



Review Article

Mysterious Havana Syndrome in India: A Growing Concern

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Article Info

Article history:

Manuscript ID:

IJPHI0115292024

Received: 01-jan-2024

Revised: 15-feb-2024

Accepted: 29-March-2024

Available online: April
2024

Keywords:

Havana Syndrome,
Neurological illness,
Mystery, Hysteria, India.

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Abstract

Background: The abrupt onset of auditory, vestibular, and neurological symptoms was observed by several U.S. ambassadors and their families in Havana and other locations, including China, Russia and France, from November 2016 until the summer of 2021. The government of India plans to look into what's causing an outbreak of a mysterious illness in the year 2023.

Objectives: This review delineates Havana syndrome present status and possibilities in India.

Method: This study was conducted by doing a review of the scientific literature as well as internet news sources. A case history sharing mechanism is needed because of the rising number of cases, their vast geographic distribution, and the lack of etiopathogenesis certainty. Scopus, MEDLINE, and Ovid databases were searched from 2000 to August 2023 for potentially relevant articles.

Result: Havana Syndrome has harmed US-Cuba relations. These persons have physical, physiological, or psychological symptoms. The Havana syndrome is a nonspecific neurological disorder with an unclear causal factor(s), an acute period of auditory-vestibular symptoms, and a chronic phase of nonspecific neurobehavioral symptoms. This condition ought to be thought about and explored as a matter of health concern rather than as a matter of political contention.

Conclusion: This is another example in today's suspicious and anxious world. Even though the etiology is uncertain, recent Havana Syndrome cases have prompted swift action. Address a new targeted attack on ambassadors and other high-ranking officials.



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INTRODUCTION

Indian society is increasingly burdened by both disease and dysfunction as its population ages. Its healthcare financing and healthcare system as a whole face a serious sustainability dilemma due to the double burden of illness and an aging population. A large number of American and Canadian ambassadors have complained of neurological symptoms, such as headaches, hearing loss, and memory loss, since 2016, with many attributing their condition to exposure to an unknown device in Havana, Cuba. But is this an actual risk, a case of mass hysteria, or something else entirely? Let's get to the bottom of this Havana Syndrome mystery¹.

Foreign service employees stationed in Havana, Cuba sometimes report strange neurological ailments, known as the Havana Syndrome. Headaches, dizziness, nausea, hearing loss, and memory issues are just some of the common symptoms, and they can linger for months or even years after exposure. The origins and characteristics of the syndrome are yet unknown^{2,3}.

Persistent Postural-Perceptual Dizziness (PPPD), vestibular migraine, traumatic brain injury (TBI), cerebral fog, discomfort, hearing impairment, and tinnitus are all symptoms that have been associated with Havana Syndrome, which affects a large number of U.S. government diplomats and their families^{4,5}.

The mysterious illness dubbed the "Havana Syndrome" first came to the attention of the public in 2016, when many American diplomats stationed at the Havana embassy began experiencing strange symptoms. In 2016, American diplomats stationed in Havana began complaining of dizziness, tinnitus, and other cognitive signs. Cognitive, vestibular, and oculomotor impairments persisted at a 6-7

month follow-up. The wide range of symptoms presented made accurate diagnosis challenging, leading to speculation about the mechanism of harm. Later, a similar combination of symptoms was reported by Canadian ambassadors and their families based in Havana. Participants from the United States and Canada both showed neuroimaging anomalies related to their time spent in Havana. Variations in the volumes of grey and white matter (WM), as well as cerebellar diffusion characteristics and functional network connections, were found by American researchers^{5,6}.

Those who stayed over a month in Havana between the years 2016 and 2018 had a lower white matter fibre density and a less connected network structure, according to the study's findings. We found that microstructural changes in the fornix (a triangular region of white matter in the mammalian brain between the area of the hippocampus and the hypothalamus) correlated with headaches and tinnitus using state-of-the-art diffusion-weighted imaging techniques (diffusion magnetic resonance imaging). The thick posterior portion of the corpus callosum of the brain (the splenium) undergoes microstructural alterations that have been associated to headaches and weariness. In addition, the commissural thalamic and hippocampus projections to the back of the brain show signs of disturbed structural network connectivity. The exact cause of the white matter changes that have been identified is a mystery.

One of the US embassy personnel in Havana, Cuba in 2016 woke up late at night to a piercing noise in one ear, then experienced severe nausea and dizziness. Spies, diplomats, and defense officials stationed in China, Russia, Austria, Serbia, the White House, and elsewhere in the United States all reported experiencing similar

symptoms of the strange ailment over the course of several years.

