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Research Paper

The Impact of Childhood Trauma on Adult Criminal Behaviour: A Neuroscientific and Criminological Perspective

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ABSTRACT

Childhood trauma, including forms of abuse, plays significant role in shaping brain development and behaviour. Adverse Childhood Experiences (ACEs), when coupled with dysfunctional family environments, increases juveniles risk engaging in criminal activities. Neuroscientific research indicates early trauma impairs cognitive functions, emotional regulation, and impulse control—key factors in development of antisocial behaviour. This paper explores how childhood trauma linked to later offences such as drug abuse, sexual violence, and even paedophilia. It discusses criminological theories to understand connection between early trauma and criminality. Classical theories like Cesare Lombroso's biological determinism postulated criminality are innate and observable physical traits. In contrast, sociological and psychological theories emphasize environmental factors, suggesting trauma, poverty, family instability, and negative peer influence shape deviant behaviour. The paper reflects role of parents and teachers in shaping child's values and development. Ancient Indian Philosophy highlights the importance of *Avibhakta Kutumba* (joint family system) and *Brahmacharya Ashrama* (age-based stages) in teaching *Sanskaras*—moral and cultural values—through close guidance from elders. As per UNCRC, the family is foundational to child's well-being. Traditional philosophies like Vedanta, Karma, and Dharma view trauma as disruption of inner peace, with practices like yoga and meditation aiding emotional healing and mental peace. Today, smaller families, poor communication, and technology overuse hinder proper guidance, affecting children's mental health and increasing vulnerability to criminal behaviour. This paper argues for considering childhood trauma as mitigating factor in sentencing and calls for preventive, rehabilitative, and restorative justice approaches contributing to a more humane and effective criminal justice system.

Keywords: *Childhood Trauma, Adult Criminal Behaviour, Neuroscientific, Criminological Perspective*

Deviant conduct and crime are complicated social phenomena that are influenced by a number of circumstances, especially early experiences. Most people consider crime to be a type of deviance, which is defined as behavior that goes against social norms and values. Although all legal infractions are crimes, not all legal violations—such as civil

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violations—are crimes. As social, economic, and political factors change, so does the definition of crime. According to Clarence Darrow, a crime is any action that is illegal and subject to legal penalties. However, sociological interpretations are broader—Branes and Teeters regarded crime as behavior deeply offensive to public sentiment, while Edwin Sutherland emphasized that crime is learned through social interactions. D.R. Taft linked criminal behavior to social disorganization, suggesting that the weakening of traditional institutions and moral values leads to deviance.

Multiple ACEs significantly raise a child's risk of behavioral disorders, mental health conditions, or even criminal tendencies in the future. Adverse Childhood Experiences (ACEs), including abuse, neglect, and exposure to domestic violence, are strongly associated with the risk of engaging in antisocial or criminal behavior later in life, according to a growing body of research. Trauma can have permanent impacts, particularly if it occurs during childhood. It includes physiological, psychological, and psychological responses to upsetting situations, frequently leaving people feeling scared or powerless. Children's inadequate emotional and intellectual growth makes them more vulnerable. Sexual violence, neglect, mental and physical abuse, and exposure to dysfunctional families are all considered ACEs. These interactions disrupt brain development, especially in areas associated with decision-making, emotional regulation, and impulse control. A child's emotional, psychological, and neurological development may be significantly impacted by these traumatic experiences, making them more susceptible to dangerous or abnormal behavior. Nearly two-thirds of individuals in a 2013 survey conducted by the Centers for Disease Control and Prevention reported having at least one ACE, and approximately 13% reported having four or more. People from marginalized backgrounds, such as those who are impoverished or involved in the criminal justice system, are particularly at danger (Merrick et al., 2018). Higher rates of substance misuse, PTSD, anxiety, and depression are associated with several ACEs. In extreme situations, they play a role in the emergence of antisocial personality disorder, which is typified by emotional instability, hostility, and impulsivity. These results are corroborated by neuroscientific research, which demonstrates how early trauma changes the structure and function of the brain. It can affect areas that control emotion, memory, and the stress response, including as the hippocampus, amygdala, and prefrontal cortex. If these changes are not addressed, there may be long-term behavioral repercussions. Early therapy intervention, however, can lessen these consequences and encourage development that is healthy.

