
RESEARCH REPORT

Predictive Validity of the Dutch PCL:YV for Institutional Disruptive Behavior: Findings From Two Samples of Male Adolescents in a Juvenile Justice Treatment Institution[†]

Jacqueline Das, M.Sc.[‡],
Corine de Ruiter, Ph.D.^{*,§},
Henny Lodewijks, M.Sc.[¶]
and Theo Doreleijers, M.D., Ph.D.^{||}

The present prospective study examined the predictive validity of the Dutch version of the Psychopathy Check List: Youth Version for disruptive behavior in male adolescents during treatment. The study comprised two samples admitted to different secure treatment institutions in The Netherlands, *Jongerenhuis Harreveld* ($n = 81$) and *Rentray* ($n = 66$). Overall, the results demonstrate that psychopathy is a significant predictor of institutional disruptive behavior, and physical violence in particular. Furthermore, Hare's traditional Factor 2 was more strongly related to disruptive incidents than Factor 1. By using the recently proposed three- and four-factor models of psychopathy, insight into the pattern of associations between psychopathy dimensions and different types of disruptive behavior was obtained. The antisocial dimension of psychopathy appeared to be more strongly related to

*Correspondence to: Corine de Ruiter, Ph.D., Department of Psychology, Maastricht University, P.O. Box 616, 6200 MD Maastricht, The Netherlands. E-mail: Corine.deRuiter@psychology.unimaas.nl

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[‡]Jongerenhuis Harreveld, Harreveld, The Netherlands.

[§]Trimbos-Institute, Netherlands Institute for Mental Health and Addiction, Utrecht, The Netherlands, and Maastricht University, Maastricht, The Netherlands.

[¶]Rentray, Eefde, The Netherlands.

^{||}VU University Medical Center, Amsterdam, The Netherlands.

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severe incidents than the lifestyle dimension. Regression analyses identified significant contributions of the anti-social and lifestyle dimensions to the prediction of incidents. The relatively small degree of variance explained underlines the importance of other risk factors to identify adolescents at risk of disruptive behavior during institutional treatment. Copyright © 2007 John Wiley & Sons, Ltd.

INTRODUCTION

Psychopathy is defined by a set of interpersonal, affective and behavioral traits. A two-factor structure was traditionally thought to underlie the PCL-R (Harpur, Hakstian, & Hare, 1988; Hare, 1991), in which Factor 1 is characterized by a selfish and callous interpersonal style and a lack of remorse and empathy (Hare *et al.*, 1990) and Factor 2 consists of a chronically unstable and antisocial lifestyle (Hare *et al.*, 1990). The presence of psychopathy in male adult prisoners and forensic psychiatric patients predicts disruptive behavior during imprisonment or hospitalization (see for a review Edens, Petrila, & Buffington-Vollum, 2001; Walters, 2003a). Using the Psychopathy Checklist—Revised (PCL-R; Hare, 1991, 2003) or its derivatives, researchers have demonstrated that a high psychopathy score is significantly, albeit sometimes modestly, related to institutional infractions (e.g., Belfrage, Fransson, & Strand, 2000; Edens, Buffington-Vollum, Colwell, Johnson, & Johnson, 2002; Hildebrand, de Ruiter, & Nijman, 2004). Guy, Edens, Anthony, and Douglas (2005) recently performed a meta-analysis on 38 independent adult samples (total $N = 5,381$) and demonstrated that the association between psychopathy and institutional misconduct was strongest for the total number of infractions and for non-violent infractions (e.g. rule violations), and weakest for acts of physical violence. This finding suggests that adult psychopaths undermine the (therapeutic) milieu of their institutional residence, and they seem to do this in covert, non-violent ways rather than through overt aggression. However, a moderator effect of nationality was found to be present across all outcome categories, indicating smaller weighted mean effect sizes when data were collected in the United States versus data collected in all other countries. For instance, psychopathy was more predictive of physical violence in non-U.S. samples ($r_w = .21$) than in U.S. samples ($r_w = .13$).

Only a limited number of studies examined the incremental value of one PCL-R factor after controlling for the other, by using multiple regression analyses. The significant contribution of Factor 2 in the prediction was consistently found, while there was mixed support for the predictive value of Factor 1 (Walters, 2003b). Recently, new factor models have been proposed for the PCL-R, including a hierarchical three-factor model (Cooke & Michie, 2001) and a parceled four-factor model (Hare, 2003). In both models, the original Factor 1 (Hare, 1991) is divided into an interpersonal dimension (new Factor 1) and an affective dimension (new Factor 2). A new Factor 3 comprises lifestyle and impulsive behavioral traits. The Hare (2003) four-factor model includes an additional fourth factor comprising antisocial behaviors. These new models allow researchers to further examine the predictive value of specific subdimensions of psychopathy.

The Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003) is a downward extension of the PCL-R to the adolescent population. In an investigation of the underlying factor structure of the PCL:YV, support was provided for the four-factor model as well as for a modified version of the three-factor model, suggesting that there is considerable continuity in the structure of psychopathy from adolescence to adulthood (Forth et al., 2003). The predictive validity of the PCL:YV for institutional disruptive behavior is receiving increasing interest. A strong significant association ($r = .46$) between PCL:YV psychopathy scores and institutional charges for misbehavior was demonstrated in a sample of 75 male adolescents in a maximum security center (Forth, Hart, & Hare, 1990). Furthermore, modest associations of around .30 were found between psychopathic traits and total number of incidents in young adults imprisoned for crimes committed as juveniles (Edens, Poythress, & Lilienfeld, 1999), in male juvenile offenders in a residential training facility (Brandt, Kennedy, Patrick, & Curtin, 1997), in a judicial assessment facility (Hicks, Rogers, & Cashel, 2000), and in a residential treatment program for dually diagnosed offenders (Rogers, Johansen, Chang, & Salekin, 1997). During the last few years, research into adolescent psychopathy in relation to recidivism is increasing (e.g., Edens, Campbell, & Weir, 2007; Schmidt, McKinnon, Chattha, & Brownlee, 2006). A meta-analysis across 21 adolescent samples (Edens et al., 2007) has shown a significant association between psychopathy and general, as well as violent, recidivism in adolescents (mean weighted effect sizes of .24 and .25, respectively). Recently, Edens and Campbell (2007) performed a meta-analysis of 15 adolescent samples (total $N = 1,310$) from 13 methodologically sound studies, by aggregating effect sizes for the total number of incidents, for a combined category including physical and verbal aggression, and for physical aggression only. The weighted mean effect size for the relation between PCL:YV total scores and total number of incidents was .24. Furthermore, a weighted mean effect size of .28 demonstrated a significant association between psychopathy and institutional physical violence, which is much stronger than the one obtained in the above-mentioned meta-analysis with adults reported by Guy et al. (2005). Finally, it was demonstrated that Hare's traditional Factor 2 consistently had greater predictive value than Factor 1. Specifically, the weighted mean effect size for Factor 1 was .21 for the total number of incidents, .22 for the combined category, and .24 for physical aggression, whereas the weighted mean effect sizes for Factor 2 were .28, .34, and .37 for the three categories, respectively.

A growing body of research examines the factors underlying the construct of psychopathy in adolescent samples (e.g. Jones, Cauffman, Miller, & Mulvey, 2006; Neumann, Kosson, Forth, & Hare, 2006; Salekin, Brannen, Zalot, Leistico, & Neumann, 2006; Skeem & Cauffman, 2003). These studies generally find support for the three- and four-factor models over the two-factor model. Although conceptually clearer than the four-factor model (Cooke, Michie, & Skeem, 2007), the hierarchical three-factor model underperforms in terms of predictive power for future recidivism. Results concerning predictive validity have shown that the PCL:YV total score based on the two-factor model was a slightly better predictor of infractions and serious violence during one month of incarceration than the total score based on the three-factor model, suggesting incremental predictive value for the antisocial items. When studying the contribution of the separate factors, Hare's

traditional Factor 2 was most predictive of violent infractions and substance abuse, while Hare's traditional Factor 1 score and Cooke and Michie's new Factor 1 score (interpersonal dimension) were most predictive of serious physical violence (Skeem & Cauffman, 2003).

In summary, the existing evidence suggests a significant, albeit modest, association between psychopathic traits and various forms of institutional disruptive behavior in male adolescent offenders. With regard to the clinical implications of these findings, it has been suggested that the construct of psychopathy may be relevant for purposes of short term risk appraisal and management among juveniles (Edens, Skeem, Cruise, & Cauffman, 2001). The traditional Hare factors were demonstrated to be differentially related to disruptive behavior while institutionalized. The recently developed three- and four-factor models (Cooke & Michie, 2001; Hare, 2003) may allow a more thorough understanding of these associations. The use of multiple regression analyses is recommended to identify the incremental value of (sub)factors over others (Walters, 2003b).

The Present Study

The present study is a prospective study designed to examine the predictive validity of psychopathic traits as measured by means of the PCL:YV for institutional disruptive behavior in adolescent offenders. Because most previous studies in this area were conducted with North American samples, a specific aim was to study whether North American findings can be generalized to adolescents in The Netherlands. The Dutch language version of the PCL:YV (*Psychopathie Checklist: Jeugd Versie*; PCL:JV; de Ruiter, Kuin, de Vries, & Das, unpublished research version) was used to measure psychopathic traits in male adolescents from two treatment institutions for juvenile offenders. The two samples were analyzed separately in order to identify whether the hypothesized associations are consistent across samples.

