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Eight month follow-up of delinquent adolescents: predictors of short-term outcome

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Abstract Clinicians working with young delinquents are concerned with finding methods to predict recidivism in these subjects. It has not been investigated yet to what extent psychiatric assessment can be of any help in this field.

In this study, we investigated whether psychiatric assessment can help to predict recidivism in already delinquent adolescents. By means of semi-structured psychiatric assessment (Child Assessment Schedule), developmental interview of the parents and self-report instruments, we assessed the psychiatric status of 72 delinquent adolescents, adjudicated before the Juvenile Court of Antwerp (Belgium). A follow-up of criminal status after eight months was conducted.

Self-report questionnaires by the subjects did not differentiate recidivists from non-recidivists, while parent questionnaires did. Through a semi-structured interview, we found that a diagnosis of conduct disorder significantly predicts recidivism, while subjects with ADHD and substance abuse show a tendency towards more recidivism. We were unable, however, due to the small number of subjects showing a psychiatric disorder (e. g. ADHD and PTSD) unrelated to conduct disorder, to assess the relative contribution of these disorders to the recidivism rate.

This study found that psychiatric assessment of delinquent adolescents could be of help in predicting recidivism. The necessity of gathering information from parents and teachers is demonstrated. Future research should include a more extensive group of a delinquent adolescent and should focus on the effect of therapeutic interventions.

Key words Juvenile delinquency · Recidivism · Psychiatric disorders

Introduction

Much emphasis has been put on efforts to prevent a person's development towards delinquency. Although prevention should remain the major concern, it is important to investigate factors influencing recidivism of already delinquent minors. As we work with adolescents who are already convicted of major crime, it is our interest to investigate factors influencing persistent criminality in this group.

Self-report studies have demonstrated the pervasivity of criminality in adolescents. Junger-Tas (1994) has shown, by means of a multi-centre study in several western countries including the US, that only 9.7 to 18.5 % of youngsters never committed any illegal act. Theft was reported by 16 to 33.5 % of youngsters and committing violent acts was reported by 15.8 to 29.5 %. The Belgian findings in this study, though derived from a mixed inner-city sample, were in line with the overall results (Born & Gavrey 1994).

Official reports have demonstrated that delinquency by minors is a major social problem in most western countries. In the last decade, adolescents have been rapidly taking on responsibility for a greater proportion of violent crimes (Stanton et al. 1997). Reports on the occurrence and course of non-violent crime by youngsters give very diverse figures.

It must be considered, however, that most young criminals pass through an adolescent limited pattern of offending (Moffitt 1993). These youngsters engage in mostly minor, occasional delinquent activities and do not need treatment. This can be regarded as a 'normal deviant behaviour'. A second group, which is a lot smaller, consists of the life-course persistent offenders and is characterised by a stable pattern of continuous offending. Generally, they commit more frequently and more severe crimes than the adolescent limited offenders. This group demonstrates more social problems and a greater individual liability towards criminality. Their individual characteristics include cognitive, mainly verbal, deficits (Moffitt 1997), early extreme aggressiveness (Lochman & Wayland 1994) and as-

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sociated hyperactivity, impulsivity and attention problems (Campbell 1997, Taylor et al. 1996).

Many authors have focused on the outcome of disruptive and antisocial youngsters. It is important to consider that the most common outcome for males with histories of childhood conduct disorder is criminality (Kratzer & Hodgins 1997). It has been demonstrated overwhelmingly that disruptive behaviour is often a forerunner of a wide range of psychosocial maladaptation in adulthood, such as job instability, unemployment, increased relationship problems and divorce/separation (Lewis et al. 1994; Zoccolillo et al. 1992).

A particularly important approach is the assessment of characteristics leading to a desistance from antisocial behaviour. A higher IQ, lower novelty seeking, lower affiliation with delinquent peers (Fergusson & Lynskey 1996) constitute examples of that kind.