In the digital world of today, children are at more risk. Although technology has educational advantages, it also exposes kids to internet dangers including exploitation, grooming, and cyberbullying (Lubenets et al., 2023). Without parental supervision and appropriate digital awareness, kids could unintentionally put themselves in danger. Few researchers have focused on how negative content of online and its spreading increases the risk of long-term psychological and reputational damage. There have been limited studies concerning the intricate connection between the emergence of criminal conduct and early trauma, encompassing both conventional ACEs and newer online threats. The study aims to offer a comprehensive knowledge of how childhood hardship creates future deviance and what steps can be done to limit this progression by combining legal definitions, sociological insights, psychological theories, and technology influences. Also, our study highlights the importance of Ancient Indian Philosophy of Vedic ages like Yoga, Meditation and Samskara in reducing and healing of the trauma (Chadda & Rajans, 2021). This research aims to emphasizes how crucial it is to take into account elements like the severity of ACEs, mental

health, and neurological disorders while deciding on sentencing and organizing rehabilitation. By doing this, it highlights how urgently strong digital safety frameworks, trauma-informed care, and early detection are needed to protect children's wellbeing and help prevent crime in the long run.

This section introduces the article and outlines its structure. The article should provide a clear overview of the research background, methodology, results, and significance.

LITERATURE REVIEW

In the study of (Basto-Pereira etal, 2022), Adverse Childhood Experiences (ACEs) have been linked to an increased likelihood of criminal offenses in the future, according to the findings. Cross-cultural studies are not common in this area, and the majority of the study that has been done so far has been in Western industrialized nations. The conclusion that there are cross-cultural mechanisms sustaining the cycle of violence is reinforced by this study. Additionally, it suggests that criminal behavior is influenced by gender and the nation's social well-being levels, as well as types of dysfunctional households.

The research study of (Schwartz et al., 2015) pointed out that studies conducted over the years have shown that those with low IQs are more likely to commit crimes. Research on future delinquency and adult criminality has shown that low IQ and poor academic performance are related, and that children who drop out of school or fail because of their low IQ and poor performance also have few career options and engage in antisocial and criminal behavior.

The finding in the study work on the connection between criminal actions and childhood abuse is comprehensively reviewed in this study. (Van Horn, (2024) The results repeatedly demonstrate the substantial influence of childhood abuse on a number of characteristics of adult criminality, such as the emergence of psychiatric illnesses, impulsivity, antisocial personality traits, and a higher likelihood of committing crimes. This systematic literature review intends to guide future research paths and intervention efforts targeted at ending the cycle of criminal behavior resulting from early-life traumas by clarifying the complex relationships between childhood trauma and criminality.

The study of (Reddy, K. J. 2025) examines the evolution of criminal responsibility norms and the impact of neuropsychological data on culpability determinations in court. By shedding light on the complex relationships between neurobiological factors and legal notions of intent and moral responsibility, case studies draw attention to the challenges in making decisions in situations involving neurological disorders. Important lessons include the necessity for in-depth understanding of the factors that determine criminal culpability, the repercussions for the legal system, and the standards for sentencing when working with individuals who have neurological impairments.

The work done by (Freeman, J. 2012) centered on studies that have significance for both the successful rehabilitation and reintegration of lower functioning individuals into society and the efficient management of such individuals in correctional settings.

The finding of the (Boccio et al 2018) fills this gap in the research by utilizing data from the National Longitudinal Study of Adolescent to Adult Health (Add Health). It explores the relationships between verbal intelligence, criminal activity, and criminal justice processing

(i.e., arrest). Th results shows that verbal intelligence is linked to criminal justice processing. The people with higher verbal intelligence scores are more likely than those with somewhat lower verbal intelligence scores to avoid being arrested for illegal activity. We talk about how these results may affect further studies.

The findings of (Leschied etal 2008) shows that the prolonged effects of early childhood and adolescent experiences on later adult outcomes are prevalent. The study findings show that later adult criminal justice involvement is associated with dynamic rather than static predictors. Family structural factors such as witnessing assault, inter-parental conflict, family difficulties, and inadequate interaction were also forecast tools, as were family characteristics such as a range of negative methods of parenting like coerciveness, autocratic behaviors, and lack of child supervision.

The research study of (Pandya, N. 2023) revealed that, findings revealed aspects of Indian moral reasoning which are absent or not considered in Western studies. This study findings points out the role of Indian Philosophy for providing directions in moral development and socialization for ACEs.

CRIMINOLOGY THEORY

Comprehensive Theories of Psycho-Criminal Behaviour

Criminal psychology theories explain how an individual's surroundings, beliefs, and feelings shape their criminal behavior, which frequently starts in early childhood and persists throughout maturity.

