

From Global Climate Crisis to Local Gendered Vulnerability: Lived Experiences of Pakistani Workingwomen During Smog in Lahore

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Abstract

Women's participation in the workforce is a global concern for women's empowerment. A major concern in women's empowerment through jobs is reaching the workplace, especially in urban areas, where climate-related challenges such as smog and other infrastructure issues persist. Lahore is one of the most populous cities in Pakistan, and its population continues to grow. The city faces hazardous climate issues, including smog, which causes many health problems and also inhibits residents' commuting to their workplaces. This condition has compounded the difficulties for working women in Lahore, who have household responsibilities alongside job activities. This paper examines gender employability and climate change as a global phenomenon to explore the social impact of smog on working women at Hameed Latif Hospital, Lahore. Although the issue

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of smog has been a recurring concern for the environment and public health in Lahore, its gendered community-level impacts are not well studied in local sociological research. The main objective of the study is to explore the impact of smog on the community participation and everyday social interaction of working women and to examine their perceptions of community and institutional responses related to smog. The study is framed around two research questions: What is the impact of smog on the community participation and daily life socialization of working women, and what are the perceptions of working women regarding community and institutional responses to smog in Lahore? The study is designed using a qualitative exploratory approach and is ethnographic in nature, employing in-depth interviews and participant observation, as it was concerned with women's lived experiences, perceptions, and meanings, and not with numerical measurement. The primary data were gathered from 12 adult working women at Hameed Latif Hospital through face-to-face semi-structured interviews with health professionals, administrative staff, and support staff. To aid in the interpretation of participants' responses, field notes were also used. The analysis of the data was done using Braun and Clarke's thematic analysis approach. The analysis resulted in six major themes: smog as a hindrance to everyday mobility, the double burden of paid work and household duties, health discomfort and emotional stress, decreased community involvement, coping strategies and personal protection, and limited community and institutional response. The study found that smog is not only an environmental or health problem but a gendered social problem that impacts women's mobility, emotional well-being, family life, work patterns, and community life. The results indicate that there is a significant need for gender-responsive workplace support, public awareness, and improved community-based response mechanisms.

Key words: Smog, working women, community participation, gendered vulnerability, social impact, Lahore, qualitative study, institutional response.

Introduction

Ensuring the empowerment of women living in urban regions is a major global concern, and their participation in the workforce is central to this effort. In Pakistan, women have gradually become part of organizational operations, and the female population now constitutes a significant share of the workforce. However, academic research indicates that women worldwide face patriarchal challenges when traveling to their workplaces (Goel, 2023; Gera and Hasdell, 2020), ranging from socio-cultural norms of modesty and honor to urban structural issues related to infrastructure and security (Khan, 2025). Recent climate change has further complicated the empowerment of urban working women (Ngcamu, 2023), as climate-induced challenges introduce gender inequalities. Furthermore, recent research indicates that women's vulnerability to environmental crises is intensified by socially constructed gender roles, which exacerbate the difficulty of balancing professional life and domestic responsibilities (Murtaza et al., 2025). Smog is widely recognized as a significant environmental and public health problem on a global scale (Kommu et al., 2021). The findings suggest that, as a climate change indicator, smog is not only an environmental and public health crisis but also a global social justice issue in terms of gender that constrains women's community participation, employability, and mobility (Ngcamu, 2023).

In Pakistan's metropolitan cities, rapid urbanization, increased traffic, industrial emissions, and changing weather patterns combine to create hazardous air quality. Lahore, one of Pakistan's major urban centers, is affected by smog and has a significant number of employed women. The intensified occurrence of smog episodes in Lahore is a grave environmental hazard that not only

compromises human security but also hinders the adaptive capability of working women (Bushra et al., 2024). The pollutants carried by the smog affect women's health and the commuting efficiency of working women (Mehboob, 2025). This paper examines how the global climate crisis manifests in the everyday lives of working women in Lahore, illustrating the intersections of gender inequality, urban sustainability, and climate justice in Lahore as part of the Global South. Furthermore, this study seeks to understand the social effects of smog on working women in Lahore, focusing on its impact on their health, mobility, work performance, and social well-being. The study is significant because it draws attention to women's experiences and presents evidence for policymakers to formulate inclusive workplace policies that cater to the needs and vulnerabilities of working women in urban Pakistan. Global research on environmental risks also underscores that exposure and vulnerability are not equally distributed in society. Instead, they are influenced by social and economic factors such as income level, type of job, housing conditions, access to healthcare, and the ability to adopt protective measures. Importantly, gender-focused studies have argued that women are often affected more by climate-related inequalities (Glazebrook et al., 2020; Rintip et al., 2025) and are further burdened by daily domestic and work responsibilities, as well as their social position, which affects both exposure and coping capacity. Women's vulnerability is often associated with unequal access to resources, lack of decision-making power, and household chores socially assigned to women (Bryan et al., 2024).

