Self-Mutilation and Suicide Attempt: Distinguishing Features in Prisoners

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Nonlethal forms of self-injury are often discussed together with suicide attempts as though they belonged on a continuum of self-harm. Both types of self-injury are common in prisons, which have a predominantly male population; however, most studies of nonlethal self-injury have been done with female subjects. This exploratory study tested the hypothesis that prisoners who injured themselves without intending to die would differ clinically from prisoners who had attempted suicide. Inmates admitted to the prison unit of a public hospital for treatment of self-inflicted wounds or who had a history of previous self-injury were administered a standardized intake protocol by the first author, which included asking about their intent at the time they injured themselves. Patients were classified as self-mutilators or suicide attempters on the basis of intent. Fifteen patients reported that they had attempted to take their own lives, while 16 reported other reasons for harming themselves. Suicide attempt was associated with adult affective disorder (13/15 versus 2/16 mutilators); self-mutilation with a history of childhood hyperactivity (12/16 versus 1/15 suicide attempters) and a mixed dysthymia/anxiety syndrome that began in childhood or early adolescence (9/16). Prison self-mutilators and suicide attempters had very different clinical presentations and histories. The history of childhood hyperactivity in self-mutilators deserves further study in both correctional and noncorrectional populations.

Acts of self-harm cover a range of severity from minor cuts to violent suicides. A variety of nonlethal self-injuries have been described, most commonly those involving superficial cutting, carving, burning, and nonlethal overdoses.[1,2] As a group, these behaviors have been called self-mutilation, defined as ". . . the commission of deliberate harm to one's own body . . . without the aid of another person, and the injury is severe enough for tissue damage (such as scarring) to result. Acts that are committed with conscious suicidal intent or are associated with sexual arousal are excluded."[1]

It has long been recognized that some patients repeatedly engage in self-mutila-

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tion, but the nosology of this phenomenon remains unsettled. In the initial clinical reports of patients who made repeated superficial cuts,[3,4] it was suggested that self-mutilation represented a distinct syndrome. Epidemiological studies, however, found that wrist-cutters could not be reliably distinguished from patients who made other kinds of suicide attempts.[5,6] In a later review of 56 published cases, Pattison and Kahn[7] also concluded that a pattern of low lethality and repetitive acts, with typical onset in adolescence, could be distinguished from suicide attempts. Efforts to have self-mutilation recognized in DSM-IV as a separate diagnostic category were unsuccessful.[2] Thus, in the contemporary literature on self-harm, nonlethal acts are sometimes treated as suicide attempts and other times as distinct from suicide attempts.[8,9]

Controlled studies of self-mutilators have primarily used as control groups patients with the same diagnosis who do not mutilate themselves. The most common diagnosis associated with self-mutilation is a cluster B personality disorder.[1,2,10] In contrast to suicide, most studies have found that self-mutilators are not more likely to have major depression.[8,9,11] They may, however, have more antisocial, aggressive, and impulsive personality traits than nonmutilators.[10] Some studies have found that self-mutilators more often report being abused as children,[12,13] while others have not.[14] We could find only one clinical study of self-mutilators that used suicide attempters as the control group.[15] In this chart review study, self-mutilators were more likely to be female, to receive an Axis II diagnosis, to have abused substances, and to report a history of physical or sexual abuse. They were less likely to receive a diagnosis of major depression.

Self-mutilation by males is most often observed in prisons and jails and is associated with the cluster B disorder antisocial personality.[1,2,10,16] In a controlled study of male prisoners who met research diagnostic criteria for antisocial personality disorder, Virkunnen found that those who mutilated themselves were more withdrawn and uncommunicative, reported more anxiety, and were more likely to have an alcoholic father.[17] Other studies of self-mutilation by incarcerated males have been uncontrolled.[18,19] Although self-mutilation and suicide are both common in prisons,[16] we are not aware of any studies of self-mutilation by prisoners, or males in general, in which the control group was people who attempted suicide by lethal means.

We hypothesized that if self-mutilation and suicide attempt are nosologically distinct rather than part of a continuum of self-harm, then in a population of male prisoners they should be found in two largely nonoverlapping groups. These two groups should be distinguishable both by their intent at the time of self-injury, and by their clinical presentations and natural histories. In the present study, we analyzed the clinical and demographic data collected on the consultation service of a prison hospital unit in order to test our hypothesis.

Methods

Subjects were inmates admitted to the Correctional Health Care Unit at Lemuel Shattuck Hospital (Boston, MA) for acute medical or surgical care. This is the principal hospital unit serving the Massachusetts state prison system, as well as county and local jails. Psychiatric consultations are ordered by other services or by the Department of Corrections, which maintains a computer database for identifying prisoners who have attempted suicide or self-injury while incarcerated and notifies psychiatry whenever one of these prisoners is admitted to the hospital.