1. High PCL:JV total scores are associated with higher frequencies of overall disruptive behavior during institutionalization.
2. High PCL:JV total scores are associated with physical violence during institutionalization.
3. Hare's traditional Factor 2 score is more strongly associated with disruptive behavior during institutionalization than Hare's traditional Factor 1 score.
4. Factor 4 (antisocial behavior dimension; Hare, 2003) is related to more serious disruptive behavior than Factor 3 (lifestyle behavior dimension; Cooke & Michie, 2001).

Special attention was directed at identifying the relative contribution of the separate factors (interpersonal, affective, lifestyle and antisocial) of psychopathy in predicting disruptive behavior, and whether the global construct of psychopathy, as defined by the interaction between all factors, made an incremental contribution to the prediction.

METHOD

Participants

The study sample comprised male adolescent offenders from two juvenile justice treatment institutions. Adolescents were sentenced by court either to a supervision order or to a mandatory treatment order. The duration of a mandatory treatment order can vary between two and six years, depending on the seriousness of the offense, on whether a mental disorder was present at the time of the offense and on whether the parenting situation was severely compromised. A supervision order is a civil measure, which can be imposed when a child's development is psychologically or physically threatened because of incompetent parenting and/or behavioral problems of the child. During the supervision order, the custody of the adolescent becomes shared by the parents and the official child protection agency. Adolescents in the first sample were admitted to a secure section of *Jongerenhuis Harreveld* and are characterized by their involvement in serious criminal behavior. Adolescents in the second sample were admitted to a semi-secure section of *Rentray* in order to *prevent* further escalation into antisocial/criminal behavior.

Sample Characteristics

Table 1 presents demographic characteristics for the Harreveld sample and the Rentray sample. Overall, the 66 boys in the Rentray sample were younger ($t = -4.65$, $p < .01$), more frequently admitted with a civil measure ($\chi^2(1) = 33.99$, $p < .01$), and had lower mean PCL:JV scores ($t = -4.91$, $p < .01$) than the 81 boys in the Harreveld sample. Furthermore, 18 (22%) boys in the Harreveld sample scored 30 or above on the PCL:JV while only two (3%) boys in the Rentray sample scored 30 or above. Again, this difference was statistically significant ($\chi^2(1) = 11.40$, $p < .01$).

Table 1. Characteristics of the Harreveld sample ($n = 81$) and the Rentray sample ($n = 66$)

	Harreveld sample	Rentray sample
Mean age	16.7 (SD = 1.80)	15.4 (SD = 1.58)
Mean PCL:JV score	22.78 (SD = 6.82)	17.30 (SD = 6.65)
% PCL:JV ≥ 30	22.2	3
Range PCL:JV total score	6–36	4–32
Ethnic origin		
European	53 (65.4%)	43 (65.1%)
Surinamese	9 (11%)	9 (13.6%)
Moroccan	5 (6.2%)	4 (6.1%)
Netherlands Antilles	3 (3.7%)	2 (3.0%)
Other	11 (13.6%)	8 (10.6%)
Judicial measure		
Civil supervision order	36 (44.4%)	59 (89.4%)
Mandatory treatment	45 (55.6%)	7 (10.6%)
Index offenses		
Violent	17 (37%)	2 (28.6%)
Sexual	25 (54.3%)	3 (42.9%)
Property	2 (4.3%)	2 (28.6%)
Arson	2 (4.3%)	0 (0%)

PCL:JV = Psychopathie Checklist: Jeugd Versie; SD = standard deviation.

Measures

Psychopathy

Similar to the PCL-R, the 20 items of the PCL:JV are scored on a three point rating scale (0 = *item does not apply*, 1 = *item applies to a certain extent*, 2 = *item definitely applies*), resulting in a dimensional total score ranging from 0 to 40. Total and factor scores can be prorated when a limited number of items are omitted. For each adolescent, PCL:JV ratings were based on the Dutch translation of the semi-structured PCL-R interview designed by Hare (1991; Dutch version, Vertommen, Verheul, de Ruiter, & Hildebrand, 2002) in conjunction with collateral information, including police files, psychiatric and psychological evaluations, and observational reports from previous institutional care. The authorized Dutch translation of the PCL:JV manual and scoring sheet were used (de Ruiter et al., unpublished research version). For the categorical diagnosis of psychopathy, the traditional cut-off score of 30 was adopted (Hare, 1991). For Items 9 (*Parasitic orientation*), 11 (*Impersonal sexual behavior*), 13 (*Lacks goals*), 17 (*Unstable interpersonal relationships*), and 18 (*Serious criminal behavior*), the descriptive criteria were slightly revised from the Canadian original. Revisions comprised clarifications of when the level of psychopathy symptoms becomes non-normative. For example, because a certain lack of commitment to long-term goals (item 13) is a normal part of adolescence, raters were advised to also take into account whether the adolescent has demonstrated being committed to short-term goals. Clarifications were added to the item description in textboxes and Dr. Adelle Forth, first author of the Psychopathy Checklist: Youth Version (Forth et al., 2003), has been informed of these revisions. The psychometric properties of the PCL:JV have been discussed elsewhere (Das, de Ruiter, & Doreleijers, in press). The reliability of the PCL:JV total score was acceptable, although less than the one reported in the original PCL:YV manual (Forth et al., 2003). Furthermore, the inter-rater reliability for the individual items and the four separate factors was also somewhat lower than what is reported in the PCL:YV manual, which is in line with previous findings by Spain, Douglas, Poythress, and Epstein (2004).

