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The Social Disaster Intelligence Paradox in Understanding Bioterrorism

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Abstract

World history always has a dark side when it comes to the topic of terrorism, especially the use and research of biological weapons. Even though a number of prohibitions and international agreements have been issued regarding the prohibition of researching, storing and using biological weapons for all countries in the world, there are still many countries in the world that are suspected of secretly carrying out research, storing and using biological weapons for certain purposes in secret. hiding on the basis of accusations/evidence based on speculation, a series of interconnected phenomena, to the discovery of physical evidence related to acts of bioterrorism. So it is interesting to carry out research related to the clarity of understanding regarding the issue of bioterrorism in the modern era, especially from the perspective of social disaster intelligence. This research uses descriptive qualitative methods and a literature study approach. Research results based on the causes of the phenomenon of disease spread are based on conjectures, interpretations and hypotheses about the use of biological weapons as a form of bioterrorism and the lack of specificity in the definition of acts of terrorism itself, creating a confusing paradox between an epidemic disease being a natural phenomenon.

Keyword : Bioterorism, Terorism, Social Disaster, Intelligence.

INTRODUCTION

The use of biological weapons in warfare has been around since 1975, with regulations officially established in 1972 through the Biological Toxin Weapons Convention (BTWC). This international agreement strictly prohibits the storage, development, production and use of all forms and types of biological weapons. Despite strict regulations, many countries secretly ignore these regulations and engage in activities such as storing, using, producing and developing biological weapons. This defiance has sparked widespread speculation and recrimination among countries, particularly those that invest heavily in military advancement, such as the United States, Iraq, North Korea and China. Prior to the founding of the BTWC, the Cold War era saw an intense arms race between the United States and the Soviet Union, with both superpowers extensively researching and producing chemical and biological weapons. Examples include bacteria that cause anthrax, tularemia, brucellosis, and Q fever, as well as viruses that cause diseases such as Venezuelan equine encephalitis.

Apart from that, anti-plant weapons in the form of fungi that cause wheat rust and rice blast were also developed(Pooja & Katoch, 2014). The historical context underscores the significant advances and implications of biological weapons in military strategy in the period. Although the BTWC has been implemented, concerns remain regarding certain countries' compliance with its provisions. Reports and allegations continue to emerge regarding secret activities of states involving the use, production and development of biological weapons. These issues remain relevant in global discourse and societal consciousness, reflecting ongoing geopolitical tensions and security challenges.

Today, the global community faces uncertainty and challenges in accurately assessing the possession and spread of biological weapons. The evolving nature of warfare and advances in biotechnology underscore the need for constant vigilance and compliance with international agreements such as the BTWC. Comprehensive monitoring, verification mechanisms, and diplomatic efforts are critical in mitigating the risks posed by biological weapons and ensuring

