Anxiety disorders among offenders with antisocial personality disorders

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Anxiety Disorders Among Offenders With Antisocial Personality Disorders: A Distinct Subtype?

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Objectives: About 50% of men with antisocial personality disorder (APD) present a comorbid anxiety disorder. Historically, it was thought that anxiety limited criminal activity and the development of APD, but recent evidence suggests that heightened responsiveness to threat may lead to persistent violent behaviour. Our study aimed to determine the prevalence of APD comorbid with anxiety disorders among offenders and the association of these comorbid disorders with violent offending.

Method: A random sample of 495 male penitentiary inmates completed an interview using the Diagnostic Interview Schedule. After excluding men with psychotic disorders, 279 with APD were retained. All authorized access to their criminal records.

Results: Two-thirds of the prisoners with APD presented a lifetime anxiety disorder. Among them, one-half had the onset of their anxiety disorder before they were aged 16 years. Among the offenders with APD, those with, compared with those without, anxiety disorders presented significantly more symptoms of APD, were more likely to have begun their criminal careers before they were aged 15 years, to have diagnoses of alcohol and (or) drug abuse and (or) dependence, and to have experienced suicidal ideas and attempts. While there were no differences in the mean number of convictions for violent offences between APD prisoners with and without anxiety disorders, more of those with anxiety disorders had been convicted of serious crimes involving interpersonal violence.

Conclusions: Among men with APD, a substantial subgroup present life-long anxiety disorders. This pattern of comorbidity may reflect a distinct mechanism underlying violent behaviour and signalling the need for specific treatments.

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Clinical Implications

- Among male offenders with APD, two-thirds presented lifetime anxiety disorders.
- Among 50% of male offenders with APD and anxiety disorders, the anxiety disorders had onset before they were aged 16 years.
- APD plus anxiety disorders may constitute a subtype with distinctive treatment needs and etiology.

Limitations

- Interrater reliability estimates for diagnoses could not be read from old computer tapes.
- The syndrome of psychopathy was not assessed.
- The Diagnostic and Statistical Manual of Mental Disorders (DSM), Third Edition, Revised, not DSM-IV, criteria for diagnoses were used.

Key Words: *antisocial personality disorder, anxiety disorders, violent criminality*

Recent investigations of large community samples have observed that almost one-half of adults with APD present anxiety disorders. The National Comorbidity Survey studied a representative sample composed of 5877 adults from 48 of the US states.[1] More than one-half, 53.3%, of the surveyed adults with APD received a lifetime diagnosis of an anxiety disorder. Further, people with both APD and an anxiety disorder were at increased risk for major depression, substance use disorders, and suicidal ideation, compared with those with only APD. Similarly, in 2 large community samples, one from the United States and one from Canada,[2] 47% of adults with APD, or a history of CD, or who presented only the adult criteria for APD, presented at least one lifetime anxiety disorder. The associations between APD, CD, and adult-only APD and anxiety disorders remained significant after controlling for sociodemographic characteristics, depression, and alcohol and drug use disorders. More recently, in a large US community sample, the 12-month prevalence of any anxiety disorder among people with APD reached 47.5%.[3]

Unlike other personality disorders, the diagnosis of APD requires the presence of a disorder in childhood, specifically evidence of CD before age 15 years. Thus APD reflects a life-long pattern of antisocial behaviour. In a meta-analysis, the prevalence of anxiety disorders among children with CD has been estimated to be 3.1 (95% CI 2.2 to 4.6) times higher than among children without CD.[4] Although, anxiety disorders are relatively common among children with CD and adults with APD, the presence of anxiety disorders among children with CD may limit transition to APD in adulthood. In a prospective study of a birth cohort, among people with anxiety disorders at age 32 years, only those with PTSD had presented elevated rates of CD in childhood.[5] In a prospective follow-up study of incarcerated adolescents, the presence of GAD was found to lower the risk of transition to APD 3 years later.[6] Thus, while the investigations of community samples of adults indicate that one-half of people with APD present comorbid anxiety disorders, 2 prospective studies reported that CD comorbid with anxiety disorders do not persist into adulthood. If these latter results are true, among adults with APD, anxiety disorders would be expected to onset in adulthood.