It has not been investigated yet in what way psychiatric disorders may help to predict recidivism and future dysfunctioning in already delinquent adolescents. Psychiatric disturbances described in delinquent adolescents are conduct disorder (Forehand et al. 1991, Hollander & Turner 1985, McManus et al. 1984, Myers et al. 1993, Zagar et al. 1989), AD(H)D (Forehand et al. 1991, Hollander & Turner 1985, Zagar et al. 1989), depression (Chiles et al. 1980, McManus et al. 1984, Myers et al. 1993), PTSD (Burton et al. 1994, Steiner et al. 1997), personality disorders (Hollander & Turner 1985, McManus et al. 1984, Myers et al. 1995) and drug abuse (McManus et al. 1984, Myers et al. 1993). Furthermore, psychiatric disorders in delinquents often are accompanied by substance abuse (Milin et al. 1991, Neighbors et al. 1992). Some authors have described psychotic (Lewis et al. 1979) and schizophrenic problems (McManus et al. 1984) as occurring frequently in juvenile offenders.

Our hypothesis was that, in an unselected sample of already delinquent adolescents, future recidivists have more psychiatric problems and developmental deficits than future non-recidivists. We tried to assess whether psychiatric assessment can help to predict short-term recidivism (at 8-month follow-up) in already delinquent adolescents.

Method

Subjects

Juvenile delinquents. Subjects were adolescents adjudicated by Juvenile Court of Antwerp because of having committed a crime. In the period of assessment (three months), 104 subjects were brought to Juvenile Court.

Within two days after adjudication, the adolescent and his parents were contacted to participate voluntarily in our study, consisting of a psychiatric and neuropsychological assessment. The subjects were given the outline of procedures, informed of their right of refusal, and were assured that refusal to participate would not influence their status. Our records were not available to Juvenile Court.

Thirty-two subjects and/or their parents refused to participate. Reasons for refusal were: assessment not necessary, there were no problems (34.4%); psychiatric/psychological help was already available (21.9%) and earlier psychological/psychiatric help was a negative experience, no belief in psychological/psychiatric help (43.8%).

There was no significant difference between participants and

non-participants on age, ethnicity and crime characteristics (previous crimes and current crime severity) (Fisher exact).

The subjects' ages ranged from 12 to 17 years (mean 15.96, SD 1.11). Only two of the 72 participants were female. 30.6% had already been convicted of a crime. Reason for adjudication were 45.8% property offences (burglary), 27.8% combined violent and property offences (armed robbery or threatening/attacking people and burglary), 12.5% violent offences (fighting, threatening) and 13.9% drug-related offences (drug dealing). The ethnic distribution was: 39 (54.2%) native Flemish, 26 (36.1%) Moroccan and 7 (9.7%) other. 91% of the Moroccans and others were second generation immigrants, which means that they were born and raised in Belgium. The others arrived in Belgium before the age of 6. All non-native Flemish subjects will be called immigrants. There were no significant differences between native Flemish and immigrants concerning age (t-test) or delinquent history (Fisher exact). SES (Socio-economic status), however, was significantly lower in the immigrant population.

Initial assessment was done over a 3-month period. Eight months later, court files of all subjects (N=104) were retrieved. At that moment, we received information on all officially recorded crimes of the period between both assessments.

Instruments

Child Behavior Checklist

The CBCL is a widely used, self-report questionnaire for children, parents and teachers (Achenbach 1991) that has been translated and validated in Dutch by Verhulst et al. (Verhulst et al. 1996, Verhulst et al. 1997). A moderate overlap between CBCL scores and DSM-IV diagnoses has been described.

Child Assessment Schedule (CAS) and Parent-Child Assessment Schedule (P-CAS)

These semi-structured diagnostic interviews (Hodges et al. 1987) determine whether DSM criteria are met for various childhood diagnoses. These scales provide information about content areas including family, friends, mood and behaviour. Diagnostic categories from the CAS and P-CAS were examined for Attention Deficit Hyperactivity Disorder, Conduct Disorder, Oppositional Defiant Disorder, Anxiety Disorder, Mood Disorders, Enuresis, Encopresis and Psychotic Disorder. The validity of the Dutch version has been reported by Verhulst et al. (1987) and the interview was updated to fit DSM-III-R criteria by Grietens & Hellinckx (1992). The CAS has not been designed to specifically identify symptoms of Posttraumatic Stress Disorder. Therefore a number of questions were added to the original interview in order to encompass this shortcoming. These questions were developed by adapting the DSM-IV criteria for this disorder, and using supplementary questions to elicit more adolescent oriented specific symptoms.

