

Public Health as a Security Strategy: A Critique of Three Seminal Books on Nuclear Threats amid Escalating Global Crises

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Geliş Tarihi / Submitted:
06.12.2024

Kabul Tarihi / Accepted:
10.03.2025

Books in Review:

- SOLOMON Fred and MARSTON Robert Q. (eds.) (1986). *The Medical Implications of Nuclear War*, National Academies Press, Washington, D.C. <https://www.ncbi.nlm.nih.gov/books/NBK219152/>.
- National Academies of Sciences (2019). *Engineering and Medicine. Exploring Medical and Public Health Preparedness for a Nuclear Incident: Proceedings of a Workshop*, The National Academies Press, Washington, D.C. <https://nap.nationalacademies.org/catalog/25372/exploring-medical-and-public-health-preparedness-for-a-nuclear-incident>.
- International Atomic Energy Agency (2022). *Nuclear Law: The Global Debate*, Asser Press & Springer, New York, NY. <https://link.springer.com/book/10.1007/978-94-6265-495-2>.

Introduction

A strong public health strategic plan, designed with care, rigor, and accountability, is key to sustaining the survival of local and global populations. A well-crafted roadmap in population health boosts resilience and enhances the ability to respond to emerging threats. As nuclear risks grow, the need for more robust approaches to managing chemical, biological, radiological, and nuclear (CBRN) threats becomes critical. This situation poses significant challenges for both military and civilian medical personnel, who must be prepared to manage casualties resulting from CBRN-related incidents such as warfare, conflicts, terrorism, and assassinations. Public health and medical practices focus on identifying CBRN agents, directing rescue operations, handling the victims, and applying decontamination and hazard management protocols. This effort includes materials, dirty bombs, and radiological dispersal devices.¹ Nuclear war is a major global risk, though not necessarily existential. Outcomes like nuclear winter or electromagnetic pulses remain uncertain. Risk assessments differ, and while current knowledge is important for management strategies, narrow methodologies may overlook the full impact of measures like reducing nuclear arsenals. Multidisciplinary research is decisive for gaining a deeper understanding of and managing the risks.² A nuclear war could cause “nuclear winter,” resulting in drastic global environmental changes

1 Steven A. Bland, “Chemical, Biological, Radiological and Nuclear (CBRN) Casualty Management Principles”, *Conflict and Catastrophe Medicine: A Practical Guide*, 747-770. July 18, 2013.

2 James Scouras, “Nuclear War as a Global Catastrophic Risk”, *National Security Report*, The Johns Hopkins University Applied Physics Laboratory, <https://www.jhuapl.edu/sites/default/files/2022-12/NuclearWarGlobalRisk.pdf>, accessed 07.02.2025.

and severe public health consequences. While research has focused on environmental and food security impacts, the human health effects and policy implications have received less attention. An interdisciplinary approach is needed to address the public health risks of nuclear winter, which should be prioritized internationally as a major public health concern.³ Even a “limited” nuclear war with 100 nuclear weapons used could have catastrophic global outcomes, disrupting climate and agriculture and endangering over two billion lives through mass starvation. Involving fewer than 5% of the world’s nuclear arsenal, it would lead to famines, food supply disruptions, and social unrest, possibly causing billions of deaths. Given the rising nuclear tensions, the risk of war is higher than ever, making these concerns especially alarming.⁴

Nuclear threats pose unique and serious challenges to public health preparedness, requiring coordinated efforts at local, national, and international levels to mitigate radiation exposure and related hazards. These threats demand a specialized approach, addressing both immediate radiation impacts and long-term recovery and health surveillance. Effective planning, timely communication, and well-equipped health systems are essential for an adequate, well-coordinated, and competent public health response.

