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REVIEW ON NOISE POLLUTION

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Abstract

The study examines the problem of noise pollution in the wake of its ill effect on the life of the people. A cross section survey of the population in Delhi State points out that main sources of noise pollution are loudspeakers and automobiles. However, the population is affected by religious noise a little more than male population. Major effects of noise pollution include interference with communication, sleeplessness, and reduced efficiency. The extreme effects e.g. deafness and mental breakdown neither is ruled out. Generally, a request to reduce or stop the noise is made out by the aggrieved party. However, complaints to the administration and police have also been accepted as a way of solving this menace. Public education appears to be the best method as suggested by the respondents.

Keywords: *: Loudness, Human Diseases, Noise Regulation, Noise Pollution, World Health Organization (WHO)*

I. INTRODUCTION

Atmospheric pollution is not the only type of contamination that is harming living beings on the planet. According to the World Health Organization (WHO), it is one of the most dangerous environmental threats to health. And according to the European Environment Agency (EEA), noise is responsible for 16,600 premature deaths and more than 72,000 hospitalizations every year in Europe alone. Drivers honking the horn, groups of workers drilling the road surface, aircraft flying over us in the sky [1]. Noise, noise and more noise. Cities have become the epicenter of a type of pollution, acoustics, which, although its invisibility and the fact that coronavirus crisis reduced it until almost yearn it, is severely damaging to human beings. So much so that the European Environment Agency estimates that noise is responsible for 72,000 hospital admissions and 16,600 premature deaths every year in Europe alone. Not only does it hurt humans, it is bad for animals, too [2].

According to the National Park Service (NPS) in the United States, noise pollution has an enormous environmental impact and does serious damage to wildlife. Experts say noise pollution can interfere with breeding cycles and rearing and is even hastening the extinction

of some species. International bodies like the WHO agree that awareness of noise pollution is essential to beat this invisible enemy. For example: avoid very noisy leisure activities, opt for alternatives means of transport such as bicycles or electric vehicles over taking the car, do your housework at recommended times, insulate homes with noise-absorbing materials, etc [3]. Educating the younger generation is also an essential aspect of environmental education. Governments can also take measures to ensure correct noise management and reduce noise pollution. For example: protecting certain areas — parts of the countryside, areas of natural interest, city parks, etc [4]. — from noise, establishing regulations that include preventive and corrective measures, mandatory separation between residential zones and sources of noise like airports, fines for exceeding noise limits, etc. Installing noise insulation in new buildings, creating pedestrian areas where traffic is only allowed to enter to offload goods at certain times, replacing traditional asphalt with more efficient options that can reduce traffic noise by up to 3 dB, among others. In this paper discussed about the noise pollution and its effects that human being affected.

II. DISCUSSION

Noise pollution is generally defined as regular exposure to elevated sound levels that may lead to adverse effects in humans or other living organisms. According to the World Health Organization, sound levels less than 70 dB are not damaging to living organisms, regardless of how long or consistent the exposure is. Exposure for more than 8 hours to constant noise beyond 85 dB may be hazardous. If you work for 8 hours daily in close proximity to a busy road or highway, you are very likely exposed to traffic noise pollution around 85dB.This type of pollution is so omnipresent in today's society that we often fail to even notice it anymore [5]:

- street traffic sounds from cars, buses, pedestrians, ambulances etc.
- construction sounds like drilling or other heavy machinery in operation
- airports, with constant elevated sounds from air traffic, i.e. planes taking off or landing
- workplace sounds, often common in open-space offices
- constant loud music in or near commercial venues
- industrial sounds like fans, generators, compressor, mills
- train stations traffic
- household sounds, from the television set to music playing on the stereo or computer, vacuum cleaners, fans and coolers, washing machines, dishwashers, lawnmowers etc.
- events involving fireworks, firecrackers, loudspeakers etc.
- conflicts generate noise pollution through explosions, gunfire etc. The dysfunctions, in this case, are likely caused by the conflict and insecurity and less by the noise pollution in itself, although that compounds stress levels too.
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Human Diseases Caused by Noise Pollution:

Whether we realize we are subjected to it or not, noise pollution can be hazardous to our health in various ways [6].