Buss Durkee Hostility Inventory (BDHI)

The BDHI is a self-report questionnaire on aggression that was recently revised by Buss and Perry (1992). The Dutch version was made by De Ruiter in 1989. Lange et al. (1995a) found two clearly different factors: Overt Aggression and Covert Aggression. The first category resembles the combination of Physical and Verbal Aggression. Anger and Hostility correlate with Indirect Aggression. Lange et al. (1995b) added a third category to the BDHI-D, consisting of Social Desirability.

Questionnaire on Sexuality and Use of Alcohol and Drugs

Through self-report, we investigated sexual experiences (age of sexarche, number, frequency), previous sexual abuse, the family at-

titude towards sexuality and the use of alcohol and drugs (nature, age, frequency). We also assessed alcohol and drug use in first-degree relatives.

Structured interview of development

By means of Yes/No/Unclear questions, language and motor development, social functioning, behavioural and learning problems were assessed at different age stages. The age periods that we investigated were baby (1st year), toddler years (1–2.5 years old), kindergarten period (2.5–6 years old), latency period (6–12 years old) and adolescence (> 12 years). In order to obtain a clear view, each developmental stage was assessed consequently.

All questionnaires were administered in a structured manner. Assessment took place in the same room for all individuals and was done by one of the two main investigators (first and second authors).

All diagnoses were made immediately after the first period of assessment. Final diagnoses were made using DSM-IV criteria (APA 1994). The diagnoses were re-set by a trained senior psychiatrist who was blind of the subject's diagnosis, crime characteristics and history. An interrater agreement of 0.8 was obtained. Disagreements were resolved by discussion. The diagnoses used in this study represent the final consensus.

Statistical analysis

For statistical analysis, Systat 7.0 was used. Discrete variables were compared using the χ^2 test. Continuous variables were analysed with non-parametric (Kruska-Wallis) or parametric tests (t-test). P-values are mentioned when appropriate.

Results

Of all subjects (N=104) 46.2% committed a new crime during the follow-up period. Relatively more recidivists were found in the participant group (N=72) than in the non-participating group (N=32) (50.0% vs 37.5%, NS). When comparing recidivists with non-recidivists among participants (N=72), we found no difference by SES or ethnicity. Recidivists were, however, significantly younger than non-recidivists (15.6 vs 16.3; $p=0.008$).

Developmental characteristics

At latency age, recidivists were reported to show more conduct problems (52.0% vs 29.0%, $p=0.08$), irritability (38.5% vs 15.6%, $p<0.05$) and bullying (45.5% vs 23.3%, $p=0.093$) than non-recidivists. There was no difference in social behaviour (number of friends and problems with peers). A higher level of attention problems (57.9% vs 40.6%, ns) in recidivists was mentioned. Learning problems (flunking and needing special education) were frequent but not significantly different.

Questionnaires

YSR and BDHI questionnaires (Table 1) of the initial assessment could not differentiate recidivists from non-recidivists. Only subscores (YSR) on delinquent behaviour differentiated both groups (T-score: 61.7 (Sd: 8.5) vs 57.5 (Sd: 6.8), $p<0.05$). The delinquency score was the only subject's score reaching the preclinical level.

Parent (CBCL) ratings, however, showed a significant difference on a number of items. Both Total and Externalizing scores (parents) were significantly elevated in the recidivist group. Scores on attention problems and delinquent behaviour were significantly higher in the recidivist group. There was only a trend towards more problems on the aggressivity subscore.

