CASE SERIES

Betting on Health: The Impact of Online Gambling Addiction on Blood pressure in Indian Youth – A Case Series

Arjun Mallasandra Balakrishna[1], Vidya Ramesh[2]

ABSTRACT

In recent years, India has seen a rise in online gambling due to its partial legalization, leading to an increase in online casinos and gambling platforms. This shift has brought about growing concerns about online gambling addiction, particularly among adolescents. One significant health issue associated with this addiction is hypertension, which has been observed in several young individuals struggling with gambling behaviors. The neurobiology of gambling addiction involves the dysregulation of brain reward pathways, specifically those linked to dopamine and the prefrontal cortex, which affect impulsivity, decision-making, and stress responses. This case series examines the neurobiological and physiological consequences of online gambling addiction in adolescents, highlighting the link between chronic stress, altered brain function, and hypertension. Management strategies include a multidisciplinary approach, combining behavioral therapy to address addiction, pharmacological treatments for hypertension, and counseling for stress management. Preventive interventions are crucial, focusing on early identification and screening of at-risk adolescents, psycho-education on gambling risks, and promoting healthy coping mechanisms to reduce impulsivity and stress. Findings suggest that addressing the neurobiological roots of addiction and implementing preventive measures can help reduce the incidence of hypertension and related health issues in adolescents. Effective policy-making should emphasize early screening, stricter online gambling regulations, public education, and better access to mental health services to combat gambling addiction and its associated health risks.

KEY WORDS: Online gambling, Hypertension, Behavioural addiction.

Introduction

The rising incidence of hypertension in adolescents, linked to gambling addiction, has emerged as a critical public health issue. Online gambling industry is heavily promoted by film stars, cricket players, and various celebrities who endorse these websites, making gambling seem glamorous and accessible. Unfortunately, the disclaimers about the risks of gambling are often read so rapidly that they barely register with viewers, creating an illusion of safety around an inherently risky activity.

Access this article online

Quick Response Code:

Website: www.jmsh.ac.in

Doi: 10.46347/jmsh.v11.i3.25.30

Gambling addiction disrupts reward pathways in the brain, particularly involving dopamine and the prefrontal cortex, which are crucial for impulsivity, decision-making, and stress responses[1]. Chronic stress linked to gambling can negatively impact cardiovascular health, contributing to hypertension by altering brain function and autonomic regulation[1]. Effective management requires addressing these neurobiological factors through a multidisciplinary approach, including behavioral therapy, pharmacological treatment for hypertension, and stress management[2]. Early screening, psychoeducation, and promoting healthy coping mechanisms are vital preventive strategies to reduce the health risks associated with gambling addiction.

This case series presents four adolescent patients diagnosed with hypertension, each linked to online gambling addiction in a scenario, addresses a growing concern in contemporary India. The partial

[1]Department of Medicine, Akash Institute of Medical Sciences, Devanhalli, Karnataka, India, [2]Department of Community Medicine, Akash Institute of Medical Sciences, Devanhalli, Karnataka, India

Address for correspondence:
Arjun Mallasandra Balakrishna, Department of Medicine, Akash Institute of Medical Sciences, Devanhalli, Karnataka, India. E-mail: dr.arjunmb@gmail.com

legalization of online gambling has led to widespread accessibility, particularly among young adults, facilitated by endorsements from celebrities. Each case illustrates the psychological and physiological ramifications of gambling addiction, including elevated systolic blood pressure, anxiety, depression, and suicidal tendencies due to financial stress

Case descriptions

CASE 1

An 18-year-old female engineering student was brought to the emergency department after experiencing loss of consciousness followed by irrational, psychotic behaviour. On examination, her blood pressure was found to be 166/96 mmHg, while other vital signs remained stable. Initial suspicions of seizure activity led to a magnetic resonance imaging (MRI) scan, which showed no abnormalities, and laboratory tests returned normal results. Despite the absence of definitive evidence for seizures, she was treated under a high index of suspicion. The next day, her systolic blood pressure persisted at elevated levels, around 150 mmHg, as reported by her parents who were constantly at her bedside. The patient exhibited a lack of appetite, refusing to eat, which prompted the need for psychiatric evaluation. During this assessment, she revealed her addiction to online gambling and disclosed that she was in significant debt, amounting to approximately one million rupees, to friends and family. This situation illustrates how unnecessary tests and treatments can occur when adolescents feel compelled to hide the truth from their parents due to fear of judgment or repercussions. After adequate counselling, she was started on selective serotonin reuptake inhibitors (SSRIs) by a psychiatrist. During a follow-up appointment six weeks later, her blood pressure had returned to normal, and her overall condition showed marked improvement.