Sigmund Freud's Psychodynamic theory, which highlights the influence of unconscious childhood experiences on subsequent behavior, is one of the fundamental theories. The Id (instincts and wants), the Ego (rational control), and the Superego (moral conscience) are the three components of personality, according to this view. A child's ego and superego may not develop normally if they are raised in a setting where they are mistreated, neglected, or unloved. Because of this imbalance, the Id is able to take control and behave impulsively and selfishly without regard for good or wrong. Because of their lack of empathy and sense of guilt, these people may commit crimes as adults (Bornstein et al., 2018).

The Cognitive theory emphasizes how people construct moral thinking and interpret information. According to psychologist Lawrence Kohlberg, moral development happens in phases, and those who do not get past the initial phases may find it difficult to discriminate between good and wrong. A youngster who is trapped at a low moral development level, for example, can follow the rules merely to get rewards or stay out of trouble rather than out of a true ethical knowledge. Aggressive or illegal reactions can also be influenced by cognitive distortions or incorrect reasoning, such as perceiving innocuous circumstances as threats. Therefore, faulty moral reasoning and maladaptive thought patterns acquired throughout childhood can result in recurrent criminal behavior in adult life (Nurhayati, 2006).

The Behavioural theory contends that encounters with the environment teach criminal behavior. Youngsters who grow up in homes or neighborhoods where violence, hostility, or crime are accepted may emulate those traits. The idea of "modelling" developed by Albert Bandura describes how kids watch and imitate the actions of role models, such as parents, friends, or celebrities. A youngster may pick up similar habits if they witness hostility leading to benefits or authority. This acquired behavior has the potential to become habitual

over time, particularly if it is reinforced. But since behavior is learned, it can also be altered with healthy surroundings and positive reinforcement (Horner et al., 2008).

The Personality theory investigates the impact of personal characteristics on behavior. Three primary personality qualities, psychoticism (aggression, antisocial traits), extraversion (impulsivity), and neuroticism (emotional instability) are associated with criminal behavior, according to Eysenck's PEN model. When a youngster that naturally exhibits these qualities is exposed to adverse situations, including abuse, inadequate parenting, or chaotic surroundings, they may grow up to exhibit antisocial conduct. Furthermore, individuals with antisocial personality disorder (ASPD), which is frequently caused by childhood trauma, may exhibit a chronic disdain for norms as well as a lack of empathy or regret. Chronic criminal activity can be influenced by contextual factors such as poverty or substance misuse, as well as personality-based tendencies.

The Intelligence theory connects criminality and low Intelligence Quotient (IQ). Youngsters with reduced cognitive ability may struggle academically, experience social rejection, and struggle to make decisions or solve problems. These drawbacks may cause people to make bad decisions, hang around with troublesome friends, and use crime as a coping method. Such early disadvantages have the potential to develop into a pattern of criminal behavior in maturity if they are not adequately supported (Walsh, 2024).

Italian School of Criminology

Cesare Lombroso (1836–1909), often called the father of modern criminology, was a trailblazer in the connection between criminal conduct and biology. As a psychiatrist by trade, he researched the characteristics of criminals and postulated that certain people are born criminals because they have physical characteristics that suggest a predisposition to crime. His seminal work, "The Criminal Man" (1876), signaled a change in emphasis from analyzing the crime to comprehending the character of the criminal. According to Lombroso, atavists-born criminals were biological remnants of prehistoric people, exhibiting traits like a big jaw, flat nose, asymmetrical skull, and low pain sensibility. At first, he thought they couldn't be changed, but he later changed his mind and proposed that only some criminals were born this way (Beccalossi, 2012).

He categorized criminals into, ‘Born Criminals’ means the individuals who are Inherently inclined to commit crimes due to biological traits, ‘Insane Criminals’ denotes those driven by mental disorders and ‘Criminoids’ denotes People who commit crimes due to external pressures or circumstances (Beccalossi, 2012).

His ideas laid the foundation for the Italian School of Criminology, though they were later criticized. Enrico Ferri, a follower of Lombroso, claimed that not all criminality has biological roots and underlined that social and environmental factors also affect criminal behavior. Even if Lombroso's biological determinism is no longer valid, his work brought scientific methodologies to the field of criminology and initiated a more thorough investigation of the biological, psychological, and social components of criminal conduct.

Trait theories, like those developed by Lonnie Athens, argue that violent behavior often stems from early exposure to brutality. Children who experience harsh treatment by parents or peers may internalize aggression and carry it into adulthood. This perspective opposes genetic theories and instead focuses on the lasting impact of traumatic social experiences.