global security and stability. Although the BTWC represents an international effort to curb the proliferation of biological weapons, its effectiveness depends on strong law enforcement, transparency, and cooperation between countries. Addressing the complexities surrounding biological weapons requires a continued commitment to upholding global norms and protecting humanity from the devastating potential of bioterrorism.; 1. Ebola, caused by an extremely deadly virus, has resulted in the deaths of thousands of people worldwide. Currently, there is no vaccine or specific treatment that guarantees a cure for this disease. However, statistical analysis reveals that individuals infected with Ebola have an 86.1% chance of survival and recovery if they survive past the critical period of 12 days after the onset of symptoms(Rojek et al., 2019) Despite the high death rate, these survival statistics raise suspicions that Ebola was deliberately developed as a biological weapon. The virus was first documented and studied in 1976, infecting approximately 2,400 people and causing fewer than 1,600 deaths. Following the tragic events of the September 11, 2001 terrorist attacks on the World Trade Center in New York City, concerns emerged that Ebola might be exploited as a potential biological weapon. as a result, research funding into Ebola increased significantly in subsequent years(Lehrer et al., 2018). In contrast, in 1995, the United States Senate Investigative Committee investigated the activities of the Aum Shinrikyo sect and its followers, who reportedly treated Ebola victims in Zaire-Africa in 1992. Their actions were allegedly aimed at obtaining Ebola samples to be used as weapons (Ushiyama, 2022). The correlation between growing fear of the Ebola threat and increased financial support for Ebola vaccine research has fueled suspicions that the virus is involved in a biological weapons program or even bioterrorism. The ongoing debate surrounding the potential use of Ebola as a biological weapon underscores the complexity and uncertainty inherent in assessing the threat. Although suspicions remain, robust scientific research and international cooperation remain essential in understanding and mitigating the risks posed by biological agents such as Ebola to global health security. Efforts to develop effective countermeasures and surveillance systems are essential to safeguard public health and prevent the misuse of biological materials for nefarious purposes. 2. Anthrax, a disease caused by bacteria, primarily attacks plant-eating animals, especially livestock. The route of transmission through these animals has been well documented. Historically, anthrax rose to prominence as a biological weapon during World War 1 due to its power and ability to spread rapidly, making it a highly effective means of biological warfare. Its ability to survive harsh conditions and its infectious nature make it a formidable weapon in a military context. However, after the enactment of strict regulations prohibiting the use of biological weapons globally, the development of anthrax as a biological weapon is still a matter of speculation. Despite these regulations, concerns remain regarding the potential for anthrax to be utilized in acts of bioterrorism. Several documented cases of anthrax infection in humans have fueled this concern, and underscore the ongoing risks associated with its misuse. Additionally, there are concerns regarding the potential exploitation of anthrax due to its impact on global livestock markets, which could have devastating economic impacts and pose a significant public health threat. Recent studies and analysis, such as those conducted by Tuba Hafiza A et al. (Hafiza Tuba Ashiq1, 2023), have highlighted remaining concerns and explained the need for continued vigilance and preparedness for bioterrorism involving anthrax. Efforts to monitor and regulate its possession and handling remain essential to mitigate the risks associated with its potential misuse. Additionally, ongoing research into advanced detection methods and effective countermeasures is critical to improving our ability to prevent and respond to anthrax-related bioterrorism incidents. Although the use of anthrax as a biological weapon has decreased with global regulation, its historical significance and potential for abuse require continued international cooperation and proactive action in biodefense. Addressing the twin threats of natural outbreaks and deliberate misuse of anthrax remains critical in maintaining global health security and mitigating the broader socio-economic impacts associated with bioterrorism. 3. HIV/AIDS, a sexually transmitted disease caused by a virus that attacks the human immune

