

# The Diagnosis of Intermittent Explosive Disorder in Violent Men

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In a study of violent men, 443 symptomatic adult male volunteers were evaluated for presence of intermittent explosive disorder (IED). Investigators first established presence of severe and frequent violent outbursts not readily explainable by another disorder. Seventy-nine violent men were so selected. Of these, 26 had excessive impulsivity, an exclusionary criterion for IED. Twenty-one were excluded because of other, exclusionary mental disorders. Violent behavior of five subjects was deemed proportionate to the provocation. Insufficient data were obtained for an accurate diagnoses of IED in 12 subjects. Fifteen subjects satisfied all criteria for IED, i.e., 18.9 percent of sufficiently violent men without other major psychopathology or 1.49 percent of all 443 men who complained of violence. Epidemiologic and validity aspects of IED are discussed.

According to the current Diagnostic and Statistical Manual of Mental Disorders, intermittent explosive disorder (IED) is "very rare".<sup>1</sup> The prevalence of organic personality syndrome, explosive type, apparently has not been determined. Whereas some authors discuss IED and related phenomena as though they are not uncommon;<sup>2, 3</sup> other investigators who have reported on diagnostic distributions in mental hospitals,<sup>4-9</sup> prisons,<sup>10-18</sup> and patients who visit hospital emergency rooms, do not mention IED, raising the question of whether the dis-

order is indeed rare or rarely included in diagnostic decision making. By contrast, John Lion listed IED as one of the four disorders which are commonly represented among violent outpatients.<sup>19</sup>

From a large number of men living in the community who sought help in controlling untoward aggression, the present study attempted to identify those who met criteria for IED. Though not an epidemiological survey, the results pertain to the question of prevalence and may shed some light on the validity of the diagnosis.

## Methodology

The target population was selected for violent episodes characterized by loss of control followed by regret, guilt, shame, or comparable dysphoria. Violent men,

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443 total, responded to vigorous recruitment efforts in the community and were evaluated from May 1, 1986, through February 28, 1989. The diagnostic criteria for IED were those of DSM-III, which was the current diagnostic manual when the study was originally designed.

This FDA supported study served several purposes including the comparison of the effects of lithium carbonate, phenytoin, and placebo in controlling intermittent violence. All subjects were informed of the possibility of being placed on one of these substances. The affiliation of the study with the medical school was apparent to all. Subjects were informed of the thorough diagnostic process that would be required, and that those selected would have weekly clinic visits and their violent acts would be monitored over a 12-week period. A typical, expressed motivation for entering the study was to gain better control over violent impulses. This aspect of the study undoubtedly contributed to the selection process.

The nature of the study further required that all study subjects be male. Because females were excluded, females who may have IED are not represented in this study.

There are four criteria for the diagnosis of IED:

A. Several discrete episodes of loss of control of aggressive impulses resulting in serious assaultive acts or destruction of property.

B. The degree of aggressiveness is grossly out of proportion to any precipitating psychosocial stressors.

C. There are no signs of generalized impulsiveness or aggressiveness between the episodes.

D. The episodes of loss of control are not due to schizophrenia, antisocial personality disorder, or conduct disorder.<sup>1</sup>

The diagnosis of IED was made in four stages, corresponding to the four criteria. Criterion A, the presence of uncontrolled aggressive impulses, was determined at screening using the interview schedule for History of Violent Behaviors, which elicits information about the frequency of violent acts toward property, people, and animals, and rates the intensity of provocation and the severity of the reactive violent behavior during the three months before application. Descriptions of the worst episode of the past two years and in a lifetime were also obtained. The episodes were rated on the Mungas scale from one to five with one being the mildest and five the most severe. Further information was obtained about the source of provocation, spontaneity, sense of control over the behavior, memory of episodes, dysphoria over the violence, and the relationship between violence and the use of alcohol or other drugs. Seventy-nine men satisfied Criterion A and received the complete screening.

Determination of disproportion of provocation, Criterion B, was made by calculating the mean score of ratings obtained from Schedule A for Severity (the intensity of the violence) and Provocation (the intensity of the stimuli) of typical episodes of violence for each subject during the three months immediately before this assessment. The severity

and provocation scores were obtained by multiplying the frequency of each type of violence (property, person, animal) by the severity rating and provocation rating, summing each, and obtaining a mean score for each by dividing the sum by the total number of episodes. The mean provocation score was subtracted from the mean severity score to obtain the difference between stimuli and the event. Any discrepancy score of 0.5 or greater was deemed to be "grossly out of proportion to any precipitating psychosocial stressors."

