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Abstract

Misdiagnosis misinforms treatments and results in undesired outcomes in clinical and psychiatric practices. Such incidences are common in psychiatric spaces and clinics, with attention deficit hyperactivity disorder (ADHD) misdiagnosis for Conduct Disorder (CD) emerging as a common occurrence. This case critiques ADHD's misdiagnosis for CD in a 13-year-old Indian-American, unveiling the effects of environmental stressors, bullying and racial discrimination on the symptoms of ADHD. A 13-year-old Indian-American attends a special education facility and faces racial discrimination. The rejection on the school bus in the morning and the classroom provoked aggression and hyperreaction. The racial discrimination and environmental factors aggravated CD symptoms, prompting a misdiagnosis of ADHD as CD. The Indian-American boy was bullied by White peers. His teachers complicated the case by providing inaccurate information about the boy's behaviour. This information misled the diagnosis and, hence, treatment. The DSM-V diagnostic model was used to diagnose the boy's condition. The bullied Indian-American boy responded to the environmental stimuli through hyperactivity, and aggression by bringing a toy gun to school. He pointed the gun at the tormentor as a response to the stimuli, replicating the environmental influence on his actions. Even though inaccurate, this would be the teacher's basis of narratives about the boy's behaviour. In response, peer group therapy and amphetamine were indicated to the boy as treatments against CD. This case underscores the importance of a thorough psychiatric evaluation that considers environmental and psychosocial factors, especially in culturally and racially diverse populations. The Indian-American boy underwent peer group therapy to enhance problem resolution and amphetamine treatment to alleviate psychosocial problems. By mocking his tormentors, his teacher thought that the boy was in full-blown conduct disorder. Racial discrimination and bullying on the bus significantly exacerbated his actions, which led to the misdiagnosis. Based on the teacher's misinformation and other factors, the boy's ADHD was confused for CD.

Keywords: *ADHD Misdiagnosis, Conduct Disorder, Bullying Context, Pediatric Behavioral Disorders, Differential Diagnosis*