Gendered Vulnerability and Everyday Life of Pakistani Working Women in Urban Public Spaces during Smog

An emerging body of global and local research indicates that women face disproportionate health and social risks from air pollution, driven by both social and biological factors. Biologically, this vulnerability is closely tied to reproductive health: studies from South Asia have linked exposure to polluted air with pregnancy complications and an elevated risk of miscarriage, underscoring the need for research that centers women's embodied experiences. This vulnerability also creates socio-cultural and domestic pressure to discontinue employment for working women. Furthermore, women disproportionately bear the emotional and psychological toll of the pollution crisis because of their gendered responsibilities for managing family health and caregiving, alongside the sheer concern for child care and other dependents at home (Singh et al., 2025). These findings suggest that smog cannot be comprehended merely as a climate change phenomenon through technical indicators alone. Rather, it needs to be examined through a gendered lens as a social and cultural phenomenon that shapes the daily lives of women in terms of family roles, mobility, and mental well-being (Bryan et al., 2024). Studies in South Asia indicate that environmental degradation can intensify women's burden, daily stress, and sense of insecurity, particularly where access to basic services and safety infrastructure is limited (Patel et al., 2020). In Pakistan, smog has emerged as a severe and recurring seasonal emergency, particularly across Punjab during the winter months. Lahore, a densely populated city, faces multiple urban issues, including traffic congestion, construction as part of development work, growing nearby industrial areas, and neighboring rural areas where crop-residue burning is a common practice, making it a city prone to environmental crisis. There are very few studies on Pakistani working women that address how smog reshapes their everyday life experiences, routines, social participation, childcare, and other family responsibilities.

In urban Pakistan, gender roles structure women's daily lives, affecting everything from mobility to household tasks, especially childcare, cooking, and health-related tasks within the family. Similarly, the movement of middle-class Pakistani women is influenced by social norms, safety

concerns about moving in public spaces, and the limited availability of secure public transport. In such scenarios, smog constrains outdoor activities, limits access to social networks, and restricts community participation (Singh et al., 2025). Environmental conditions like smog further constrain women's mobility and social participation. Pakistani women's movement in public spaces is shaped by social norms, safety concerns, and transport limitations; smog compounds these constraints by discouraging outdoor activity, limiting access to social networks, and restricting participation in community life (Singh et al., 2025). Yet a substantial number of women in Lahore are engaged in both the formal paid workforce and informal employment roles, heightening their outdoor exposure during daily commuting and outdoor tasks due to reliance on public and shared transportation (Patel et al., 2020). Especially, women working in the health-care sector cannot avoid working and are more vulnerable to smog exposure. Hence, these women are inevitably engaged in occupational and household responsibilities, which we term the 'double burden' of work during the environmental crisis period of smog, despite other sectors being allowed to have online work options. Smog not only constrains women's mobility and social participation but also restricts their ability to perform domestic responsibilities amicably.

Smog as an Urban Global Challenge

Smog is a mix of smoke and fog, and the term was coined in the early 1900s. It occurs when pollutants in the air build up faster than the air can be dispersed. It is still characterized by two archetypes in the language of scientists, namely London smog and Sulfurous smog. Sulfurous smog is caused by burning fossil fuels and other fuels that contain sulfur, and is exacerbated by cold, damp, still air. The London Smog in December of 1952 claimed up to 12,000 lives and caused 100,000 illnesses in London, UK (Borowski, 2023). However, "Los Angeles smog," or photochemical smog, requires no smoke or fog at all, as it is the product of chemical reactions between emissions from motor vehicles (nitrogen oxides and volatile organic compounds) and the sun's rays, resulting in the formation of ground-level ozone and a reddish-brown haze (Encyclopaedia Britannica, 2026). Most megacities today, such as those in South Asia, are primarily affected by a combination of both, i.e., fossil-fuel combustion and biomass combustion supplying particulates and sulfur compounds, and dense traffic supplying the photochemical precursors, which are trapped by the temperature inversions typical of a winter morning. Smog is not a single-pollutant issue; it's a failure of the systems of energy choice, transport planning, agricultural practice, and urban design that are focused on where population density, vehicle numbers, and uncontrolled combustion combine with bad weather.