The data reported here were collected using a standard clinical information protocol administered for all consultations by the first author (C.F.). The protocol covers childhood history of psychiatric symptoms and learning disability as well as adult symptoms. Adult Axis I diagnoses were made using DSM-IV criteria. Data about signs and symptoms of DSM-IV Axis II disorders was not available on enough patients to make Axis II diagnoses. The diagnosis of "childhood hyperactivity" was made if the patient recalled either being diagnosed by a professional as "hyperactive" or being treated with a psychostimulant, and the symptoms significantly impaired their school performance. The diagnosis of conduct disorder was made using DSM-IV criteria based on behavior prior to age 14. Criminal records were not examined, but additional hospital records were used when available.

This report presents analysis of the clinical and demographic data on all inmates admitted to the unit over a one-year period for suicide attempt or self-mutilation (N = 17), as well as inmates with histories of self-injury identified by the computer database (N = 14). These inmates were questioned at the time of consultation about their intent by being asked "Did you want to die or just hurt yourself?" followed by "Why did you want to (kill/hurt) yourself?" Inmates were classified as self-mutilators if they had inflicted objectively verifiable bodily injury without either the intent or wish to die (N = 16). Suicide attempters were defined as patients whose intention was to die (N = 15). The two groups were compared on clinical, developmental, family history, and demographic variables. Continuous variables were analyzed using *t* tests, while chi-square analyses were performed for dichotomous variables. The Bonferroni correction was applied to correct for the number of variables examined. Tests with p values $< .002$ were considered significant and were further analyzed by logistic regression.

Results

Demographic characteristics of mutilators and attempters are presented in Table 1. The two groups were similar in age and number of years of education. Most of the participants had not completed high school (mean, 9.8 years of education). The small sample size does not permit us to make definitive conclusions regarding gender, race, or history of head injury or neurological abnormality, but these did not appear to be significantly different between groups. Four suicide attempters and one self-mutilator were female.

Table 1
Demographic Characteristics

	Self-Mutilators		Suicide Attempters			
	Mean	SD	Mean	SD	t^a	p
Age (years)	30	7.2	34	7.3	1.7*	0.1
Education (years)	9	3.1	11	2.7	1.4**	0.2
	N	%	N	%	χ^2	p
Gender (female)	1	6	4	27	2.4	0.1
Head injury	6	40	3	20	1.4	0.2
Neurological abnormality	4	25	3	20	0.1	0.7

[a]Two-tailed.
*F = .114, df = 28; **F = .006, df = 21.

The acts committed by patients whose intent was to take their own lives were highly lethal, as shown in Table 2. Patients suffered serious injury, except in one case in which a firearm failed to discharge. Jumps were from heights that resulted in multiple fractures; hangings were attempted at night when discovery was highly unlikely; cuts were deep enough to cause loss of consciousness and require transfusion. The patient who set himself on fire suffered serious disfigurement over greater than 50 percent of his body.

When the intent was not to die (self-mutilators), the acts were nonlethal and easily distinguished from the methods used in suicide attempts (Table 2). The most common act was insertion of foreign objects into the urethra (in one case a

Table 2
Methods and Frequency of Self-Injury and Suicide Attempts

Self-Mutilators			Suicide Attempters			
Action	N	%	Action	N[a]	%	
Insertion	6	38	Hanging	4	29	
Wrist-slashing	3	19	Deep cut	3	21	
Swallowing sharp object	3	19	Lethal overdose	3	21	
Nonlethal overdose	2	13	Jumping	2	14	
Hanging	2	13	Firearm	1	7	
			Immolation	1	7	
Frequency						
Once	4	25		11	79	
Twice	1	6		3	21	$p < .001$*
>Twice	11	69		0	0	

[a]Data unavailable for one subject.
*χ^2 = 15.2.