Abbreviations used in this article

APD	antisocial personality disorder
CD	conduct disorder
DIS	Diagnostic Interview Schedule
DSM	Diagnostic and Statistical Manual of Mental Disorders
GAD	generalized anxiety disorder
MAOA	monoamine oxidase A
OCD	obsessive–compulsive disorder
PCL-R	Psychopathy Checklist—Revised
PTSD	posttraumatic stress disorder
SCID-II	Structured Clinical Interview for DSM-IV Personality Disorder

APD and Violence

Only one-half of adults with APD are convicted of crimes[7] (Jack Samuels, 1 June 2007, personal communication), even though large proportions of incarcerated offenders present with APD.[8] However, it is currently unknown if anxiety disorders comorbid with APD influence the risk of criminality among people with APD. APD has not been consistently associated with violent criminality.[9,10] However, results from the Epidemiological Catchment Area Study found that 85% of people with a diagnosis of APD engaged in violence toward others.[7] By contrast, a recent study[11] that examined a British community sample of 8397 adults reported very different results. In this study, diagnoses were derived from the self-report screening questionnaire for personality disorders included in the SCID-II.[12] One-half of those with APD reported not having engaged in violence toward others during the past 5 years, while 29% reported violence toward others when intoxicated, 26% reported injuring a victim, and 23% reported 5 or more violent incidents.[11] The discrepancy in the results of these 2 studies may be due to differences in diagnostic criteria (DSM-III, compared with DSM-IV), diagnostic procedure (lay interviewer using the DIS, compared with self-report on the SCID-II screening questionnaire), and (or) differences across countries (United States and United Kingdom) and time periods (1980 and 2000). Thus the link between APD and violence toward others remains unclear. One hypothesis is that among people with APD, those with comorbid anxiety disorders are less likely than those without these disorders to engage in violence toward others.[13,14] This hypothesis is consistent with the finding that low levels of anxiety are associated with persistent criminality.[15]

However, recent evidence points toward a more complicated picture. Secondary analyses of data from the National Household Survey of Great Britain are in line with other studies in showing that anxiety disorders were significantly more common among respondents with APD (32.2%) than the rest of the population (16.0%). Among the respondents with APD, comparisons of the symptoms of both APD and CD suggested more aggressive behaviour among those with comorbid anxiety. For example, the largest difference between those with and without comorbid anxiety was for the APD symptom irritability–aggressiveness that was endorsed by 77.3% of respondents with APD and an anxiety disorder and 49.4% of those with only APD, and proportionately more of those with, than without, comorbid anxiety disorders reported using a weapon (42.1%, compared with 29.4%) and physical cruelty toward people (32.0%, compared with 16.8%) before age 15 years.[16] Thus it may be that anxiety disorders alone are protective against aggressive behaviour, while anxiety disorders comorbid with APD or CD promote aggressive behaviour.[17] However, it is currently unclear if

anxiety disorders comorbid with APD are associated with violent criminality.

The Importance of Anxiety Disorders Comorbid With APD

Among offenders with APD, the presence of anxiety disorders may increase behaviour problems and limit participation in offender rehabilitation programs and work training. People with APD and anxiety disorders have high rates of help-seeking behaviour.[18] An untreated anxiety disorder may also increase the risk of substance misuse, which, in turn, increases the risk of repeat offending.[19,20] In most countries, mental health care in prisons is limited. While cognitive-behavioural treatments for anxiety disorders have been shown to be effective,[21] mental health professionals trained to administer such treatments are not likely available to incarcerated offenders. While medicines also reduce anxiety and their use requires less mental health staff time, inside prisons medicines can be used as contraband. Finally, the presence of an anxiety disorder comorbid with APD, especially if it has been present since childhood or adolescence, may indicate a distinct subtype of APD.[22]

Our Study

A random sample of 495 incarcerated male offenders completed diagnostic interviews. Our study aimed to examine: the prevalence and age of onset of anxiety disorders among incarcerated offenders with APD and the associations of comorbid anxiety disorders with convictions for violent crimes.