The scale is no longer on the margins. Data from the 2025 World Air Quality Report, which included air quality monitoring data from 9,446 cities in 143 countries, showed that air quality is worsening despite increased monitoring coverage, as only 14% of urban areas now meet the WHO annual PM2.5 guideline, down from 17% the previous year (IQAir, 2026a). It is now a significant contributor – with record wildfire emissions from North America and Europe estimated to have released an additional 1,380 megatonnes of carbon in one year (Jacobs, 2026). It is estimated that approximately 90% of the world's population (Climate & Clean Air Coalition, 2018) is exposed to air that is polluted beyond guideline levels, and that each year about seven million people die because of exposure to fine particulate matter (Climate & Clean Air Coalition, 2018). This burden is not equated: exposure above even the WHO's least stringent interim target was thirteen times more common in LMIC countries than in wealthy countries, affecting 6.5 billion people, and an estimated 2 billion people continue to cook with polluting stoves and fuels, a large share of which is borne by women and children (World Health Organization, 2026). Therefore, smog is an

environmental and equity issue, and it is transboundary: the air quality in a country can depend on the emissions from its neighbors as well as on its own regulations, e.g., the common airshed between Pakistan and northern India (IQAir, 2025).

Table 1. Selected Air Quality and Travel-Exposure Data, Global and South Asian

City / Region	2025 PM2.5 ($\mu\text{g}/\text{m}^3$)	Multiple of WHO guideline (5 $\mu\text{g}/\text{m}^3$)	Dominant local sources
Lahore, Pakistan	88.9	$\sim 17.8\times$	Vehicles, industry, crop burning, brick kilns
Loni, India	— (highest globally)	$>22\times$	Industrial and vehicular emissions
Delhi, India (roadside)	up to 750.5 (peak)	far above guideline on most days	Traffic, stubble burning, cross-border transport
Global urban average	varies widely	Only 14% of 9,446 cities met the guideline	Traffic, industry, wildfire smoke, biomass

Sources: IQAir (2025, 2026a, 2026b); Singh et al., (2025); Colbeck et al., (2011). See References

The urban aspect is more pronounced than anywhere else in South Asia in the mega-cities. In 2025, Pakistan became the most polluted country in the world, with Lahore the most notable victim of pollution. In 2025, Lahore recorded an average air quality of $88.9 \mu\text{g}/\text{m}^3$ (well over 17.8 times the WHO annual guideline of $5 \mu\text{g}/\text{m}^3$) and was ranked the 8th most polluted city on the planet that year (IQAir, 2026b); it is now also notorious for its recurring winter ‘smog season,’ which affects air quality and forces the closure of markets and schools early in the day (Anjum and Aziz, 2025b). The causes are layered and mainly man-made: emissions from vehicles account for an estimated 40-45% of Lahore's air pollution, and industrial activity another 30% (IQAir, 2026b), with the remainder split between unregulated brick kilns, biomass and waste burning, and dust from construction activities during rapid urban growth. In cooler months, calm winds and temperature inversions help pollutants stay near the ground for days, and in the region, transboundary smog drifting from India's Punjab adds to the issue (IQAir, 2025). This trend is repeated in other cities in South Asia, such as Dhaka, Kathmandu and Colombo, indicating that South Asia's smog problem is not just a local issue for each city (Awan, 2025).

Studies show that one of the most obvious ways everyday people are exposed to this pollution is through daily commuting and travel. During in-vehicle transport, the study found an average of $50 \mu\text{g}/\text{m}^3$ of PM2.5, but $91 \mu\text{g}/\text{m}^3$ was recorded at the roadside, and CO of approximately 8 ppm was recorded in traffic, which the study linked to heavy-traffic sites and to the fact that most public transport in the city is not air-conditioned, leaving commuters with little protection from exposure (Colbeck et al., 2011). A five-year study on the dose of PM2.5 and PM10 absorbed by people in Delhi showed that PM2.5 and PM10 doses during the evening commute were up to 39% and 23% higher than during the morning commute, with the highest PM2.5 dose seen in a male pedestrian commuter, nearly forty times the WHO guideline-based reference value (Singh et al., 2025). Comparative studies on Delhi's various modes of transport have also revealed that open or non-

air-conditioned modes of transport, such as rickshaws, non-AC cars, and walking, are associated with significantly higher PM_{2.5} exposure than air-conditioned cars and the metro. Occupational drivers are even more burdened; studies conducted on autorickshaw and air-conditioned cab drivers in the city of Delhi have reported higher levels of particulate exposure for autorickshaw drivers than for cab drivers, especially during the winter season of high smog concentration (Jain & Barthwal, 2022). Combined, this evidence indicates that the mode and time of daily travel, by walking, cycling, or open-vehicle travel during peak evening hours, can lead to many times greater personal exposure to pollutants than that measured by ambient monitoring stations, suggesting that transportation decisions and traffic management policy can have a direct impact on public health beyond being just an environmental statistic.