IED Criterion C, absence of generalized impulsivity and aggressiveness, was determined by the use of the Barratt Impulsivity Scale (BIS-10), which measures planning, motor, and cognitive impulsivity. The BIS-10 is a 34-question self-administered paper and pencil psychometric. The subject chooses one response per question on a 4-point scale: rarely/never, occasionally, often, or almost always/always. A subscore total is obtained for each category, and then the subscore totals are summed. The total scores were compared with the mean (49.1) and standard deviation (4.8) from scores derived from a prior study of a group of 300 college students, physical plant workers, and police.<sup>20</sup> Those subjects who scored at or above two standard deviations above the mean were considered to have generalized impulsivity, and were thus excluded based upon this criterion.

Criterion D requires a systematic attempt to rule out schizophrenia, antisocial personality disorder, and conduct disorder. Beyond these exclusionary di-

orders in DSM III, to ensure accurate diagnosis of IED, the investigators decided to rule out affective disorders, other psychotic disorders, substance abuse, mental retardation, and dementia. The Structured Clinical Interview for the DSM-III-R (SCID-P) was used to rule out all but mental deficiency. Intellectual functioning level was estimated by administration of the Peabody Picture Vocabulary Test (PPVT), and all with an IQ below 70 were excluded. Additionally, an electroencephalogram and a complete medical and neurological examination were conducted to further rule out epilepsy and CNS organicity.

### **Results**

Of the 443 violent men having been screened, 79 were culled from the narrowing index group by exclusionary diagnoses (see Table 1). For subjects excluded with alternative diagnoses, substance abuse and affective disorders,

**Table 1**  
**Of 443 men who contacted the investigators with complaints of untoward violence, 79 were excluded from IED diagnosis, having shown signs of alternative mental disorders. Substance Abuse and Affective Disorder were the most common exclusionary psychiatric conditions**

Reason for Exclusion	No. Excluded	% Excluded
Substance abuse disorder	29	36.7
Affective disorder	20	25.3
Psychotic disorder	14	17.8
Low intelligence quotient	6	7.6
ADP or excessive violence/criminality	5	6.3
CNS organicity	5	6.3
Total	79	100.0

several with manic episodes associated with violent behaviors, were commonly identified. Other exclusionary diagnostic groupings were psychosis, 14 (17.8%); organicity, 5 (6.3%); low intelligence, 6 (7.6%); and antisocial personality disorder, 5 (6.3%).

Of the 443 subjects screened, 79 showed violence that was both severe and recurrent and was not explainable by other significant psychopathology. Of these 79 who were sufficiently violent to be included in the study 70 (88.6%) were white; 2 (2.5%) were black; 6 (7.6%) were hispanic, and 1 (1.3%) was of another ethnic-racial grouping. Given the composition of the community, black men were underrepresented in the recruitment results. The mean age was 28.5 years. Forty (50.6%) were engaged in full-time employment; 13 (16.4%) were employed part-time; and 26 (33.0%) were unemployed. Most had graduated from high school or achieved some measure of higher education. Specifically, 5 had completed junior high school, 27 (34.2%) had some albeit incomplete high school education; 18 (22.8%) had graduated from high school; 18 (22.8%) had some, incomplete college education; and 11 (13.9%) had graduated from a college or university.

The violent behavior of 5 individuals was deemed proportionate to the provocation, excluding IED. Excessive impulsivity in 26 subjects was sufficiently pronounced to rule out IED. The mean BIS score of these 26 excluded individuals was 75.9. Twelve subjects who did not complete the BIS-10 were excluded

due to insufficient data for complete evaluation of IED.

Though 79 potential subjects had already been eliminated from the study based on an exclusionary mental disorder, of the 79 who were subjected to close and uniformly methodical scrutiny another 21 were eliminated based on presence of a mental disorder (IED Criterion D). Thirteen had an antisocial personality disorder; three, conduct disorder; and five, schizophrenia.

Of the 79 subjects with severe and recurrent violence and without other significant psychopathology, 15 (18.9%) fully satisfied criteria for IED. The mean age of these 15 subjects with IED was 31.1 years. By design all were males. Most (13, 88%) were white, while only one (6%) black and one (6%) hispanic were included. A near equal number were married (7, 46%) and single (5, 33%) with three divorced (20%) subjects. Most (8, 53%) were engaged in full-time employment, four (26%) were employed part time, and only three (21%) were unemployed. Most subjects (10, 67%) had graduated from high school or pursued some higher education. The estimated level of intellectual functioning, as indicated by scores on the Peabody Picture Vocabulary Test ranged from 75 to 125 with a mean of 102.5. Electroencephalograms of 13 subjects were read as normal; two showed excessive slowing.

