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Treating Adolescent Sexual Victimization: A Concise Review of Epidemiology, Neurobiological Consequences, and Evidence Based Interventions

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ABSTRACT

Sexual victimization of adolescents represents a critical public health concern with particularly elevated prevalence in low- and middle-income countries including Bangladesh. This narrative review synthesizes evidence on epidemiology, neurobiological mechanisms, and evidence-based treatments for adolescent sexual victimization. Global prevalence ranges from 3-41.5%, with girls disproportionately affected. The review covers Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) and Eye Movement Desensitization and Reprocessing (EMDR) as primary evidence-based psychotherapies, neurobiological changes in posttraumatic stress disorder (PTSD), and contextual factors unique to Bangladesh including legal gaps, stigma, and limited-service infrastructure. Recommendations address legal reforms, institutional strengthening, and community awareness programs essential for effective response in resource-limited settings.

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Introduction

Sexual victimization of adolescents represents one of the most serious violations of human rights globally. Sexual victimization encompasses a broad spectrum from non-contact offenses (sexual harassment, voyeurism) to severe penetrative abuse [1]. Epidemiological data demonstrates staggering burden: global lifetime prevalence of sexual harassment among children is approximately 11%, with contact sexual violence affecting 9% and completed forced sexual intercourse affecting 6% of children, with girls accounting for 7% and boys for 3% [1].

The burden is particularly acute in South Asia. Bangladesh faces alarming prevalence rates, with child sexual abuse (CSA) ranging from 3.3% to 41.5% depending on population studied and methodology, with girls demonstrating significantly higher victimization rates than boys [2]. Recent epidemiological surveys reveal that 33% of Bangladeshi children have experienced some form of sexual violence, and 70% of Bangladeshi women report lifetime experience of intimate partner violence (physical, sexual, emotional, or economic) [2].

The neurobiological consequences of sexual victimization are well-established, involving dysregulation of multiple neurotransmitter systems and structural brain alterations. These changes frequently manifest clinically as PTSD and comorbid psychiatric conditions including depression, anxiety disorders, substance use disorders, and suicidal ideation [3].

Defining Sexual Victimization: Scope and Classification Definition and Global Burden

Sexual victimization is operationalized as the perpetration of nonconsensual sexual behaviors directed toward a victim without consent or toward individual's incapable of consenting or refusing [1]. This encompasses a heterogeneous range of acts from verbal harassment and non-contact sexual offenses to forced sexual intercourse and severe penetrative abuse.

The global prevalence data underscore the universal nature of this problem. Among children, 11% report lifetime history of sexual harassment, 9% report contact sexual violence, and 6% report completed forced sexual intercourse [3]. These figures demonstrate that sexual victimization represents one of the most common forms of interpersonal violence experienced during childhood and adolescence, with girls bearing disproportionate burden.

Classification of Sexual Victimization

Sexual victimization exists along multiple classificatory dimensions, permitting nuanced clinical and epidemiological understanding:

By Nature of Act: Sexual victimization ranges along a spectrum from non-contact offenses (e.g., exhibitionism, voyeurism, sexual harassment) to contact offenses (e.g., fondling, oral- genital contact, penetrative sexual abuse). Verbal and online harassment, while non- contact, nevertheless produce significant traumatic sequelae [1].

By Age and Vulnerability of Victim: Developmental context substantially influences consequences. Victimization of young children (prior to age 5) differs qualitatively from adolescent

sexual abuse due to developmental differences in cognitive capacity, language ability, and pre-existing agency [1].

By Relationship to Perpetrator: Sexual victimization is further classified as intrafamilial (perpetrator is family member), extrafamilial (perpetrator is known but unrelated individual), or perpetrated by stranger. Intrafamilial abuse typically produces more severe and enduring consequences due to breach of trust and ongoing family dysfunction [1].

By Severity and Developmental Timing: A nuanced classification incorporates both severity of acts and temporal patterns of victimization:[2]

High Severity Developmental Revictimization: Victimization occurring in both childhood/adolescence and adulthood, frequently involving penetrative abuse and prolonged victimization duration. This pattern produces cumulative trauma burden with compounded sequelae.

Low Severity Child/Adolescent Sexual Abuse: Victimization confined to childhood or adolescence, typically involving less severe acts (e.g., fondling, sexual touching without penetration) and shorter duration. While less severe in absolute terms, outcomes remain significantly adverse.