The United States has not yet determined a culprit. Some have speculated a sonic weapon attack, while others have suggested nerve poisons or microwave death rays. However, there is no hard evidence of a weapon, and Moscow, Beijing, and Havana all deny responsibility for the assaults (if there were attacks to deny)^{2,5,7}.

The CIA has ruled out, at least in principle, that a hostile force is behind the inexplicable occurrence of Havana Syndrome. However, the FBI continues to rule out foreign involvement in scores of instances, including some that began at the US Embassy in Havana^{5,8}.

1. Energy assaults may cause symptoms:

In a twist worthy of a spy thriller, the US National Academies concluded that the United States is likely the target of microwave strikes, or directed, pulsed radio frequency energy. The use of such powerful beams to damage electronics dates back to the Cold War between the United States and the Soviet Union. However, the attacks on Havana in 2016 and 2017 did not appear to have impacted electronic systems, which may indicate that either power levels were lower than necessary or microwave-directed energy weapons were not deployed. Only two of the National Academies' 19 committee members appear to have any knowledge in microwave technology, and that's not even their specialization, as noted by Foreign Policy⁵.

2. Prior microwave assaults on US diplomatic staff:

Medical investigations conducted on embassy personnel indicate that microwave beams were directed towards the US Embassy building in Moscow from at least 1953 until 1976. At first, a beam from an apartment building around a hundred yards to the west illuminated the ten stories of the US Embassy. In 1975, both beams were in use, with one coming from the east and the other from the south. The United States suspected espionage, with the beams being used to set off bugs in the embassy or disrupt American communications. After the shield was set up, no ill effects were reported, at least formally⁵.

3. The US Embassy in Cuba incident isn't the only one that happened:

A dozen people initially complained in Havana in 2016, but that number quickly grew to hundreds. This included reports from CIA employees in far-flung locations. Former CIA operative Marc Polymeropoulos awakened in a Moscow hotel room with terrible vertigo, unable to stand: "Of course I'm concerned about the adversaries behind this, because ultimately,

I believe it's an act of war," SPYEX consultant Marc Polymeropoulos said on SPYSCAPE's True Spies podcast. As well, other CIA agents have been attacked in London and Uzbekistan, they said. American troops in Syria fell victim to mysterious illnesses. The Canadian Embassy workers in Havana also experienced concussion-like symptoms, with one employee even using the word "zombie" to describe his condition. Several others in the United States have reported experiencing this, including a National Security Council employee who said he collapsed outside the White House gates and thought he was dying⁸.

4. China's incident resembles Havana's:

In 2017, Catherine Werner was awakened in the middle of the night by a throbbing, humming sound in her Guangzhou, China, residence. For months, she experienced headaches, nausea, and balance issues, which doctors at first attributed to the city's excessive pollution. After flying out to aid, her mother became ill as well. In fact, even Werner's pets were sick. Werner was diagnosed with an "organic brain injury" and medevaced back to the United States. About 300 other US personnel in China were also checked, and 15 were sent back to the United States for additional screening. U.S. officials have called it a "health attack," but China has denied any involvement. No one or thing has been pinpointed as the cause².

5. Chemical causes are the attention of Canadian scientists:

Scientists from Canada have hypothesized that pesticides, insecticides, and nerve gases may be linked to the mysterious illness known as "Havana Syndrome," which has affected dozens of embassy workers and their families in Cuba. To combat the Zika virus, Cuba started a massive anti-mosquito operation in 2016, spraying heavily around government buildings and diplomatic compounds. The US academies independently investigated chemical contaminants and other potential reasons, such as an infectious sickness, but concluded that none of the theories made sense³.

6. Psychological disorders may increase numbers:

Survivors reported hearing a high-pitched screech, chirping, clicking, or piercing sound before feeling a crushing pressure or a jarring

vibration. The withdrawal symptoms are physical, including impaired mobility, hearing, and focus; but, is the mental component of Havana Syndrome also present?

Robert Bartholomew, a psychologist from the United States and New Zealand, made this comparison between Havana Syndrome and combat stress in a paper published in 2019: "A signature feature of shell shock was concussion-like symptoms." However, some specialists were not as confident, noting that the large number of symptoms and widespread impact cast doubt on a connection to trauma or mass hysteria⁷.

