Self-Harm in Prisoners

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ABSTRACT

Introduction: Self-harm is a direct, socially unacceptable, repetitive behavior that causes minor to moderate physical injury without suicidal intent. It is also a significant and growing concern among prison inmates, although it has been rarely studied. In the present study, we aimed to investigate demographic, psychosocial, and clinical variables associated to this critical bahaviour in a high risk sample of 1,555 male prisoners.

Methods: Prisoners were interviewed about their history of self-mutilation, psychiatric history, and forensic history. The prisoners completed the Barratt Impulsivity Scale, Buss-Durkee Hostility Inventory, Eysenck Personality Questionnaire, and Childhood Trauma Questionnaire.

Results: Eighteen percent of prisoners had a history of self-harm. They more frequently reported childhood traumas, were more likely to be unmarried, previously imprisoned, tested positive for substance abuse, had a history of suicide attempt, and more likely showed violent tendencies.

Discussion: Self-harm among prisoners is common, being found in almost 20% of the subjects in our sample. Self-mutilation among prisoners appears to be multi-factorial with developmental, socio-demographic, psychiatric, and personality determinants.

FOCUS POINTS

- Self-harm is a disorderly and repetitive behavior that causes minor to moderate physical injury without suicidal intent.
- Self-harm is a significant and growing concern among prison inmates.
- There is poor evidence about risk factors and predictors of self-harm in the inmate population.

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Conclusion: Self-harm is associated with critical behaviors such as violence, substance abuse and suicide attempts, which represent major critical problems in contention environments.

INTRODUCTION

Self-harm is a disorderly and repetitive behavior that causes minor to moderate physical injury without suicidal intent.[1] Such non-suicidal self-injury is defined as intentional direct damage to one's own body tissue without suicidal intent.[2] Self-harm is relatively common among psychiatric patients diagnosed with various personality disorders and other psychiatric diagnoses. A history of self-harm has also been reported in ~4% of adults in general population surveys.[2] Self-harm rates are higher among adolescents and it has been estimated that up to 15% of adolescents may self-injure at some time.[2,3] Self-harm often begins during adolescence as a way to release tensions, anger, or other emotions, and its purpose has been described as attention seeking and manipulative. Skin-cutting is the most common form of self-harm and is found between 70% to 97% of self-harmers.[2]

Self-harm is also a significant and growing concern among prison inmates.[4] In the prison environment, research shows that maladaptive responses, such as self-harm and suicide attempts, are among the most widespread self-injuring behaviors.[5] Usually such acts occur during the early phases of incarceration.[6] It has been suggested that prisoners may self-harm in order to gain some control over the environment (eg, attention, transfer to a hospital, moving to a less restrictive setting).[7] Jeglic and colleagues[4] found four main functions of self-harm behaviors in the forensic population: suicidal intent; manipulation of the environment; emotional regulation; and a response to psychotic delusions or hallucinations. However, previous studies do not provide a clear answer as to how prisoners who self harm differ from other prisoners and how this unwanted behavior might be predicted. Thus, the aim of this study was to examine self-harm behavior in the prison system and to examine for variables that might predict it. The hypothesis tested was that the personality traits of aggression and impulsivity and associated behavioral characteristics such as conviction as a minor, a history of attempting suicide, violence of crime committed, and aggression in the prison would predict self-harm in prisoners.

METHODS

Sample

The sample consisted of 1,555 prisoners incarcerated in Penitentiary Institutions of the district of Abruzzo-Molise, in central Italy. All prisoners from low and high security correctional facilities were eligible to take part in the study with the exceptions of those unable to speak or read Italian, with learning disabilities, or florid psychosis. The purpose of the research was explained to participants and informed consent was obtained. The Ethics Review Board of the University of Molise approved the study.

