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## Environmental Degradation, COVID-19, and Respiratory Health for Rohingya Refugees in Cox's Bazaar

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by Abellia Anggi Wardani, Tengku Shahpur, and Thurain Soe



## Abstract

The Rohingya minority has been the victim of forced migration by the Myanmar Government and had to leave Myanmar since 2017. Over 700,000 refugees fled to neighboring Bangladesh where they presently face an environmental and health crisis (UNHCR 2023). After the massive outbreak of Diphtheria and recently the COVID-19 pandemic, Rohingya refugees living in camps remain vulnerable to health issues particularly respiratory infections with children being the most at risk (Rahman and Islam 2019; Shammi et al. 2020). This study examines the connections between environmental and air degradation, with the living conditions of Rohingyas in refugee camps as it pertains to the spread of respiratory diseases. The data was collected using qualitative research methods through focus group discussions with Rohingyas in Bangladesh. The data was analyzed using a coding method that situated the findings into themes for explanatory purposes (Vaismoradi et al. 2013, 398–405). Findings indicate that the poor living conditions and arduous journey to Bangladesh caused many refugees to catch respiratory illnesses. This article argues that the squalid and densely populated living conditions coupled with the degradation of the natural environment need to be addressed to mitigate a health crisis.

Keywords: Rohingya refugees, environment, respiratory health, refugee camps



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# Environmental Degradation, COVID-19, and Respiratory Health for Rohingya Refugees in Cox's Bazaar

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The Rohingya are an ethnic Muslim minority from Rakhine State, Myanmar, who have faced persecution and structural violence by the Myanmar Government. This has manifested in the denial of citizenship rights and education, as well as the propagation of anti-Rohingya and Muslim rhetoric. These actions culminated in the 2017 Myanmar Military campaign that saw the Rohingya community experience large-scale state-sanctioned violence leading to mass killings and forced displacement (Fortify Rights 2022). The scale and severity of the violence led the United Nations to label the actions of the Myanmar Government and its military as genocidal. Approximately 700,000 Rohingya were forced to flee Myanmar at that time to neighboring Bangladesh in search of safety, shelter, and basic human rights (Ellis-Peterson 2018). Currently, they reside in refugee camps along the Bangladeshi border with Cox's Bazaar having the largest Rohingya refugee population (Shoowong 2022). Most of the population presently live in makeshift shelters made of tarpaulin and bamboo with little to no access to healthcare, clean water, and nutritious food. The camp's infrastructure is stretched to its limits with only a small number of health centers and schools.

Rohingya refugees face numerous challenges including poor living conditions, limited access to healthcare, and ongoing security concerns (Shoowong 2022). They are vulnerable to communicable diseases such as Cholera, Diphtheria, Measles, and COVID-19, which is easily spread through overcrowded and unsanitary conditions (Ridwanur and Islam 2019). This vulnerability is compounded by their status as refugees, which leaves them without legal protection or support. Women and children are particularly vulnerable to exploitation, trafficking, and sexual and gender-based violence. They also have little to no access to education and employment opportunities, leaving them heavily dependent on aid. According to the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA 2023), the Rohingya crisis is one of the world's most

protracted and complex refugee situations. The outlook remains stark with little to no improvement in the immediate future or political will on the part of the Myanmar government to repatriate the Rohingya and grant them citizenship. Respiratory health is a major concern for many in the camps, as outbreaks of diphtheria and COVID-19 have caused widespread illness, exacerbated by a lack of medical facilities and the potential for a mass health crisis (Ridwanur and Islam 2019).

This research seeks to explore the role that the environment plays in exacerbating respiratory health challenges for the Rohingya population, as they are a highly vulnerable population that faces unique challenges. The COVID-19 pandemic has underscored the critical importance of examining the relationship between the environment and respiratory health in refugee populations. By studying the role that the environment plays in respiratory health in refugee camps, risk factors can be identified and inform interventions to improve the health and well-being of those most affected. Additionally, it highlights the implications for the wider public as the number of forcibly displaced population grows the world over. The research design employed in this study was qualitative research that utilized focus group discussions and interviews with communities in Cox's Bazaar refugee camps. The data was analyzed using a qualitative coding method that allowed for the inference of meaning from the data. A total of nine people between the ages of 24 and 55 were interviewed, with a moderate balance between male and female respondents selected because they live in the camps.