Table 3
Psychiatric Diagnoses of Self-Mutilators (N = 16) and Suicide Attempters (N = 15)

	Self-Mutilators		Suicide Attempters			
	N	%	N	%	χ^2	*p*
Adult						
Major affective disorder	2	13	13	87	17.1	0.00004
Mixed anxiety/dysthymic disorder	9	56	0		11.8	0.0006
Alcohol dependence	10	63	7	58	0.1	0.8
Drug dependence	13	81	11	73	0.3	0.6
Child						
Childhood hyperactivity	12	75	1	7	15.5	0.00008
Conduct disorder	8	50	3	20	3.1	.08
Learning disorder	5	56	0	0	7.5	<.01

uretostomy site). Wrist-slashing involved superficial cuts without loss of significant amounts of blood. Three patients swallowed objects such as razor blades, broken light bulbs, and bedsprings. The two overdoses involved nonlethal amounts of pain relievers, and the two hangings were carried out with correctional staff present or nearby. This distribution is not representative of all self-injuries by prisoners, because we saw mostly those injuries that resulted in hospitalization. Self-mutilation had occurred multiple times (>2) in 11 of 16 (69%) cases. Three of the single-episode cases were inmates copying a severe self-mutilator in the same institution in order to get transferred to a hospital. In contrast, 11 of 14 (80%) of suicide attempters had made only one attempt and the other 3 had made only two attempts.

The reasons mutilators gave for injuring themselves fell into three categories. (1) For five inmates (31%), the self-injury was a conscious attempt to manipulate corrections officials (usually to obtain transfer to a less restrictive setting); three of these had never engaged in this behavior before, but were copying the behavior of a severe self-mutilator in their institution. (2) The purpose for nine (56%) of them was to relieve anxiety or tension. Rather than experiencing pain, the subjects felt a relief from anxiety or tension, usually accompanied by a sense of well-being. Several of them stated that they had struggled with the impulse for hours or days until it ultimately proved irresistible. (3) Two inmates (13%) were following command hallucinations instructing them to hurt themselves.

The most significant findings in this study related to the types of psychiatric symptoms and their age of onset (presented in Table 3). The major clinical difference between the two groups on presentation to the consultation service was the Axis I diagnosis. Thirteen (87%) of the suicide attempters had a major affective disorder by DSM-IV criteria: 53.3 percent had major depression; and 33.3 percent had bipolar I disorder. In most cases

(10/13), the diagnosis had been made prior to the current hospitalization, and patients had received prior treatment with antidepressants, mood stabilizers, or both. The two attempters without affective disorder included one who suffered from delirium due to pneumonia and hypoxemia and another without an Axis I disorder. In contrast, only two mutilators had major affective disorder, both major depression (13%). Two additional mutilators had nonaffective psychotic disorders and were responding to command hallucinations when they hurt themselves. One patient had adjustment disorder with depressed mood and had copied a mutilator in his institution to gain transfer to the hospital. The remaining two mutilators had no Axis I disorder.

Although most mutilators did not have major depression or bipolar disorder, 9 of 16 (56%) described a strikingly similar pattern of mixed dysthymic and anxiety symptoms that had been present since early adolescence or childhood. Their dysphoria was reactive to the environment, particularly to rejection. It typically lasted from a few hours to a few days and could be alleviated by a positive experience. The only vegetative symptom some patients experienced was hypersomnia. Manic or hypomanic episodes were denied. The anxiety symptoms included tension, inability to concentrate, racing thoughts, and an intense need to find a release. These symptoms lasted a few hours to a few days and were not always associated with dysthymic symptoms. The absence of autonomic symptoms or a sense of dread or fear, and the gradual onset of the symptoms over a few hours, distinguished these states from panic attacks, although one patient also reported panic attacks. Most patients reported that alcohol or certain drugs provided relief. In both groups, more than half received diagnoses of alcohol and/or drug dependence. Although the mutilators claimed that their mixed anxiety/dysthymia symptoms began in childhood or adolescence and preceded any substance use, we could not independently confirm the order of onset.

The early onset of psychiatric symptoms in self-mutilators was also reflected in the fact that 75 percent (12/16) reported being diagnosed hyperactive as children, compared with only one of the attempters. This association was even stronger if the two mutilators who were responding to auditory hallucinations are excluded (12/14 versus 1/15). Five remembered being treated with Ritalin and several reported that illicit stimulant drugs (cocaine, amphetamines) had a calming effect and helped them concentrate.

The differences between three clinical variables—(1) diagnosis of affective disorder, (2) syndrome of mixed anxiety/dysthymia, and (3) history of childhood hyperactivity—were highly significant even when we corrected for the multiple variables examined ($p < .002$ with Bonferroni correction). Associations between self-mutilation and a history of learning disorders and conduct disorder (Table 3) and having an alcoholic father were not significant after the correction. Our results did not suggest that a history of physical or sexual abuse, or other childhood trauma, was associated with self-

mutilation. A logistic regression analysis incorporating childhood hyperactivity and affective disorder as covariates found that self-mutilators were 28 times more likely to report childhood hyperactivity, and suicide attempters were 21 times more likely to be diagnosed with major affective disorder. A model that included these two variables correctly classified 86 percent of the sample.

