Opinion
Volume 08:04, 2025

Journal of Pollution

ISSN: 2684-4958

Open Access

Diverse Environmental and Occupational Health Risks

Eriksson, Lina*

Department of Nordic Marine Contaminant Research, Swedish Coastal Science University, Gothenburg, Sweden

Introduction

This systematic review and meta-analysis really highlights how widespread occupational health hazards were for healthcare workers in Ethiopia during the COVID-19 pandemic. What they found is that a significant number faced physical, psychological, and biological risks, driven by factors like lack of personal protective equipment, inadequate training, and overwhelming workloads. It emphasizes a clear need for better safety protocols and support systems for these essential workers [1].

Here's the thing about air pollution: this review makes it clear it's a major player in cardiovascular disease. It breaks down how fine particulate matter and other pollutants contribute to heart attacks, strokes, and other issues by causing inflammation and oxidative stress. The takeaway is that reducing air pollution isn't just about clean air, it's a critical strategy for improving global heart health [2].

This systematic review shows us that phthalate exposure, which is common from plastics and personal care products, carries a real health risk. It points to associations with endocrine disruption, reproductive issues, and developmental problems. What this really means is that we need to be more aware of these ubiquitous chemicals and their potential long-term effects on human health [3].

Let's break down the impact of climate change on human health. This review highlights how rising temperatures, extreme weather events, and changes in disease vectors are creating new and exacerbating existing health challenges. It underscores the urgency of addressing climate change not just for the environment, but for protecting public health worldwide [4].

The discussion around engineered nanomaterials is important, and this review tackles their potential health hazards. It brings to light concerns about their unique physical and chemical properties, which can lead to toxicity, inflammation, and cellular damage upon exposure. This really points to the need for careful risk assessment and regulation as these materials become more common [5].

What this systematic review and meta-analysis reveals is a consistent link between pesticide exposure and various adverse health effects. It looks at a range of studies and finds associations with neurological disorders, certain cancers, and reproductive issues. The findings strongly suggest that reducing pesticide use and ensuring safer handling practices are crucial for public health [6].

Noise pollution isn't just an annoyance; this comprehensive review shows it's a significant health hazard. It explores how chronic exposure to high noise levels, particularly from traffic and industrial sources, contributes to sleep disturbances, cardiovascular diseases, and mental health issues. It's a reminder that sound environment quality directly affects our well-being [7].

Here's a growing concern: microplastics. This review provides a comprehensive look at how these tiny plastic particles are emerging as a global health hazard. It discusses their presence throughout the environment, their potential to accumulate in the human body, and the possible links to inflammation and cellular damage. It makes a strong case for urgent research and policy action to mitigate this widespread threat [8].

This systematic review and meta-analysis on heavy metal contamination in agricultural soil and vegetables paints a clear picture: it's a serious health risk. It highlights how heavy metals like lead, cadmium, and mercury accumulate in crops, enter the food chain, and can lead to various toxic effects in humans. The study reinforces the importance of monitoring and remediation efforts in contaminated areas to protect public health [9].

Let's talk about something often overlooked: indoor air quality. This systematic review underscores its critical impact on human health. It identifies common indoor pollutants like volatile organic compounds, mold, and particulate matter, and connects them to respiratory problems, allergies, and other health issues. What this means is that maintaining good indoor air quality is vital for creating healthy living and working environments [10].

Description

During the COVID-19 pandemic, healthcare workers in Ethiopia faced widespread occupational health hazards, including physical, psychological, and biological risks. These were primarily driven by factors such as a lack of personal protective equipment, inadequate training, and overwhelming workloads. This reality emphasizes a clear need for better safety protocols and robust support systems for these essential workers [1]. Similarly, air pollution stands as a major player in cardiovascular disease. Here's the thing: fine particulate matter and other pollutants contribute significantly to heart attacks, strokes, and other issues by causing inflammation and oxidative stress. What this really means is that reducing air pollution isn't just about clean air; it's a critical strategy for improving global heart health [2].