Public health preparedness for nuclear threats includes planning, radiation detection, and monitoring. Governments and health agencies must equip first responders with radiation assessment tools and establish clear evacuation and shelter protocols. Medical plans should include potassium iodide (KI) for thyroid protection. Regular training helps identify gaps and improve coordination. Agencies are required to communicate protective measures effectively. Health systems should be capable of managing patient surges through triage, decontamination, and the provision of psychosocial support. Radiological countermeasures like KI and chelating agents should be available. Recovery involves long-term health monitoring, environmental cleanup, and infrastructure rebuilding. International collaboration boosts resilience. Challenges include damage to infrastructure, injuries, and limited resources. A systematic approach, informed by science and experience, is required for planning, collaboration, and communication.⁵

The Materials and Methods used in Assessing Public Health Approaches to Nuclear Risks

This section outlines the methodology for comparative analysis, including selection criteria, data collection, and the analytical framework. The critique compares three key works, *The Medical Implications of Nuclear War*, *Exploring Medical and Public Health Preparedness for a Nuclear Incident*, and *Nuclear Law: The Global Debate*, on nuclear threats and public health. The books were selected from equally valuable resources, also taking into account their availability online for free and their global accessibility to students, researchers, and policymakers. They offer distinct perspectives on medical effects, preparedness, and legal frameworks, with comprehensive coverage and interdisciplinary insights. Data was collected through a systematic review of these books, focusing on themes, findings, and recommendations about medical effects, preparedness, and legal frameworks. A comparative analysis examined methodologies, evidence, and policy implications, revealing each text’s

3 Andreas Vilhelmsson and Seth D. Baum. “Public Health and Nuclear Winter: Addressing a Catastrophic Threat”, *Journal of Public Health Policy*, 44, 2023, pp. 360-369.

4 International Physicians for the Prevention of Nuclear War. “Nuclear Famine: Even a ‘Limited’ Nuclear War Could Cause Abrupt Climate Disruption and Global Starvation”, August 2022. <https://www.ippnw.org/wp-content/uploads/2022/09/ENGLISH-Nuclear-Famine-Report-Final-bleed-marks.pdf>, accessed 07.02.2025.

5 Norman C. Coleman et al., “Public Health and Medical Preparedness for a Nuclear Detonation: The Nuclear Incident Medical Enterprise”, *Health Physics*, 108:2, 2015, pp. 149-160.

unique contributions to nuclear threat knowledge. This process deepened the understanding of how each addresses nuclear risks and public health, informing policy development. The critique followed a structured analytical framework, emphasizing interdisciplinary approaches and the need for a global response to nuclear threats. Key themes like radiation exposure, health crises, preparedness, and international cooperation were identified and categorized. The influence of expert knowledge across medicine, public health, and law was also assessed. The societal impact of each work was considered in shaping public health policies and international treaties on nuclear risk. Despite the thorough evaluation, the review acknowledges the limitations of the selected texts in representing the full literature on nuclear threats and public health.

Comparative Analysis of the Three Key Works on Nuclear Threats and Public Health

This book review critiques three key open-access resources on nuclear threats and public health. It presents a comparative analysis of the books' coverage of the medical effects, public health preparedness, and policy aspects of nuclear threats, offering valuable insights into their impact on society. These resources provide scholars in relevant fields with a comprehensive understanding of nuclear threats and their profound public health implications, encouraging deeper engagement with critical perspectives on the subject (Image 1).

Image 1. The Covers of the Three Books Reviewed for Their Insights on Nuclear Threats and Public Health



The Medical Implications of Nuclear War, examines the catastrophic medical, environmental, and psychosocial consequences of nuclear conflict. Based on a 1985 symposium, the book covers the immediate and long-term health impacts of nuclear warfare, including radiation exposure, nuclear winter, and famine. It also discusses the aftermath of Hiroshima and Nagasaki, focusing on the demand for medical resources and the psychological toll and calling attention to gaps in research and the urgent need for global action to prevent nuclear disaster.⁶

6 Institute of Medicine (US) Steering Committee for the Symposium on the Medical Implications of Nuclear War, Franklin Solomon & R. Q. Marston (eds.), *The Medical Implications of Nuclear War*, National Academy Press, Washington, D.C., 1986.

Exploring Medical and Public Health Preparedness for a Nuclear Incident compiles a workshop by the National Academies of Sciences, Engineering, and Medicine on medical and public health systems' readiness for nuclear emergencies. It explores the complexities of preparing for such incidents, focusing on healthcare capacity, emergency services, and public health measures, particularly regarding radiation exposure and treatment. Drawing on expert insights, the book offers recommendations for improving preparedness, coordination, and response to nuclear disasters, aiming to strengthen national and international public health strategies.⁷