The figure below demonstrates how emission sources combine with meteorology to produce smog and traces the resulting impacts through to the governance responses needed to interrupt the cycle.

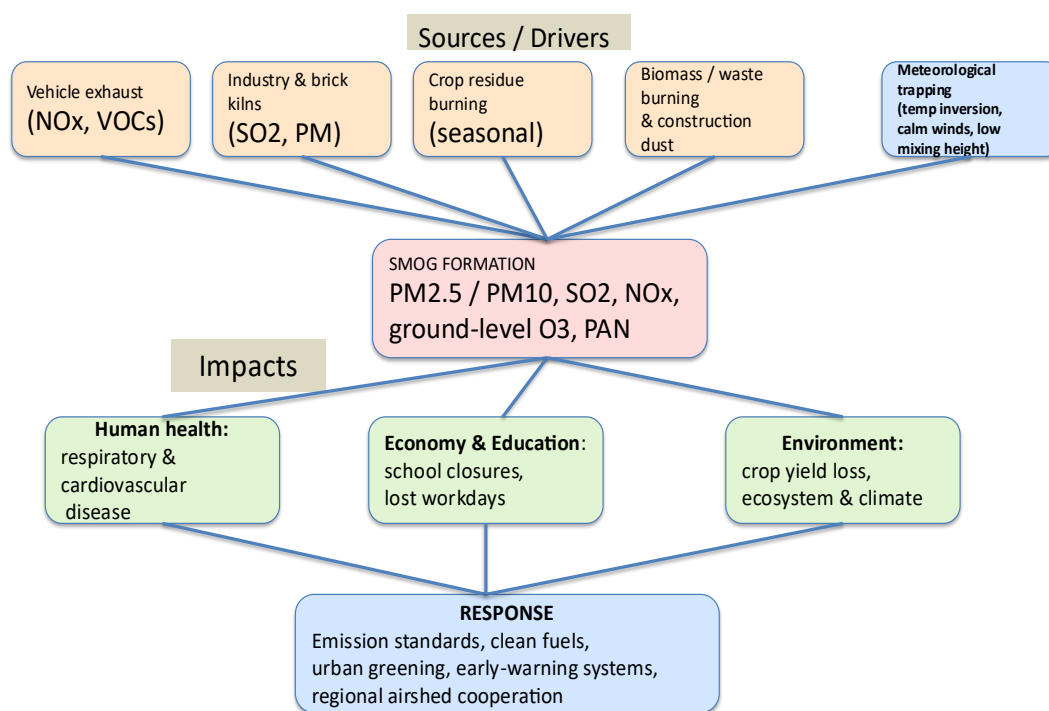


Figure 1

Methodology

This paper has employed an ethnographic research methodology as a sustained engagement with research participants to understand their experiences and contexts through discussions and observation, which served as the central methodological component. This approach was used to comprehend how women perceive, interpret, and assign meaning to smog within their everyday professional and personal lives. Through in-depth interviews and participant observation, the study has examined the lived experiences of working women in Lahore in relation to pressing global concerns regarding women's empowerment through employability, while commuting in smog as a health hazard due to climate. Participant observation and interviews were supplemented with fieldnotes, which documented contextual observations, nonverbal cues, immediate reflections, and other unsaid responses in the form of tone and gestures to authenticate the data gained through in-depth interviews. By corroborating interview and participant observation data with fieldnotes, we as researchers were enabled to examine smog not merely as an environmental hazard but as a social and gendered phenomenon, while capturing the subjective realities, emotional responses, and coping strategies to smog while maintaining work-life balance. Furthermore, the paper has adopted an exploratory qualitative research design, which was particularly appropriate given the scarcity of existing scholarship on the intersection of smog and gendered experience in the Pakistani context. This allowed us researchers to bring up novel insights, patterns, and dimensions that are undocumented regarding gender empowerment in professional and private contexts during smog conditions. This context-specific lens of research ensured that cultural norms, mobility constraints, and caregiving responsibilities shape encounters of Pakistani women with seasonal smog in Lahore. These experiences are incorporated into the analysis, alongside their influences on Pakistani women's mobility, occupational duties, household responsibilities, community participation, and their emotional well-being. The data was analyzed using thematic analysis, following the six-phase framework proposed by Braun and Clarke (2006): familiarization with data, generation of initial codes, searching for themes, reviewing themes, and defining and naming themes developed in relation to the study's research objectives.