CASE 2

A 26-year-old post graduate college student from a middle-class family in rural India was diagnosed with hypertension and had been taking nebivolol 2.5 mg for the past two years due to experiencing palpitations. Despite adherence to his medication regimen, his blood pressure remained elevated at 156/78 mmHg. A comprehensive workup for secondary hypertension, including tests for renal artery stenosis, pheochromocytoma, and carcinoid tumor, returned negative results. Further evaluation through 24-hour blood pressure monitoring revealed a "**non-dipping**" (Figure 1) pattern despite a normal basal heart rate during sleep.

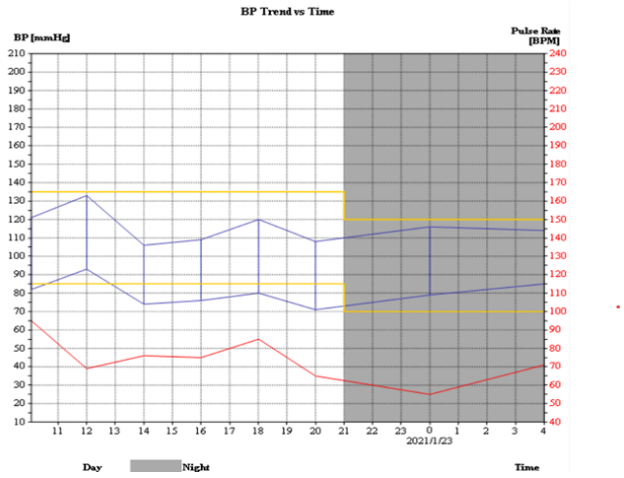

Figure 1: Showing Non dipping pattern on 24 hr ambulatory monitoring

Upon deeper investigation, the patient reported experiencing insomnia. Seeking professional psychiatric help, he disclosed his online gambling addiction, explaining that the thrill of winning motivated him to play continuously, often until he lost everything he had won.

He expressed a preference for managing his blood pressure with medication rather than taking sedatives to help him sleep, as he was reluctant to miss out on nightly gambling sessions with his peers.

Over the next three months, with comprehensive intervention from psychiatrist and physician, the patient was counselled adequately along with prescription of anxiolytics for 4 weeks following which his blood pressure normalized, Ultimately, he no longer required nebivolol for blood pressure control, demonstrating the critical importance of addressing underlying psychological issues in managing hypertension effectively.

CASE 3

A 25-year-old male employee, recently hired at a private company, was discovered to have a blood pressure of 176/98 mmHg during a routine physical examination before starting work. His heart rate was recorded at 90 bpm, raising suspicion for white coat hypertension. When advised to undergo 24-hour blood pressure monitoring, he declined and was instructed to monitor his blood pressure at home, which consistently showed systolic hypertension with readings exceeding 140 mmHg.

Despite normal findings on echocardiogram and no evidence of left ventricular hypertrophy or retinopathy, the planned workup for secondary hypertension was halted when the patient expressed concern about affordability, as he had just started his job, and his insurance did not cover the costs. This prompted him to disclose the truth about his significant debt, stemming from an online gambling addiction, and revealed that this job was his only means of clearing his financial obligations.

Additionally, he reported experiencing insomnia, which led him to abuse marijuana (smoking cannabis) on daily basis, and he had even resorted to selling it to settle his gambling debts. The patient was referred to a psychiatrist for further management, where he received treatment for both de-addiction and depression, alongside extensive lifestyle modifications. One month later, his systolic blood pressure had significantly decreased, allowing him to return to work, highlighting the urgent need for addressing underlying psychological issues contributing to both addiction and hypertension.

CASE 4

23-year-old lady from a humble rural background who was pursuing her Masters in mathematics was brought to the emergency department in an unconscious state after allegedly consuming multiple tablets of Atenolol 50 mg, a medication prescribed to her by general practitioner for recently diagnosed hypertension. Upon admission, her ECG revealed complete heart block with a heart rate of 36 beats per minute, and her blood pressure was not recordable. Despite immediate intervention, including the placement of a temporary pacemaker, she had already developed hepato-renal failure and sadly passed away the following day.

Her parents recounted her remarkable academic history, noting that she had achieved 100% marks in mathematics during her undergraduate studies. However, this success had fostered a delusion of grandeur, leading her to believe she could win significant amounts through online gambling and casinos. Friends and peers began supporting her, often providing money with the expectation that she could double it in her gambling endeavours. This obsession took a toll on her well-being; she frequently stayed awake at night, driven by the pressure to win, which ultimately affected her academic performance. Despite her parents' concerns about her behaviour, they sought help from local deities and exorcists instead of professional mental health support, which proved ineffective. Overwhelmed by her accumulating debts from gambling, she tragically resorted to an overdose of medication, leading to her untimely death. This case has been published after obtaining appropriate consent from the parents of the deceased.