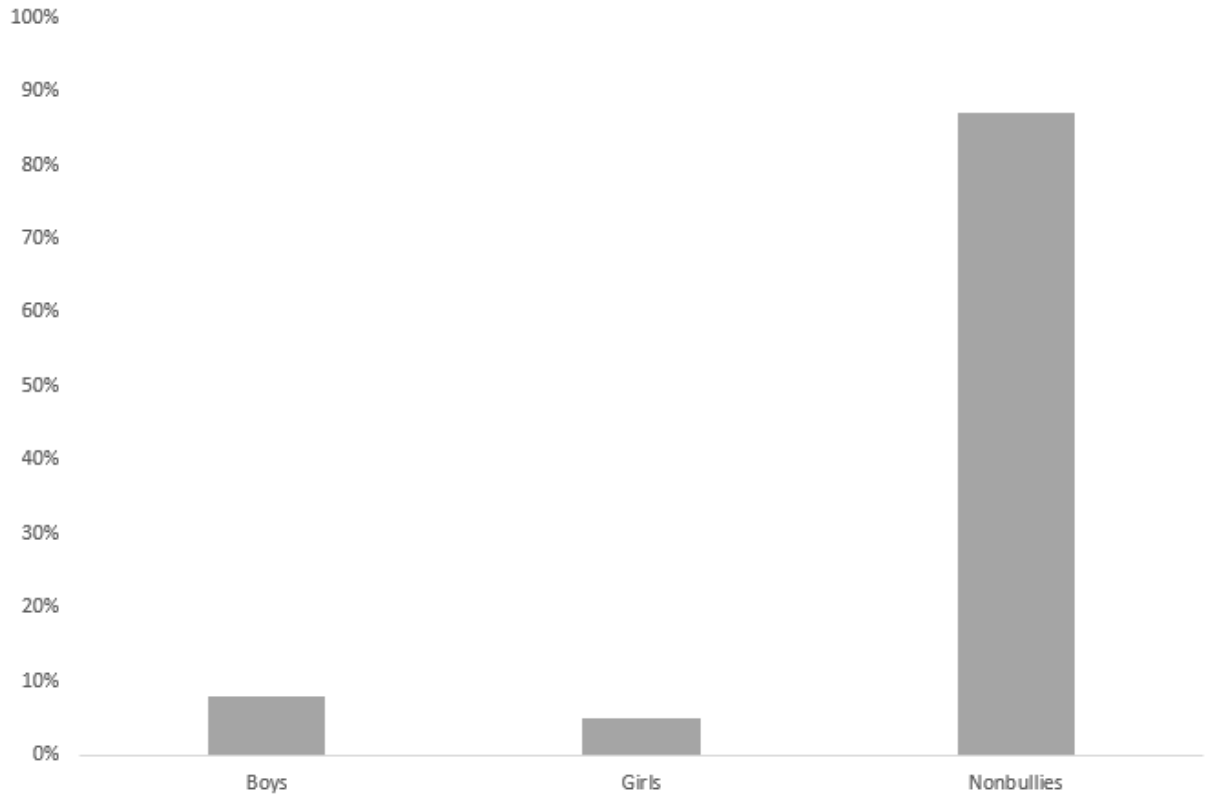
1.0 Introduction

ADHD refers to a neurodevelopmental condition presenting with an early onset in childhood. The disorder features inattentive-hyperactive or impulsive symptomatology across various settings that are indecent to developmental stages and negatively affect psychosocial functions(Pityaratstian & Prasartpornsirichoke, 2023). The global prevalence stands at 5.29%, with affected children posting low academic achievements or performance, school dropouts, and grade retention.

Bullying refers to repetitive negative actions, aggression and power imbalance intended to disturb, distract or harm an individual perceived to be psychologically or physically inferior to the aggressor (Källmén & Hallgren, 2021; Pityaratstian & Prasartpornsirichoke, 2023). In settings like schools, differences in religion, ethnicity, sexuality, color, disabilities, and weight are among the key triggers of bullying. Often, superior students oppress their counterparts and subject them to unjust treatment, hurting words or physical actions.

Bullying is common in 79 countries across the world, with 30% of adolescents affected (Hesapçıoğlu et al., 2017). The World Health Organization posits that an average of 6% of adolescents are actively engaged in bullying in schools, where 11% of adolescents have been reported victims of bullying. In contrast to girls (5%), boys are more prone to bullying behaviors (8%) (WHO, 2024), as illustrated in **Figure 1**. Despite the low incidence of bullying in schools, the psychiatric implications cannot be underrated.

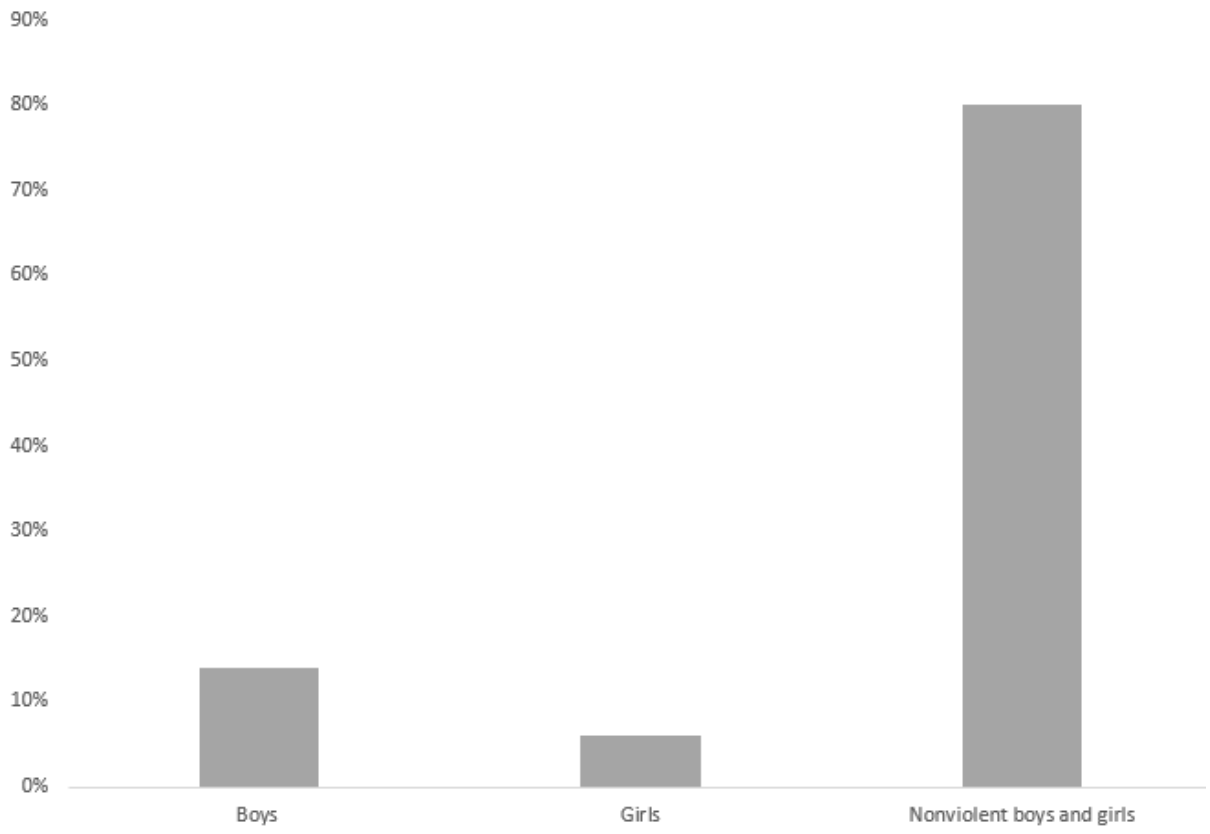
Figure 1: Dynamics of Bullying in School