The study was conducted at a hospital in Lahore, and Hameed Latif Hospital was selected for its easy access and the permissions required. This institutional context provided a workforce that was bound to be exposed to smog, as they could not take leave from their jobs despite the government offering work from home, because hospital duties require a regular presence, especially when a health crisis is prevalent due to climate conditions. The participants had varying degrees of exposure to smog, depending on their job descriptions, shift schedules, patterns of movement, and institutional positions. Clinical staff, for instance, worked extended and irregular hours that mostly required travel during peak smog hours, thereby exposing them differently than other administrative or support staff. Similarly, respondents who traveled on public transport were more likely to be exposed to smog than those who traveled in private vehicles like cars. Moreover, low-income women working in the health sector were bound to work regardless of financial or environmental factors for their economic survival, thus had no option but to travel in unhealthy environmental conditions. The selected sample unit for the research was adult women, aged between 18 and 45 years, with middle-class backgrounds and a range of professional and socioeconomic diversity for analytical richness in perspectives. A semi-structured question guide with open-ended questions was prepared related to health, stress, family responsibilities, and workplace challenges to stay focused on the research topic. Moreover, a consent form was developed to ensure the voluntary participation of the interlocutors. The question guide and

consent form were duly approved by the ethical committee of the university concerned to maintain the privacy and dignity of the respondents during the interview process and to ensure trust in safeguarding the participants from any potential discomfort or harm. They were informed that their confidentiality and anonymity would be ensured throughout the research process and that pseudonyms would be used rather than their actual names. However, it was clearly explained that participants had the right to refuse any question and withdraw from the study at any time without any negative consequences. All audio recordings, notes, and transcripts were collected and stored securely and only for academic analysis. There was no conflict of interest among the researchers while collecting the data and writing the paper.

Thematic analysis was used as the analytical technique and was carried out in six steps as described by Braun and Clarke (2006). This approach was suitable because it enabled the identification of recurring meanings, patterns, and themes in the interview data.

1. The first step was to become familiar with the data by listening to recordings, reading transcripts, and forming initial impressions.
2. In the second step, initial codes were developed from the words, sentences, and ideas that were important in participants' responses. Some potential codes included breathing difficulty, discomfort while traveling, not seeing friends socially, burden on the family, concern about children, wearing a mask, and not receiving support from the community.
3. In the third step, codes were clustered into larger categories that were related to each other. Codes related to travel delays, fear of leaving the house, and decreased mobility were combined into the mobility restriction category, for instance. Codes relating to tiredness, stress, and worry were combined into a psychosocial wellbeing category.
4. The categories were then checked and compared with the research objectives in the fourth step to see if they were representative of the data.
5. Themes were identified and named in the fifth step.
6. The last step involved writing the findings clearly and in an organized way, with participants' perspectives and in relation to the theoretical framework used in the study, which was the Social Vulnerability Theory.

Research Analysis

The data were analyzed using thematic analysis. Repeated patterns in participants' responses were identified and grouped into major themes. The analysis shows that smog affects working women not only physically but also socially, emotionally, and practically in their everyday lives.

Table 1: Coding of Themes

Theme	Sub-themes	Codes / Repeated Words
Smog as a Barrier to Daily Mobility	Commuting difficulty; fear during travel; reduced outdoor movement	travel difficulty, commuting, road visibility, traffic delay, fear while traveling, unsafe roads, outdoor movement, limited movement
Double Burden of Paid Work and Household Responsibilities	Work-family pressure; caregiving responsibility; increased domestic workload	household duties, family care, children's health, tiredness, work pressure, caregiving, extra burden, family management
Health Discomfort and Emotional Stress	Physical symptoms; psychological stress; concern for family health	burning eyes, cough, throat irritation, breathing problems, headache, fatigue, weakness, worry, stress, anxiety, health risk
Reduced Community Participation	Avoidance of gatherings; limited visits; social withdrawal	Avoid visits, family gatherings, social events, staying indoors, relatives, community activities, isolation, reduced interaction
Coping Strategies and Personal Protection	Individual precautions; home remedies; medical coping	mask use, precautions, warm water, medicine, avoid outdoor activity, self-protection, prevention, protective measures
Weak Community and Institutional Response	Weak public awareness; limited workplace support; weak government control	lack of awareness, weak support, government action, workplace guidance, factory smoke, vehicle smoke, public measures, community response

Six main themes emerge from the analysis: smog as a barrier to daily mobility; the double burden of paid work and household responsibilities; health discomfort and emotional stress; reduced social participation; coping strategies and personal protection; and weak community and institutional response. These themes collectively suggest that smog is a problem for working women in both public and private domains. They are exposed due to the need to travel for work, responsibilities at home, their caregiving role, and the lack of institutional and community support. In this way, smog makes women more vulnerable by exacerbating the gendered pressures they already face.