Finally, Control theories, they change the focus from why people commit crimes to why they don't, especially those by Travis Hirschi. Hirschi contends that strong social ties, including a person's attachment to their family, belief in society's ideals, dedication to their aims, and participation in constructive activities, keep people on the straight and narrow. Children who receive direction, discipline, and emotional support during their upbringing are less likely to grow up to be criminals. Hirschi further underlined that deviance is more likely when there is a lack of self-control, which is frequently brought on by inadequate parenting and monitoring. His theory of internal, indirect, and direct controls clarifies how social and individual elements might deter crime at a young age (Wickert, 2022).

Every hypothesis or theories demonstrates how early experiences, whether emotional, cognitive, social, or environmental have a significant impact on an adult's behavior. A complicated combination of early trauma, poor moral development, weak social relationships, taught behaviors, personality features, and, in certain situations, biological predispositions frequently leads to criminal behavior. Rehabilitating offenders and reducing crime can both benefit from an understanding of these issues.

NEUROSCIENTIFIC RESEARCH

Childhood trauma significantly impacts brain development, leading to long-term neurobiological changes that affect emotional regulation, executive functions, and impulse control. These changes are often observed through functional imaging studies, which reveal reduced activity in the prefrontal cortex and increased amygdala activation, contributing to impaired decision-making and heightened emotional reactivity. Such neural alterations predispose individuals to various behavioral issues, including antisocial behavior and substance abuse in adulthood.

However, neuroplasticity offers hope for recovery through targeted interventions like neurofeedback and meditation, which can help mitigate these trauma-related deficits. Childhood trauma disrupts neurodevelopment, particularly in frontolimbic circuitry, leading to increased amygdala reactivity and decreased prefrontal recruitment, which may contribute to emotional dysregulation and vulnerability to psychopathology, emphasizing the need for targeted interventions (Kumar et al., 2023).

Neurobiological and Structural Changes Due to Childhood Trauma

Childhood trauma such as abuse, neglect, or exposure to violence—can deeply affect an individual's neurobiology. The impact is far-reaching, influencing brain structure, brain function, and hormonal regulation that collectively shape emotional resilience, cognitive capabilities, and behavioral responses. Understanding these changes is critical in both clinical and research settings, as it helps in developing targeted interventions and informs prevention strategies.

Structural Brain Changes like reduction in the amygdala and hippocampus, and shrinkage of dendrites in the medial prefrontal cortex, affecting emotional and cognitive processing happens due to Trauma (Neurobiology and Psychological Treatments - iResearchNet, 2025). The amygdala and hippocampus are vital structures within the limbic system, heavily involved in emotional regulation, memory processing, and stress response. Childhood trauma has been consistently associated with alterations in these regions.

'Amygdala' is almond-shaped structure plays a key role in detecting threats and generating fear responses. Studies such as those reviewed by (Sun et al., 2023) have shown that trauma can lead to an increase in amygdala volume in some cases, potentially due to hyperactivity and ongoing stress exposure. Alternatively, other research indicates volume reduction, likely reflecting neurotoxic effects of chronic stress or neuroplastic adaptations. These changes result in an increased sensitivity to perceived threats, heightened fear responses, and emotional reactivity.

'Hippocampus' is critical for memory formation and contextualizing threats, it often exhibits volume reductions in individuals with childhood trauma. This shrinkage is attributed to stress-induced neurotoxicity, increased glucocorticoid exposure, and impaired neurogenesis. These structural deficits can impair learning, memory consolidation, and the ability to differentiate relevant stimuli from threatening ones, exacerbating anxiety and fear-related disorders.

Dendritic Shrinkage could be seen in the Medial Prefrontal Cortex (mPFC). The mPFC is liable for higher-order executive functions like decision-making, impulse control, and emotional regulation. Trauma-related dendritic shrinkage in this region, as noted by (Sun et al., 2023), likely results from chronic exposure to stress hormones and neuroinflammatory processes.

The Functional Brain Changes like Increased amygdala activation and decreased prefrontal-amygdala connectivity are common, impairing emotional regulation and executive functions (Sun et al., 2023).

Elevated Amygdala Activation is shown in Functional neuroimaging studies. These examinations consistently reveal hyperactivity in the amygdala among individuals with childhood trauma histories. The heightened activation signifies an exaggerated threat perception, even in non-threatening situations.

This neurobiological hypervigilance may initially be adaptive in dangerous environments but becomes maladaptive when it persists into adulthood, leading to anxiety disorders, phobias, or post-traumatic stress disorder (PTSD). Increased amygdala activity also correlates with persistent feelings of fear and emotional dysregulation, influencing interpersonal relationships and overall mental health.