Teacher ratings (TRF) were only retrieved for 55 subjects, due to the fact that a number of individuals did not attend school or changed school very often. Recidivists differed significantly from non-recidivists on total problem, externalizing and internalizing scores. Teachers scored recidivist higher on delinquent and aggressive behaviour, while a trend towards more attention problems was noted.

Psychiatric diagnoses (Table 2)

Individuals with a Disruptive Behaviour Disorder showed significantly more recidivism. Within this group, only the

Table 1 CBCL T-scores for recidivists and non-recidivists; Mean (SD)

	YSR		CBCL		TRF	
	REC	NON-REC	REC	NON-REC	REC	NON-REC
TOT T	51.6 (11.5)	50.8 (10.6)	64.5 (9.0)	58.3 (11.2)**	66.7 (7.7)	60.2 (8.3)**
INT T	50.0 (12.6)	51.4 (10.4)	59.7 (9.5)	58.9 (10.7)	60.5 (5.8)	54.8 (6.6)***
EXT T	54.1 (11.2)	50.1 (10.7)	66.1 (11.1)	56.9 (12.7)***	69.1 (9.7)	61.3 (9.3)**
Attention problems	56.3 (8.7)	58.3 (9.4)	65.2 (8.5)	60.5 (11.5)**	62.0 (9.2)	58.9 (7.2)
Delinquent behaviour	61.6 (8.8)	57.4 (6.5)*	71.0 (11.3)	61.5 (8.8)***	70.7 (9.4)	64.3 (9.7)*
Aggressive behaviour	54.6 (7.2)	53.3 (5.3)	61.9 (8.9)	57.8 (12.0)	68.9 (11.7)	61.1 (7.5)*

t-test: * $P<0.05$; ** $P<0.01$;
*** $P<0.005$

Table 2 Psychiatric diagnoses, comparison of recidivists versus non-recidivists; N (%)

	Non-Recidivists	Recidivists	
Disruptive Behaviour Disorder	14 (32.6)	29 (67.4)	***
CD	12 (30.8)	27 (69.2)	***
CD early onset	4 (33.3)	8 (66.7)	–
ADHD	5 (31.3)	11 (68.8)	NS
Substance abuse	6 (35.3)	11 (64.7)	NS
PTSD	3 (33.3)	6 (66.7)	–
Depression	7 (70.0)	3 (30.0)	–
No diagnosis	9 (100.0)	0	***

Fisher exact: *P<0.05; **P0.01; ***P<0.05; – numbers too small for statistical analysis

diagnosis of conduct disorder (CD) significantly predicted recidivism, while ADHD showed a trend towards more recidivism. Only four of the ADHD cases presented without co-morbid CD, of which half committed a new crime, making it impossible to draw conclusions about this pure ADHD group. A trend toward more recidivism was also present in case of substance abuse and post-traumatic stress disorder. CD did not accompany substance abuse in six cases, of which only two repeated the offence. Only four of the PTSD subjects had no co-morbid CD. It should be noted, however, that three of them committed a new delinquent fact during follow-up.

The absence of a diagnosis was related to abstaining from further crime. Depressive individuals showed a tendency towards being involved in less recidivism.

Discussion

Studies have shown that over 3/4 of adolescents involve in delinquent behaviour at some time in their life (Junger-Tas 1994). Most adolescent criminality, however, is time-limited and of low severity. It is widely accepted that a limited number of persistent offenders account for a high proportion of all crimes (Farrington & West 1993). It should be an objective to recognise this subgroup as early as possible. It was our idea that delinquent adolescents with early developmental and psychiatric problems are most likely to continue their pattern of offending. A more extended follow-up should be done in order to investigate whether this subgroup will become persistent offenders.

This preliminary study showed that psychiatric assessment of already delinquent adolescents might help in predicting future delinquency. Future research on a large number of subjects should reveal the relative importance of socio-economic factors, family characteristics, previous criminal history, and psychiatric/psychological assessment in delinquent adolescents. Subsequently, adequate screening measures that can help social workers, judges and health professionals to distinguish the different groups of adolescent delinquents should be developed.