Nuclear Law: The Global Debate, edited by the International Atomic Energy Agency, explores the evolution of nuclear law, covering its origins, development, and current state. The book examines legal issues surrounding nuclear energy, including safety, non-proliferation, environmental concerns, and liability. Legal experts and policymakers discuss laws, treaties, and agreements that govern nuclear technology to ensure international safety. It addresses the opportunities and challenges of nuclear power and provides insights into the four main branches of nuclear law: safety, security, safeguards, and liability, ensuring the peaceful use of nuclear technology worldwide.⁸

The risk of nuclear warfare has reached its highest point in decades, fueled by escalating global conflicts. These books are crucial in light of the growing threat of nuclear conflict, offering frameworks for understanding the complexities of modern warfare and nuclear escalation. In a time when nuclear war looms large, they provide critical insights into the historical, political, and ethical aspects of global security. Revisiting these texts deepens our understanding of how past theories inform current efforts to mitigate existential threats. These books, while not recent, remain influential in shaping foundational concepts and provide sparks in the ongoing discussion. A review article demonstrates their enduring relevance and long-lasting contributions.⁹

Addressing Nuclear Risks from Health, Preparedness, and Legal Perspectives

These three books reviewed here address nuclear risks from health, preparedness, and legal perspectives. They serve as foundational building blocks in understanding the multifaceted risks of nuclear threats, collectively providing a comprehensive understanding of the global nuclear challenge and the interconnectedness of these fields. These books are essential for understanding the significant risks that nuclear weapons pose to both health and the environment (Table 1).

7 National Academies of Sciences, Engineering, and Medicine. *Exploring Medical and Public Health Preparedness for a Nuclear Incident: Proceedings of a Workshop*, The National Academies Press, Washington, D.C., 2019.

8 International Atomic Energy Agency, ed. *Nuclear Law: The Global Debate*, Asser Press & Springer, 2022.

9 United Nations. "Nuclear Warfare Risk at Highest Point in Decades, Secretary-General Warns Security Council, Urging Largest Arsenal Holders to Find Way Back to Negotiating Table: Delegates Stress Non-Proliferation Architecture Must Be Strengthened", *Meetings Coverage*, Security Council, 9579th Meeting (AM), March 18, 2024. <https://press.un.org/en/2024/sc15630.doc.htm>; Laurence Norman, "Nuclear War Risks Rise Again, Stoked by Global Conflicts", *The Wall Street Journal*, October 16, 2024. <https://www.wsj.com/world/russia/nuclear-war-risks-rise-again-stoked-by-global-conflicts-fa3333b6>, accessed 07.02.2025.

Table 1. A Systematic and Comparative Analysis of Three Seminal Works

Book Title	Summary	Common Themes	Distinctive Aspects	Expert Contribution	Societal Impact
<i>The Medical Implications of Nuclear War</i>	Examines the medical, environmental, and psychosocial effects of nuclear warfare, focusing on radiation exposure, health crises, and health care system impact, using Hiroshima and Nagasaki as examples, and calls for global prevention.	Addresses nuclear risks and their societal impact, focusing on health systems, public safety, and global consequences.	Specifically examines the medical consequences of nuclear war, while others focus on preparedness or legal frameworks.	Contributions from the National Academy of Sciences stressing urgency in preparedness and long-term health effects. (It has also had a significant impact on policy and nuclear disaster research.)	Raised global awareness about nuclear war's medical and environmental consequences, urging preventive action and international cooperation. (It has also influenced health care protocols and nuclear disarmament discussions.)
<i>Exploring Medical and Public Health Preparedness for a Nuclear Incident</i>	Focuses on the preparedness of health care systems for nuclear incidents, covering radiation exposure, treatment, and response strategies.	Discusses nuclear risks, health system preparedness, and emergency response, similar to <i>The Medical Implications of Nuclear War</i> .	Emphasizes preparedness and response, while others focus on consequences or legal regulations.	Recommendations from the workshop helped guide emergency protocols and international collaboration.	Strengthened national and international health care systems, improved nuclear emergency preparedness and disaster response strategies.
<i>Nuclear Law: The Global Debate</i>	Explores nuclear law, including safety, non-proliferation, environmental concerns, and liability, offering insights into treaties and international agreements.	Addresses nuclear risks, global implications, and nuclear safety, like the others.	Focuses on nuclear law and regulation, while others focus on health and emergency preparedness or effects.	Provides a comprehensive understanding of nuclear law, safety, and international frameworks.	Influenced nuclear safety regulations and international treaties, promoted global security and the peaceful use of nuclear technology.