7. The "Attacks" are unknown:

The United States has not publicly blamed any nation; nonetheless, there are many possible culprits if the accidents are due to microwave beams. High-power microwave research is being conducted in the United States, Russia, China, and many other countries. That means it might be a single nation or a group of worldwide bad guys. However, no proof has surfaced yet that covert microwave weapons, or any other weaponry, are being deployed to specifically target individuals. Until there is conclusive evidence, Havana Syndrome will remain a strange mystery in the annals of espionage^{5,8,9}.

Theories behind Havana Syndrome:

Microwave Weapons:

There has been no proof found to corroborate this claim, however some people have a theory that the diplomats were targeted with microwave weapons that are capable of causing harm to the brain⁴.

Mass Hysteria:

Some people believe that the symptoms were the product of mass hysteria or a psychogenic sickness, much like the well-known cases of dance mania and the Salem witch trials. These people suggest that the symptoms were psychological in origin⁵.

Bacterial Toxins:

Some people believe that the symptoms were brought on by an infection of some kind, whether it be bacterial, viral, or chemical in nature; nevertheless, there is no proof that can be considered conclusive^{4,10} (Figure 1).

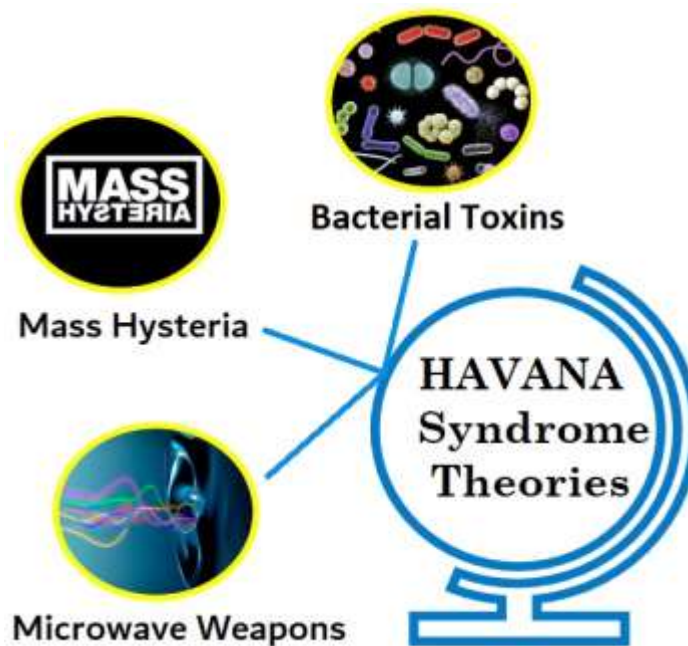


Figure.1: Theories behind Havana Syndrome (Research has revealed that microwaves, mass hysteria, and bacterial toxin can be weaponized and create Havana Syndrome symptoms.)

Notable Mega Psychogenic Illnesses:

The Dancing Plague of 1518 occurred in Strasbourg, France, and resulted in hundreds of individuals dancing themselves to exhaustion and eventually death^{11,12}.

The Tanganyika Laughter Epidemic of 1962 occurred when infectious laughter spread across a school, leading to the closure of 14 schools and affecting more than a thousand individuals¹³.

Throughout the course of history, examples like these have provoked arguments concerning the etiology and diagnosis of mass psychogenic

sickness, particularly in situations where other explanations seem like a more likely possibility¹⁴.

The True Tale of Havana:

The United States embassy staff in Cuba was accused of suffering from mysterious ailments at the year's end. These stories caused a media uproar and a political scandal. Congress in the United States, after conducting an inquiry into the occurrences, decided to close the embassy, expel all Cuban diplomats in 2018, and drastically reduce the number of embassy employees. The Cuban government has blamed

the United States for creating an unfriendly environment for diplomats, while denying any

knowledge of any inappropriate action^{5,10,15} (Figure 2).



Figure.2: The True Tale of Havana (Havana syndrome is unknown but promisingly researched. Safety requires condition awareness and avoidance).

INDIA 2023:

According to the Karnataka High Court, the Indian government has promised to investigate the 'Havana Syndrome' in the country. This was in response to a petition submitted by a Bengaluru man named A Amarnath Chagu, who wanted the

Indian government to investigate the cause of the unexplained sickness and take steps to stop it from spreading throughout the country. The court ordered the Centre's legal team to review the case on July 27 and gave them three months to do so¹⁶ (Figure 3).



Figure.3: Havana Syndrome, India 2023 (The Indian government is examining 'Havana Syndrome' after a petition.)