Discussion

This case series underscores how online gambling addiction can lead to severe psychological distress in adolescents, hidden addictions can mimic medical emergencies, leading to unnecessary diagnostic tests and treatments when underlying causes are not disclosed like in our first patient. Similar cases documented previouslydescribe how the intense stress from financial debts and secrecy can elevate blood pressure and even precipitate acute psychotic episodes[3]. Gambling-induced stress frequently manifests as hypertension and depressive symptoms among young adults due to perceived social and familial repercussions[3].

The complex interplay of inferiority complex, anxiety, and bipolar tendencies as discussed in our second case, needs to be addressed by a multidisciplinary team comprising psychiatrists, an internal medicine consultant, and a psychologist, alongside support from his family. Psychogenic hypertension suggests that fear and guilt associated with concealed behaviors, such as gambling addiction, can lead to sustained high blood pressure, requiring psychiatric intervention for resolution[2].

Patients' reliance on recreational drugs as a coping mechanism for insomnia and financial stress reflects a common pattern where individuals with gambling addiction turn to substance use to manage anxiety and depressive symptoms. Addressing underlying psychological stressors is crucial in young adults presenting with unexplained hypertension and substance abuse like discussed in our third case.

Our 4th case highlights the deadly consequences of untreated gambling addiction in young adults, particularly in rural areas with limited mental health support. The patient's academic success led to a false belief in her ability to win through gambling, which quickly escalated into debt, stress, and ultimately a fatal overdose. Cultural stigmas and reliance on non-medical interventions prevented timely mental health support, demonstrating the urgent need for

increased awareness and accessible resources for addiction and mental health care in underserved regions. Pathological gambling is associated with significant impairments in neurocognitive functions, particularly in areas related to impulsivity, decision-making, and reward processing. These cognitive deficits are linked to altered functioning in brain regions such as the prefrontal cortex and striatum, which play critical roles in regulating behavior and emotional responses[4].The hypothalamic-pituitary-adrenal (HPA) axis plays a crucial role in the stress response, and dysfunction within this system has been shown to contribute to both gambling addiction and hypertension. Chronic activation of the HPA axis due to gambling-related stress can exacerbate cardiovascular health issues, including high blood pressure[5]. Preventing tragic cases linked to gambling addiction requires awareness, early education, and support. Parents need to recognize warning signs, foster open communication, and teach children the value of hard work over risky financial gains. Poverty, peer pressure, boredom, and the lure of quick wealth often push young people into gambling, especially in the absence of strong cultural values or accessible support systems. Health providers should maintain a high index of suspicion and conduct thorough assessments before diagnosing young patients with conditions like hypertension, as underlying stressors may be overlooked. Enhanced governmental advisories, strict legislations, proactive mental health services, and better parent-physician communication can collectively reduce the impact of gambling addiction on youth.

Conclusion

Addressing gambling addiction among youth demands a community-wide effort focused on awareness, education, and support. Enhanced governmental advisories and accessible mental health services are crucial in creating a supportive environment that encourages healthy choices, ultimately safeguarding the well-being of our youth in an increasingly risky digital landscape.

Disclosure

Funding: None

Conflict of Interst: Nil

References

1. Desai RA, Maciejewski PK. Gambling, alcohol use, and the neurobiological mechanisms underlying comorbidity. Neurobiol Addict. 2010;21(2):128–140.
2. Hodgins DC, et al. Psychogenic factors influencing hypertension in adolescents with gambling addiction. Int J Ment Health Addict. 2019;17(2):439–449.
3. Derevensky JL, Gupta R. Gambling problems in adolescents: Severity and related factors. Psychol Addict Behav. 2016;30(3):385–391.
4. Goudriaan AE, et al. Neurocognitive functions in pathological gambling. Clin Psychol Rev. 2010;30(4):302–318.
5. Gunn SH, et al. The role of the hypothalamic-pituitary-adrenal (HPA) axis in gambling addiction and hypertension. J Neuroendocrinol. 2016;28(7).

How to cite this article: Balakrishna AM, Ramesh V. Betting on Health: The Impact of Online Gambling Addiction on Blood pressure in Indian Youth – A Case Series. J Med Sci Health 2025; 11(3):343-346

Date of submission: 19.01.2025
Date of review: 08.02.2025
Date of acceptance: 20.03.2025
Date of publication: 14.11.2025