Method

Participants

From the 2972 male inmates in the penitentiaries in Quebec in 1988, a random sample of 650 was selected. Among them, 38 (5.9%) refused to participate, 15 (2.3%) could not be contacted, 2 interviews could not be used, and 495 inmates completed the diagnostic interview (for further details, see Hodgins and Côté[23]). Men who refused to participate were, on average, older and had been incarcerated longer than those who accepted; however, the 2 groups were similar as to marital status, language, length of sentences, number of sentences to penitentiaries, security level of the penitentiary, and violence of the most serious offence. Thirty-nine inmates who met diagnostic criteria for schizophrenia, schizoaffective disorder, mania, bipolar disorder, other nonspecified psychotic disorders, and organic brain disorder were excluded. The final sample included the 279 (56.7%) inmates who met DSM-III-R criteria for APD.

Instrument

A French-language version of the DIS,[24] version III-A, was used to assess mental disorders. The DIS was translated into French by a team of investigators trained by LN Robins. In establishing diagnoses the DIS is designed to exclude symptoms attributable to physical illness or to alcohol or drug use.

Procedure

Interviewers completed an intensive training program to use the DIS, received regular supervision, and, in addition, each protocol was checked by a senior researcher. After approval of the study by Correctional Services of Canada and the ethics committee, the researchers met with the inmate committee to explain the study and to stress that inmates who would be approached had been selected randomly, that all information gathered would be kept strictly confidential, except if it was judged that an inmate presented an imminent danger to himself or others when the person would be referred for psychiatric care. All randomly selected inmates were sent letters explaining the study and asking for their participation. At the interview, the study was again discussed and inmates signed consent forms agreeing to the interview and access to their penitentiary files.

Statistical Analyses

All analyses were conducted with SPSS software, version 15 (SPSS Inc, Chicago, IL). Categorical variables were compared using chi-square analyses and continuous variables using Student *t* tests.

Results

Anxiety Disorders Among Incarcerated Offenders With APD

Table 1 presents the prevalence of anxiety disorders that were present: at any time over the life course; only in the past not including the 6 months before the interview; and only during the 6 months before the interview. DIS recommendations were followed in calculating prevalence rates. The lifetime prevalence of anxiety disorders does not exactly equal the sum of past and last 6 months. For each anxiety disorder, the DIS includes questions asking if it ever occurred. These answers were used to calculate lifetime prevalence. Other questions ask about symptoms for each disorder and when they occurred. These questions were used to calculate only past and past 6 months prevalence. A very small number of participants reported symptoms sufficient for a disorder but were not able to report when exactly these symptoms occurred. Among offenders with APD, 63.8% met lifetime criteria for an anxiety disorder, not including PTSD, and this rose to 68.5% when PTSD was included. Among offenders with a lifetime disorder, two-thirds had not experienced an episode in the past 6 months, suggesting that the anxiety disorders were not simply a reaction to incarceration.

For each disorder, the DIS requests information about periods when the symptoms were present in an effort to establish the age at which there were sufficient symptoms to meet criteria for the disorder for the first time. Based on these questions, 186 participants provided enough information to

Table 1 Prevalence of lifetime anxiety disorders among incarcerated offenders with APD

	Anxiety disorders *n* = 279		
Variable	Lifetime,[a] %	Only past,[b] %	Only last 6 months,[c] %
Total	68.5	45.9	20.4
OCD	6.8	2.9	3.9
Phobia	31.9	18.3	11.1
Simple phobia	21.5		
Social phobia	10.0		
Agoraphobia	9.3		
Panic disorder	1.1	0.7	0.4
GAD	48.4	29.7	18.6
PTSD	15.0	7.2	7.5

[a] Diagnostic criteria for an anxiety disorder met at any time; lifetime prevalence does not exactly equal the sum of only past and past 6 months.