system, first appeared in the 1980s, with the first cases identified in 1981. Until now, there is still no drug or vaccine that can stop the spread of this disease. virus. Current treatment options primarily focus on managing the disease through antiretroviral drugs and promoting a healthy lifestyle to improve immune function. Ongoing research into HIV/AIDS continues to explore new therapeutic pathways and vaccine development. Despite progress, the origins of the virus continue to be the subject of intense debate and scrutiny. Many studies have shown that HIV/AIDS originated in chimpanzees, highlighting zoonotic transmission as a plausible explanation. However, some experts, such as Horowitz, point to a persistent reluctance in certain medical institutions to accept the notion that AIDS could have emerged from a laboratory or been deliberately engineered. This persistent denial has created a paradoxical relationship between AIDS and potential bioterrorism activity(Schapiro, 1997). Reluctance to consider alternative origins of HIV/AIDS has fueled scientific discourse and public concern regarding the implications of such scenarios. This debate underscores the complex interrelationships between scientific inquiry, public health policy, and international security. Although mainstream scientific consensus supports natural origins theories, alternative viewpoints remain that underscore the need for continued transparency, rigorous research, and global cooperation in combating HIV/AIDS and addressing the broader threat of bioterrorism. ongoing investigations into the origins of HIV/AIDS and its potential implications for bioterrorism highlight the importance of evidence-based research and open dialogue in shaping public health responses and international security strategies. By fostering collaboration and sharing knowledge, the global community can better understand and mitigate the various challenges posed by infectious diseases and provide clarity on the facts of the emerging threat of bioterrorism, not just mere assumptions or speculation. 4. The COVID-19 pandemic, which began with the novel coronavirus outbreak in 2019, has had a major impact on global society and continues to shape contemporary human civilization. As the world gradually transitions from this devastating health crisis, various social movements are emerging across the globe. These movements often revolve around protests and actions that blame China as the source of the Covid-19 pandemic. Unfortunately, these sentiments sometimes manifest in acts of racism directed toward individuals of Asian descent living in America and Europe, illustrating the uncertain intersection between public health concerns and social dynamics. Accusations against China are not only limited to the general public but also extend to accusations against the Chinese Communist Party, accusing the Chinese Communist Party of complications in the development or mishandling of the virus. The atmosphere of suspicion regarding the origins of COVID-19 and its potential classification as a form of bioterrorism mirrors previous controversies such as those surrounding Ebola. Extensive Scientific investigations into coronavirus disease over the past few years have fueled speculation and suspicion regarding the deliberate manipulation or release of the virus. While no conclusive evidence has supported claims of COVID-19 being engineered or used as a bioterrorism agent, the discourse highlights the complexity of global health security and the social impact of infectious disease outbreaks. These concerns underscore the urgent need for transparent international cooperation in epidemiological research, information exchange, and public health interventions. For instance, studies have examined the origins of SARS-CoV-2, finding strong evidence that the virus likely originated from zoonotic spillover rather than deliberate human manipulation(Rahman et al., 2020). Despite these findings, conspiracy theories persist, partly due to a lack of early transparent communication during the pandemic (Ferreira et al., 2020). Such theories have exacerbated geopolitical tensions and contributed to social issues, including the stigmatization of ethnic Chinese communities, especially in Europe and America, where individuals have faced bullying and discrimination based on baseless accusations. These allegations often link COVID-19 to bioterrorism claims against China, yet investigations, such as those conducted by the World Health Organization (WHO), have found no evidence to substantiate these assertions(Ammar, 2020). Historical analyses of bioterrorism, such as the Aum

Shinrikyo group's failed attempts to use biological agents in the 1990s, reveal the significant technical and logistical barriers to weaponizing pathogens effectively(Ammar, 2020). Such findings suggest that fears of widespread bioterrorism might be overstated but still warrant vigilance.

Addressing these issues requires proactive state responses. Governments should invest in bioterrorism preparedness by strengthening laboratory security, enhancing surveillance systems, and fostering international collaborations to detect and mitigate potential threats. Furthermore, public health agencies must counter misinformation through evidence-based communication campaigns to reduce societal stigma and fear. Social disaster intelligence plays a crucial role in this context by analyzing the societal impacts of disease outbreaks and guiding policy responses. This includes monitoring the spread of misinformation, evaluating the psychosocial effects of pandemics, and promoting resilience through community engagement and education. By prioritizing transparency, fostering scientific collaboration, and addressing the root causes of fear, the global community can better navigate the challenges of infectious disease outbreaks and prepare for future pandemics.

RESEARCH METHODS

The research methodology adopted in this study follows a qualitative descriptive approach, which is commonly recognized in social sciences for its emphasis on detailed descriptions and contextual understanding of phenomena. According to(Moser & Korstjens, 2018), qualitative descriptive research is particularly effective when the goal is to provide comprehensive summaries of events in everyday terms that are accessible to both experts and laypeople. This method is widely appreciated for its ability to facilitate a nuanced understanding without imposing theoretical or interpretive constraints, making it ideal for exploring complex phenomena like bioterrorism. Additionally, the study incorporates a comprehensive literature review approach. (Kraus et al., 2022)highlight that a literature review serves as a robust research method by synthesizing available knowledge to identify gaps, patterns, and implications in the existing body of research. By integrating insights from academic studies, government documents, and empirical reports, this study adopts a holistic approach to frame bioterrorism within the broader context of terrorism studies.