The immediate aftermath of nuclear war viewed through the medical lens reveals catastrophic health consequences. *The Medical Implications of Nuclear War* examines the health consequences of nuclear warfare, using Hiroshima and Nagasaki as examples. It highlights the impact on health systems and human health, filling a research gap and calling for disarmament. Unlike the other two books focusing on preparedness or legal frameworks, this work offers a stark warning about the medical fallout from nuclear events and advocates for urgent policy change.

Exploring Medical and Public Health Preparedness for a Nuclear Incident focuses on strategies to enhance health systems' response to nuclear disasters. While other works examine the consequences or legal structures, this book bridges the gap in anticipation of the inevitable. It provides a blueprint for improving emergency healthcare infrastructure and response strategies, shaping modern disaster readiness, and influencing global healthcare protocols.

Nuclear Law: The Global Debate explores international legal frameworks governing nuclear technology, focusing on safety, non-proliferation, and environmental concerns. Unlike the other two books, which emphasize health and preparedness, it examines treaties and regulations preventing nuclear misuse and ensuring peaceful use, contributing to the legal architecture safeguarding the future of nuclear safety laws and global cooperation on nuclear security.

Despite their different focuses, all three books accentuate the interconnected impact, a global perspective on the global stakes of nuclear risks, and the need for integrated approaches across health, legal, and international frameworks. *The Medical Implications of Nuclear War* influenced disarmament and health protocols; *Exploring Medical and Public Health Preparedness* strengthened emergency responses; and *Nuclear Law: The Global Debate* shaped global nuclear safety standards, improving preparedness and security.

Each of these books offers distinct strengths and weaknesses. *The Medical Implications of Nuclear War* provides a powerful look at the health consequences of nuclear conflict, but its focus on immediate fallout may leave readers wanting broader solutions. *Exploring Medical and Public Health Preparedness for a Nuclear Incident* excels in offering practical strategies for improving health system responses, though it could benefit from more examples of international collaboration. *Nuclear Law: The Global Debate* presents a thorough examination of legal frameworks for nuclear safety and non-proliferation but may lack insights into real-world enforcement. The combined power of the three books lies in their emphasis on the imperative for integrated approaches across health, preparedness, and legal perspectives in the management of nuclear risks.

The growing wealth of scholarship on this subject addresses the need for accessible academic resources. This review aims to optimize benefits for academic readers by ensuring that the three selected books are easily accessible as open-access online resources; however, these books represent just a small portion of the expanding literature in the field. Many thought-provoking works explore nuclear threats and public health strategies, offering diverse perspectives from policy, science, and ethics: *Global Catastrophic Risks*, edited by Nick Bostrom and Milan M. Ćirković, addresses this issue with an interdisciplinary approach, examining global catastrophic risks, including nuclear war, and their potential threats to civilization and public health.¹⁰ *Nuclear Disarmament: A Critical Assessment*, edited by Bård Steen and Øyvind Njølstad, explores the challenges and opportunities of nuclear disarmament. The book presents essays from leading scholars, weighing arguments for and against a world without nuclear weapons (the “global zero”) and examining paths to disarmament while offering a new framework for assessing the evolving agenda. It also addresses how technological, political, and climatic changes complicate the issue. Aimed at students and scholars in arms control and international relations, the book fosters debate and bridges differing perspectives on nuclear disarmament.¹¹ The growing global instability