Procedures

Trained psychologists and psychiatrists conducted a semi-structured interview with inmates to record socio-demographic and psychiatric data and information on lifetime history of self-harm and suicide attempt. The presence of any lifetime Axis I psychiatric history was diagnosed using the Mini-International Neuropsychiatric Interview.[8] Inter-rater reliability of the interviewers was high (r=0.91). Current or past history of self-harm and suicide attempt was evaluated by direct interviews with the subjects, reviews of clinical charts and registers or, when necessary, interviews with relatives. Self-harm acts, which were not suicidal (did not carry any suicidal intent, [eg, no wish to die]) and which involved intentional direct damage to one's body tissue by skin-cutting were categorised as self-harm. Behaviors such as biting, burning, and hitting were considered self-harm if meeting the criteria stated above (intentional self-damage, no suicidal ideation/wish to die). A suicide attempt was defined as a self-destructive act with some intent to end one's life that was not self-mutilatory in nature.

After the psychiatric interview the prisoners' prison files were examined. Data were recorded about the nature of the crime for which the prisoner was convicted, the presence of past convictions, any contention before 18 years of age, and disciplinary reports of aggressive behavior while detained in prison. Offenses for which the

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prisoners were convicted were classified as violent (included homicide, assault, aggression with guns or other weapons, sex offences, robberies, terrorist activity) and non-violent (included drug use or sale, burglaries, fraud, and any other crime that was not carried against a person).

Evaluations

Prisoners completed the Eysenck Personality Questionnaire (EPQ),[9] from which scores on extraversion, neuroticism, and psychoticism were obtained; the Barratt Impulsivity Scale (BIS-11)[10] a self-report measure of impulsive personality traits; the Childhood Trauma Questionnaire (CTQ)-34 item version,[11] which yields scores for childhood emotional abuse, physical abuse, sexual abuse, physical neglect, emotional neglect, as well as a weighted total score; and the Buss-Durkee Hostility Inventory (BDHI),[12] a measure of hostility and aggression.

Statistical Analyses

Statistical analyses were performed by the SPSS software.[13] Chi-square and t-Student tests were employed to compare prisoners who had self-mutilated with prisoners who had not self-mutilated. A logistic regression analysis was performed using history of self-harm as the dependent variable and multiple predictors to ascertain major effects and control for confounding factors. The false discovering rate (FDR) was calculated to correct *P*-values for multiple testing.[14] The G*Power software[15] was employed to calculate post-hoc statistical power. With an alpha value of 0.05 two-tailed, in our sample we had a sufficient power (0.90) to detect small effect sizes of about d=0.19 when comparing the two groups for continuous variables.

RESULTS

The mean age of the prisoners, who were all male, was 38.24 years. Among the 1,555 prisoners, 278 (17.9%) had committed self-harm. We compared prisoners who had or had not a lifetime history of self-harm on socio-demographic variables. No difference was observed for age, while self-harm prisoners have a lower educational level, were less likely married and employed before incarceration as compared to non-self harm prisoners (Table 1).

We compared prisoners who had or had not self-harmed for their forensic and psychiatric history. Self-harm prisoners were more likely to have experienced a previous detention and a detention before 18 years of age. No difference was observed as regards having committed a violent crime. Self-harm prisoners were more likely to have shown violent behavior in jail, to be positive for a psychiatric disorder and/or substance abuse, and for suicidal attempt (Table 2).

We compared prisoners who had or had not self-harmed for childhood traumas (CTQ), temperamental dimensions (EPQ) and traits of hostility (BDHI) and impulsivity (BIS). Self-harm prisoners obtained overall significantly higher CTQ scores than prisoners who had never self-harmed, as well as higher scores for all trauma categories (emotional, physical and sexual abuse, emotional and physical neglect). As regard temperamental traits, self-harm prisoner were also higher in psychoticism and neuroticism, while they were lower in extraversion scores as compared to prisoners who had never self-harmed. Finally, they were significantly higher for total BDHI and BIS scores (Table 3).

Since consistent reciprocal inter-correlations among demographic, forensic, psychiatric, temperamental traits, and exposure to traumas were observed, logistic regression models were run to ascertain main effects. The final model showed consistent major effect exerted by non-married status, previous contention/s, violent behavior in jail, substance abuse, history of suicide attempt, physical abuse, and emotional neglect in childhood (Table 4).

