Chapter 18
The Unseen Stressor: How Pollution Impacts Mental Health – A Narrative Review of Literature

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ABSTRACT

Global mental health is seriously threatened by environmental pollution, which is also rather increasing. Examining the complex link between several types of environmental pollution and a spectrum of mental diseases, this chapter offers a methodical review of material published mainly between 2007 and 2024. The chapter concludes with emphasizing the critical need of integrated public health policies, strict pollution control measures, sustainable urban planning, and focused interventions to minimize the widespread negative effects of environmental pollution on population mental health and support resilient communities.

INTRODUCTION AND BACKGROUND

Both natural and man-made crises greatly affect the state of the community, particularly mental health, as such, mental disorders have become a major public concern in middle-income nations as well as developing ones. Affecting millions of people worldwide, mental disorders are becoming a major threat to society.

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According to Krause, et al. (2016), early death and disability globally are mostly caused by mental disorders considerably.

Numerous studies have unequivocally shown a strong relationship between environmental pollution and a spectrum of negative effects on mental health. Pollution exposure has been linked to increased stress, anxiety, depression, cognitive problems including Alzheimer's disease. Moreover, it can raise death rates among people already suffering with chronic mental illness. Particularly arguing that exposure to environmental toxins causes a notable incidence and intensity of mental diseases are Braithwaite et al. (2019) and Zhao et al. (2018). Environmental pollution, according to Stiftung (2010), also compromises mental health and might lead to anxiety, insomnia, major depression, hostility, and social dysfunction.

More especially, key risk factors for mental health have been found to be air, water, and solid waste pollution. Extended exposure to high pollution levels can interfere with the normal operation of important brain areas including the prefrontal cortex, amygdala, and hippocampal involved in control of emotions. This disturbance might produce a biological environment fit for the emergence of several mental disorders, including anxiety and major depression (APA, 2023). Studies have shown that environmental pollution seriously compromises emotional and psychological wellbeing, so affecting concentration, poor decision-making, annoyance, anger, boredom, and disturbed sleep (Perveen, et al., 2015). Along with epigenetic processes, the interaction of genes and the surroundings provides important proof on the causes of various psychotic diseases, including schizophrenia (Attademo et al., 2017). Strong levels of particulate matter, nitrogen, sulfur oxides, organic solvents, and other environmental pollutants as well as heavy metals like lead and cadmium could increase the risk of schizophrenia and other psychotic diseases. Environmental factors account for 55%–60% of the risk for major depression, 32% for bipolar disorder, and 23% for schizophrenia, according to Khan et al. (2019). Marangoni et al. (2016) and Bortolato et al. (2017) have similarly suggested that risk factors for psychiatric and neurological diseases are genetic elements, personal traits, behaviors (such as drug abuse), social conditions (such as work stress), and environmental exposure (including pollution). Factors including air quality, water quality, land quality, weather indices, and sociodemographic elements including income and population density significantly influence the beginning and development of psychiatric diseases, claims Khan et al. (2019). Moreover, areas marked by poverty, inadequate access to reasonably priced homes, high unemployment, limited green areas, overcrowding, and other psychosocial challenges are linked to inflammation and, when combined with poor air quality, can lead to both physical and mental health problems (Bhui, et al. 2023). In essence, the data shows that environmental pollution in all its forms seriously compromises mental health in many different age groups and contexts. From aggravating the risk and severity of mental diseases