The methodological process aligns with the recommendations of(Atakro et al., 2019), who emphasized the importance of triangulation in qualitative research. By analyzing data from diverse sources, this study ensures credibility and depth in understanding the socio-political and historical contexts of bioterrorism. The use of case studies is particularly relevant, as noted by (P. Adithya Teja Prasad et al., 2020), for examining real-world events to uncover motives, patterns, and consequences associated with bioterrorism acts. Moreover, this approach reflects the interpretive flexibility described by(Rolfe, 2006), enabling researchers to engage critically with qualitative data and consider multiple perspectives. The synthesis of historical and contemporary materials allows the study to go beyond mere documentation, aiming to contextualize bioterrorism phenomena within theoretical frameworks and practical implications for preparedness, response strategies, and international security measures. Furthermore, the literature study approach involves a systematic review and synthesis of existing knowledge regarding bioterrorism. It includes a variety of sources, from theoretical frameworks to empirical studies, to build a comprehensive understanding of the subject matter. By synthesizing these diverse sources, this research identifies gaps, contradictions, and emerging trends in bioterrorism research. This chapter also examines how the definition and perception of bioterrorism has evolved over time, reflecting changes in technology, geopolitics, and global security issues. In conclusion, by combining qualitative descriptive methods with a rigorous literature study

approach, this research aims to deepen our understanding of bioterrorism as a complex phenomenon. This report aims to provide insight into the motives, methods and impacts of bioterrorism, thereby informing policy making, security strategies and international cooperation efforts aimed at effectively countering the threat of bioterrorism.

RESULT AND DISCUSSION

In understanding the paradoxical pattern of understanding social disaster intelligence regarding acts of bioterrorism, it is necessary to first know what is actually meant by acts of terrorism, here are several definitions of terrorism;

1. Terrorists are perpetrators of acts of terror, while the word terror means violence that causes or results in chaos. while the term "terrorism" means to frighten (to terrify). This word comes from Latin, terrere, causing a feeling of trembling and anxiety(Orehek & Vazeou-Nieuwenhuis, 2014).
2. Terrorism is a form of violence that is planned and has a political pattern that targets vulnerable/civilian groups carried out by a syndicate or secret agent, which is generally carried out to influence the public(Abbasi & Khatwani, 2014).
3. Terrorism is an illegal act in the form of planned violence to threats of violence carried out by subnational groups against people who own property with the intention of destroying a government by creating fear in society(Piazza, 2012).
4. Terrorism can be said to be a method of fighting rather than an identified ideology or action, because it involves the planned use of violence against civilians to achieve the psychological effect of fear in other people rather than directly targeting targets/goals(Bux & Coyne, 2009)

So terrorism can be understood as a deliberate, organized use of violence or threats by individuals or groups to achieve objectives that often extend beyond immediate gains, aiming instead to instill fear and create widespread insecurity among populations unrelated to their specific grievances. The impact of terrorism transcends its direct victims, affecting broader societies and sometimes even global perceptions and policies. Due to its multifaceted nature and varied manifestations, terrorism defines a singular, universally accepted definition. The diversity of terrorist acts—from politically motivated violence to ideological extremism and even state-sponsored terrorism—underscores the complexity in defining and categorizing terrorism comprehensively. The lack of a precise historical starting point for terrorism or a universally agreed-upon definition further complicates efforts to understand and combat this phenomenon effectively. The multifaceted nature of terrorism has made it a continuously evolving phenomenon influenced by changing socio-political landscapes, technological advancements, and ideological shifts. These changes reflect the adaptability of terrorism as a form of violence and the complexity of addressing it on a global scale. A significant challenge in understanding and combating terrorism is the divergence in how nations and communities perceive and respond to it, shaped by their unique cultural, political, and legal contexts. For instance, acts deemed terrorism in one jurisdiction may be framed as resistance or freedom fighting in another. This definitional ambiguity creates challenges in achieving international consensus, developing policies, and implementing coordinated counterterrorism measures.