TABLE 1
Comparison of Prisoners With and Without a History of SH on Sociodemographic Variables

Category	Whole sample (N=1,555	Comparison			
		Non-SH (n=1,277)	SH (n=278)	Tests	*P*-value
Married	35.6%	38.8%	20.5%	χ^2=34.7	<.0001*
Employed	47.6%	49.8%	37.8%	χ^2=12.7	.0004*
Age (mean SD)	39.5 (10.7)	39.8 (10.9)	38.4 (9.6)	t-test= 1.94	.05
Education (mean SD)	8.0 (2.9)	8.1 (2.9)	7.4 (2.5)	t-test= 3.96	.00008*

* Significant *P*-values according to the false discovery rate correction

SH=self-harm.

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DISCUSSION

The first finding of this large study of 1,555 male prisoners was that a history of self-harm was not uncommon. It was found that 278 prisoners (17.9%) had a positive history for it. That a high percentage highlights that this population is at risk for self-injurious behaviors.[4,5]

In our sample, prisoners with a history of self-harm were more likely to have a psychiatric diagnosis, substance abuse, to have been previously imprisoned before 18 years of age, to have exhibited violent behavior in jail, and to have attempted suicide as compared to the prisoners without a history of self-harm. Thus, self-harm behavior in prisoner seems to have similar associated factors to self-harm outside the correctional system. For example, Sakinofsky[16] reported that many individuals committing self-harm are diagnosed as having borderline or antisocial personalities, Axis I substance abuse, intermittent explosive disorder, and posttraumatic stress disorder. Recent studies in various populations have also noted that self-mutilators are significantly more often diagnosed with psychiatric and substance abuse disorders and found to have more depressive and anxiety symptoms, and to have attempted suicide more than controls.[17,18]

Other commonly reported demographic and clinical predictors of self-injurious behaviors among inmates are young age, low education, childhood traumas, aggressive-impulsive traits and coping strategies based on avoidance.[19-20]

Regarding sociodemographic features, though we did not found significant difference in terms of age,[21] we found that prisoners committing self-harm were significantly more likely to be unmarried. Less consistently, prisoners having committed self-harm were more likely to have a lower education level and to be unemployed before incarceration, as compared to the prisoners who never committed self-harm. Nevertheless, such effect disappeared in multivariate analyses. According to our analyses, it is likely that the effect of education and employment was mediated by psychiatric status and substance abuse. Indeed, the latter were both associated to education and employment status, and interactive effects were observed in multivariate analyses (not shown in results), indicating that substance abuse is associated with a lower likelihood of medium-high education and employment before imprisonment, which in turn

TABLE 2
Comparison of Prisoners With and Without a History of SH on Psychiatric and Forensic Variables

Variable	All	Non-SH	SH	χ^2	*P*
	%	%	%		
Psychiatric diagnosis	25.3	22.9	36.3	20.63	.00001*
Depression	12.2	11.2	17.0	6.74	.15
Schizophrenia	5.7	3.8	1.9		
Anxiety disorder	3.5	3.0	0.5		
Bipolar disorder	2.8	1.9	0.8		
Adjustment disorder	0.9	0.9	1.1		
Substance abuse	38.6	33.4	62.2	77.84	<.00001*
Suicide attempt	12.9	5.7	45.7	250.68	<.00001*
Contention before 18 years of age	22.5	19.1	38.1	43.10	<.00001*
Violent crime	36.7	35.9	40.3	1.83	.17
Violent behavior in jail	22.8	18.3	43.5	73.60	<.00001*

* Significant *P*-values according to the false discovery rate correction.

SH=self-harm.

Carli V, Mandelli L, Poštuvan V, et al. *CNS Spectr.* Vol 16, No 3. 2011.