1. Smog as a Barrier to Daily Mobility

A key finding from the data was the limited mobility of women during smog. Participants repeatedly identified traveling during smog as difficult, uncomfortable, unsafe, and stressful. Working women depend on mobility, as they have to travel from their homes to their workplaces daily, irrespective of the weather and environmental conditions. But smog makes it harder to move, makes breathing more difficult, increases traffic delays, and heightens fear when traveling. When the air is so polluted, even walking around is tiring, participants said.

“Coming to the hospital feels more difficult than usual ... even a short journey feels tiring when the smog is severe” (Administrative Staff, 38 years old)

According to statements, smog makes commuting to work physically and emotionally challenging. Low visibility on the roads also makes people feel unsafe, particularly in the morning when the fog is usually thick..

“The road looks unclear in the morning, and it creates fear while commuting.” (Nurse, 25 years old)

The statement highlights the role of environmental factors in anxiety and in women's feelings of insecurity in public places. The theme is relevant because mobility is directly linked to women's access to work, income, healthcare, and social life. Smog also limits women's independence and freedom by hindering their mobility. Participants did not just say it was inconvenient for them; they said it made it more difficult and stressful to move around because of environmental pollution. Smog is an additional challenge for working women who have to cope with time pressure, workplace expectations, and family responsibilities.

2. Double Burden of Paid Work and Household Responsibilities

The second key theme was the double burden faced by working women in smog. Participants' responses indicated that smog affects them not only as employees but also as caregivers, mothers, wives, and family managers. They should be able to return to household chores after work, even when physically tired or unwell due to polluted air. Household work, family care, children's health, tiredness, and work and family pressure were repeatedly mentioned. One participant stated,

“After duty, I still have to manage the home even when I feel tired because of smog.” (Senior Doctor, 40 years old)

This reflects the gendered norm that women are responsible for maintaining domestic work, despite their health status. Another participant shared,

“When children get cough or flu during smog, most of the responsibility comes on me.” (Nurse, 32 years old)

This means that women's workload is affected by smog, especially when they are responsible for caring for children or elderly family members who are sick because of it. The double burden theme reflects the different experiences of women in the context of environmental issues arising from their gender roles. Smog affects family life as a whole, and women are often left to cope with the disruption. They are responsible for their own health, work, caring for sick family members, domestic chores, and family routines. This results in emotional and physical fatigue. This tension is clearly expressed in the following statement.

“I feel pressure from both sides, from work and from family” (Young Doctor, 28 years old)

Thus, smog not only poses health risks but also increases unpaid domestic work. The results suggest that working women's vulnerability depends on the interplay between their work and their expectations in the household. This means that their exposure to smog is more severe than simply breathing polluted air.

3. Health Discomfort and Emotional Stress

Health discomfort was another key theme in participants' experiences. Several physical symptoms were reported by women: burning eyes, throat irritation, cough, headache, breathing problems, fatigue, weakness, and allergy-like symptoms. These symptoms were strongly associated with traveling outdoors or being exposed to smog while traveling for work.

“My eyes burn when I travel during heavy smog ... I often feel headache and tiredness after spending time outside” (Young Nurse, 21 years old)

The participants' statements reveal that smog has a direct impact on their physical well-being. The discomfort experienced by participants was not occasional or minor but became part of their seasonal routine during periods of smog. Participants reported feeling weak, uncomfortable, and less energetic, even if they were not seriously unwell. In addition to physical discomfort, participants reported emotional stress. They voiced concern about the negative impact of polluted air and fear about how to keep themselves and their families safe. One participant said,

“Sometimes I feel worried because I know this air is harmful.” (Doctor, 30 years old)

Another interlocutor informed,

“I feel stressed because I have to protect myself and my family at the same time.” (Senior Nurse, 35 years old)

These statements indicate that, in addition to physical symptoms, smog creates psychological pressure. Women's emotional stress is closely tied to their role as caregivers. They are concerned not only with their own health but also with that of their children, elders, and other family members. This creates an ongoing sense of responsibility and fear. Even when working women are aware of the harmful environment, they are still required to continue working. This exposure is beyond their control and increases their stress. This theme illustrates the impact of smog on the body and mind. Physical symptoms deplete women's energy and comfort, and emotional stress adds to anxiety and mental strain. Smog poses a significant risk to women's health and well-being due to its physical and psychological effects.