Incidents

A classification scheme for rating of institutional infractions designed by Hildebrand et al. (2004) was slightly modified to assign incidents to a certain category. The scheme includes four categories: (1) *Verbal abuse* (inappropriate verbal expressions, cursing), (2) *Verbal threat* (verbal hostility with the intention to psychologically harm another person or threatening to act physically violently), (3) *Physical violence* (violent behavior against people or property), and (4) *Violation of institutional rules* (including use of drugs, unauthorized absence, positive urinalysis results). For the Harreveld sample, the registration of incidents was based on TULP (a judicial system for the registration of client information), on internal memos, and on daily reports written by group leaders and teachers. Two raters (the first author and a trained undergraduate psychology student) independently reviewed 113 daily reports by group leaders to examine agreement on whether the events reported,

qualified as incidents. The observed agreement was 96.5% and Cohen's κ was .80, indicating excellent agreement. Subsequently, 100 incidents were randomly selected from the total number of incidents and coded by the two independent raters with regard to type of incident. Because there was excellent agreement (observed agreement = 92%; Cohen's κ = .88), further ratings were made by one independent rater. For each adolescent, the total number of incidents in each category was divided by the number of days spent in the institution, in order to correct for the fact that the time at risk of institutional misbehavior was not equal for participants.

For the Rentray sample, two independent raters used half-yearly treatment evaluation reports written for the court and the before mentioned TULP system for the registration of incidents. Excellent inter-rater reliability (Cohen's κ = .96) was demonstrated for 110 randomly selected incidents, justifying further single ratings by an independent research assistant.

Disciplinary Actions

For both samples, TULP was used to count two types of disciplinary actions, i.e. seclusion in a designated room and placement in another institution for juvenile offenders for the duration of two weeks (correctional placement). Again, the total number of disciplinary actions was corrected for the length of institutional stay.

Procedure

All raters received training in the administration and scoring of the PCL-R by the second author and/or a mental health professional, who had been trained by Drs. Robert D. Hare and David Cooke. The training included a review of the clinical construct of psychopathy and the research literature pertaining to it. Scoring was practiced using videotapes of two Dutch adult forensic psychiatric patients and three adolescent offenders. In the current study, most adolescents were interviewed and rated by the supervising psychologist of the ward they were admitted to. The PCL-R interviews were videotaped after written informed consent by the adolescent and informing the parents about the purpose and procedure of the study. PCL:JV ratings were conducted for the Harreveld sample by 14 raters, ten female and four male, and for the Rentray sample by two female raters. Two independent ratings were available for 74 (91.4%) boys in the Harreveld sample and for 16 boys (24.2%) in the Rentray sample.

Data-analysis

The inter-rater reliability of the PCL:JV was examined by means of the intraclass correlation coefficient (ICC), using a two-way random effects model and the consistency type (McGraw & Wong, 1996). The observed inter-rater reliability was evaluated according to the following categories: $ICC \geq .75$, excellent; $.60 \leq ICC < .75$, good; $.50 \leq ICC < .60$, moderate; $ICC < .50$, poor (Fleiss, 1986).

Spearman ρ correlations instead of Pearson correlations were calculated between PCL:JV total and factor scores and all outcome variables because of the ordinal nature of the PCL:JV data. In addition, the total number of incidents was not normally distributed in both the Harreveld sample (Kolmogorov–Smirnov $Z = 1.52$, $p = .02$) and the Rentray sample (Kolmogorov–Smirnov $Z = 1.65$, $p = .02$).

Linear regression with the stepwise procedure (based on the F statistic) was conducted to determine which psychopathy dimension(s) were significant predictors of the total number of incidents and the different incident categories. Furthermore, psychopathy as defined by the interaction between all four psychopathy factors was entered in Block 2, to identify whether it had incremental value to the prediction. The criterion for entry was set at .05 and for removal at .10.