A hallmark functional change related to childhood trauma is the weakened connectivity between the prefrontal cortex and the amygdala. This reduced connectivity hampers the prefrontal cortex's ability to regulate emotional responses generated by the amygdala.

Richmond (2024) and Assogna et al. (2020) describe this disconnection as a neural substrate associated with poor emotional regulation, impulsivity, and vulnerability to stress-related psychopathology. The impaired circuitry contributes to a cycle of heightened emotional reactivity and reduced capacity for emotion regulation strategies, such as cognitive reappraisal or suppression.

Impact on Cognitive Functions

The prefrontal cortex's role in executive functioning is compromised due to structural and functional disruptions, leading to deficits in Working memory, Decision-making, Attention

regulation and Problem-solving. These deficits impair day-to-day functioning and increase susceptibility to psychopathologies such as depression, anxiety, and substance use disorders. Endocrine Disruptions: HPA Axis Dysregulation Dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis is often observed, leading to hormonal imbalances that exacerbate stress responses (Chauhan & Jain, 2023).

The Hypothalamic-pituitary-adrenal (HPA) axis is the central stress regulatory system, orchestrating the release of cortisol and other stress hormones. In childhood trauma, chronic stress exposure leads to persistent activation or dysregulation of the HPA axis, affecting the body's ability to mount a proper stress response. Prolonged or excessive cortisol release adversely affects brain regions such as the hippocampus, prefrontal cortex, and amygdala, creating a vicious cycle of neuroendocrine disruption (Assogna et al., 2020).

Hormonal Imbalances and Psychological Consequencesare also seen due to Trauma. Dysregulation of the HPA axis manifests as abnormal cortisol patterns. Elevated baseline cortisol levels can cause neurotoxicity, impair neurogenesis, and contribute to brain volume reductions which is called as 'Hypercortisolism'.

Conversely, some trauma-exposed individuals display blunted cortisol responses, which can impair adaptive stress responses and leave individuals vulnerable when faced with new stressors which is know as 'Hypocortisolism'. These hormonal imbalances not only amplify emotional dysregulation but also affect immune function, metabolic processes, and cardiovascular health, contributing to the broad physical health consequences seen in trauma survivors.

Broader Implications of Neurobiological Changes

a) Risk for Psychiatric Disorders: These neural alterations create a substrate for various mental health conditions like PTS and Major depressive disorder. Also other contributing factors are 'Generalized anxiety disorder', 'Borderline personality disorder' and 'Substance use disorders'.
b) Resilience and Vulnerability: Individual differences in neurobiological plasticity and environmental factors influence whether trauma results in severe psychiatric outcomes. Protective factors such as supportive relationships, therapy, and positive environmental stimuli can moderate or reverse some of these neurobiological changes. This highlights the significance of need of early intervention.

Implications and Interventions

Behavioral and Psychological Implications: Increased Risk of PTSD: Trauma exposure significantly raises the risk of developing PTSD, with symptoms like hyperarousal and emotional dysregulation (Richmond, 2024). Long-term Behavioral Issues: Individuals with childhood trauma histories are more prone to antisocial behavior, substance abuse, and impulsive crimes due to impaired impulse control and emotional regulation (Kirouac & McBride, 2009).

Interventions and Recovery for understanding the specific neurobiological alterations guides targeted interventions is vital. Psychotherapies like Cognitive-behavioral therapy (CBT) and trauma-focused therapies aim to improve prefrontal regulation and reduce amygdala hyperactivity (Lomas, 2024).

Pharmacotherapy like Medications modulating stress hormones, neurotransmitter systems, and neuroplasticity can help restore circuitry balance. Neurostimulation techniques such as transcranial magnetic stimulation (TMS) target the prefrontal cortex to enhance its regulatory functions. Lifestyle Interventions like Mindfulness, exercise, and nutritional support bolster neurogenesis and neural resilience.

Therapeutic Approaches

Trauma-focused cognitive-behavioral therapy and eye movement desensitization are effective in reducing PTSD symptoms. Interventions like neurofeedback and meditation can promote 'Neuroplasticity recovery', aiding in the recovery of affected neural circuits (Lomas, 2024).

While the neurobiological impacts of childhood trauma are profound, the potential for recovery through targeted interventions highlights the importance of early intervention and trauma-informed care. This underscores the ethical considerations in using neurotechnology for rehabilitation, raising questions about responsibility and free will in the context of criminal behavior.

