Discipline*. New York: Plenum.
- Kroner, D. G., & Mills, J. F. (2001). The accuracy of five risk appraisal instruments in predicting institutional misconduct and new convictions. *Criminal Justice and Behavior*, 28, 471-489.
- Hare, R. D. (1991). *Manual for the revised Psychopathy Checklist*. Toronto, Canada: Multi-Health Systems.
- Hare, R. D. (1996a). Psychopathy: A clinical construct whose time has come. *Criminal Justice and Behavior*, 23, 25-54.
- Hare, R. D., Forth, A. E., & Stachan, K. E.

- (1992). Psychopathy and crime across the life span. In R. D. Peters, R. J. McMahon, & V. L. Quinsey (eds), *Aggression and Violence Throughout the Life Span*. Newbury Park, CA: Sage.
- Harris, G. T., & Rice, M. E. (2003). Actuarial assessment of risk among sex offenders. *Annals of New York Academy of Sciences*, 989, 198-210.
- Hart, S. D., Kropp, P. R., & Hare, R. D. (1988). Performance of psychopaths following conditional release from prison. *Journal of Consulting and Clinical Psychology*, 56, 227-232.
- Salekin, R. T, Rogers, R., & Sewell, K. W (2006). A Review and Meta-Analysis of the Psychopathy Checklist and Psychopathy Checklist-Revised: Predictive Validity of Dangerousness. *Clinical Psychology: Science and Practice*, 3, 203-215.
- Salekin, R. T, Rogers, R., Ustad, K. L., & Sewell, K. W (1998). Psychopathy and recidivism in female inmates. *Law and Human Behavior*, 22, 109-128.
- 1 차원고접수 : 2010. 2. 19.
심사통과접수 : 2010. 2. 24.
최종원고접수 : 2009. 3. 22.

국내 범죄자를 대상으로 한 PCL-R 재범예측력에 대한 연구

이 수 정 김 민 정

경기대학교 대학원 범죄심리학과

재범을 예측하는 다른 어떤 요인들보다 정신병질이 더 우수한 예측 요인으로 알려져 있다. 캐나다, 영국, 미국 등의 서구사회에서 수행된 PCL-R에 대한 메타분석 연구에서는 PCL-R이 범죄 기록, 인구통계학적 요인 혹은 환경적 요인들보다 재범을 예측함에 있어 더 우수하다고 보고하고 있으며, 심지어 여러 연구들에서 PCL-R이 자기보고식 질문지인 MMPI의 하위 분류 기준보다 더 우수하고 보고한다. 본 연구에서는 한국에 있는 교도소 수용자 82명과 보호관찰 감독을 받고 있는 범죄자 31명을 대상으로 PCL-R을 시행하여 그 재범예측력을 분석하였다. 결과에 의하면, 북미지역에서 개발된 PCL-R이 여전히 한국의 범죄자들의 재범을 예측하는데 효과적이었다. 이러한 결과는 PCL-R이 한국의 형사정책 제도에서 유용하게 활용될 수 있다는 점을 보여주는 것이다.

주요어 : PCL-R, 정신병질, 사이코패스, 재범, 위험성 평가, 고위험군, 저위험군