RESULTS

Reliability

Table 2 presents the single measure ICCs for the PCL:JV total and factor scores in the Harreveld and Rentray samples. Overall, the inter-rater reliability of the PCL:JV total score and Hare's traditional Factor 1 and 2 was good in both samples. Furthermore, inter-rater reliabilities for the interpersonal, lifestyle, and antisocial dimensions were adequate, whereas the affective dimension of psychopathy had poor inter-rater reliability in the Harreveld sample.

Cronbach's coefficient α for the PCL:JV total score indicated high internal reliability for both samples (.81 and .80 for the Harreveld and Rentray samples, respectively). The mean inter-item correlation was .18 for the Harreveld sample and .16 for the Rentray sample.

Frequency of Disruptive Behavior

Table 3 presents the frequency of disruptive behavior in the Harreveld and Rentray samples. In comparison to the Rentray sample, boys in the Harreveld sample were followed for a shorter period of time ($t = -4.33$, $p < .01$), but they displayed significantly more incidents of verbal abuse ($t = 3.02$, $p < .01$) and physical violence ($t = 3.73$, $p < .01$) during their stay in the institution. At the same time, the average number of incidents per adolescent is highly similar in both samples (19.4 and 21.3 for the Harreveld sample and the Rentray sample, respectively).

Table 2. Intraclass Correlation Coefficient (ICC) single measure of PCL:JV total and factor scores in the Harreveld Sample ($n = 74$) and the Rentray Sample ($n = 16$)

	PCL:JV						
	Total	Hare's Factor 1	Hare's Factor 2	Interpersonal	Affective	Lifestyle	Antisocial
Harreveld sample	.75	.63	.67	.56	.45	.58	.74
Rentray sample	.74	.71	.58	.57	.71	.62	.62

PCL:JV = Psychopathie: Checklist: Jeugd Versie (Psychopathy Checklist: Youth Version). All ICCs were significantly greater than 0 ($p < .05$).

Table 3. Frequency of disruptive behavior in the Harreveld sample and Rentray sample

	Harreveld sample	Rentray sample
Total number of incidents	1512	1405
Average follow-up period in days	457 (SD = 285.2)	675 (SD = 325.0)
Average number of incidents per adolescent	19.4 (SD = 23.9)	21.3 (SD = 21.4)
Incident category		
Verbal abuse	234 (15.5%)	121 (8.7%)
Verbal threat	98 (6.5%)	108 (7.7%)
Physical violence	465 (30.7%)	258 (18.3%)
Violation of institutional rules	711 (47.0%)	912 (64.9%)
Self-harm	4 (0.3%)	6 (0.4%)
Disciplinary action		
Seclusion	8 (9.9%)	36 (45.5%)
Correctional placement	10 (12.3%)	10 (15.2%)
Adolescents not involved in any type of incident	3 (3.7%)	1 (1.5%)

SD = standard deviation.

PCL:JV Scores in Relation to Disruptive Behavior

Table 4 presents the Spearman ρ correlations between PCL:JV total and factor scores and all outcome variables. In the Harreveld sample, significant relations demonstrated that the PCL:JV total score was predictive of the total number of incidents ($\rho = .37$) and the incident categories verbal abuse ($\rho = .25$), physical violence ($\rho = .34$), and rule violations ($\rho = .39$). Hare's traditional Factor 1 score was only found to be significantly related to correctional placement ($\rho = .19$), whereas the strongest correlations were found between Hare's traditional Factor 2 and the total number of incidents ($\rho = .44$) and rule violations ($\rho = .45$).

Evaluating the lifestyle dimension and the antisocial dimension separately, a different pattern of correlations was identified. In particular, the lifestyle dimension was more strongly related to rule violations ($\rho = .41$), whereas the antisocial dimension was more strongly related to total number of incidents ($\rho = .35$), verbal abuse ($\rho = .36$), physical violence ($\rho = .36$), and correctional placement ($\rho = .26$). Although no hypothesis was formulated with regard to self-harm, the results demonstrated a trend with the interpersonal dimension ($\rho = .19$).

In the Rentray sample, only modest but significant associations were found for physical violence, including an association with the PCL:JV total score ($\rho = .29$), Hare's traditional Factor 2 ($\rho = .29$), and the lifestyle dimension ($\rho = .28$). Furthermore, the antisocial dimension was associated with seclusion ($\rho = .25$). Finally, the relation between the interpersonal dimension and self-harm ($\rho = .28$) could also be identified in this sample. In general, however, far fewer significant associations between the PCL:JV and institutional infractions were found in the Rentray sample compared with the Harreveld sample.