Interview questions focused on several themes such as housing and the environment, their journey to the camp, their socioeconomic situation, and experiences with respiratory health. The main challenge faced during the data collection were poor wireless internet connections when calling respondents on social media applications, as direct calling was too expensive. Another challenge was the time it took to transcribe and translate the data along with the potential loss of nuance because of the translation process. To address this, we conducted a peer-review on the transcripts to ensure that we were capturing the most accurate meanings. The article is structured as follows: it begins with a literature review on climate change and respiratory health in refugee populations. Next, the methodology section outlines the data collection and analysis process. The findings section details the main themes that emerged from conversations with refugees. Finally, the discussion section interprets the findings and their implications, before concluding the study.

### **Climate Change and Respiratory Health in Refugee Populations**

Climate change has become a significant threat to human health, especially for vulnerable communities such as refugees and migrants. This section explores the relationship

between climate change, respiratory health, and refugees. Because of this, articles from diverse disciplines were selected as the primary source of literature—such as medical, humanities, migration, and environmental journals, and only articles published since 2013. The aim is to investigate how environmental degradation impacts Rohingya refugees' respiratory health in Bangladeshi refugee camps. The review seeks to analyze the evidence and knowledge gaps in the literature, underscoring the consequences of a poor environment on respiratory health among Rohingya refugees in Cox's Bazaar.

This analysis highlights the intricate relationship between climate change, respiratory health, and refugees. It emphasizes the significance of housing as a crucial social determinant of health for refugees and migrants, noting that cold and damp living conditions can significantly contribute to respiratory issues. Additionally, it addresses the heightened vulnerability of refugees and migrants to infectious respiratory diseases during periods of forced displacement, migration, or while *en route* to refugee camps. The discussion also explores the potential positive and negative impacts of climate-related migration, depending on the adaptation strategies employed by both refugees and host nations.

The number of refugees around the world are increasing and are often forced to live under conditions that promote respiratory infections as argued by health science scholar Tim K. Takaro and colleagues (Takaro, Knowlton, and Balme 2013). Migrants represent a diverse population comprising workers, students, undocumented individuals, and refugees. It is often used as a general term for people outside of their country of origin. According to Amnesty International (n.d), refugees have fled their countries due to specific risks or serious human rights violations that they had to face. Worldwide, approximately 1 billion people were considered migrants in 2016. Notably, about 65 million of these migrants were forcibly displaced from their homes, and 20 million were considered refugees (Roman et al. 2018). Climate change in particular can impact migrants and refugees, due to coexisting exposure to environmental hazards and inadequate access to health care. Forced displacement of people is associated with acute respiratory infections and tuberculosis, while migration from rural to urban areas is associated with allergic diseases such as asthma (Roman et al. 2018).

A key factor affecting these health outcomes is housing, which is an important social determinant of health. The quality of housing has a considerable impact on overall well-being and is closely linked to specific mental and physical health conditions, such as depression and respiratory illnesses (Ziersch, Walsh, Due, and Duivesteyn 2017). For asylum seekers and refugees, who often face multiple human rights violations and prolonged exposure to trauma and torture, the effects of inadequate housing are

particularly severe. The loss of habitability correlates with an increased potential for human suffering (Gilmore et al. 2024, 3).