TABLE 3
Comparison of Prisoners With and Without a History of SH on Personality Variables and Childhood Trauma Scores

Variable	SH	Non-SH	t-test	*P*
	Mean (SD)	Mean (SD)		
Psychoticism	7.0 (3.3)	5.5 (3.1)	6.94	<.000001
Extraversion	12.5 (3.8)	13.7 (3.6)	4.81	.000002
Neuroticism	14.5 (4.7)	11.4 (4.6)	9.36	<.000001
BDHI total	42.0 (10.3)	35.8 (10.7)	8.18	<.000001
BIS-11 total	51.6 (15.9)	46.7 (14.6)	4.63	.000004
CTQ				
Emotional abuse	8.6 (4.5)	6.7 (3.1)	8.09	<.000001
Physical abuse	9.4 (5.6)	6.9 (3.5)	9.48	<.000001
Sexual abuse	8.7 (4.4)	7.4 (2.8)	6.31	<.000001
Emotional neglect	25.2 (10.7)	21.6 (9.0)	5.81	<.000001
Physical neglect	15.2 (6.4)	11.9 (4.2)	10.25	<.000001
Total	9.5 (3.6)	7.6 (2.3)	10.63	<.000001

All significant *P*-values according to the false rate discovery correction.

SH=self-harm; BDHI=Buss-Durkee Hostility Inventory; CTQ=childhood trauma questionnaire.

Carli V, Mandelli L, Poštuvan V, et al. *CNS Spectr.* Vol 16, No 3. 2011.

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increase the risk of self-harm in prisoners positive for psychiatric status and substance abuse. On the other hand, no similar interactive effects were observed for marital status in our sample. Thus, being single or divorced seems to be a strong independent risk factor for self-harm, according to previous evidence.[22]

Childhood traumatic events have been reported consistently associated with self-harm and suicidal behavior[23] in both community, clinical and inmates populations. For example, Briere and Gil[24] studied both general population and clinical samples and found that childhood trauma were significantly associated with self-harm in both samples. Turell and Armsworth[25] reported that prisoner committing self-harm were more likely to have experienced physical or psychological abuse in their families of origin, particularly sexual abuse.

In our sample, all childhood traumas were associated with self-harm in linear analyses. In multivariate analyses, physical abuse and emotional neglect maintained significant association with self-harm.

TABLE 4
Multivariate Analysis of Variables Associated to SH

Variables	OR	*P*-values
Married status	0.49	.011*
Education	0.99	.60
Employed status	1.11	.66
Other contentions	2.17	.0051*
Contention before 18 years of age	1.15	.79
Violent behavior in jail	1.94	.00013*
Psychiatric status	1.02	.15
Substance abuse	1.72	.0023*
Suicidal attempt	10.48	<.000001*
Emotional abuse	0.95	.12
Physical abuse	1.09	.0014*
Sexual abuse	1.03	.31
Emotional neglect	0.98	.013*
Physical neglect	1.05	.17
BDHI total	1.01	.47
BIS total	1.01	.65
Psychoticism	1.06	.38
Extroversion	0.95	.12
Neuroticism	1.04	.06

* Significant *P*-values according to the false rate discovery correction.

SH=self-harm; OR=odds ratio; BDHI=Buss-Durkee hostility inventory; BIS-11=Barratt Impulsiveness scale, 11-items version

Carli V, Mandelli L, Poštuvan V, et al. *CNS Spectr*. Vol 16, No 3. 2011.

Personality may also have a significant impact on risk for self-harm.[16] In linear analyses, prisoners committing self-harm had higher scores in the temperamental dimensions of psychoticism and neuroticism, lower scores of extraversion, and higher scores in hostile-impulsive traits. These results are in line with previous reports. Many other studies have similarly reported that individuals who had committed self-harm are impulsive and hostile. Simeon and colleagues[26] found that the degree of self-harm was significantly correlated with impulsivity.[27,28] Shea[29] administered the Minnesota Multiphasic Personality Inventory to 30 self-harm and 30 non-self-harm male inmates and reported that the self-harm prisoners scored significantly higher for acting out tendencies.