[b] Diagnostic criteria for an anxiety disorder met any time before the last 6 months.

[c] No anxiety disorder before the 6 months preceding the interview, when diagnostic criteria for an anxiety disorder were met.

calculate the age of onset of anxiety disorders. The median age of onset of any anxiety disorder was 16 years (mean 15.3, SD 9.1). We examined the proportions of people in whom the disorder onset was before age 15 years, and between the ages of 16 and 18 years: GAD, 32.3% and 21.8%; OCD, 36.8% and 15.8%; phobias, 67.1% and 12.2%; panic disorder, 33.3% and 66.7%; and PTSD, 17.1% and 34.1%.

The subsequent analyses included 191 offenders with APD and a lifetime anxiety disorder including PTSD (APD + Anxiety) and 88 offenders with APD who had never experienced an anxiety disorder (APD – Anxiety).

Associations of Antisocial and Anxiety Symptoms

As presented in Table 2, the 2 groups of inmates were similar in age at the time of the interviews. The APD + Anxiety prisoners, compared with the APD – Anxiety offenders, reported similar numbers of CD symptoms but significantly more symptoms of APD. Comparisons of the proportions of each group who endorsed each CD symptom were similar, except for delinquency that was reported by 60.2% of the APD + Anxiety inmates and 46.6% of the APD – Anxiety inmates ($n = 279$; $\chi^2 = 4.533$, $df = 1$, $P = 0.03$). Comparisons of the proportions in each group who endorsed each APD symptom indicated no differences except for the criterion of persistent disregard for truth that was endorsed by 31.9% of the APD + Anxiety inmates and 17.0% of the APD – Anxiety inmates ($n = 279$; $\chi^2 = 6.741$, $df = 1$, $P = 0.009$). Using the Spearman rank correlation, the number of APD symptoms was significantly correlated with the total number of symptoms of anxiety disorders ($\rho = 0.220$, $P < 0.001$) and with the number of symptoms of phobias ($\rho = 0.166$, $P = 0.005$), OCD ($\rho = 0.196$, $P = 0.001$), GAD ($\rho = 0.130$, $P = 0.03$), PTSD ($\rho = 0.142$, $P = 0.02$), but not with the number of symptoms of panic disorder.

Comorbid Disorders

As presented in Table 2, the prevalence of suicidal ideas, suicide attempts, and diagnoses of alcohol and drug abuse and (or) dependence was higher among the APD + Anxiety than in the APD – Anxiety offenders, while the prevalence of major depression was similar. There was a trend for a higher level of dysthymia among the APD + Anxiety offenders.

Criminal Convictions

No differences were detected in the numbers of convictions for violent offences of the offenders with APD + Anxiety and APD – Anxiety offenders. The category of violent offences included offences such as homicide, and attempted homicide, physical, and sexual assaults, that were direct physical attacks on another person, as well as offences such as armed robbery, hostage taking, and threatening others with a weapon. However, we reasoned that offenders with APD + Anxiety would be more likely than the APD – Anxiety offenders to engage in direct physical attacks on others. The APD + Anxiety offenders had been convicted of significantly more homicides, attempted homicides, and physical and sexual assaults than the APD – Anxiety offenders. This tendency for the APD + Anxiety offenders to have been involved in more crimes involving interpersonal violence is evident in the larger proportion of them who had been convicted of a homicide or attempted homicide and the lower mean number of nonviolent offences, but neither of these differences were statistically significant. There was no difference in age at first conviction between the 2 groups.