Among diverse conditions of housing, cold and damp, emerged as a significant factor highlighted in interviews, leading to a range of physical and mental health issues such as respiratory problems, sadness/depression, and joint pain and other forms of high-risk mobility among the refugees (Ziersch, Walsh, Due, and Duivesteryn 2017; Gilmore et al. 2024, 4). Some argue that the perception of a home is shaped by complex needs and that spatial and cultural dimensions should be considered for the improvement of physical and psychological health (Shahpur and Wardani 2022). In addition to housing, respiratory health, and climate change are connected through forced migration and sea level rise that leads to flooding (Takaro, Knowlton, and Balmes 2013). Forced migration and the trek to refugee camps play a significant role in the rise of acute infectious respiratory diseases. Environmental conditions, such as monsoon rains, can exacerbate air pollution by increasing moisture levels, which promotes mold growth. Mold emits various compounds and particles into the air, while damp environments can lead to the chemical breakdown of materials, releasing further harmful substances as they deteriorate. Refugees and migrants often experience an arduous flight and precarious living and housing circumstances, which might affect their nutritional status and immune system. Accordingly, a study analyzing respiratory infections among adult refugees indicates that certain factors may heighten refugees' vulnerability to infections in general (Jablonka et al. 2021). However, others argue that climate-related migration can potentially have both positive and negative health effects and well-being consequences for both the host and home communities.

As with any migration, it can contribute to both vulnerability and resilience, with potential for both protective and detrimental impacts on human health and well-being (Schwerdtle, Bowen, and McMichael 2018). Other findings support this claim that climate change-related migration is likely to result in adverse health outcomes, both for the displaced and for host populations, particularly in situations of forced migration. However, where migration and other mobility issues are used as adaptive strategies, health risks are likely to be minimized, and in some cases, there will be health gains (McMichael, Barnett, and McMichael 2012).

While climate and weather events are influenced by natural climate variability, they are also closely linked to non-climatic factors (Gilmore et al. 2024) such as human-induced climate change and socioeconomic development. Therefore, adaptation to climate change aims to reduce vulnerability and exposure, and to build capacity and resilience to potential adverse impacts of climate extremes, while accepting the

inevitable risks due to the changes (Schwerdtle, Bowen, and McMichael 2018; Gilmore et al. 2024).

Although direct impacts between environmental quality and respiratory health are significant, there are indirect impacts that can exacerbate health challenges for refugees. For example, one article examines the process by which East African refugee women from Somalia have adapted to an unfamiliar, urban environment on the South Acton Estate, West London, UK (Atubo and Batterbury 2001). The article considers various aspects of the “material” in the urban environment including housing, pollution, and health, alongside its effects on social relations, culture, and women’s access to urban spaces. The study revealed that women have experienced challenges in settling into and adapting to the estate environment. A language barrier has proven to be a significant obstacle to their independence, limiting their access to public facilities and other services offered by local authorities (Atubo and Batterbury 2001). However, in another study conducted, findings show that migrants suffer from medical conditions typical of other populations such as tobacco related disease or sleep disordered breathing (Holguin et al. 2016). However, they also found that conditions relevant to the nature of their living standards affected them as well, and that the ability of the host country to address their health care needs is reduced due to difficulties in identifying such populations (Holguin et al. 2016).

This research presents a contribution to the literature by examining the specific case of Rohingya refugees in Bangladesh—one of the largest if not largest refugee populations in the world with a growing population, where residents live under constant threat of disease outbreaks, fire, monsoon rains, and no prospect of returning home. The migration of Rohingya refugees to Bangladesh was not primarily driven by climate issues, but rather by decades-long structural discrimination and conflict, culminating in the violent conflict that occurred in 2017. It highlights the immediate need for further research to address the respiratory health challenges faced by the Rohingya population and to inform policy and interventions that can mitigate the adverse effects of environmental degradation on their health.

### Methodology

This research study sought to understand the impact of environmental degradation on respiratory health among refugees in Cox’s Bazaar in Bangladesh. A purposive sampling method was used to choose participants that were living in Cox’s Bazaar camps who have migrated from Rakhine State, Myanmar. The sample size consisted of nine individuals aged 24 to 55, with a balanced representation of the sexes (five male and four female respondents). This small sample size was influenced by several factors, including

the ongoing security crisis, time constraints, and the challenges of conducting research in a conflict-affected setting. Data were collected through semi-structured interviews implemented from December 2023 to January 2023. The interview guide had 15 questions that focused on four components: traveling, housing and environment, respiratory health, and the socioeconomic situation of respondents. The interviews were conducted in the Rohingya language facilitated by local volunteers based in Rakhine State, who briefed respondents on the project's objectives and ethical considerations. The conversations were recorded using a recording software on their mobile phones. Informed consent was obtained from all participants prior to the interviews. The participants were notified about the purpose and objective of the research and how the information would be used. Confidentiality and anonymity were maintained and no personal details such as names were disclosed. To ensure the participants' well-being, a safe and comfortable environment was created, and psychological support provided if necessary.