10 Nick Bostrom and Milan M. Ćirković (eds.), *Global Catastrophic Risks*, Oxford University Press, Oxford, 2008.

11 Bård Steen and Olav Njølstad, eds. *Nuclear Disarmament: A Critical Assessment*. 1st ed., Routledge, London, 2019.

from nuclear weapon proliferation highlights the catastrophic risks of nuclear war, including massive loss of life, infrastructure destruction, and environmental collapse. A recent journal article argues that current defense systems and shelters provide inadequate protection. The authors emphasize that global nuclear disarmament through treaties, not post-event preparedness, is the only effective prevention.¹² A 2023 editorial reflects on the risks of nuclear threats, linking them to public health and global security, marking the anniversaries of the Hiroshima bombing and the Alma-Ata Conference. It opposes escalating nuclear war rhetoric, urging that “please, world leaders, come to your senses and give the world a chance of survival and the hope of ‘health for all’.”¹³ Nuclear war is the greatest threat to global public health.¹⁴ The prohibition of nuclear weapons is a public health priority, as they pose severe threats to public health and the environment. The destructive potential of nuclear weapons makes traditional defense and just war concepts irrelevant. Nuclear weapons cause mass casualties, overwhelm healthcare systems, and have long-term effects that threaten humanity’s survival. Global health systems can’t handle nuclear warfare’s devastation. The Treaty on the Prohibition of Nuclear Weapons, effective since January 2021, is an integral step in preventing such disasters. The medical community must actively oppose war to protect public health.¹⁵ The call for collective action from the international public health community is crucial in mitigating the risks of catastrophic conflicts and nuclear warfare.

Relevance of the Current Analysis to Türkiye’s National Security, Nuclear Risks, and Emerging Threats

Türkiye’s public safety and state security are shaped by its unique position at the crossroads of Europe and Asia, influencing its role in regional conflicts and security challenges. Türkiye’s security is also closely tied to its ability to address nuclear and chemical threats when questioned from the perspective of this review, which critiques the intersection of public health and security strategies in the context of nuclear threats amidst global crises. Its proximity to potentially hostile neighbors with access to or the capability to develop nuclear or chemical weapons means that Türkiye needs robust national security strategies, which must include comprehensive preparedness for CBRN threats, better medical infrastructure, enhanced detection systems, and rapid-response capabilities. Türkiye must integrate public health considerations into its security framework, ensuring national and international coordination mechanisms to manage health crises resulting from such catastrophic events. By making public health a key element of its national security, Türkiye can strengthen its resilience against emerging threats and mitigate their impact both domestically and globally. The growing threat of terrorism, exacerbated by proximity to conflict zones, demands effective counterterrorism strategies. Türkiye also faces increasing cybersecurity risks due to its interconnectedness, necessitating defenses against cyberattacks on critical infrastructure. Energy security is also vital, as disruptions to energy flows can have widespread effects. Internal stability, migration, and border security are further concerns, along with preparedness for environmental and health crises. Turkish national security strategies integrate military, diplomatic, and domestic policies to address these multifaceted threats.

12 Frank Boulton and Thomas Dunn, “Nuclear War and Public Health: Preparedness, Protection and the Case for Prevention”, *Journal of Public Health*, 42:3, 2020, pp. e316-e322.

13 Colin Binns and Wah Yun Low, “Nuclear Threats and Public Health”, *Asia-Pacific Journal of Public Health*, 35:6-7, 2023, pp. 405-407.

14 Richard C. Armitage, “Nuclear War: The Greatest Threat to Global Public Health”, *Public Health* 207, 2022, pp. e3-e4.

15 Lucia Bisceglia and Pirous Fateh-Moghadam, “The Prohibition of Nuclear Weapons: A Public Health Priority”, *Lancet*, 400:10347, 2022, pp. 158-159.

Conclusion

A strong public health strategy is fundamental for enhancing global resilience and responding to emerging security threats. This review critically examines three seminal works to call for urgent international action against the threats posed by nuclear weapons while emphasizing the intersection of nuclear threats and public health and pointing to the challenges in mitigating nuclear war's catastrophic effects. Despite complexities such as disarmament and political instability, the position here is that the only solution is a legally binding commitment to nuclear disarmament.

Nuclear weapons pose catastrophic risks, including mass casualties, overwhelmed healthcare, environmental collapse, and irreversible climate effects like nuclear winter, making disarmament urgent. Current defense mechanisms cannot protect populations during nuclear conflict, thus making disarmament a crucial security and public health priority, as outlined in the Treaty on the Prohibition of Nuclear Weapons. Health systems already strained by crises like pandemics cannot manage nuclear devastation, and the medical community's opposition to nuclear war is a moral duty. As global instability rises, the call for a nuclear-free world is time-sensitive; inaction threatens humanity's survival. Immediate collective action is essential to dismantle the nuclear threat and ensure health and security worldwide.

Acknowledgement

The author conducted the entire study, including the literature review, research idea, methodology, conceptual analysis, critical discussion, and conclusion. This work utilized the free OpenAI GPT-40 technology in a nearly negligible capacity. Its application was confined to minor tasks such as paragraphing, section partitioning, formatting, standardizing the reference list, finding synonyms for no more than ten words, and correcting inadvertent typographical errors.

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