Low Severity Adult Sexual Assault: Sexual victimization occurring only during adulthood typically demonstrates less severe consequences compared to developmental revictimization patterns, though outcomes remain serious.

The Bangladesh Context: Epidemiology and Vulnerability Factors

Prevalence Burden

Bangladesh faces one of the most severe burdens of sexual violence against children in South Asia. The wide range (3.3-41.5%) reflects both genuine regional variation and marked underreporting characteristic of stigmatized behaviors in patriarchal societies [2]. Girls represent the overwhelming majority of victims at 7% prevalence compared to 3% in boys. Ethnic minorities and economically disadvantaged children demonstrate heightened vulnerability, with street children and domestic workers facing particularly acute risk [2].

Risk Factors

Patriarchal Culture: Bangladesh remains characterized by pronounced patriarchal social organization. Cultural norms enforce silence regarding sexuality and sexual violence, rendering survivors extremely reluctant to disclose, particularly boys who face emasculation stereotypes [2].

Poverty and Economic Marginalization

Poverty directly contributes to vulnerability through parental desperation leading to child trafficking and child marriage, economic dependency rendering children susceptible to exploitation, and lack of resources preventing escape from exploitative situations [2].

Legal and Institutional Gaps: Bangladesh is making progress but critical legal deficiencies remain. Legal definitions employ gendered language, and burdensome evidence requirements regarding “proof” of nonconsent and institutional corruption enable case dismissal. Additionally, approximately 3% conviction rate reflects inadequate prosecution capacity [2].

Neurobiological Mechanisms of Trauma

Sexual victimization produces profound neurobiological changes involving multiple neurotransmitter systems:[3]

Neurotransmitter Dysregulation: Elevated norepinephrine from locus coeruleus results in hypervigilance and exaggerated startle responses. Reduced serotonergic activity contributes to depressed mood and lack of behavioral control. Reduced GABA function results in inadequate amygdala suppression, maintaining excessive fear responses. Elevated glutamate may contribute to neuronal damage and aberrant memory encoding [3].

Structural Brain Changes: The hippocampus demonstrates reduced gray matter volume, impairing contextualization of traumatic memories. The amygdala shows heightened reactivity to trauma-related stimuli. The ventromedial prefrontal cortex (vm PFC) shows reduced connectivity with the amygdala, so its normal “regulatory control” over amygdala fear circuits does not switch on properly [3].

These neurobiological findings suggest specific therapeutic targets. SSRIs increase synaptic serotonin availability, restoring serotonergic function. Cognitive-behavioral interventions gradually reestablish vm PFC-amygdala connectivity through repeated, controlled exposure to trauma memories, restoring prefrontal inhibitory control over amygdala-mediated fear [3].

Clinical Consequences

Psychiatric Manifestations

Posttraumatic Stress Disorder (PTSD): PTSD represents the most common formal psychiatric diagnosis, characterized by intrusive re-experiencing, hypervigilance, emotional numbing and avoidance, and negative cognitions. Approximately 50% of adolescent sexual assault survivors develop PTSD meeting diagnostic criteria [4].

Depression: Persistent depressed mood, anhedonia (loss of pleasure in activities), feelings of hopelessness, negative self-evaluation, and in severe cases suicidal ideation frequently co-occur with PTSD. Depression often emerges following the acute trauma period and may become chronic, particularly without intervention [4].

Anxiety Disorders: Beyond the situational anxiety associated with PTSD, generalized anxiety disorder, social anxiety disorder, panic disorder, and specific phobias frequently develop following sexual victimization. Anxiety symptoms often center on situations or stimuli resembling the victimization context [4].

Substance Abuse and Addiction: Adolescent survivors frequently develop problematic substance use patterns as maladaptive coping mechanisms to manage trauma-related emotional distress. Substance abuse patterns established during adolescence frequently progress to diagnosable substance use disorders with significant morbidity and mortality [4].

Self-Esteem and Self-Worth Disturbances: Severe shame, guilt, and self-blame frequently characterize the cognitive-emotional landscape of survivors. Many survivors internalize victim-blaming narratives prevalent in patriarchal cultures, resulting in profound self-directed anger and reduced sense of personal agency. These disturbances in self-worth persist long-term without intervention [4].

Trust and Intimacy Difficulties: Sexual victimization fundamentally disrupts capacity for healthy interpersonal connection and intimate relationships. Survivors frequently demonstrate marked relationship difficulties including withdrawal from peer relationships, difficulty

forming romantic attachments, and hypervigilance regarding interpersonal boundary violations in close relationships.