Table 2 Comparisons of offenders with APD with and without comorbid anxiety disorders

	APD Anxiety disorders, lifetime *n* = 279		
Variable	Present *n* = 191 Mean (SD)	Absent *n* = 88 Mean (SD)	*t, df, P*
Age at interview, years	29.4 (6.95)	28.9 (7.19)	0.537, 277, 0.59
Symptoms			
Number of CD symptoms	6.3 (2.27)	5.8 (2.25)	1.857, 277, 0.06
Number of APD symptoms	5.2 (1.22)	4.7 (1.31)	2.92, 277, 0.004
Comorbid disorders	%	%	*n*, χ^2, *df, P*
Major depression	15.7	19.3	279, 0.561, 1, 0.45
Dysthymia	12.8	4.9	262, 3.80, 1, 0.05
Suicidal ideations	75.9	61.4	279, 6.238, 1, 0.01
Suicide attempts	43.7	30.7	278, 4.252, 1, 0.04
Alcohol abuse and (or) dependence	78.5	67.0	279, 4.231, 1, 0.04
Drug abuse and (or) dependence	76.4	57.5	278, 10.342, 1, 0.001
Criminal histories	Mean (SD)	Mean (SD)	*t, df, P*
Age at first conviction (any offence), years	23.53 (5.70)	24.49 (6.42)	1.2, 253, 0.23
Number of convictions for nonviolent offences	9.84 (17.57)	13.80 (24.06)	1.546, 277, 0.12
Number of convictions for violent offences	3.95 (6.79)	4.10 (7.81)	0.163, 277, 0.87
Number of convictions for homicide, attempted homicide, physical and sexual aggression	0.77 (1.24)	0.49 (0.802)	2.264, 247.427, 0.02
	%	%	*n*, χ^2, *df, P*
≥1 conviction for homicide	19.4	11.4	279, 2.76, 1, 0.10

Discussion

Among convicted offenders with APD, two-thirds presented a lifetime anxiety disorder. The prevalence of anxiety disorders observed among the offenders with APD was higher than that reported among men with APD in 3 general population samples.[1,2] The elevated prevalence of anxiety disorders was not due to current life circumstances that could be argued were stressful, as most of the offenders with APD + Anxiety had not experienced an episode in the past 6 months. The elevated rate of anxiety disorders among the offenders was also not due to an elevated rate of PTSD, which was lower among the offenders than in general population samples of men with APD. Among offenders with APD + Anxiety, the prevalence of each type of anxiety disorder, except PTSD and panic disorder, was higher than that reported among men in the general population with APD and anxiety disorders. [1–3,25] By contrast, the prevalence of PTSD was lower among the offenders with APD in our study than has been reported among people with APD in the national comorbidity studies in the United States, where it was 19%[3] and 21%.[1] The finding that the prevalence of anxiety disorders was higher among offenders with APD than among men in the general population with APD is consistent with the hypothesis that APD + Anxiety increases the risk of criminality. Future research is needed to test this hypothesis.

There was no evidence that the anxiety disorders were the result of incarceration. In fact, among one-half of the inmates with APD + Anxiety, the anxiety disorders had onset before the inmates were aged 16 years and among one-quarter of the APD + Anxiety prisoners aged 12 years. Thus, contrary to results of 2 prospective investigations,[5,6] this finding suggests that a subgroup of males present CD comorbid with

anxiety disorders before age 15 years and that this pattern of comorbidity persists through adulthood. This pattern of comorbidity has been found to significantly increase the risk of violent offending from age 16 to 21 years[26] and to precede the onset of substance misuse problems in adolescence,[27,28] which, in turn, have been found to increase the likelihood of persistent criminality in early adulthood.[19,20] The finding that among one-half of the APD + Anxiety disorder offenders the anxiety disorder had onset before age 16 years needs to be replicated in a prospective, longitudinal investigation.