INDIAN PHILOSOPHY

Yoga and Meditation

Yoga and meditation have remedies for psychological criminal behavior among children and adults. In Sanskrit, Yoga means to join, link, or yoke together; the main objective of yoga is to integrate the body, mind, and soul into one harmonious unit. The first yoga class is meant for spiritual activities and focuses on multiple basic values. The first basic concept of yoga is to assess an individual's perception and cognitive state while discovering the reason of pain and then employing meditation to solve the issue (Olsen, E.-K. H, 2021).

The second case value aimed to enhance awareness and consciousness. While the third was used to achieve Ascendancy or Transcendence. The fourth principle was enigmatic because yoga is utilized to enter other people's bodies and do Supernatural acts. The remedy to control the child's deviancy as mentioned in the cognitive theory of moral development, social contract and principled conscience the first to third ways of Yoga can be a part of the social, legal system.

The neuroscience of Yoga may assist to clarify why practicing it regularly successfully decreases stress and creates a state of equilibrium in the body. As we all know, two functional parts of the brain play a key role in stress.

Yoga has both physical and mental benefits over time, including improved posture, greater balance, detoxification, and body system regulation. Physical benefits include enhanced confidence and a more optimistic outlook, more awareness of the body and movement, higher self-acceptance, and enhanced interpersonal abilities. These physical and mental elements are important in deviant activity since actus reus and menswear are components of crime. Yoga can be used inside the criminal justice system as part of the penalty period for deformities.

The subsequent findings are based on the role of yoga for children and young people in juvenile facilities and practical experiments. Yoga and mindfulness therapy improve focus and activity in young persons with ADHD. Notably, a recent assessment of randomized

controlled trials (RCTs) at young revealed improvement in behavioral and/or current and cognitive and/or psychological functioning in children and teens (Chouhan, B. 2024). Yoga is about bringing oneself into harmony with the universe. It is the technology of harmonizing individual geometry with the cosmic to attain the greatest level of perception and harmony (Gulden, A., & Jennings, L. 2023).

Samaskara

Ancient Indian Samaskara philosophy is also crucial for children's healthy growth and for fostering sustainability in their adult and juvenile developmental stages. Putting together doing well, creating the ideal form of solemn recognition and preparation, performing works, and acknowledging the purity of the body by cleansing and the mind by education or an object by prayers are all examples of Samskara's many content-driving meanings.

The phrase can be found in the writings of Jainism, Buddhism, and Sikhism as well as the Srutis and Smritis of several schools of Hinduism. Samskara is another term like Dharma with wide imports, and it has no exact equivalent in any other language.

According to Sabara, ‘Samskara’ is that process by undergoing which a person or thing becomes fit the purpose for which he or it becomes fit the purpose for which he or it is meant. Shankara in Vedanta Sutra defines ‘Samskara’ as a process by which good qualities are imparted and defects removed. According to Kumarila, ‘Samskara’ is that action or rite which imparts fitness to a person or things. It serves two purposes (Upanayana – the Meaning of Saṃskāra, n.d.).

In the Jainism literature Removal of defects and Generation of good qualitie. Samskara had been so a method that was meant to cleanse, develop, mold, learn, and get ready an individual so as to provide him fit to discharge his responsibilities and duties at every stage of his life, or, in other words, meant to instill discipline, character, and good conduct, as well as help the acquisition of all other necessary qualitie(Gada M, 2015).

The ‘Shodasa Samskaras’ practiced even today in Indian Culture, i.e., from the consummation of a child in the womb of a mother up to sacrificing his life, i.e., up to death (attainment of moksha), has its significance at each stage. The family is the first school of a child, and the mother is the first guru means ‘Teacher’ is the primary Samskara and the Gurukula system is the Secondary Samskara, and the Society, including the State and Justice System is a third form of Samskara finally discharging duties towards the Society and attaining the moksha as final Samskara (Prajapati et al., 2010).

There has to be adopted on an analysis of the meaning of Samskara by Sabara, Kumarila, and Shankara on Vedanta Sutra in the present Society toward children and adults based on the principle of Sadachara explained by Harita, i.e. ‘Sat’ means good, and the good is those who are pure and free from stigma, and the practice of such people is called ‘Sadachara’.

Prāyaścitta

Shabara's commentary on 'Mimamsasutra' defines 'Prāyaścitta' broadly in Sruti scriptures. He claims that they are of two categories. Prāyaścitta can be utilized for restore customs caused by carelessness or heedlessness, while others are for penance for "not doing what one must" or "doing what one must not". The fourth definition relates it to sin, claiming that it is made up of Prayata and Cita (as in Upacita), and that it signifies "actions that destroy sins".