Discussion

The most intriguing finding from this study of predominantly male prisoners was the childhood onset of psychiatric symptoms in self-mutilators. Most of these patients reported being diagnosed hyperactive as children and described symptoms of dysthymia and anxiety that began in childhood. In contrast, prisoners who attempted suicide were more likely to have major affective disorders with onset in adulthood. Other studies of both prisoners[19, 20] and nonprisoners[2, 9, 15] have also found that self-mutilators do not suffer from major affective disorder (but see Ref. 8). We are not aware of any previous reports of childhood psychiatric symptoms in self-mutilators.

Self-mutilation in women is most often associated with borderline personality disorder (BPD)[1, 2, 7] and in men with antisocial personality disorder (ASP).[1, 17, 19] Virkkunnen[17] reported that male prisoners who met research criteria for ASP and engaged in self-mutilation (slashing) were more withdrawn, uncommunicative, anxious, and more likely to have had an alcoholic father compared with prisoners with ASP who did not injure themselves. The author proposed that because sociopaths are stimulus-seeking, those who are unable to obtain stimulation from social interactions may resort to self-mutilation instead. In an uncontrolled study of prison self-mutilators, Bach-y-Rita[18] stressed that the behavior is part of a lifelong pattern of impulsiveness. He also reported that most of his subjects recalled having more temper outbursts than normal as children. Neither of these investigators reported on childhood diagnoses in their subjects. But we speculate, based on our findings, that the lifelong patterns of stimulus-seeking, impulsiveness, and temper outbursts described by these authors may reflect the same symptoms that led to the diagnosis of childhood hyperactivity in our subjects.

Both disorders associated with self-mutilation, ASP and BPD, belong to cluster B on Axis II and may be interrelated.[11, 21, 22] Phenomenologically, the self-injurious behavior we have described in male prisoners resembles that of women with BPD, including the repetitiveness and nonlethality of the acts,[8, 11, 15] the manipulative intent[7, 23] and the subjective experience.[1, 2, 10] These similarities have also been noted by other researchers studying self-mutilation by prisoners.[19, 20]

More than half of the self-mutilators in our study described symptoms of reactive dysphoria and anxiety that began in childhood or early adolescence. In a study of female self-mutilators with BPD, Herpertz[9] reported that these patients described a long-standing pattern of dysphoria and poor affect regulation that was different from other affective disorders. Based on a principal components analysis of affective symptoms in female psycho-

paths with BPD, Coid[21] proposed that these women have a distinct affective syndrome that could be relieved temporarily by compulsive behaviors including self-mutilation. We propose that the atypical affective syndrome described by these and other authors in patients with BPD is also present in male prisoners who self-mutilate.

In light of our finding that most self-mutilators were diagnosed hyperactive as children, it is interesting to note that childhood attention-deficit/hyperactivity disorder (ADHD) is a risk factor for both cluster B personality disorders ASP and BPD in adulthood.[24, 25] Outcome studies of ADHD have not found an increased risk for major affective disorder,[26, 27] but Wender's group[28, 29] has described a dysphoric syndrome marked by onset in childhood, with a duration of hours to days and reactivity to the environment that is similar to the syndrome described by 56 percent of the mutilators in our study and to the atypical affective syndrome of BPD. A relationship between ADHD and BPD has also been suggested by increased rates of BPD in families of probands with ADHD[30] and by comorbidity studies.[31]

Our findings must be considered preliminary because of several weaknesses in our exploratory study. In as much as the sample size is small and was not a random sample of prisoners, we cannot rule out a selection bias. However, we note that 38 percent of the self-mutilators in this study were admitted to the hospital for other reasons, and the results did not appear to differ significantly from subjects admitted for self-injury. The reliability of diagnoses is limited because we did not use structured clinical interviews, and the interviewer was not blind to the type of self-injury. Finally, we did not have access to school records or parent interviews, nor did we use rating scales[32] to corroborate childhood symptoms.

In conclusion, our findings in male prisoners support the hypothesis that self-mutilation and suicide attempt represent distinct clinical entities that are not on a continuum of self-harm.[2, 5, 10] We found that they could be distinguished by conscious intent and that most self-mutilators suffered from psychiatric symptoms that began in childhood, whereas most suicide attempters suffered from adult-onset major affective disorder. Self-harm in jails and prisons is a major problem that is poorly understood and notoriously difficult to treat.[16] If our findings are supported by further investigation, they should lead to significant improvements in treatment. The similarities we have described with self-mutilation in noncorrectional populations suggest that our findings may also have implications for the understanding and treatment of self-mutilation in general.

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