

EDITORIAL

Noise Pollution a Public Health Concern, Its Consequences & Prevention

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In the words of Mother Teresa “We need to find God, and he cannot be found in noise and restlessness. God is the friend of silence. We need silence to be able to touch souls”. Noise is derived from the Latin word “nausea” implying 'unwanted sound' or 'sound that is loud, unpleasant or unexpected'. The noise originates from human activities, especially development of transport, industry and the urbanization. Human activities create sounds in their surroundings through their propensity for work place/industrialization and urbanization.¹ The noise pollution is thought to be slow and subtle killer, still it is not perceived as it is and yet very little efforts have been made to ameliorate the Problem. It is also adding along with other types of pollution which has become a hazard to quality of life.²

Majority of sounds can be classified as essential and desirable, but abuse of the sounds for various purposes such as in unregulated industries, social events, transportation, construction activities household chores and poor urban planning create noise. In general sounds that we deem unwanted or unnecessary are considered to be noise.³ A better definition of noise is wrong sound in the wrong place at the wrong time. Our society is affected by noise, which is invasive, persistent and abundant, most important of all, it is unhealthy. Now is the right time to realize that how big this problem is and how to address it.⁴

Burden of the Problem

Excessive noise is a global occupational health hazard with considerable social and physiological impacts, including noise-induced hearing loss (NIHL). Worldwide, 16% of the disabling hearing loss in adults (over 4 million DALYs) is attributed to occupational noise, ranging from 7% to 21% in the various sub regions. The effects of the exposure to occupational noise are larger for males than females

in all sub regions and higher in the developing ones.⁵ About 9 million workers in the United States, are exposed to time-weighted average (TWA) sound levels of 85 dBA and above and about 10 million have NIHL >25 decibels (dB). In the European Union, 28% of workers surveyed reported that at least one-fourth of the time, they are occupationally exposed to noise. Adult-onset hearing loss has been described as the “fifteenth most serious health problem” in the world, with profound effects ranging from social isolation and stigmatization of individuals to serious national economic burdens.⁶ Estimates of the number of people affected worldwide by hearing loss increased from 120 million in 1995 to 250 million worldwide in 2004. Much of this impairment is caused by exposure to noise on the job. In Eastern Mediterranean Region Pakistan, Afghanistan, Djibouti, Egypt, Iraq, Morocco, Somalia, Sudan, Yemen are the countries with High child, and high adult morbidity.⁷

Effects of Noise on Health

Effect of sound/noise on health and quality of life has been known to human race since ancient times of Roman empire and medieval Europe but striking insights into the phenomenon was hypothesized scientifically in 1960. Despite long standing knowledge on the subject medical fraternity and specifically public is unaware of the deleterious hazardous effects of the noise.⁸ There are many perilous effects of noise but mainly they are divided in two main categories Auditory: auditory fatigue, whistling and buzzing in ears, deafness or hearing loss may be temporary or permanent. Exposure to sound level less than 70 dB does not produce hearing damage whereas levels more than 85 dB is potentially damaging. Exposure to noise above 160db may rupture the tympanic membrane and permanent hearing loss. Non-auditory Effects include interference with speech, difficulty in communication, Annoyance which is a psychological response, irritability, short temperedness, impatience, agitation and decreased production.⁹ Physiological effects are rise of blood pressure, rise in intracranial pressure, increased heart rate increased breathing, sweating, giddiness, nausea and fatigue, interference with sleep, visual disturbances, narrowing of pupil also affect color perception and reduced night vision.¹⁰ Disturbed sleep is a

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consequence of environmental noise pollution, in chronic occurrence this results in mood changes, performance deterioration and other long term effects on health and well-being. The primary sleep disturbances are difficulty in falling asleep, frequent awakenings, waking too early, and alterations in sleep stages and depth, especially a reduction in REM sleep. Secondary effects include fatigue, depressed mood, well-being and decreased performance.¹¹ Vulnerability to noise hearing loss is more in children than adults. In the young hearing loss affects communication, cognition, behavior, social-emotional development and academic outcomes. Population studies have suggested association between noise and learning, reading, problem solving, social and emotional development.¹² Our history is common with examples of issues of public health importance which we fail to recognize in spite of over whelming evidence and are reluctant and very late to respond. Now having abundant knowledge on medical, social and economic effects of noise on our society should alert our policy makers to address the issue of noise pollution and its effects as an important public health problem to disconnect the connection between noise and disease.¹³

Prevention

The principle of prevention in the words of Napoleon Bonaparte may be taken as the land mark that ten people who speak make more noise than ten thousand who are silent. Two approaches to noise pollution control can be advocated as least costly, must be logistically feasible and effective. These are governmental interventions to introduce regulations of noise emissions and the public awareness. A variety of methodologies are needed to control the noise.¹⁴

Careful planning of the cities with division of the city in zones with separation of areas concerned with transport and industry. Residential areas should be with wide green belts at least 15 meters from road with thick plantation. There should be wide streets to reduce the level of noise penetration in the houses. Control of big vehicles in residential areas, horn blowing restrictions, building control preferably detached building rather than continuous big buildings, and the buildings should be sound proof.

Areas for railway, industry, marshaling yards should be planned well.¹⁵

There should be hearing protection for exposed persons, rotation of exposed persons, periodical audiograms checkup and use of ear plugs, ear muffs when and where required in the noisy industries. Legislation at the Governmental level for control of noise and compensation for the workers if they suffer from the noise pollution. Improved public health education on the issue is the main pivot to draw the benefits of policy.

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