However, when considering all personality dimensions together with other associated variables no significant effects could be observed. Violent behavior in jail remained a significant predictor of self-harm, suggesting that consistent aggressive-impulsive traits may be associated with self-harm. Self-harm prisoners were not found having committed more likely a violent crime (though a trend in this direction could be observed). Unfortunately, we did not characterized crime for its impulsive versus predatory nature, thus lacking a further source of information about impulsivity. Another important variable associated with self-harm was other contentions in the past, another indicator of aggression and impulsivity.

According to previous evidence, in linear analysis prisoners who had committed self-harm were more likely diagnosed for a psychiatric disorder and substance abuse, and were more likely to have also committed a suicide attempt. In multivariate analysis the effect of psychiatric status disappeared, while substance abuse and previous suicide attempt were strongest independent predictors of self-harm. Self-harm is known to be strongly related to suicide attempt[30] and a study investigating risk factors for self-harm in prisoners, reported substance abuse among the three strongest predictors, together with psychiatric condition and aggression.[20] Many other studies have reported a strong association with substance abuse self-harm individuals.[30] In our sample, substance abuse was present in more than half of prisoners with a psychiatric diagnosis and an interactive effect was observed

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between psychiatric status and substance abuse, with comorbid abuse strongly increasing the risk for self-harm in psychiatric prisoners.

Our results are in line with previous evidence regarding associated variables or predictors of self-harm both in community, clinical and forensic samples. In particular, in our sample of male prisoners, most consistent variables associated with self-harm were: childhood traumas, single or divorced status, previous contention/s, violent tendencies, substance abuse and history of suicidal attempt. In particular, the observed association between self-harm with violent traits, substance abuse and suicide attempt deserves some note, since self-harm may be a predictor of problematic behaviors that strongly impact and complicate the management of individuals under legal restraint.

Strengths of the present study are represented by the large sample size of 1,555 prisoners, evaluated through semi-structured interviews by trained mental health workers, and for a number of individual and clinical factors, such as early environmental stress, personality dimensions, and psychiatric variables. Moreover, we tried to ascertain most consistent associated variables to self-harm by controlling for reciprocal intercorrelations among variables and for potential confounders.

Our battery of evaluations did not include a structured interview for the diagnosis of personality disorders and this could represent an important limitation of the present study, since some personality disorders have been associated with self-harm more than others, for example cluster B personality disorders. The prevalence of self-harm in other personality disorders is still unclear and also cluster A and C personality disorders may lead to self-harm in some cases.[31] Moreover, within the same cluster and personality disorder as well, abnormal traits may consistently vary, so that a dimensional approach to the evaluation of personality may add more useful information. The self-report nature of all instruments employed to evaluate personality traits may represents a further source of bias.

Similarly, the evaluation of traumatic events was based on the report of prisoners and was furthermore retrospective. Though the CTQ has been shown to have high reliability and validity,[11] the possibility of memory recall biases may not be excluded.

All the subjects of our sample were male and offenders. We intentionally investigated an inmate population, given the known high for self-harm,[4,5] the restriction to male individuals may limit the generalization of findings to females. Thus, self-harm in both the community and the prison environment may have different risk factors and associated features in females.

Finally, we could not have taken into consideration a number of important variables associated to self-harm, for example, current stressors, familiar history, duration of current incarceration, and, most importantly, we did not record whether self-harm behavior was antecedent to imprisonment. This may represent an interesting topic to investigate, since self-harm limited to the prison environment may have different characteristics as compared to antecedent self-harm.

CONCLUSION

Taking into account the above mentioned limitations, the present study support the evidence that self-harm behavior is a common and critical phenomena occurring in prisons. According to our results, variables associated to self-harm are: childhood traumas, non-married status, violent tendencies, multiple contentions, substance abuse and history of suicide attempt. Thus, according to the results of our study, self-harm on itself may be a predictor of problematic behaviors occurring in containment environments and it may be taken into account in programs aimed to prevent the occurrence of violence and suicidal behaviors. ***CNS***

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