The systematically collected data permitted some general observation about the "typical violent episode" in these 15 with IED. The most commonly identified provocateur was a spouse, lover, or

boy/girl friend.<sup>8</sup> Only one was provoked by a stranger. For most,<sup>10</sup> rage reactions occurred immediately and without a noticeable prodromal period. Only one stated that the outburst occurred between one and 24 hours after the perceived provocation. (If diagnostic criteria were to specify discrete outbursts that occur suddenly without delay after the provocation, this subject would not have been included.) All 15 denied that they intended the outburst to occur in advance. Most subjects remained well oriented during the outbursts, though two claimed to lose track of who they were. None lost control of urine or bowel function during the episode. Subjects reported various degrees of behavioral dyscontrol, with seven feeling themselves to be "about half in and half out of control of my behavior." Only four felt they had completely lost control. Six had good recollection of the event afterward, eight partial recollection, and one lost memory of the episodes afterwards. Most attempted to help or comfort the victim afterward.

### Discussion

IED was not a recognized mental disorder in the first Diagnostic and Statistical Manual published in 1952.<sup>21</sup> Disorders that were at all similar were personality trait disturbances including the emotionally unstable personality (EUP) and passive aggressive personality (PAP), aggressive type. EUP was marked by "strong and poorly controlled hostility, guilt, and anxiety."<sup>22</sup> An essential feature of PAP, aggressive type, is "A

persistent reaction to frustration with irritability, temper tantrums, and destructive behaviors."<sup>23</sup>

The second edition of the Diagnostic and Statistical Manual in 1968 discarded the earlier diagnoses of EUP and PAP, aggressive type.<sup>24</sup> However, another personality disorder was introduced that more closely approached the IED phenomenon. DSM II defined explosive personality, also termed epileptoid personality disorder, as a personality disorder characterized by "[G]ross outbursts of rage or of verbal or physical aggressiveness. These outbursts are strikingly different from the patient's usual behavior, and he may be regretful and repentant for them." These patients are generally considered excitable, aggressive, and overresponsive to environmental pressures. It is the intensity of the outbursts and the individual's inability to control them which distinguishes this group.<sup>25</sup>

Already in 1963, Dr. Karl Menninger and coworkers had described the explosive loss of control of aggressive impulses from a psychodynamic framework.<sup>26</sup> He termed the phenomenon as "ego rupture," a disturbance that presents as one of two syndromes. The first syndrome consists of chronic, repetitive aggression. In the other syndrome, aggressive acts may not be as frequent, but the violent behavior is sudden and explosive. These aggressive outbursts are typically quite severe. Menninger's duality compares with the undercontrolled and overcontrolled personality types described by McGargee<sup>27</sup> a few years later.

With regard to the present study, im-

pulsivity two standard deviations below the mean on the BIS-10 indicates a degree of overcontrol. Rather than describing the IED group here as nonimpulsive, it may be more accurate, if not paradoxical, to regard them as "overcontrolled."

Russell Monroe formulated a rather elaborate nosology and classification of episodic disorders.<sup>2</sup> Integrating both psychodynamic and neurophysiologic concepts, he viewed these phenomena from several dimensions: ego syntonic versus ego alien, behavioral inhibition versus behavioral disinhibition, dyscontrol versus reaction, and so on. Monroe offered recent evidence that was consistent with the hypothesis that a significant number of patients with episodic disorder involving dyscontrol or psychotic symptoms have a complex partial (focal) seizure in the limbic system.<sup>28</sup> If this is an etiologic mechanism, anticonvulsant medications may help to control the symptoms of dyscontrol.

Mark and Ervin included four elements in the "dyscontrol syndrome": (1) physical assault, (2) pathological intoxication, (3) impulsive sexual behavior, and (4) numerous traffic violations and serious automobile accidents. Though violent subjects in their studies usually had a history of these behaviors, Mark and Ervin did not require all four characteristics to identify this syndrome.<sup>4</sup>

IED was first used in the DSM III of 1980. DSM III criteria for diagnosis of IED, used in the present study, were presented above under Methodology.