We found that the subjects' self-report questionnaires were unreliable in predicting subsequent delinquency. With the exception of the delinquency subscore, all the adolescent's scores were in the non-clinical range. On the other hand, parent scores (CBCL) were on average within

the clinical range for the externalising and the total problem score but for recidivists only. All non-recidivist scores were non-clinical. This demonstrates the necessity of gaining information from the subject's environment, as has been described previously by Kratzer and Hodgins (1997). When considering subscores, it should be mentioned that not only delinquency scores, but also attention scores are significantly higher in the recidivist group. In our group, teacher information was available in 55 subjects only, seriously hampering interpretation. The reason for this was that many subjects did not attend school or changed school so often that reliable information was unavailable. The importance of teacher reports should be investigated in future. A frequent problem may be the unavailability of reliable school reports, as many delinquent youngsters are very irregular school attenders.

A number of previously described developmental and individual risk factors were also found in this sample. Early conduct problems, irritability and bullying, for example, were found to be more prevalent in recidivists. These problems suggest the presence of an early "difficult temperament" in persistent delinquents. It is possible that this persistent delinquent group corresponds with the life-course persistent offenders described by Moffitt (1993). An interesting finding is the higher rate of attention problems in these youngsters' history. Due to the high behaviour problem rate and the frequent overlap between attention problems and behaviour problems in our group, it is impossible to evaluate the independent impact of eventual attention problems. Furthermore, the retrospective nature of our study and the short duration of follow-up hamper adequate comparison.

We should mention though that the excess of early conduct problems reported by parents could be the result of profound actual behaviour problems, rather than the consequence of early developmental behaviour problems. We are aware of the possibility that recall bias influenced parental reporting.

The absence of a psychiatric diagnosis is predictive of abstaining from delinquency. It is no wonder that the same subjects are clearly characterised by an early 'normal' development. This group may resemble the adolescent limited offending group, described earlier by Moffitt (1993). A more extended follow-up should be done to test this hypothesis.

On the other hand, it is not surprising that most con-

duct disordered delinquent subjects continue offending. Developmental history suggests a higher rate of oppositional and defiant behaviour in the history of the recidivistic individuals. Hence, a history of early ODD might be of help in predicting future recidivism. The continuity of delinquency in substance abusing adolescents is as well expected. With the exception of two, all adolescents maintained their abusive behaviour. As delinquency and substance abuse/dependence tend to reinforce each other, we suppose that continuous abusive adolescents are unable to abstain from delinquency. A pattern of persistent offending is likely. The diagnosis of ADHD in our subjects brings about a tendency towards more delinquency. As a great number of hyperactive/inattentive children have been described to develop antisocial behaviour in adolescence and adulthood (Satterfield & Schell 1997), we expected an excess of continuing criminality in ADHD subjects. Due to the limited number of non-CD ADHD subjects, we were unable to evaluate the significance of this pure ADHD to future delinquency.

The finding of a trend towards more recidivism in PTSD subjects is interesting, but difficult to interpret. As our instruments were not very specific for the diagnosis of PTSD, we are unable to draw conclusions at this point. It is an interesting finding that the majority of non-CD PTSD subjects repeat their offence, but again we have to note that this group is very small (only four subjects).

Some limitations of the study need to be noted. Firstly, a normal control group has not been investigated. Consequently, the prevalence of the psychiatric disorders cannot be evaluated in relation to the true prevalence in the normal population. Secondly, it is unclear in what way our group of delinquents represents the whole group of delinquent youngsters. It is obvious that the delinquents we assessed were only a selection of the total group of delinquents in the population.

Conclusion

This study found that psychiatric assessment of delinquent adolescents could be of help in predicting future recidivism. The necessity of gathering information from parents and teachers is demonstrated. We were unable, due to small numbers of subjects showing a psychiatric disorder (e.g. ADHD and PTSD) unrelated to conduct disorder, to assess the relative contribution of these disorders to the recidivism rate. Future research should include a more extensive group of delinquent adolescents and should assess the effect of therapeutic interventions.

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