Self - Injurious Behaviors: Assessment and Management

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Cases of Self-Inflicted Injuries Treated in U.S. Emergency Departments, 2002 – 2009*

*Emergency Department Visits per 100,000 population


Definitions and Distinctions:

- Self injurious behavior (SIB) – intentional self-directed injury inflicted without conscious intent to kill oneself
- “A basic understanding is that a person who truly attempts suicide seeks to end all feelings whereas a person who self-mutilates seeks to feel better”
- SIB may be a “preferable alternative” to suicide
- Although SIB may not be suicidal in intent, it can rarely lead to “accidental” suicide
- Impulsivity – a dimension of personality defined as the failure to resist an impulse, drive, or temptation that is harmful to oneself or others

Further support for distinct nature of SIB:

<table>
<thead>
<tr>
<th>Diagnosis (n=548)</th>
<th>SIB</th>
<th>Suicide Attempts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depression</td>
<td>14%</td>
<td>56%</td>
</tr>
<tr>
<td>Alcohol abuse</td>
<td>16%</td>
<td>26%</td>
</tr>
<tr>
<td>Adjustment disorder</td>
<td>24%</td>
<td>6%</td>
</tr>
<tr>
<td>Borderline PDO</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>Histrionic PDO</td>
<td>22%</td>
<td>4%</td>
</tr>
<tr>
<td>Schizoid PDO</td>
<td>2%</td>
<td>9%</td>
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</tbody>
</table>


Nonfatal Self Harm may portend Suicide

- Long term follow up of 34,219 admissions for self-harm found that 3.5% completed suicide within 9 years
- Another review found a similar 4% risk within 5 years of self-harm
- However, highest risk was most closely associated with diagnosis of severe mental illness (especially bipolar disorder)
- Higher risk of eventual suicide also linked to self-injury method (hanging was most predictive)

**Evaluation of Self – Injurious Behaviors:**

- Presence of suicidal ideation
- History of prior SIB
- Frequency of SIB
- Medical complications / interventions (lethality)
- Age of onset / longest period free of SIB
- Family history of SIB


**Classification of SIB**

- Stereotypic / automatistic
- Major / psychotic
- Compulsive
- Impulsive
- Other / mixed
- Culturally sanctioned


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**Stereotypic SIB**

**Behaviors:** head banging, self hitting, self biting, skin picking

**Pattern:** highly repetitive, monotonous, fixed, often rhythmic, driven, contentless (devoid of meaning / affect), occur in private more than other SIB's

**Damage:** mild to severe (even life threatening)

**Disorders:** mental retardation (MR), autism, congenital syndromes

**Prevalence:** 3% - 46% in patients with MR


**Treatment of Stereotypic SIB in Mentally Retarded / Developmental Disorders**

- Studies suggest that serotonin and dopamine play roles in mediation of SIB in MR/PDD
- SSRI’s, antipsychotics (atypicals), Lithium, Valproic acid, Beta-Blockers, and others have been utilized with mixed results
- 2 DBPC studies with Risperidone in autism with (+) results
- Small studies (+) with Olanzapine and Ziprasidone
- Behavioral interventions and in severe cases restraints may need to be employed


**Major SIB**

Behaviors: castration, enucleation, limb amputation
Pattern: isolated, impulsive or planned, typically involves concrete symbolism
Damage: severe or life threatening
Disorders: schizophrenia, psychoses, substance induced, severe personality disorders, transsexualism
Prevalence: rare, majority involve patients with psychosis


**Features of Major SIB:**

- Several medical studies have found decreased sensitivity to pain in patients with schizophrenia (e.g. 37% vs 95% in appendicitis)
- Many patients report minimal pain associated with act despite severe tissue damage
- Majority of these cases involve males
- Psychosis involved in over 80% of genital mutilations and eye enucleations
  - delusions with themes of sin / guilt / sex / religion
  - study found 50% quoted bible (Matthew 5:29) after enucleation
  - command auditory hallucinations
- Treatment: includes medical stabilization and usually antipsychotic agents


**Compulsive SIB**

Behaviors: often represents exaggerated grooming (e.g. hair pulling, skin picking, nail biting)
Pattern: repetitive, ritualized, sometimes symbolic
Damage: mild to moderate
Disorders: eating disorders, trichotillomania, body dysmorphic disorder, Tourette’s syndrome
Prevalence: eating disorders are common, trichotillomania affects 1-2%, rarely seen in obsessive compulsive disorder 13% - 53% of patients with Tourette’s

*Treatments for Compulsive SIB:*

- Atypical antipsychotics and SSRI’s for Tourette’s
- SSRI’s have had questionable efficacy in trichotillomania (40% response in citalopram study)
- Cognitive-Behavioral interventions may be superior to SSRI’s (in 2 studies: CBT > SSRI’s)
- Better responses with SSRI’s in eating disorders and body dysmorphia
- Consider combination approach


**Impulsive SIB**

Behaviors: skin cutting, burning, non-lethal overdoses, self hitting
Pattern: isolated or habitual, often symbolic, impulsive
Damage: mild to moderate
Disorders: borderline (BPD), antisocial (ASPD), post traumatic stress disorder, others
Prevalence: most common form of all SIB, approximately 75% of patients with BPD


**Multidimensional Causes of Impulsive SIB:**

- Biological contributions
  - neurochemical (serotonin, GABA, opioid, dopamine, etc) and structural (amygdala / frontal lobe)
- Psychological contributions
  - “coping mechanism” to avoid suicide
  - serve as self punishment / other dynamic theories
  - regulate negative affects (psychic pain turned outward)
- Social Contributions
  - secondary gains / garners attention and empathy
  - dysfunctional family and support systems
  - poor communication skills
Role of Serotonin:

- Substantial evidence **inversely correlates** peripheral and central markers of 5HT function with impulsive, aggressive, and **suicidal behaviors**
- Diminished 5HT activity ([CSF 5-HIAA]) associated with impaired impulse control in variety of conditions (depression, bulimia, cluster B, alcoholism, MR, etc)
- Fenfluramine induced prolactin and cortisol changes blunted in personality disordered patients with SIB
- Neuroimaging studies (PET) have reported decreased 5HT function in areas of prefrontal cortex in impulsive individuals


Role of Endogenous Opioids:

- Conditions in which pain insensitivity accompany SIB include schizophrenia, BPD, and dementia
- Intrinsic pain inhibitory system activated in presence or anticipation of pain – βeta endorphins
- Beta endorphins via “stress induced analgesia” (e.g. wounded soldiers / athletes) may play role
  - psychic numbing
  - escalation of severity (tolerance / addiction)
- Cutaneous SIB resembles acupuncture (?) which may provide potent analgesia via opioid mediation


Psychodynamic Formulations for Impulsive SIB:

- Promote **affect regulation**
- **Reduce anxiety** / generate euphoria
- Discharge sexual arousal
- Terminate dissociative experiences
- Serve as **self-punishment**
- Support dysfunctional relationships
- Serve as nonlethal alternative to suicide


Psychotherapeutic Approaches to Impulsive SIB:

- Psychodynamic psychotherapy
  - most common form of therapy utilized overall
  - attempts to gain insight into causes of behavior
  - teaches healthier ways of coping with negative internal states
- Dialectical behavior therapy
  - most often employed with impulsive SIB in Axis II disorders
  - combines cognitive, behavioral, and supportive interventions
  - in large study, DBT reduced frequency of self-mutilation to 1.5 acts per year compared with 9 acts per year in controls


Medications utilized in treatment of impulsivity and SIB associated with Borderline Personality:

- SSRI’s
  - Fluoxetine most studied with 2 DBPC (n=62)
  - others show some benefit in OL/CR
- Antipsychotics – 6 small DBPC with atypicals
- Mood Stabilizers
  - Divalproex with 1 DBPC + study
  - Lithium and Carbamazepine with OL/CR
- Opioid Antagonists / Others
  - Naltrexone has OL/CR with mixed results
  - DBPC = double blinded / placebo controlled
  - OL/CR = open label / case reports


Self injury in the Inmate Population:

- 5% incidence in early study (Toch, 1985)
- Usually mild to moderate injuries including slashing, head banging, self-hitting, non-lethal overdoses, foreign body insertions, etc.
- In some cases, motives (relief of anxiety/tension) are consistent with impulsive or compulsive SIB
- Most (> 90%) strongly associated with ASPD and other severe PDO’s (Virkkunen, 1992)
- Rarely associated with psychosis (10%) (Fulwiler, 1997)
Unique Features of Inmate SIB:
- In 31% conscious manipulation was leading motive (Fulwiler, 1997) – deliberate, calculated acts
- Unusual forms of SIB such as hunger strikes and foreign body ingestions (Stojkovic, 2005)
- Low environmental stimulation in prison may precipitate SIB in sensation-seeking antisocial individuals (Virkkunen, 1992)
- Contagion of SIB reported in prisons (Rada, 1982)
- Terrorism – use or threatened use of force or violence with an intent to coerce societies or governments by inducing fear in their populations (Pastor, 2004)

Management of SIB in the Correctional Setting
- Medical interventions / stabilization
- Determine presence of suicidality not only from subjective statements but from objective data
- Assess lethality / impulsivity / triggers
- Classify type and ascertain underlying diagnoses
- Treatment focused on underlying diagnoses
- Consultation with colleagues / team approach

Management of Inmates on Hunger Strikes
- Calm / cautious reaction to these dramatic behaviors
- Avoid reinforcement of recurrent SIB with transfers and inpatient admissions
- Behavioral oriented therapies to reduce SIB
- Do not negotiate with “terrorists”
- Less emphasis on psychotropics unless clearly beneficial
- Encourage redirection of energy into more appropriate channels (e.g. requests and grievances)

Management of Inmates on Hunger Strikes
- Response should follow the policies and procedures of the institution / DOC
- Medical assessment to obtain baseline weight, vital signs, labs, and complicating illnesses
- Mental health assessment for presence of delusions, suicidality, and mental status changes
- Typically housed in isolation setting to closely monitor food / fluid intake, weight, signs of dehydration and malnourishment

Foreign Body Ingestions / Insertions:
- Relatively unique to the inmate population
- Manipulation predominant factor in these acts
  - rarely compulsive, impulsive, or even factitious components
- Mental health intervention
  - individual assessment and diagnosis
  - often very limited impact with treatment
  - obtain second opinion from colleague
  - avoid reinforcing these behaviors
- Medical intervention
  - usually requires only monitoring of passage (radiographic studies)
  - may need endoscopic retrieval or surgery (sometimes multiple)
- Team approach (mental health, medical, security)

Summary and Concluding Remarks

- Etiology of SIB is multifaceted

- SIB that is distinct from suicidality is exhibited by various individuals

- Classification of SIB may assist in identification of any underlying psychiatric disorder

- Treatment interventions should be multidisciplinary and most effective if aimed at the underlying diagnosis