The Relative Contribution of Psychopathy Dimensions in the Prediction of Disruptive Behavior

In the Harreveld sample, linear regression analysis demonstrated that the antisocial dimension was the only variable to enter the equation in the prediction of the total

Table 4. Spearman ρ correlations between PCL:JV scores and incidents

Type of incident	PCL:JV total	Factor 1 (Hare, 1991)	Factor 2 (Hare, 1991)	Interpersonal	Affective	Lifestyle	Antisocial
<i>Hareveld sample</i>							
Total number of incidents	.37**	.12	.44**	.08	.08	.33**	.35**
Verbal abuse	.25*	.10	.28**	.11	.05	.11	.36**
Verbal threat	.15	.08	.18	.02	.04	.11	.18
Physical violence	.34**	.09	.39**	.01	.08	.25*	.36**
Rule violation	.39**	.17	.45**	.17	.09	.41**	.27**
Self-harm	.09	.09	.01	.19	-.06	-.00	.07
Seclusion	.19*	.03	.25*	-.05	.14	.23*	.14
Correctional placement	.27**	.19*	.25*	.08	.17	.15	.26**
<i>Rentray sample</i>							
Total number of incidents	-.07	-.07	-.05	-.01	-.08	.08	.05
Verbal abuse	.11	.11	.05	.06	.10	.03	.06
Verbal threat	.10	.02	.18	.03	.02	.10	.13
Physical violence	.29*	.20	.29*	.13	.21	.28*	.18
Rule violation	-.08	-.05	-.07	-.01	-.07	-.06	.01
Self-harm	.17	.17	.17	.28*	.08	.11	.13
Seclusion	.05	.01	.03	-.06	.04	.04	.06
Correctional placement	.23	.13	.24	.14	.09	.24	.25*

* $p < .05$, two tailed.
 *** $p < .01$, two tailed.

number of incidents ($R^2 = .07, p < .05$). Psychopathy, as defined by the interaction term of all four factors, did not produce a significant improvement to the model fit ($F = .32, p = \text{ns}$). Similarly, the antisocial dimension was a significant predictor of verbal abuse ($R^2 = .05, p < .05$) but the interaction term did not improve the model fit ($F = .01, p = \text{ns}$). For physical violence, the individual psychopathy dimensions as well as the interaction term failed to enter the equation. Finally, the lifestyle dimension was the only variable to enter the equation in the prediction of rule violations ($R^2 = .12, p < .01$). Again, the interaction term did not improve the model fit ($F = .01, p = \text{ns}$). Regarding seclusion, none of the PCL:JV factors, nor the interaction term entered the equation in the prediction of seclusion. The interaction term, but none of the factors, significantly predicted correctional placement ($R^2 = .10, p < .01$).

In the Rentray sample, significance was only achieved by the antisocial dimension for predicting correctional placement ($R^2 = .09, p < .05$). The interaction term did not improve model fit ($F = 2.21, p = \text{ns}$).

DISCUSSION

The present study comprised two samples of boys admitted to different juvenile justice treatment institutions. The samples differed in terms of age, the proportion of boys placed under a criminal justice measure as opposed to a civil supervision order, and mean psychopathy scores. This provided an opportunity to examine possible differences in predictive power of the construct of psychopathy as measured with the PCL: Youth Version for institutional disruptive behavior. In both samples, a high base rate of incidents was found, suggesting disruptive behavior during treatment in juvenile justice institutions is a substantial problem. In fact, in the present study the average number of incidents per adolescent was higher than in previous studies with adult offender samples (e.g., Edens et al., 2002; Hildebrand et al., 2004), and adolescent offender samples (e.g., Edens et al., 1999; Hicks et al., 2000).

Psychopathy Total Scores in Relation to Institutional Disruptive Behavior

The first hypothesis postulated that high PCL:JV total scores are associated with higher frequencies of overall disruptive behavior during institutionalization. In line with previous studies (Brandt et al., 1997; Edens et al., 1999; Forth et al., 1990; Hicks et al., 2000; Rogers et al., 1997), this hypothesis was supported in the Harreveld sample by a correlation of .37. In the Rentray sample, however, this association could not be demonstrated. Although the variance of PCL:JV scores was similar for both samples (Harreveld sample, $SD = 6.82$; Rentray sample, $SD = 6.65$), PCL:JV total scores were consistently lower in the Rentray sample. As opposed to 22% in the Harreveld sample, only 3% of the Rentray boys had a PCL:JV total score of 30 or more. The fact that few adolescents in the Rentray sample had elevated psychopathy scores may have resulted in attenuated correlations. The results may imply that psychopathy at the low end of the

distribution is not particularly useful in terms of differentiating adolescents prone to institutional misbehavior and those not so prone.

