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Evidence of the Health Impacts of Outdoor Air Pollution for Policy Makers in the UK Parliament

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Air pollution is a pressing environmental issue with significant consequences for public health. This evidence text aims to inform policy makers in the UK Parliament about the extent of air pollution's direct and indirect impacts on the health of individuals and communities in the UK, the long-term health effects, differential impacts across geographic areas and ethnic sub-groups, and the appropriateness of measures to address poor air quality in the UK. The evidence presented is based on the below five articles produced by Mary Abed Al Ahad during her four years PhD journey in Geography at the University of St Andrews, Scotland, UK.

Article 1 entitled “The Spatial-Temporal Effect of Air Pollution on Individuals' Reported Health and its Variation by Ethnic Groups in the United Kingdom: A Multilevel Longitudinal Analysis” (Abed Al Ahad et al., 2023) analyses the spatial-temporal effect of air pollution on individuals' reported health in the UK, considering variations by ethnic groups. The findings suggest a significant association between long-term air pollution exposure and self-reported health. Furthermore, the study reveals disparities in health impacts across ethnic groups, indicating that certain minority groups including Indian, Pakistani, Bangladeshi, African and Caribbean experience a disproportionate burden of air pollution-related health effects, mainly related to the relatively higher levels of air pollution at their place of residence and socioeconomic deprivation.

Article 2 entitled “Does Long-Term Air Pollution Exposure Affect Self-Reported Health and Limiting Long-Term Illness Disproportionately for Ethnic Minorities in the UK? A Census-Based Individual Level Analysis” (Abed Al Ahad et al., 2022b) is a census-based study that investigates the potential disproportionate impact of long-term air pollution exposure on self-reported health and limiting long-term illnesses among ethnic minorities in the UK. In line with article 1, this study confirms that long-term exposure to air pollution adversely affects health outcomes, and certain ethnic minority groups and non-UK-born individuals are more vulnerable to these effects compared to the British-white and UK-born individuals. The findings underscore the importance of addressing the disparities in air quality impacts experienced by different ethnic communities.

Article 3 on “Air Pollution and Individuals' Mental Well-being in the Adult Population in the United Kingdom: A Spatial-Temporal Longitudinal Study and the Moderating Effect of Ethnicity” (Abed Al Ahad et al., 2022a) is a longitudinal study that explores the spatial-temporal relationship between air pollution and individuals' mental well-being in the adult population of the United Kingdom. This research reveals an association between air pollution

and mental well-being, including increased non-psychotic psychiatric illness. However, this study provided inconclusive evidence about the moderating effect of ethnicity, whereby only Pakistani and Bangladeshi and non-UK-born individuals were more susceptible to the mental health effects of long-term air pollution exposure compared to British-white and UK-born individuals.

Article 4 on "The Spatial-Temporal Effect of Air Pollution on GP Visits and Hospital Admissions by Ethnicity in the United Kingdom: An Individual-Level Analysis" (Mary Abed Al, 2022) assessed the spatial-temporal effect of air pollution on general practitioner (GP) visits and hospital admissions, specifically considering variations by ethnicity in the UK. The findings demonstrate a significant association between long-term air pollution exposure and increased all-cause GP visits and outpatient hospital admissions. Non-UK-born individuals were more likely to visit a GP than UK-born individuals with increased exposure to air pollution. The findings also emphasized the need for targeted interventions to mitigate health disparities related to air pollution.

Article 5 is systematic scoping review that provides a comprehensive overview of the effect of air pollution and weather exposures on mortality and hospital admissions in Europe (Abed Al Ahad et al., 2020) The review highlights the substantial impact of air pollution on both short-term and long-term health outcomes, including respiratory and cardiovascular conditions. The findings emphasize the urgency of further research and the development of effective policies to address the health risks associated with air pollution.

To sum up, those five published articles highlight the significant health impacts of outdoor air pollution on individuals and communities in the UK. The articles emphasise the long-term health consequences, the differential effects across ethnic sub-groups and geographic areas, and the importance of targeted measures to address poor air quality and ethnic inequalities in air pollution exposures and health. By taking this evidence into account, policy makers in the UK Parliament can make informed decisions and implement effective strategies to mitigate the adverse health effects of air pollution and protect the well-being of the UK population, with a particular focus on addressing ethnic inequalities.

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