Cultural sensitivity was considered in this research, and Rohingya interviewers were employed to help bridge any cultural barriers. Although only one author was from the community, we made efforts to ensure that the meanings conveyed in the interviews were fully understood. We approached the process reflexively to maintain both impartiality and a deep understanding of the issues at hand. As non-Rohingya researchers, we recognize that our perspective might differ from that of native speakers. Therefore, the interviews were transcribed and then translated from Rohingya to Burmese and then to English, using a qualitative coding process for analysis.

However, several challenges emerged during the implementation of this research study. Direct phone calls were expensive and therefore the interviewers focused on messaging apps such as WhatsApp and Viber, which at times were unstable due to poor wireless internet connections. Furthermore, volunteers located in certain areas, such as Buthidaung and Maungdaw, were the only ones able to make calls to Bangladesh due to their social network within the camps and thus reduced the number of potential participants. Additionally, the slow process of data transcription and translation presented a challenge that was addressed by having more people work on the data. Another issue faced throughout the translation process was the loss of information due to words and expressions being filtered through multiple languages. This was addressed by having multiple translators double-check data to minimize loss.

### **Linking Health Problems and the Refugees' Journey**

The research question focused on exploring how environmental degradation in refugee camps in Bangladesh affected Rohingya population. This overarching question was

broken down into the following themes: their journey to the camps, housing and environment, the prevalence of COVID-19 and other respiratory diseases, and their socioeconomic situation. The data was collected by local Rohingya researchers and analyzed using a qualitative coding method. Analysis of the respondents' answers revealed refugees have experienced numerous health problems during their migration from Myanmar to Bangladesh, including difficulty breathing, fever, body aches, swollen feet, and sore throat. As one respondent said: "yes, we suffered difficulties while fleeing Myanmar and the persecution. As both my parents are diabetes patients, they had breathing difficulties on the way." Another respondent said: "while our family was fleeing from Myanmar to Bangladesh, especially pregnant women and the elderly had suffered common cold, breathing problems and my father died on the way."

The journey was not only physically difficult but also emotionally challenging, as participants reported heart palpitations due to the fear of being persecuted. As they were forced to leave their homes and flee to Bangladesh to avoid persecution, they were left vulnerable as they navigated through the perilous journey. As one respondent said: "I witnessed pregnant women dying on the way as they were unable to deliver and elderly people dying due to over exhaustion." Participants' responses reveal trauma and suffering they had to endure to escape the persecution in Rakhine.

### **Housing and Environment-Related Issues in the Camps**

The problems persisted and worsened once the refugees arrived in the refugee camps. Respondents reported that the living conditions were poor, with overcrowded and inadequate housing. Most houses were made of bamboo poles and wood with tarpaulins commonly used as roofs. These materials are inexpensive and lightweight, and the bamboo grew naturally in the surroundings areas, making them suitable for temporary structures, though they offer minimal protection against the elements. Moreover, there is no separation between kitchen, bathroom, and bedroom, making it challenging for families to have privacy or maintain a sanitary home. Furthermore, the wet environment during the monsoon season compounded the challenges of living in the camps. As one respondent said: "It is not convenient to stay in Refugee camp because it is overcrowded. Now, where we are staying is a small place where kitchen, bathroom and bedroom are not separated. This place gets wet in the rainy season and not appropriate to stay." This indicates that the living situation for Rohingya refugees needs to be upgraded with partitioned rooms for families and proper sanitation to prevent the spread of diseases. This compares negatively to their origins, where they lived in individually separated wooden houses with spare land functioning as their back or front yard (Shahpur and

Wardani 2022). This situation is not just relegated to the housing situation but also the overall environment that has adversely affected people's health in the camps.