The discussion becomes even more nuanced when considering bioterrorism, which involves the deliberate use of biological agents to cause harm. The ambiguity in defining terrorism extends to bioterrorism, compounded by the difficulty in distinguishing natural epidemics from deliberate acts. This paradox—whether a disease outbreak is an act of bioterrorism or a natural phenomenon—highlights the inherent uncertainty in intelligence and

decision-making processes. The need for evidence-based analysis is critical in addressing these ambiguities, as speculative assumptions can lead to misinformation, panic, or misguided policy responses. While historical data indicate that biological agents have been used in only a minute fraction (0.02%) of terrorist attacks up to 2022 (Tin et al., 2022), the low frequency of such incidents should not diminish their potential impact. The catastrophic consequences of a successful bioterrorism event necessitate proactive intelligence efforts, robust public health systems, and international collaboration. Intelligence gathering and analysis in this domain must evolve to refine methodologies for detecting, interpreting, and responding to potential bioterrorism threats. The integration of advanced technologies, such as artificial intelligence and big data analytics, could enhance predictive capabilities and reduce reliance on guesswork. Furthermore, the rarity of bioterrorism incidents underscores the importance of refining the definitions and frameworks used to conceptualize terrorism. A broader and more inclusive definition of terrorism is needed to account for its diverse manifestations, including bioterrorism. This includes acknowledging the intersection of terrorism with other global challenges, such as public health crises, environmental degradation, and technological misuse. In addition to definitional clarity, there is an urgent need to improve intelligence methodologies. Current practices often grapple with limited data, subjective interpretations, and the inherent unpredictability of human behavior. Developing standardized protocols for assessing bioterrorism threats, combined with international agreements on intelligence-sharing, could mitigate risks and enhance global preparedness.

Finally, fostering dialogue and research is essential for addressing these complexities. Collaborative efforts among nations, international organizations, and research institutions can promote the exchange of knowledge and best practices. Such cooperation should also emphasize the ethical dimensions of counterterrorism strategies, ensuring that measures to combat bioterrorism respect human rights and the principles of justice. By adopting a comprehensive, evidence-based, and ethical approach, the international community can strengthen its capacity to prevent, respond to, and recover from bioterrorism threats, safeguarding global security and public health.

CONCLUSION

The conclusions drawn from this research underscore the complexity of understanding bioterrorism through a disaster intelligence lens. It is clear that the interpretation of activities suspected of being bioterrorism is often limited by existing definitions of terrorism, which may not be fully in line with the current context of bioterrorism. Nonetheless, empirical evidence fails to definitively support the claim that bioterrorism activities are carried out with specific strategic objectives, giving rise to a confusing paradox in intelligence processing. Speculation often outweighs concrete evidence in assessments of bioterrorism threats. To bridge this gap, there is an urgent need for more targeted and rigorous research approaches.

More advanced methodologies must be developed to improve disaster intelligence's ability to produce precise and relevant information regarding potential bioterrorism threats. This requires refining research techniques to ensure they are robust enough to effectively navigate the ever-evolving complexity and dynamics of modern security threats. The importance of adapting research methodologies to optimize intelligence results is paramount in facing the various challenges facing global society today. Thus, this research presents an important opportunity to enhance intelligence capabilities, thereby strengthening our ability to anticipate, detect, and mitigate emerging bioterrorism threats more accurately and efficiently. Ultimately, improving our understanding of and response to bioterrorism through better intelligence practices will

provide hope for maintaining public safety and global security in an increasingly interconnected world.

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