The second hypothesis that high PCL:JV total scores are related to physical violence was supported in both the Harreveld and the Rentray sample, which is in line with previous research in adolescents (see the meta-analysis by Edens & Campbell, 2007). Thus, psychopathy may be qualified as a robust predictor of physical violence during institutionalization, regardless of the degree of psychopathy of the sample under investigation. The results further demonstrated that the association between psychopathic traits and the other incident categories (verbal abuse, verbal threat, rule violations) are dependent on the sample under investigation. To be more specific, in the Harreveld sample, where psychopathic traits were highly prevalent, the presence of these traits is associated with various types of disruptive behavior. However, when psychopathic traits are less prevalent, as in the Rentray sample, the construct may not be useful for identifying adolescents at risk of incidents other than physical violence. In such a sample, an evaluation of risk factors other than psychopathy may be critical. In fact, (Lodewijks, Doreleijers, de Rooter, & Borum, *in press*) demonstrated that in the Rentray sample the SAVRY (Structured Assessment of Violence Risk in Youth; Bartel, Borum, & Forth, 2002) was useful in predicting physical violence as well as other incident categories, including rule violations and verbal threat. The systematic assessment of a constellation of historical, social, and individual risk factors combined with protective factors proved to be a useful method for identifying youth at risk of displaying various forms of disruptive behavior while institutionalized.

Dimensions of Psychopathy in Relation to Institutional Disruptive Behavior

Hare's traditional two-factor model (Hare, 1991) and the recently proposed three- and four-factor models (Cooke & Michie, 2001; Hare, 2003, respectively) were useful in examining the pattern of associations between the separate psychopathy dimensions and disruptive behaviors. The third hypothesis, that Hare's traditional Factor 2 is a more effective predictor of disruptive behavior than Factor 1, was supported in both samples. Furthermore, partial support was provided for the fourth hypothesis, stating that the antisocial dimension is related to more serious misbehavior than the lifestyle dimension. The antisocial dimension was most strongly related to correctional placement in both samples, implying that this dimension of psychopathy is predictive of the most serious forms of disruptive behavior, resulting in the most severe disciplinary action. Inconsistent with the hypothesis, however, both dimensions were found to be related to mild as well as serious incident categories. It is important to note that physical violence was best predicted by the antisocial dimension in the Harreveld sample, whereas in the Rentray sample it was best predicted by the lifestyle dimension. This finding may perhaps be explained in light of the cross-national (Cooke, Hart, & Michie, 2004), gender-related (Bolt, Hare, Vitale, & Newman, 2004; Schmidt *et al.*, 2006), and age-related (Vincent, unpublished doctoral dissertation) differences in the expression of psychopathy that have been demonstrated in previous research. Hypothetically, the lifestyle dimension is more characteristic of psychopathy in

younger and (still) less criminal adolescents such as the Rentray sample, and is therefore more likely to be related to external correlates of psychopathy such as physical violence. In a similar vein, the antisocial dimension may be more revealing of psychopathy in older and more criminal adolescents such as the Harreveld sample. The lifestyle dimension may be an important precursor to antisocial behavior, which is expressed in the person's criminal lifestyle over time.

Considerable debate exists about which symptoms form the core symptoms of psychopathy. For instance, Cooke, Michie, Hart, and Clark (2004) have argued that the interpersonal, affective, and impulsive lifestyle dimensions are core symptoms, while antisocial symptoms should be perceived as consequences of psychopathy. In contrast, others have found that antisocial tendencies also play a fundamental role in the assessment of psychopathy (Hare, 2003; Neumann, Vitacco, Hare, & Wupperman, 2005). Research findings demonstrating differential correlations between individual psychopathy factors and external criteria highlight the importance of each of these factors (e.g. Hall, Benning, & Patrick, 2004; Vitacco, Neumann, & Jackson, 2005). In this study, only the behavioral dimensions were found to have predictive value for (general) institutional externalizing behavior. This is in line with Walters' (2003b) statement that "...behavioral models appear to have an advantage over personality models (Cleckley, 1941/1976; Hare, 1996) in the sense that behavioral models closely approximate the behavioral criteria used to gauge disciplinary adjustment. . ." (p. 543). Nevertheless, it is still possible that the interpersonal and affective dimensions are related to the broader concept of treatment response, including program retention, treatment module attendance and therapist ratings of participation. For instance, Hobson, Shine, & Roberts (2000) have demonstrated that Hare's traditional Factor 1 (and not Factor 2) was significantly associated with negative behavior during therapy groups and community meetings, and with general negative behavior on the wing. More recently, Richards, Casey, and Lucente (2003) found Hare's traditional Factor 1 to be related to infractions during treatment and new charges in the community after treatment, but also to a shorter stay in treatment and removal from the program due to rule violations. In the only Dutch study pertaining to this subject, Hare's traditional Factor 1 was not found to be associated with treatment compliance (Hildebrand, de Ruiter, & van Zaane, in preparation). However, in this study only one aspect of treatment compliance was measured, i.e. attendance rate of therapeutic activities. In all, these findings suggest that the interpersonal and affective dimensions may be related to more subtle indicators of treatment response than the ones used in the present study.