4. Reduction in Social Participation

The fourth theme was a lack of social participation. Participants described not visiting relatives, attending family events, attending community events, or going outside for non-essential reasons during smog. This indicates that smog affects women's social life and relationships, in addition to health and work.

“During smog, I avoid visiting relatives unless it is very necessary... smog reduces our social life because we avoid going out” (Senior Nurse, 40 years old)

The above statements indicate that polluted air leads to social withdrawal. Women prefer to stay indoors after work because they feel unsafe or uncomfortable outside. Family gatherings and social events become difficult because traveling during smog increases exposure to polluted air. This further shows that polluted air leads to social withdrawal. After work, women prefer to stay indoors as they feel unsafe or uncomfortable outside. Smog makes traveling difficult, making family gatherings and social events challenging. This decrease in social involvement can lead to loneliness. Social interaction is a significant aspect of emotional well-being, family bonding, and community belonging. If women do not go to social visits and gatherings, they do not get in touch with relatives and community networks. Smog also takes away opportunities for rest, recreation, and social support for working women, who often have little free time due to their jobs and family responsibilities. The theme also demonstrates the impact of environmental pollution on people's daily lives. Participants were not rejecting social life due to personal decisions, but because of the risk of going outdoors due to smog. This implies that smog plays a dominant role in women's lives. It restricts their activities and keeps them at home, particularly after work. This means that smog can lead to less socializing and less engagement in community activities.

5. Coping Strategies and Personal Protection

In addition to the challenges of smog, participants identified several coping strategies. These included wearing masks, avoiding outdoor activities unless necessary, drinking warm water or tea, taking cough and allergy medications, staying indoors, and taking general health measures. These practices demonstrate that women are not merely victims of smog but take active measures to safeguard themselves and their families. One of the most frequently cited protective measures was wearing a mask. Participants reported trying to wear masks when going outside. Others said they limit unnecessary outdoor activities or travel when possible. Some used home remedies to soothe throat irritation, such as warm water or tea. When symptoms worsened, medications were also taken. The data also indicate that these coping strategies have their limits. One participant stated,

“We can take precautions, but we cannot completely avoid smog because we have to work.”
(Doctor, 34 years old)

This statement is important because it highlights the difference between awareness and capability. Women may be able to protect themselves, but it is not possible to be completely protected because of their work and family responsibilities. In extreme smog situations, they can't just stay inside; they have to work, go to duty, run their households, and take care of others. This theme illustrates that coping is a personal matter and doesn't go far enough. Personal protection will help alleviate discomfort, but it will not address the broader issue of air pollution. Although smog is caused by environmental and structural factors, the burden of protection is borne by individuals, particularly women. Thus, women have to employ available coping mechanisms but are constrained by economic, social, and institutional factors.

6. Weak Community and Institutional Response

This theme concerns the low community and institutional response to smog. Participants said that not enough action is being taken to combat smog. They cited poor awareness, poor government response, inadequate guidance in the workplace, factory smoke, vehicle emissions, and poor environmental control. Many participants believed that people had adapted to smog and were dealing with it on a personal level, but not at the community level.

“People talk about smog, but practical steps are very limited... community support is weak because everyone manages the problem individually.” (Doctor, 36 years old)

Statements express unhappiness with the overall response to smog. Participants felt that the government should take more action to regulate factories and vehicle emissions. They also recommended that workplaces provide instructions to employees during heavy smog, particularly for working women who cannot avoid it while traveling to work. This theme is significant because it shifts the focus from personal suffering and individual coping. Smog is not an individual issue that women need to deal with alone. It is an institutional responsibility and a public health and social problem. Participants hoped for government, workplace, and community involvement, such as awareness campaigns, pollution control policies, safety instructions, and protective measures for employees. The institutional response is weak, making women more vulnerable. Lacking public support, women are forced to defend themselves with limited personal means. This leads to inequality, as resources, transportation, flexibility, and access to healthcare are unequal for women. Thus, the impact of smog is more pronounced on working women due to the absence of any collective response.