Bullied adolescents suffer poor school performance and emotional and social underdevelopment (American Academic of Child and Adolescent Psychiatry, 2007). In other cases, mental health complications, including suicidality and self-harm, are common aftermaths of bullying (Källmén & Hallgren, 2021). According to the World Health Organization, bullying at school results in physical fights, poor social interaction and loss of

emotional regulation. While 1 in 10 bullied adolescents resort to physical exchange, a significant gender difference emerged (WHO, 2024), as illustrated in **Figure.** Only 20% of bullied adolescents turn violent.

Figure 2:



The nexus between bullying behaviour and ADHD regards the latter's comorbidity of anxiety disorders among adolescents and children (Pityaratstian & Prasartpornsirichoke, 2023). A study by the National Institute of Mental Health Collaborative, Multisite Multimodel Treatment Study of Children with ADHD, revealed undetectable behavioral differences between children with CD and ADHD. Even though recent evidence does not support the association between bullying involvement and CD (Pityaratstian & Prasartpornsirichoke, 2023), adolescents with CD-ADHD comorbidities are more vulnerable to victimization and penetration in school.

Owing to the undetectable differences, clinicians and psychiatrists face difficulties differentiating CD and ADHD. In many instances, ADHD has been misdiagnosed as CD in bullying contexts. Consequently, these misdiagnoses have led to inaccurate treatments and undesired outcomes.

ADHD's inheritability calls for a family history assessment (American Academy of Child and Adolescent Psychiatry, 2007). Also, family history can potentially indicate the presence of CD. Despite the diverse approaches to accurate diagnosis, misdiagnoses are common in clinical practices. The inaccurate diagnoses result in inappropriate treatments that neither address the cases of ADHD nor improve the patient's quality of life or health status.

This case series reviews a particular case of an Indian-American boy whose ADHD was misdiagnosed as CD, resulting in inappropriate treatment. This analysis connects with the

environmental and psychological effects of bullying to establish the multidimensional mechanism of ADHD's misdiagnosis as CD among minority groups.

2.0 Case Presentation

Demographics

This case involved a 13-year-old Indian-American boy at a private special education facility. The school is predominantly White, including teachers and supporting staff. Every morning he boards the school bus, his peers reject him, and no one wants him to sit next to them on the bus. In class, his classmates do not want to sit next to him, except for other fellow adolescents of Indian-American origin: an Asian Indian American. Nonetheless, the boy is quite antisocial and appears to be disorganized. One of the teachers noticed that the boy was quite cruel and aggressive towards his peers. However, he asserted that his peers provoked and intimidated him. One day, the boy brought a toy gun with him to school. Another saw him point the toy gun at his tormentor. The boy was defiant and aggressive as he acted to shoot the bully. A week earlier, the boy had been to a psychiatric facility. A DSM-5 diagnostic criteria was used to diagnose the boy, and aggressiveness, hyperactivity, inattention, poor social skills, and impulsivity were reported as the symptoms **(Table 1).**

Table 1: Characteristic symptoms of ADHD and CD separately

ADHD symptoms	CD symptoms
Hyperactivity	**Physical aggression**
Inattentiveness	**Cruelty**
Impulsivity	**Antisocial**
Poor social skills	**Disorganized**

The boy was assessed by interviewing his teacher, psychiatric evaluation, and assessment of the school's behavioural records. Upon reviewing assessment results, the boy was found with higher ADHD scores. Previously, the boy was diagnosed with CD and put on peer group therapy. Following the accurate diagnosis, the boy was put on amphetamine, cognitive behavioural therapy and peer group therapy.