Behavioral and Social Problems: Behavioral manifestations frequently include aggression, academic decline, social withdrawal, and risk-taking behaviors. Some survivors exhibit externalizing behaviors (aggression, risk-taking) while others manifest internalizing behaviors (withdrawal, depression). School performance typically declines significantly following victimization [4].

Additional Psychiatric Disorders: In addition to common sequelae outlined above, sexual victimization occasionally precipitates more severe psychiatric conditions including psychotic disorders, personality disorders, and eating disorders. The severity and breadth of psychiatric sequelae typically correlates with severity, duration, and age of onset of victimization [4].

Physical Symptomatology: Survivors frequently report diverse physical symptoms including headaches, gastrointestinal distress, chronic pain syndromes, and sleep and appetite disturbances. These physical manifestations likely reflect both direct injury, stress-induced physiological dysregulation, and somatization of psychological distress [4].

Suicidal Ideation and Behavior: Sexual victimization represents a significant risk factor for suicidal behavior among adolescents. Survivors demonstrate elevated suicidal ideation and substantially elevated rates of suicide attempt and completion compared to non-traumatized populations. Suicide represents a leading cause of death among adolescent sexual assault survivors [4].

Functional Impairment and Life Course Impact
Beyond specific psychiatric symptoms, sexual victimization results in profound functional impairment across academic, social, occupational, and family domains. Adolescent survivors frequently experience significant academic decline related to concentration difficulties, school avoidance due to anxiety/depression, and reduced motivation. Social relationships frequently deteriorate as survivors withdraw from peer connections or develop interpersonal difficulties. In the long-term, victimization frequently results in occupational underachievement, relationship instability, and ongoing economic vulnerability [4].

Comorbid Disorders: Depression, anxiety disorders, substance abuse, and suicidal ideation frequently co-occur. Survivors demonstrate marked relationship academic decline, social withdrawal, and behavioral problems. Suicidal ideation represents a leading cause of death among adolescent sexual assault survivors [4].

Evidence-Based Psychotherapies
Trauma-Focused Cognitive Behavioral Therapy (TF-CBT)
Trauma-focused cognitive behavioral therapy (TF-CBT) is a structured, phase-based, and empirically validated psychotherapy for childhood and adolescent posttraumatic stress disorder (PTSD) following sexual victimization, integrating core cognitive-behavioral principles with trauma-specific techniques to target maladaptive trauma-related cognitions, emotional dysregulation, and behavioral avoidance, and demonstrating robust efficacy in randomized trials and meta-analyses, with large reductions in PTSD symptoms (often 50–60%), improved emotional regulation, and reduced comorbid depression and anxiety, thereby establishing it as a first-line treatment typically delivered over 12–16 weekly 60-minute

sessions with exibility for complex trauma [5]. Standard protocols encompass psychoeducation to normalize trauma responses and clarify the treatment rationale, skills-based work with caregivers to enhance supportive parenting and emotion coaching, and training in emotional regulation strategies such as relaxation, grounding, and controlled breathing, alongside cognitive restructuring to modify distorted trauma-related beliefs (for example, shifting from pervasive self-blame to more balanced appraisals) [5]. Central trauma-processing elements include gradual development and processing of a detailed trauma narrative in a safe therapeutic context, graduated in vivo exposure to trauma reminders in the child’s environment to reduce avoidance and foster mastery, and collaborative safety planning that addresses current risks, perpetrator warning signs, and concrete strategies to enhance protection across home, school, and community settings [5].

Eye Movement Desensitization and Reprocessing (EMDR)
EMDR represents an alternative evidence-based approach demonstrating efficacy approaching that of TF-CBT. The approach assumes that traumatic memories remain “frozen” in maladaptive encoding, and bilateral stimulation (eye movements, tapping, or auditory tones) facilitates reprocessing and integration into autobiographical memory [6].

EMDR Protocol: Eight-phase protocol including history-taking, preparation, assessment of trauma targets, desensitization (guided recall with bilateral stimulation), installation of adaptive cognitions, body scan, closure, and re-evaluation [6].

Efficacy: EMDR demonstrates efficacy comparable to TF-CBT in reducing PTSD symptoms, with some studies suggesting potentially more rapid symptom reduction. Meta-analyses indicate similar efficacy with shorter treatment duration (4-8 sessions versus 12-16 for TF- CBT) [6].