The Relative Contribution of Psychopathy Dimensions

Regression analyses were performed in order to evaluate the relative contribution of the PCL:JV factor and total scores in the prediction of institutional disruptive behavior. Again, the superior contribution of the lifestyle and antisocial dimension was demonstrated in the Harreveld sample. Furthermore, the global construct of psychopathy, as defined by the interaction between the four factors, only contributed significantly in the prediction of correctional placement. A correctional placement is only imposed after a very serious incident has occurred, which means that this

finding suggests that psychopathic traits predict the most severe forms of disruptive behavior. This is in line with previous research demonstrating that, while the PCL:YV total score did not prove predictive of (mild) violent/aggressive incidents, it was predictive of serious violence during incarceration (Skeem & Cauffman, 2003). Finally, the regression analyses in the Rentray sample demonstrated limited relevance of a high PCL:JV score in the prediction of institutional disruptive behavior, suggesting other risk factors should be considered when psychopathy has a low base rate in a sample.

Psychopathic Traits and Self-Harm

The present study also showed a moderate positive association between the interpersonal dimension and self-harm, suggesting adolescents with a glib, grandiose, and manipulative interpersonal style more frequently engage in self-harm than adolescents not showing this interpersonal style. It should be noted, however, that the base rate of self-harming behaviors in both samples was rather low, increasing the chance of spurious findings. In previous studies of adult male and female samples, Hare's traditional Factor 1 (including the interpersonal and affective dimension) was found to be either negatively related or unrelated to parasuicidal behavior (Gray *et al.*, 2003; Verona, Hicks, & Patrick, 2005; Verona, Patrick, & Joiner, 2001). Moreover, the negative correlation between Factor 1 and suicide attempts was determined by the interpersonal dimension of psychopathy (Verona *et al.*, 2005). Self-harm is mainly thought to be related to internalizing forms of psychopathology, such as anxiety and depression. Thus, the negative association between parasuicidal behavior and the interpersonal dimension found in adult samples is in line with the evidence that shows that lack of internalizing psychopathology is a core feature of psychopathy (Hildebrand, 2004; Skeem, Mulvey, & Grisso, 2003). In adolescent samples, however, PCL:YV scores have been found to be either unrelated (Brandt *et al.*, 1997; Skeem & Cauffman, 2003) or even positively related to negative affect (Kosson *et al.*, 2002), suggesting adolescent psychopathy may be associated with greater negative affectivity than psychopathy in adulthood. Kosson and colleagues (2002) postulated that "Whereas psychopathic adults have a seamless veneer of affectlessness, adolescents with psychopathic traits have the same dispositions (impulsivity, callousness, manipulativeness, etc.) but have not yet developed the same impenetrable mask of sanity" (p. 106). Consistent with this hypothesis, the positive association between the interpersonal dimension of psychopathy and self-harm was demonstrated to be stronger in the younger and less criminal Rentray sample than in the older and more criminal Harreveld sample. More research with different kinds of measure of negative emotionality (including self-harm) is needed to improve our understanding of its association with adolescent psychopathy.

Limitations

The results of the present study should be qualified by several caveats. First and foremost, since the focus of the study was to evaluate the predictive validity of the

Dutch PCL:JV and the dimensions within the concept of psychopathy, no alternative predictor variables were included in the analyses. The relatively small degree of variance explained by PCL:JV total and factor scores should prompt researchers to study other relevant risk factors in youth at risk for institutional disruptive behavior. Second, although much effort was devoted to applying uniform procedures for data gathering in both samples, practical circumstances led to differences in (a) the sources that were used for the registration of incidents and (b) the procedure for examining inter-rater reliability of the incident registration. Despite close monitoring of the coding procedures, any potential influence on the results cannot be ruled out.

Conclusion

In line with previous North American findings, the Dutch PCL:JV was proven to be a significant predictor of disruptive behavior in adolescents during institutional treatment in the juvenile justice system (Brandt et al., 1997; Edens et al., 1999; Forth et al., 1990; Hicks et al., 2000). This association is primarily determined by the behavioral dimensions and not the personality dimensions of psychopathy. The PCL:JV total score proved to be useful in the prediction of the most serious incidents. The results underline the importance of considering other relevant predictor variables when trying to identify adolescents at risk for displaying institutional disruptive behavior, especially in populations where psychopathic traits are less prevalent.

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