The offenders with APD + Anxiety displayed more symptoms of APD than those with APD – Anxiety disorders, but no specific patterns of symptoms distinguished the 2 groups. However, more of the offenders with APD + Anxiety than those with only APD reported delinquency before age 15 years. The number of APD symptoms and the number of CD symptoms were positively correlated with the number of anxiety symptoms. In addition, the prevalence of diagnoses of alcohol abuse and (or) dependence and of drug abuse and (or) dependence was higher among the offenders with APD + Anxiety than among those with APD only. Taken together, these findings indicate that, among offenders with APD, the presence of a comorbid anxiety disorder was associated with an earlier onset and a more severe pattern of antisocial and criminal behaviours.

The offenders with APD + Anxiety had been convicted, on average, for similar numbers of crimes and violent crimes as the offenders with APD – Anxiety. Thus there was no evidence that the presence of anxiety disorders limited criminal activity in general or specifically violence toward others. This finding is important for 2 reasons. One, the prevalence of convictions among the APD + Anxiety offenders was similar to that observed among the APD – Anxiety offenders who likely included large numbers of inmates presenting the syndrome of psychopathy as diagnosed with the PCL-R.[29–31] Among offenders, those with psychopathy present the highest rates of violent offending.[32] Thus the finding that the offenders with APD + Anxiety had accumulated as many convictions for violent crimes as had the APD – Anxiety offenders, which would have included those with psychopathy, underlines the importance of the link between APD + Anxiety and violence toward others. The second reason why the finding that the ADP + Anxiety offenders had accumulated as many convictions for violent offences as the APD – Anxiety offenders is important in that it is consistent with recent genetic evidence about the etiology of violent behaviour among a subgroup of men with APD. Among males who experienced maltreatment in childhood, the presence of the low-activity allele of the MAOA gene significantly increased the risk of conduct problems in childhood and adolescence and persistent violent offending in adulthood.[33] Further, among healthy adult men, this MAOA allele is associated with enhanced reactivity to threat observed in the left amygdala, cingulate cortex, left insular cortex, and lateral orbitofrontal cortex, an increased tendency to experience anger, frustration and bitterness, and reduced sensitivity to cues that elicit and maintain prosocial behaviour. The low-activity variant of MAOA has also been found to be associated with compromised connectivity between the amygdalae and the orbitofrontal cortex and with a significant reduction in volume of the orbitofrontal cortex. These functional and structural differences in the brain have been interpreted to suggest that the low-activity variant of the MAOA gene in men results in a reduced capacity of the orbitofrontal cortex to regulate exaggerated responsiveness to aversive stimuli in limbic structures.[34,35] Thus the APD + Anxiety offenders may be carriers of the low-activity allele of the MAOA gene and have experienced maltreatment in childhood that would lead to structural and functional changes in the brain reflected in an overactive threat system and increased risk of reactive violence. An overactive threat circuit characterizes patients with anxiety disorders.[36] This hypothesis will be tested in future studies. If confirmed, it would demonstrate that the mechanisms underlying violent behaviours differ among subgroups of offenders with APD. For example, men with APD and psychopathy and children with CD and callous–unemotional traits, both of whom are characterized by reduced levels of trait anxiety,[37] fail to recognize fear in the faces of others.[37,38] This has been hypothesized to reduce constraints on aggressive behaviour.[38] Recent studies[39,40] have shown that this deficit in recognizing fear in the faces of others is specifically associated with a lack of activation to fearful faces in the amygdala, a brain structure that, in healthy children and adults, responds strongly to fearful faces. If the presence of distinct mechanisms underlying violent behaviours among subgroups of males with APD was confirmed, it would strongly suggest the need for specific interventions to reduce violence. A recent study of a large US sample followed from childhood to early adulthood reported that the presence of CD and anxiety in childhood increased the risk of violent criminal offending from age 16 to 21 years, to a much greater degree than CD and substance misuse.[26] Taken together, these findings support the hypothesis that APD + Anxiety is a distinct subtype of APD.