The essential features are several discrete episodes of loss of control of aggressive impulses that result in serious assault or destruction of

property. For example, with little or no provocation the individual may suddenly start to hit strangers and throw furniture. The degree of aggressivity expressed during an episode is grossly out of proportion to any precipitating psychosocial stressor. The individual may describe the episodes as "spells" or "attacks." The symptoms appear within minutes or hours and regardless of duration, remit almost as quickly. Genuine regret or self-reproach at the consequences of the aggressive impulse may follow each episode. There are no signs of generalized impulsivity or aggressiveness between the episodes.<sup>29</sup>

Although DSM III does not assert an etiology to explain IED generally, only organic, not psychosocial factors, are mentioned. According to DSM III, "An underlying physical disorder, such as a brain tumor or epilepsy, may in rare cases cause this syndrome."<sup>30</sup> Toxic agents such as alcohol can lower the threshold for violent outbursts. Any process that causes brain dysfunction can predispose to the disorder. Such insults include perinatal trauma, infantile seizures, head trauma, and encephalitis.

Also within DSM III are criteria for organic personality disorder including "emotional lability," which may be manifested by "explosive temper outbursts." Diagnostically, the patient with rage reactions and some organic findings presents a differential of IED and OPD. Nosologically, the question arises whether these should be regarded as separate disorders.

Not hinging on known organic brain dysfunction, borderline personality disorder (BPD) is also characterized by rage reactions. A symptom of BPD is "inappropriate, intense anger or lack of control of anger."<sup>31</sup> Though more fully developed in DSM III, its early predeces-

sor, EUP of DSM I, was similarly described. The chief difference between IED and BPD appears to be the more diffuse and continuous impulsivity of BPD. In contrast, aggressive outbursts in IED are discrete, isolated episodes in the context of otherwise unremarkable behavior.

Except for the addition of several exclusionary diagnoses, criteria for IED in DSM III-R are essentially the same as those in DSM III. The new exclusionary conditions are psychotic disorders, organic personality syndrome, borderline personality disorder, and intoxication with a psychoactive substance. Aforementioned etiological factors associated with IED in DSM III are not mentioned in DSM III-R. Although relying on the earlier DSM III criteria, methodology of the present study also excluded psychotic disorders, organic syndromes, and substance abuse disorders. If BPD is marked by inordinate impulsivity, the exclusion of highly impulsive individuals would have also served to differentiate IED from this DSM III-R exclusionary diagnosis as well.

Though retained in DSM III-R, the validity of IED is explicitly questioned in the manual. Specifically, it is postulated that the intermittent explosive behavior is actually symptomatic of the exclusionary diagnoses and therefore should not be recognized as a separate disorder. Isolated explosive disorder was dropped from the manual. Insufficiently provoked rage reactions are symptomatic of OPD, but, in addition, if the outbursts are the predominate feature, "explosive type" should be specified.

Undoubtedly, the appropriate subcommittee for DSM IV is already giving much thoughtful discussion to the nature and validity of IED.

In both DSM III and DSM III-R, the prevalence of the disorder is said to be "very rare." Though not an epidemiological study, results of the present investigation suggest that IED, as defined in DSM III, if not DSM III-R, is not rare. At least 18.9 percent of the violent men who were thoroughly evaluated satisfied the diagnostic criteria.

In the present study the violent outbursts were not found to be the result of OBD. Thorough neurological and medical assessment including history, psychological and intelligence testing, neurological and physical examinations, and blood chemistries did not support presence of significant organicity. Only 2 of the 15 had somewhat abnormal EEGs. It is conceivable that neuropsychological testing may have disclosed minimal brain dysfunction in some individuals. Even so, it is unlikely the magnitude of organicity would have justified a diagnosis of organic brain disorder in most of these subjects.

The important question of validity is not easily resolved. Three plausible explanations of intermittent explosive behaviors obtain: (1) Intermittent explosive behavior may be symptomatic of BPO or other personality disorder that is overlooked by focusing primarily on APD and generalized impulsivity. (2) If intermittent explosive behaviors stem from subtle and difficult to detect minimal brain dysfunction, the neurological basis would strengthen the validity of

the disorder. Then the question would be whether the separate OPD with explosive features and IED are redundant. (3) As is apparently true for many violent behaviors, intermittent explosive behaviors may be "environmentally programmed" or socially learned behavioral responses to stress.

These three conceptualizations of intermittent explosive behaviors are not necessarily competitive or mutually exclusive. Evidence for all three can be identified in the same individual. Further investigation is needed to address the etiological issues. Together with treatment needs for violent patients who desire help, the pressing need for research, in the authors' opinion, justifies continued use of the intermittent explosive syndrome in scientific literature, if not IED in the Diagnostic Manual.

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