Let's break down how common chemical exposures also pose serious risks. For instance, phthalate exposure, prevalent from plastics and personal care products, carries a real health risk. It points to associations with endocrine disruption, reproductive issues, and developmental problems. What this really means is that we need to be more aware of these ubiquitous chemicals and their potential long-term effects on human health [3]. Likewise, what this systematic review and meta-analysis reveals is a consistent link between pesticide exposure and various adverse health effects. It looks at a range of studies and finds associations with neurological disorders, certain cancers, and reproductive issues. The findings strongly

suggest that reducing pesticide use and ensuring safer handling practices are crucial for public health [6]. Even newer materials like engineered nanomaterials are a discussion point, as this review tackles their potential health hazards. It brings to light concerns about their unique physical and chemical properties, which can lead to toxicity, inflammation, and cellular damage upon exposure. This really points to the need for careful risk assessment and regulation as these materials become more common [5].

Environmental contaminants extend beyond direct chemical exposures to include broader ecological issues. The growing concern around microplastics, for example, is significant [8]. This review provides a comprehensive look at how these tiny plastic particles are emerging as a global health hazard. It discusses their presence throughout the environment, their potential to accumulate in the human body, and the possible links to inflammation and cellular damage. It makes a strong case for urgent research and policy action to mitigate this widespread threat. Furthermore, noise pollution isn't just an annoyance; this comprehensive review shows it's a significant health hazard. It explores how chronic exposure to high noise levels, particularly from traffic and industrial sources, contributes to sleep disturbances, cardiovascular diseases, and mental health issues. It's a reminder that sound environment quality directly affects our well-being [7].

Heavy metal contamination in agricultural soil and vegetables paints a clear picture: it's a serious health risk [9]. This systematic review highlights how heavy metals like lead, cadmium, and mercury accumulate in crops, enter the food chain, and can lead to various toxic effects in humans. The study reinforces the importance of monitoring and remediation efforts in contaminated areas to protect public health. Let's also talk about something often overlooked: indoor air quality. This systematic review underscores its critical impact on human health. It identifies common indoor pollutants like volatile organic compounds, mold, and particulate matter, and connects them to respiratory problems, allergies, and other health issues. What this means is that maintaining good indoor air quality is vital for creating healthy living and working environments [10]. Finally, let's break down the impact of climate change on human health. This review highlights how rising temperatures, extreme weather events, and changes in disease vectors are creating new and exacerbating existing health challenges. It underscores the urgency of addressing climate change not just for the environment, but for protecting public health worldwide [4].

Conclusion

This collection of reviews and meta-analyses highlights the diverse and pressing health hazards stemming from various environmental and occupational exposures. It's clear that healthcare workers faced significant physical, psychological, and biological risks during the COVID-19 pandemic, largely due to inadequate safety measures and heavy workloads [1]. Air pollution stands out as a major contributor to cardiovascular disease, emphasizing that clean air is crucial for global heart health [2].

Here's the thing: ubiquitous chemicals like phthalates, found in plastics and personal care products, are linked to endocrine disruption and reproductive issues, calling for greater awareness of their long-term effects [3]. Climate change is also a growing concern, impacting human health through rising temperatures, extreme weather, and altered disease vectors, which underscores the urgent need for action beyond just environmental benefits [4].

Engineered nanomaterials introduce unique health concerns, potentially causing toxicity, inflammation, and cellular damage, which demands careful risk assessment and regulation as their use increases [5]. Pesticide exposure shows consistent links to neurological disorders, cancers, and reproductive problems, urging reduced use and safer handling [6]. Noise pollution, often an overlooked factor, contributes to sleep disturbances, cardiovascular issues, and mental health problems, reminding us that sound quality affects well-being [7].