Sin (pāpa) or Adharma (not dharma) refers to any wrongdoing or behavior that violates Dharma. In Hindu literature, the term also refers to actions taken to atone for one's mistakes or transgressions (Yoshimizu, 2000).

Ancient Indian Philosophy of Punishment

The ancient philosophy of punishment placed greater emphasis on penance as a means of inner correction than it did on punishment. Penance to correct oneself, or prāyaścittas, is seen as a component of dharma. A minor is exempt from performing penance if he commits a sin like consuming 'sura' means Alcohol. According to Brhadyama smriti, the penance should be carried out by the minor's guardian, who could be their father, older brother, family member, or relative (Kadam, 1988).

During the Middle Ages, practyāmnāyas became popular as a penance that was suitable for the sinner's age, time, and strength. They were said to be a form of penance that cleanses a man without hurting him or making him feel too bad. There are numerous forms of Prāyaścitta, or penance, listed in the Dharmasastras. Among those, the following could be taken into account for the current state of affairs for both adults and children worldwide (Avadaiyappa, n.d.).

a) Abhiśasta (public confession): A beggar goes to people's houses, asks for food, confesses his guilt, and begs for forgiveness.
b) Anutāpa (repentance): "I shall not do that again" is something that a person repeatedly tells himself because he detests the evil that he done.
c) The two most prevalent types of penance that are recommended in Hinduism's Dharma teachings are 'Upavas' (dietary restriction or fasting) and 'Vrata' (with vow).

In Dharmasastra texts, vratas are discussed as a way to prāyaścitta. These scriptures' numerous prāyaścitta vratas imply that it involves feeding "Brahmins, blind, poor, and helpless" in addition to other charitable deeds.

Repentance doctrine found in Hindu Dharma books like the 'Manusmriti', 'Repentance' or 'Anutapa', is a crucial aspect of 'Prāyaścitta' (Jaiswal, 2013). Recognizing an act of injustice is seen as the beginning of a purging of the consequences of immorality and a step toward internal change. In order to get jnana (knowledge) for redemption and a return to a dharmic existence, the teachings advise that repentance and remorse be coupled with austerity, introspection, and study. These kinds of informal penalties are effective and vital in meeting the needs of children who require care and protection as well as those adults and children who violate the law. It is also important that while performing penance, some virtues, like honesty, should also be cultivated. In Indian Philosophy it is called as "Yamas"(Buragohain et al., 2025).

DISCUSSION

Childhood trauma has profound and complex impacts on neurobiology, including hormone dysregulation, structural changes in the brain, and malfunctioning neuronal circuits. Many of the behavioral and psychological issues seen in people who have experienced trauma are caused by these alterations. Understanding these neurobiological effects helps us better understand trauma-related psychopathology and creates opportunities for specialized therapies that promote resilience and healing. In order to lessen these alterations and

promote rehabilitation and an enhanced quality of life for those who are impacted, more advanced techniques are being developed as research progresses.

CBT and EMDR are psychological therapies that improve emotional regulation and help mitigate the neurobiological effects of childhood trauma. Neurochemicals can be balanced by pharmaceutical therapies, and neuronal circuits can be restored using neurostimulation methods like TMS. Mindfulness and physical exercise promote neuroplasticity and reduce stress hormones. Early intervention, a healthy diet high in omega-3 fatty acids, and environmental support all contribute to recovery by fostering resilience and brain health. Combining these methods provides a thorough plan to reverse or reduce trauma-induced structural and functional brain alterations, enhancing emotional stability, cognitive performance, and general wellbeing. Support that is both early and continuous is essential for the best results.

Criminological ideas place these biological predispositions within larger societal frameworks, whereas neurobiological evidence sheds light on the foundations behind criminal tendencies. According to traditional notions like Lombroso's biological positivism, criminality may be somewhat innate or connected to physical and biological characteristics ("Criminal Man According to the Classification of Cesare Lombroso.," 1911). These theories emphasize the significance of biological variables in criminal behavior, despite the fact that they are out of date in many ways. Current viewpoints acknowledge the interplay between personality development, environmental factors, and social learning processes and early trauma. For example, the social learning theory highlights how children may mimic aggressive or antisocial behaviors if they are exposed to such role models. Children who have experienced trauma are more likely to develop maladaptive behavioral patterns, particularly if they don't have secure settings or supportive social networks. Control theories posit that trauma undermines internal and external controls—such as moral values or social bonds—further increasing the likelihood of deviant acts. When these theories are integrated with neurobiological findings, a more comprehensive framework emerges: childhood trauma affects brain development, which in turn influences personality traits and behavioral tendencies, thereby increasing the risk of criminal conduct.