Comparative Effectiveness
Both TF-CBT and EMDR demonstrate comparable efficacy in PTSD symptom reduction. However, TF-CBT demonstrates superiority in reducing comorbid depression and anxiety. EMDR often completes in fewer sessions. TF-CBT demonstrates particular strength in younger children and includes integral caregiver involvement, typically resulting in superior family outcomes [6].

Table 1: Comparison of Trauma-Focused Cognitive Behavioral Therapy and Eye Movement Desensitization and Reprocessing

Feature	TF-CBT	EMDR
Session Structure	Structured phases with psychoeducation and cognitive work	Eight-phase protocol focusing on sensory aspects
Treatment Duration	12-16 sessions	4-8 sessions
Trauma Narration	Requires detailed verbal recounting	Minimal verbal elaboration
Homework	Yes—daily skills practice and exposure	No—session-based only
Cognitive Distortions	Directly and systematically addressed	Addressed indirectly through reprocessing
Best For	Prominent cognitive distortions, comorbid depression/anxiety, younger children	Acute distress, Difficulty with verbal processing, dissociation
Caregiver Involvement	Integral component	Minimal in standard protocol

Desensitization and Reprocessing Pharmacological Interventions

Pharmacological treatment addresses neurobiological dysregulation and is most effective when combined with evidence-based psychotherapy rather than as monotherapy [7].

First-Line: Selective Serotonin Reuptake Inhibitors (SSRIs)

SSRIs increase synaptic serotonin availability, restoring serotonergic function in mood and anxiety-regulating circuits. FDA-approved agents include fluoxetine (10-60 mg daily), escitalopram (10-20 mg daily), and sertraline (25-200 mg daily). SSRIs reduce PTSD symptoms including re-experiencing, hyperarousal, and mood dysregulation.

Approximately 60% of PTSD patients demonstrate clinically significant response. Side effects include activation/agitation (particularly early treatment), emotional blunting, and weight changes. FDA black-box warning requires careful monitoring of suicidal ideation in youth [7].

Adjunctive Agents

Prazosin: Alpha-1 adrenergic antagonist reducing noradrenergic hyperactivation, particularly effective for trauma-related nightmares (typical dosing: 1-4 mg at bedtime).

Propranolol: Beta-blocker reducing sympathetic arousal (0.5-2 mg/kg/day), may reduce hyperarousal symptoms.

Benzodiazepines: Should be used cautiously and briefly, as regular use may impair natural fear extinction and carries dependence risk.

Barriers to Effective Treatment in Bangladesh Resource and Accessibility Barriers

Limited Shelter Facilities: Bangladesh possesses few dedicated shelter facilities for abuse survivors. Access procedures require court orders (creating barriers wherein survivors must navigate legal system before accessing safety), capacity is severely limited, and geographic distribution leaves rural survivors with no local options [8].

Insufficient Mental Health Professionals: Bangladesh faces shortage of mental health professionals trained in trauma-specific interventions. Few possess TF-CBT or EMDR training. This shortage and undertrained workforce necessitate that survivors receive inadequate care or travel substantial distances [8].

Untrained Police and Judicial Personnel: Police and judicial personnel investigating sexual assault cases frequently lack training in child development, trauma dynamics, and evidence-based interviewing. Police employ confrontational approaches retraumatizing survivors, and judges lack understanding of trauma responses [8].

Poverty and Economic Vulnerability: Poverty increases victimization vulnerability while impeding service access. Economically marginalized adolescents face heightened victimization risk through economic dependency and reduced protective institutions. Simultaneously, poverty prevents service access: transportation costs, lost productivity, and inability to pay represent insurmountable barriers [8].

Legal and Institutional Barriers

Gendered Legal Definitions: Traditional legal definitions employ gendered language limiting protection to girls while excluding

boys. This gendered approach re-creates and perpetuates victim-blaming narratives regarding girls while minimizing boy victimization [2].

Extraordinarily Low Conviction Rates: Only approximately 3% of rape cases result in conviction in Bangladesh, compared to substantially higher rates in developed nations. Multiple factors contribute: evidence mishandling, witness intimidation, institutional corruption, and prosecutorial inadequacy [2].

Prolonged Judicial Processes: Cases frequently require multiple years for judicial resolution, traumatizing survivors through repeated testimony and enabling perpetrator evasion [2].