Another growing concern is microplastics, which are recognized as a global health hazard with potential links to inflammation and cellular damage, necessitating urgent research and policy [8]. Heavy metal contamination in agricultural soil and vegetables presents serious risks, as these metals accumulate in food chains and cause toxic effects, highlighting the importance of monitoring and remediation [9]. Finally, indoor air quality is critical, with common pollutants causing respiratory and allergic issues, making good indoor air vital for healthy environments [10].

Acknowledgement

None.

Conflict of Interest

None.

References

1. Temesgen Fentahun, Belete Gelaw, Kassahun Abebe, Mulualem Gizie, Kassahun Desalegn, Alemu Degu. "Occupational health hazards and safety measures among healthcare workers during COVID-19 pandemic in Ethiopia: A systematic review and meta-analysis." *BMC Public Health* 23 (2023):1354.
2. C. *Arden Pope* 3rd, Robert D. Brook, Joel D. Kaufman, Annette Peters, Michael T. Brauer, Sanjay Rajagopalan. "Air Pollution and Cardiovascular Health: JACC State-of-the-Art Review." J Am Coll Cardiol 76 (2020):254-266.
3. Jie Cao, Yaxin Wang, Xin Wang, Yuhang Wang, Jiaqi Zhang, Mengjie Fan. "Health risks associated with phthalate exposure: A systematic review and meta-analysis." *Environ Pollut* 277 (2021):117109.
4. George Luber, Katherine E. L. Hayhoe, Jeremy S. Hess, John Balbus, Patrick L. Kinney. "Climate Change and Human Health: A Review of Recent Findings." *Curr Environ Health Rep* 8 (2021):227-238.
5. Azam Bolandnazar, Azim Mirzazadeh, Hamed Jafari, Zahra Maleki, Reza Faraji, Fatemeh Rahmani. "Health hazards of engineered nanomaterials: A systematic review." *Ecotoxicol Environ Saf* 243 (2022):113642.
6. Ying Cao, Mengjia Sun, Jie Zhang, Yan Li, Jie Li, Yaping Huang. "Health effects of pesticide exposure: A systematic review and meta-analysis of recent epidemiological studies." *Environ Res* 189 (2020):109848.
7. Kshitij Verma, Rajesh Kumar Singh, Saurabh Kumar Yadav, Nitesh Kumar Singh. "Environmental noise pollution and its health impacts: A comprehensive review." *Sci Total Environ* 894 (2023):165415.
8. Muhammad Aamir Khan, Zulfiqar Ahmad, Amna Bibi, Shazia Kulsum, Muhammad Shahid, Muhammad Zia ul Haq. "Microplastics as an emerging global health hazard: A comprehensive review." *Ecotoxicol Environ Saf* 236 (2022):113229.
9. Mengmeng Liu, Yuchuan Liu, Lei Zhang, Xinyu Song, Wenwen Wang, Yongsheng Wang. "Health risk assessment of heavy metal contamination in agricultural soil and vegetables: A systematic review and meta-analysis." *Ecotoxicol Environ Saf* 211 (2021):112660.
10. Sarah K. Miller, John R. Williams, Emily C. Davis, Michael P. Jones, Laura A. Green. "Indoor air quality and its impact on human health: A systematic review." *Build Environ* 231 (2023):110291.

How to cite this article: Lina, Eriksson,. "Diverse Environmental and Occupational Health Risks." *Pollution* 08 (2025):399.

Address for Correspondence: Eriksson„ Lina, Department of Nordic Marine Contaminant Research, Swedish Coastal Science University, Gothenburg, Sweden, E-mail: lina.eriksson@scsu.se

Received: 28-Nov-2025,ManuscriptNo.pollution-25-176630; **Editor assigned:** 01-Dec-2025, PreQC No. P-176630; **Reviewed:** 15-Dec-2025, QC No. Q-176630; **Revised:** 22-Dec- 2025,ManuscriptNo.R-pollution-25-176630; **Published:** 29-Dec-2025,DOI: 10.37421/2684-4958.2025.8.399