3.0 Discussion

Globally, the prevalence of accurate mental illness diagnosis and effective treatment remains a priority for educators and stakeholders. Accurate diagnoses and effective treatments treat mental illnesses and alleviate symptoms, enabling optimal learning among all children. Even so, cases of misdiagnoses, alongside consequential inappropriate treatments, cannot be understated and overlooked. The U.S. Department of Education asserts that educators must give inaccurate information on adolescents, whereas counsellors disproportionately misdiagnose ADHD adolescents as CD. Evidence shows that racial discrimination against Indian American adolescents develops along ethnic and racial identities (Unni et al., 2022). This case series reviews a case of an Indian-American with ADHD as CD.

This case series established the propensity of misdiagnosing ADHD as CD due to shared symptoms. The misdiagnosis occurs due to crossover symptoms and minimal differences that

can be easily ignored. However, in the context of bullying, misinformation by teachers is more likely to promote misdiagnosis.

Evidence from previous studies strongly indicates that ADHD is comorbid with CD (American Academic of Child and Adolescent Psychiatry,(American Academic of Child and Adolescent Psychiatry, 2007). However, ADHD and CD are often confused, hence misdiagnosis.

In the context of bullying, ADHD and CD misdiagnosis draws from multiple factors like racial discrimination, socio-economic differences, and ethnicity (Español-Martín et al., 2023). However, different cases present unique scenarios for misdiagnoses.

Differences between ADHD-CD

CD or ADHD patients are described as inattentive or impulsive. Yet, children with CD meet DSM-5's criteria for ADHD (American Academic of Child and Adolescent Psychiatry, 2007). However, ADHD is often misdiagnosed as CD due to overlapping symptoms **(Table 2).**

Table 2: This timeline illustrates the progression of the patient's ADHD symptoms and significant incidents, including the day he brought a toy gun to school.

***Sym*ptom**	**ADHD**	**Conduct Disorder**	**Patient's Presentation**
Attention Issues	Often (frequently loses focus on tasks)	Rarely	Yes
Impulsivity	Yes	Yes	Yes
Hyperactivity	Yes	Occasionally	Yes
Aggression	Rare	Yes	No (misinterpreted)
Defiance	Occasional	Yes	No
Reaction to Stress	Varies	Often adverse	Yes (brought toy gun)
Response to Discipline	Often poor focus	Often poor cooperation	Poor focus

Unique symptoms like inattentiveness, impulsivity, irritability and hyperactivity mark ADHD. This suggests that ADHD children are not as typically aggressive as they are disruptive, as summarized in **Supplementary Table 2 & 3**. Often, CD patients have fewer symptoms of ADHD. On the other hand, ADHD children meet CD's diagnostic criteria. Hence, they are often thought to have CD.

Table 2: This timeline illustrates the progression of the patient's ADHD symptoms and significant incidents, including the day he brought a toy gun to school.

***Sym*ptom**	**ADHD**	**Conduct Disorder**	**Patient's Presentation**
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Reaction to Stress	Varies	Often adverse	Yes (brought toy gun)

Response to Discipline	Often poor focus	Often poor cooperation	Poor focus

Table 3: This table compares common symptoms associated with ADHD and Conduct Disorder side-by-side, highlighting the initial misinterpretation of the patient's behavior.

SYMPTOMS	
ADHD	CD
Impulsivity	Impulsivity
Hyperactivity	Aggression
Response to stress	Defiance
Aggression	Extreme response to stress or external stimuli

Nonetheless, the present events might be used as the rationale for the misdiagnosis. In the present case, the Indian-American boy's diagnosis of CD could be attributed to his response to racial discrimination. Fundamentally, the act of bringing the gun and pointing at his tormentors, coupled with teachers' accounts of his behaviour, could justify aggression, impulsivity and hyperactivity. The U.S. Department of Education found that Indian-American adolescents, despite presenting with similar symptoms as Caucasian, are diagnosed with CD other than ADHD (Unni et al., 2022). To elaborate on CD, the American Association of Psychiatrists describes the disorder as a persistent and repetitive violation of societal norms, others' basic rights and rules.