One of the most important factors influencing results is the timing of trauma exposure. Early childhood trauma typically has more severe and long-lasting impacts because it occurs during brain-sensitive developmental stages. After all, negative experiences can alter normal development trajectories, and the brain is most pliable during these intervals. Early detection and support are crucial since interventions during these crucial times may prevent or reverse some neurological abnormalities. On the other hand, adolescent trauma may also have a major effect on brain development, however the pattern of effects may vary and frequently lead to distinct behavioral manifestations. Adolescent trauma, for instance, may have a greater impact on risk-taking, substance misuse, and violent tendencies, all of which increase the likelihood of criminal activity.

Cultural and Philosophical Perspectives on Healing

Beyond Western biomedical approaches, additional healing pathways are provided by conventional cultural and philosophical systems. Yoga, meditation, and mindfulness are examples of Indian philosophies that encourage mental discipline and inner peace, which aids with emotional control. The effects of trauma are said to be lessened and inner transformation facilitated by practices like as samskara, which are psychological

impressions created via cultural and spiritual traditions. These all-encompassing methods highlight how crucial it is to combine therapeutic interventions with mind-body activities for the best results.

Policy and Societal Implications: Policy changes that prioritize prevention and early intervention are necessary in light of the realization that childhood trauma is a major contributor to criminal behavior. Significantly lowering the likelihood of criminal activity can be achieved by implementing trauma-informed treatment frameworks in juvenile justice, educational, and pediatric settings. It is essential to fund social programs that assist families and children who are at risk, such as community involvement, educational assistance, and mental health care. Additionally, as part of the rehabilitation process, trauma assessment and therapy ought to be incorporated into criminal justice reforms. Instead of only penalizing behavior, sentencing and incarceration programs that address underlying trauma encourage recovery and reintegration into society.

CONCLUSION

The integration of criminological, philosophical, and neuroscientific viewpoints emphasizes how childhood trauma plays a key role in forming the neurodevelopmental pathways that make people more likely to commit crimes. Early negative experiences cause long-lasting alterations in the brain regions in charge of impulse control, mood regulation, and decision-making. These alterations show up as behavioral vulnerabilities that raise the risk of committing crimes. Research still has limits, despite strong evidence linking early trauma to behavioral and neurobiological effects. Because of the diversity of trauma kinds, personal resilience, genetic predispositions, and environmental influences, it is difficult to universally identify direct causal pathways. To fully follow the paths from early trauma to adult behavior, longitudinal research are required.

Personalized intervention approaches that take into account psychological, neurological, and genetic factors should also be investigated in future studies. Developments in biomarker identification and neuroimaging may make it possible to identify at-risk patients early and implement customized preventive strategies. Understanding the neurological bases of criminal behavior requires a paradigm change in policy, intervention, and prevention. The cycle of violence and victimization can be lessened by utilizing the brain's plasticity to support resilience and recovery through early diagnosis and trauma-informed care.

There are encouraging opportunities to promote both individual and societal transformation through holistic approaches that combine contemporary neuroscience with conventional healing techniques like yoga, meditation, and group support. Holistic strategies that combine modern neuroscience with conventional therapeutic techniques present significant chances for both individual and society change. More focused and efficient interventions are made possible by neuroscience's insights into mental health, emotional regulation, and brain plasticity. These methods create a closer bond between the mind and body when paired with techniques like yoga and meditation, which encourage awareness, calmness, and physical health. Group support networks promote social bonding, shared experiences, and group resilience, all of which contribute to recovery. People can develop a sense of purpose, enhance emotional stability, and manage stress with the use of such integrative techniques. Widespread adoption of these practices can result in a more compassionate society, healthier communities, and lower healthcare costs. These holistic approaches have the ability to bring

about long-lasting change by bridging the gap between scientific knowledge and traditional wisdom, fostering growth, harmony, and well-being on both a personal and societal level.

By prioritizing rehabilitation over punishment and creating social settings that support healthy development, addressing childhood trauma as a public health priority has the potential to revolutionize the criminal justice system. Society may create safer and more resilient societies by combining scientific knowledge with cultural knowledge to develop more humane, long-lasting, and successful methods of ending the trauma-crime cycle.

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Conflict of Interest

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