The lack of fresh air, as many respondents reported, has caused many to become sick and experience exacerbated allergies, which they attribute to the dirty environment as well as the food. For example, Takaro et al. (2013) identified that increased ozone and particulate air pollution from cook fires, deforestation, and forest fires reduced lung function. One respondent said: "There is ditch beside the road in our area to flow water, but some people throw waste in the ditch. When the ditch is clean, it smells very bad which cause difficulty in breathing and many people sick and there is a constant bad smell from the ditch," whereas another respondent said: "Yes, as our environment is not clean, it causes breathing difficulties and there are some unseen diseases found in refugee camps." Furthermore, many respondents highlighted that there were no trees around them. However, based on where they are located within the camp there is a chance that they can get cleaner air. As one interviewee said: "there are no green trees around us, and the air quality is bad but if you are on top of the hill the air quality is better but there still are no trees."

The findings reveal that many individuals face extreme hardships and challenges in the refugee camps, beginning with their journey from Myanmar to Bangladesh. This journey was fraught with physical and emotional difficulties, resulting in significant suffering and, in some cases, fatalities. Upon arrival in Bangladesh, refugees encountered poor living conditions that adversely affected their health and well-being, exacerbated by the prevalence of airborne diseases.

This study underscores the urgent need to improve living conditions in these refugee camps, including the provision of partitioned rooms for families and proper sanitation to prevent the spread of diseases. However, the lack of political will to prioritize both short- and long-term solutions for the Rohingya community—compounded by the COVID-19 crisis and other existing health challenges—contributes to the dire circumstances in the camps. Additionally, ineffective humanitarian assistance mechanisms that fail to adapt to the complex, multi-layered crises further worsen the experiences of the refugees.

### **Environmental Degradation and Its Impact on the Respiratory Health of Rohingya Refugees**

This research set out to explore environmental degradation and its effects on Rohingya refugee respiratory health in refugee camps in Bangladesh. To address this, questions were designed to study themes such as their journey to the camps, housing and environment, the prevalence of respiratory health, and their socioeconomic situation.

The data was collected by Rohingya researchers and analyzed using a qualitative coding method. The findings of this research highlight the numerous health problems that Rohingya refugees experience during their migration from Myanmar to Bangladesh. These health problems consist of difficulty breathing, fever, body aches, swollen feet, and sore throat. Their forced migration to the camps was emotionally draining as the refugees experienced and witnessed several traumatic events that most likely caused psychological harm. Many were left vulnerable as they traveled to Bangladesh as several of those interviewed stated that they saw the pregnant or elderly die on their journey while having to escape the persecution and killings by the Myanmar military. Their situation remained bleak as they arrived at the camps as many respondents stated that the living conditions were poor, overcrowded, and unhygienic. Respondents have stated that there needs to be more adequate homes with partitioned rooms for their families and for proper sanitation to stop the spread of disease. Furthermore, the lack of fresh air and trees has, according to respondents, contributed to respiratory problems among many of the refugee population.

The cold and damp housing were found to be the most significant factors across interviews, causing respiratory problems as well as mental health issues (Ziersch et al. 2017). Through the findings, this study adds to the existing literature by providing a specific case study of the Rohingya population in Bangladesh during the critical period of COVID-19 crisis. It brings to light the poor living conditions, environment, and arduous journeys they took to reach the camps and how those factors greatly affected not only their respiratory health, but emotional health as well. The intertwined issue was often overlooked in refugees' studies. It requires immediate action taken to improve the refugees' living situation. The support in the camps can be done particularly through providing partitioned rooms and managing the over crowdedness in the camps to prevent the spread of airborne diseases. This research indicates that there is evidence to support the connection between environmental degradation and the respiratory health of Rohingya refugees, but there is an urgent necessity to better understand the needs of the people in camps as well as to adjust the policy and aid programs so these align with Rohingya cultural values and norms.

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