Discussion

The results of this study show that smog has a significant impact on the social, emotional, and practical lives of working women in Lahore. The participants' experiences reveal that smog is not just an environmental or medical problem but a gendered social problem that affects women's mobility, family responsibilities, health, emotional well-being, and social life. The results align with recent literature, suggesting that air pollution and smog have a detrimental impact on both physical and psychosocial health, particularly in urban populations regularly exposed to environmental hazards (Ali and Rana 2024; Nasar-U-Minallah et al., 2024). Lahore has been identified as a smog hotspot, and recent studies have highlighted the importance of smog risk perception in understanding public health preparedness and protective measures (Ali and Rana 2024). The results indicate that smog affects women's mobility and hinders their participation in everyday life. Poor visibility, traffic delays, heavy air, throat irritation, and fear of traveling were reported as problems with commuting to work. This means that women's mobility is impaired and public places are perceived as unsafe because of smog. Similarly, Ali and Rana (2024) found that smog is viewed as a serious danger in Lahore and that people's perception of risk affects their preparedness and daily life. The mobility of working women was directly affected by smog because they could not completely avoid outdoor exposure due to their work activities in this study.

The theme of decreased social participation also directly addresses the first research question. Participants reported that during smog they did not visit relatives, did not attend family gatherings, and avoided unnecessary activities. This indicates that smog weakens women's social bonds and engagement in family and community life. Previous studies have linked poor air quality to physical health problems, psychological distress, and decreased well-being (Bhui et al., 2023). The participants' findings corroborate this literature, as a polluted environment can heighten anxiety and promote the avoidance of social interaction. The results also indicate that smog exacerbates the double burden on working women. Participants worked in paid employment and also engaged in household work, child health care, and family care. Women were typically the primary caregivers when children and elderly family members had coughs, flu, or breathing issues during smog. This illustrates the gendered vulnerability to environmental conditions. The authors of the study, Peters et al. (2024), suggest that environmental health effects are mediated by sex and gender, since exposure, behavior, social roles, and resources differ for men and women. The study by Anjum and Aziz (2025a) also revealed that climate-related and environmental changes can exacerbate women's caregiving responsibilities, particularly in low- and middle-income communities. The present results thus indicate that working women are exposed to smog not only directly but also indirectly, as a result of socially assigned roles as caregivers.

Our Interlocutors felt that community and institutional responses were weak. They noted that people speak of smog, but little can be done in practice. Most women described coping with smog on their own by wearing masks, drinking warm drinks, taking medications, and avoiding going outside. They also recognized that individual precautions are not enough, as they have to keep working and traveling. This finding is supported by Nasar-U-Minallah et al. (2024), who argued that Lahore's smog problem requires collective mitigation measures, including transportation and industrial controls, domestic measures, public awareness, and more stringent environmental policies. Interlocutors further called for greater efforts from the government, workplaces, and the community. They recommended regulating factory and vehicle emissions and having workplaces inform employees during heavy smog. These perceptions align with recent literature from Lahore, which suggests that the causes of smog are a mix of industrial emissions, vehicle exhaust, crop

burning, construction activity, and inadequate environmental control (Ali and Rana, 2024; Nasar-U-Minallah et al., 2024). Thus, participants were aware of smog as both an individual and a structural issue. Their answers reveal that they employ personal coping mechanisms but also expect institutional responsibility and action at the community level.

Conclusion

The study finds that smog has a significant social effect on working women in Lahore. The results reveal that smog is not just an environmental or health issue but a social issue that affects women's daily life, mobility, emotional health, family duties, and social engagement. The thematic analysis identified various challenges associated with working women during smog, such as commuting, physical discomfort, stress, social isolation, and increased household and caregiving responsibilities. One key finding is that smog limits women's mobility and makes daily commuting to work more stressful. Participants reported low visibility, traffic delays, breathlessness, and fear during commuting. These experiences demonstrate that women's mobility is restricted and their confidence in public places is lowered due to smog. The study also found that smog increases the double burden of working women. They are expected to carry out work-related responsibilities, as well as domestic tasks and family care, even when feeling tired, coughing, or experiencing an itchy eye or headache. Another significant finding of this research is its focus on the gendered effects of smog. The results indicate that working women are not only victims of polluted air but also protectors of children, elders, and other family members. Smog also impacts women's social engagement, with many participants reporting that they do not visit relatives, attend gatherings, or participate in community activities when the air is polluted. The study also reveals that the community and institutional response to smog is perceived as weak. Participants felt that most people deal with smog on their own by using masks, taking medicine, drinking hot beverages, and staying indoors, and that practical help from workplaces, government, and community institutions is still low. The findings suggest that smog should be addressed as a social, health, and gender-related issue. Policymakers should control factory and vehicle emissions, improve public transport, and promote awareness campaigns. Workplaces should provide masks, health guidance, and flexible arrangements during severe smog. Future research should include larger samples, different professions, and comparative studies between men and women.

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