Effects of Racial Discrimination

Racial discrimination is a trigger to behaviours that elucidate CD-like symptoms and leads to ADHD's misdiagnosis as CD. The discrimination of minority persons results in aggression, violation of societal norms and potential violence. The American Psychiatric Association contend that Indian-American children are more likely to encounter racial discrimination in a White-based community, society or school (American Psychiatric Association, 2020). A similar scenario unfolds in the present case scenario where the 13-year-old Indian-American boy suffers racial discrimination on the school bus and in the classroom.

The outright racial discrimination and rejection on the school bus and in the classroom was a common scenario for the young boy. Looking at the literature on racial discrimination and ADHD, bias and mistreatment trigger disruptive behaviours and create a hostile environment for co-existence (Fadus et al., 2019). The Indian-American boy responded to the stressful environment by bringing the gun to threaten the bullies. This was an impulsive move, embodying impulsivity witnessed among ADHD patients, but it can be a varied response. Basically, not every ADHD child would respond by threatening their tormentors with gun toys.

Effects Of Environmental Factors

Bullying negatively impacts on learning environments through consequentiality or causality (Hesapçıoğlu et al., 2017), by which adolescents who are not involved in bullying report higher self-esteem, impulsivity, inattentiveness, hyperactivity, defiance, suicidal thoughts and depressive symptoms. On the other hand, conducive environments culture and foster inclusivity and co-existence among diverse individuals.

In the present case, the 13-year-old boy was misdiagnosed with CD for impulsivity and aggression. The boy carried a gun to threaten his tormentors, which is the foundation for diagnosis as CD. However, the boy was responding to the environmental stressor: bullies. One study found that aggression and impulsivity are some of the long-term effects of bullying among adolescents (Wolke & Lereya, 2015). Racial discrimination and bullying were a

significant external stimulus enough to trigger impulsivity and aggression. Arguably, these are typical defence mechanisms against tormentors.

The environmental phenomenon connects with the teachers' report and account of the boy's behaviour. Inaccurate information promoted the misdiagnosis of ADHD as CD. School's behavioural report, psychiatric evaluation and an interview with the boy's teacher established that he suffered from ADHD but not CD.

The Committee on Quality Improvement of the American Academy of Paediatrics established a treatment guideline for adolescent victims of bullying. The guideline recommended the following: one, evaluation of ADHD among adolescents presenting with impulsivity, inattention, hyperactivity, behavioural problems, and academic underachievement among adolescents. Two, ADHD diagnosis based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Three, direct ADHD assessment from evidence provided by a teacher or other professionals in the school environment. Four, ADHD assessment is based on evidence presented by caregivers or parents. Five, evaluating adolescents with ADHD for co-existing conditions (Wolraich et al., 2019). A clear diagnosis and differentiation mark the onset of ADHD and CD diagnosis.

4.0 Conclusion

Diagnosis and treatment are complementary psychiatric activities. Accurate diagnosis results in effective management, whereas inaccurate diagnosis misinforms psychiatric treatments. In the present case series, ADHD's misdiagnosis for CD is consequential to inappropriate interventions are administered. This evidence expands psychiatric knowledge and evidence on the importance of evidence-based interventions against various psychiatric illnesses to enhance quality care and patient management.

Even with robust diagnostic criteria and tools, the current psychiatric space features misdiagnosis, resulting in inaccurate treatment. The Indian-American's case presents ADHD's comorbidity with CD. However, ADHD was inaccurately diagnosed as CD, resulting in amphetamine and group therapy interventions. These interventions implicate insignificant impacts on the boy as they are tailored for totally different psychiatric complications.

Such psychiatric errors prompt further studies on mechanisms of enhancing adherence to clinical guidelines and practices on ADHD and CD. The clinical guidelines outline the diagnosis and treatment of psychiatric conditions. This prevents misdiagnosis. In such instances, the guidelines should extend to criteria of vetting teachers and parents who provide information about children. Such information could be inaccurate, and misguide diagnosis and consequentially, treatment.

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