Strengths and Limitations

Our study is characterized by many strengths that increase confidence in the results. The sample of offenders was representative of penitentiary inmates in Quebec and was relatively large. Diagnoses were made during interviews using a structured and validated instrument. Official criminal records were available. Our study also had several weaknesses. The age of onset of anxiety disorders was established by self-report. Recall bias may have influenced participants' answers about the age of onset and severity of anxiety symptoms that occurred in childhood and (or) adolescence. In the original data collection, 69 people were interviewed twice by different interviewers. These data were computerized in a file that is no longer readable and consequently we were not able to calculate interrater reliabilities for the diagnoses. Another weakness is the absence of PCL-R ratings, which limited us from distinguishing prisoners presenting the syndrome of

psychopathy from those with APD. As we have argued elsewhere,[41,42] this limits the understanding of APD.

Conclusion

Findings from our study indicate that two-thirds of offenders with APD met criteria for at least one lifetime anxiety disorder. The prevalence of comorbid anxiety disorders observed among the offenders was even higher than reported among men with APD in general population samples, and it was not accounted for by current disorders or by the prevalence of PTSD. The offenders with APD + Anxiety reported more symptoms of CD and higher rates of delinquency before age 15 years, more symptoms of APD, and higher levels of abuse and dependence on alcohol and illicit drugs than offenders with APD and no anxiety disorders. Among the offenders with APD, the presence of an anxiety disorder did not influence the number of convictions for violent offences, but was associated with serious crimes of interpersonal violence. Among male offenders with APD, there are subgroups with and without anxiety disorders in whom the neurobiological mechanisms underlying violent behaviour may differ.

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Résumé : Les troubles anxieux chez les délinquants ayant des troubles de la personnalité antisociale : un sous-type distinct?

Objectifs : Environ 50 % des hommes ayant un trouble de la personnalité antisociale (TPA) présentent un trouble anxieux comorbide. Historiquement, l'on croyait que l'anxiété limitait l'activité criminelle et le développement du TPA, mais de récentes données probantes suggèrent qu'une sensibilité accrue à la menace puisse entraîner un comportement violent persistant. Notre étude visait à déterminer la prévalence du TPA comorbide de troubles anxieux chez les délinquants et l'association de ces troubles comorbides avec les infractions avec violence.

Méthode : Un échantillon aléatoire de 495 détenus de pénitencier masculins a eu une entrevue à l'aide de la « Diagnostic Interview Schedule ». Après avoir exclu les hommes souffrant de troubles psychotiques, 279 hommes souffrant du TPA ont été retenus. Tous ont autorisé l'accès à leur casier judiciaire.

Résultats : Deux tiers des prisonniers ayant un TPA présentaient un trouble anxieux au cours de leur vie. Chez la moitié d'entre eux, le trouble anxieux s'était d'abord manifesté avant l'âge de 16 ans. Chez les délinquants ayant un TPA, ceux qui souffraient d'un trouble anxieux, comparés à ceux qui n'en souffraient pas, présentaient significativement plus de symptômes de TPA, étaient plus susceptibles d'avoir commencé leur carrière criminelle avant l'âge de 15 ans, d'avoir des diagnostics d'abus d'alcool et (ou) de drogues et (ou) de dépendance, et d'avoir eu des idées et des tentatives de suicide. Même s'il n'y avait pas de différences dans le nombre moyen de condamnations pour des infractions avec violence entre les prisonniers ayant un TPA avec et sans trouble anxieux, ceux souffrant de troubles anxieux étaient plus nombreux à avoir été condamnés pour des crimes sérieux avec violence interpersonnelle.

Conclusions : Chez les hommes ayant un TPA, un sous-groupe substantiel présente des troubles anxieux au cours de leur vie. Ce modèle de comorbidité peut refléter un mécanisme distinct recouvrant un comportement violent et signalant le besoin de traitements spécifiques.