Cultural and Social Barriers

Pervasive Stigma: Profound stigma attaches to sexual victimization in Bangladesh's patriarchal society. Survivors face community ostracization, family rejection, and reduced marriageability. Boys face emasculation stereotypes and family shame. This stigma suppresses disclosure, delays help-seeking, and perpetuates abuse cycles [2].

Victim-Blaming Narratives: Patriarchal norms emphasize female submissiveness while holding girls responsible for preventing assault through "appropriate" dress and behavior. Survivors frequently internalize blame, and communities often minimize assaults [2].

Normalization of Sexual Violence: Sexual violence exists on a continuum of gender-based violence normalized within patriarchal societies. This normalization prevents abuse recognition and enables perpetrators to operate without accountability [2].

Practical Recommendations for Systemic Improvement Mental Health Service Development

Establish Specialized Trauma Programs: Dedicated programs specializing in trauma treatment should be developed within existing mental health facilities, employing evidence-based protocols (TF-CBT, EMDR) delivered by trained clinicians [5,6].

Expand Telehealth Capacity: Telehealth platforms delivering evidence-based interventions address geographic accessibility barriers while reducing stigma. Telehealth programs can reach rural adolescents lacking local services [8].

Implement Prevention Programs: School-based programs teaching healthy relationships, consent, and help-seeking should be integrated into secondary education curricula.

Professional training should include prevention components addressing perpetrator and victim risk factors [8].

Legal and Policy Reforms

Enact Gender-Neutral Legislation: Replace gendered legal definitions with gender-neutral, age-appropriate legislation protecting all children regardless of sex [2].

Implement Witness Protection: Specialized witness protection programs reduce intimidation and enable prosecution. Expedited trial timelines reduce prolonged trauma [2].

Strengthen Forensic Capacity: Investment in forensic laboratories, specialized investigative units, and personnel training enhances evidence collection and prosecution [2].

Institutional Strengthening

Expand Child-Friendly Courts: Specialized courts designed for child abuse should be expanded beyond current limited locations, employing trained judges and facilitating child-sensitive examination procedures [2].

Establish Integrated Service Centers: More One-Stop Crisis Centers integrate medical, forensic, legal, and psychological services in single locations, ensuring trauma-informed procedures minimizing retraumatization [2].

Train Frontline Professionals: Health care workers, police, judges, and social workers require specialized training regarding child development, trauma-informed approaches, evidence-based interviewing techniques, and culturally sensitive communication [2].

Community and Support Services

Public Awareness Campaigns: Campaigns addressing myths regarding sexual assault, normalizing disclosure, and publicizing available services reduce stigma and increase help-seeking [8].

Comprehensive Support Services: Services should integrate medical, forensic, legal, psychological, and social components including medical care, forensic examination, legal advocacy, psychological counseling, social services addressing housing and education, and family reintegration support [8].

Economic Interventions: Vocational training programs reduce vulnerability to victimization while enabling survivor economic independence. Conditional cash transfers to economically vulnerable families can reduce child labor, child marriage, and sexual exploitation by providing economic alternatives [8].

Conclusion

Adolescent sexual victimization represents one of the most prevalent and destructive forms of violence affecting children globally, with devastating impact in low- and middle-income countries including Bangladesh. The epidemiological burden is staggering, affecting millions of adolescents. Evidence-based psychotherapies particularly Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) and Eye Movement Desensitization and Reprocessing (EMDR) demonstrate substantial efficacy in reducing PTSD symptoms and restoring functional capacity, with both approaches demonstrating approximately 50-60% symptom reduction rates [5,6].

However, Bangladesh confronts critical barriers impeding effective prevention and treatment. Legal frameworks remain gendered and inadequate, institutional systems lack capacity and training, mental health services are severely limited, and pervasive stigma suppresses disclosure [2]. Addressing adolescent sexual victimization requires comprehensive, multi-level interventions spanning legal reform, institutional strengthening, mental health service expansion, community awareness, economic empowerment, and targeted research [2].

Adolescent survivors deserve recognition as survivors rather than victims, acknowledging their capacity for resilience and recovery. With appropriate support, evidence-based treatment, and systemic reforms addressing underlying vulnerabilities, adolescent survivors of sexual victimization can achieve recovery, restore functional capacity, and reclaim agency over their lives. The recovery process represents not erasure of trauma but restoration of agency and empowerment to reclaim one's narrative.

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