In September of 2021, a CIA officer sought medical assistance after exhibiting symptoms of the mysterious Havana sickness. They said that sounds, pressure, or heat caused them to experience

symptoms such as dizziness, nausea, and vomiting. The HAVANA Act (Helping American Victims Afflicted by Neurological Attacks Act) was passed by Congress in 2021 for a variety of reasons,

including to allow for compensation to be paid to intelligence officers and diplomats who had been injured as a result of the syndrome^{3,16,17}.

Acute symptoms^{5,18}:

1. Abrupt loud noise (screeching, chirping, clicking, or piercing).
2. Impaired vision and light sensitivity.
3. Head pain or vibration
4. Ear or head pain
5. Hearing loss/tinnitus
6. Vertigo, unsteadiness

Chronic symptoms^{5,18,19}:

1. Sleep deprivation
2. Dizziness/nausea
3. Sound hypersensitivity
4. Tinnitus/hearing loss
5. Poor memory and concentration.
6. Depression and anxiety.
7. Headache
8. Tired (Figure 4)

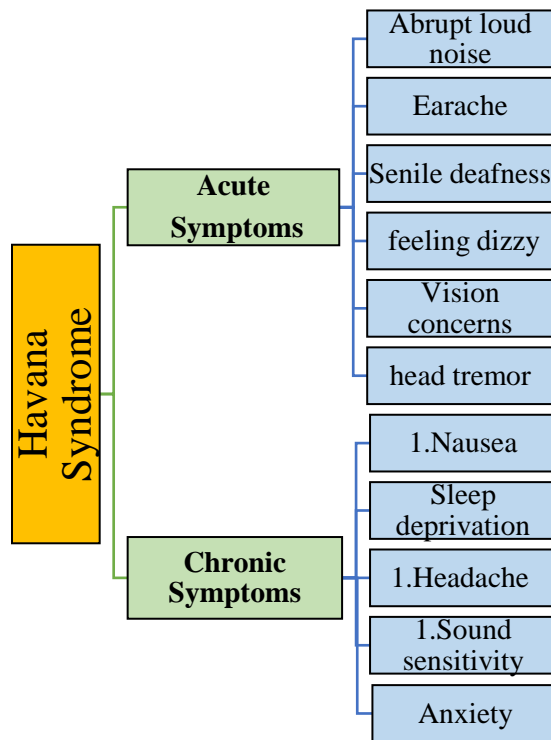


Figure.4: Symptoms of Havana Syndrome

Havana Syndrome, A Medical Diagnosis:

1. New technology often exacerbates existing fears.
2. After the radio was invented, many believed the unseen waves were making them sick.
3. Sound below the hearing threshold does not harm humans.
4. Double-blind tests have demonstrated that people who claim to suffer symptoms from mild electromagnetic fields cannot detect them

- and that sham exposure causes symptoms as often as real exposure.
5. According to the facts, widespread psychogenic disease caused by rumours of a new and enigmatic sound technology is the most likely explanation for the current breakout of strange symptoms in Cuba and elsewhere^{4,5,20,21}.

Conclusion and Future Possibilities:

Despite the source of Havana Syndrome remains a mystery, it is undeniable that the occurrence has harmed US-Cuba ties. Whether or not these people's symptoms have a physical, biological, or psychological origin is still up for debate. In today's climate of mistrust and worry, this instance serves as just another illustration of the challenge. Even while the root cause of Havana Syndrome is still a mystery, recent cases have prompted calls for swift action from authorities. There is a pressing need to address the potential for a novel sort of targeted attack on diplomats and other high-ranking officials.

- Stricter security measures, more extensive employee background checks, and more frequent health screenings.

- **FUNDING:**

None.

- **ACKNOWLEDGEMENTS:**

The authors are thankful to the Maharana Pratap College of Pharmaceutical Sciences, Kanpur, UP. Institute of Pharmacy, Shri Ramswaroop Memorial University, Barabanki, India 225003. Assistant Professor, Pranveer Singh Institute of Technology, Kanpur, UP. Krishna Institute of Pharmacy and Sciences, Kanpur, UP. for providing the necessary facilities.

- **CONFLICT OF INTEREST:**

The author declares no conflict of interest.

- There has to be stronger standards for sharing threat intelligence among countries, more coordination between intelligence and security organizations, and the creation of cutting-edge detection and protection technology.
- Havana Syndrome can have serious consequences for a person's mental health, including the development of post-traumatic stress disorder (PTSD).
- Those affected by Havana Syndrome should have ready access to and high priority for mental health support programs.
- Efforts should be made to raise awareness about the psychological effects of targeted attacks and lower the stigma associated with mental health disorders.⁵

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