- Hypertension: is, in this case, a direct result of noise pollution caused elevated blood levels for a longer period of time.
- Hearing loss can be directly caused by noise pollution, whether listening to loud music in your headphones or being exposed to loud drilling noises at work, heavy air or land traffic, or separate incidents in which noise levels reach dangerous intervals, such as around140 dB for adult or 120 dB for children.
- Sleep disturbances are usually caused by constant air or land traffic at night, and they are a serious condition in that they can affect everyday performance and lead to serious diseases.
- Child development: Children appear to be more sensitive to noise pollution, and a number of noise-pollution-related diseases and dysfunctions are known to affect children, from hearing impairment to psychological and physical effects. Also, children who regularly use music players at high volumes are at risk of developing hearing dysfunctions. In 2001, it was estimated that 12.5% of American children between the ages of 6 to 19 years had impaired hearing in one or both ears [7].
- Various cardiovascular dysfunctions: Elevated blood pressure caused by noise pollution, especially during the night, can lead to various cardiovascular diseases.
- Dementia isn't necessarily caused by noise pollution, but its onset can be favored or compounded by noise pollution.
- Psychological dysfunctions and noise annoyance: Noise annoyance is, in fact, a recognized name for an emotional reaction that can have an immediate impact.
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Effects of Noise Pollution on Wildlife and Marine Life:

Our oceans are no longer quiet. Thousands of oil drills, sonars, seismic survey devices, coastal recreational watercraft and shipping vessels are now populating our waters, and that is a serious cause of noise pollution for marine life. Whales are among the most affected, as their hearing helps them orient themselves, feed and communicate. Noise pollution thus interferes with cetaceans' (whales and dolphins) feeding habits, reproductive patterns and migration routes, and can even cause hemorrhage and death [8].

Other than marine life, land animals are also affected by noise pollution in the form of traffic, firecrackers etc., and birds are especially affected by the increased air traffic.

Social and Economic Costs of Noise Pollution:

The World Health Organization estimates that one out of three people in Europe is harmed by traffic noise. More than the purely medical effects of noise pollution on the individual, there is a significant social and economic impact. Since noise pollution leads to sleep disturbance, it affects the individual's work performance during the day, it leads to hypertension and cardiovascular disease and costs the health system additional time and money, and it negatively affects school performance in children [9].

Tips for Avoiding Noise Pollution:

- Wear earplugs whenever exposed to elevated noise levels

- Maintain a level of around 35 dB in your bedroom at night, and around 40 dB in your house during the day
- If possible, choose your residential area as far removed from heavy traffic as you can
- Avoid prolonged use of earphones, especially at elevated sound levels
- If possible, avoid jobs with regular exposure to elevated sound levels

Measuring and Perceiving Loudness:

Sound waves are vibrations of air molecules carried from a noise source to the ear. Sound is typically described in terms of the loudness (amplitude) and the pitch (frequency) of the wave. Loudness (also called sound pressure level, or SPL) is measured in logarithmic units called decibels (dB). The normal human ear can detect sounds that range between 0 dB (hearing threshold) and about 140 dB, with sounds between 120dB and 140 dB causing pain (pain threshold). The ambient SPL in a library is about 35 dB, while that inside a moving bus or subway train is roughly 85 dB; building construction activities can generate SPLs as high as 105 dB at the source. SPLs decrease with distance from the source [10].

Effects On Humans and Wildlife:

Noise is more than a mere nuisance. At certain levels and durations of exposure, it can cause physical damage to the eardrum and the sensitive hair cells of the inner ear and result in temporary or permanent hearing loss, known as noise-induced hearing loss. Hearing loss does not usually occur at SPLs below 80 dBA (eight-hour exposure levels are best kept below 85 dBA), but most people repeatedly exposed to more than 105 dBA will have permanent hearing loss to some extent. In addition to causing hearing loss, excessive noise exposure can raise blood pressure and pulse rates, cause irritability, anxiety, and mental fatigue, and interfere with sleep, recreation, and personal communication. Children living in areas with high levels of noise pollution may suffer from stress and other problems, such as impairments in memory and attention span. Noise pollution control is therefore important in the workplace and in the community.

Noise Regulation and Mitigation:

Noise-control ordinances and laws enacted at the local, regional, and national levels can be effective in mitigating the adverse effects of noise pollution. Environmental and industrial noise is regulated in the United States under the Occupational Safety and Health Act of 1970 and the Noise Control Act of 1972. Under these acts, the Occupational Safety and Health Administration set up industrial noise criteria in order to provide limits on the intensity of sound exposure and on the time duration for which that intensity may be allowed.

III. CONCLUSION

This research paper explores the sources, effects, reactions and suggestions for controlling the excessive noise. Automobiles and public address systems (loudspeakers) turn out to be major sources of noise pollution. It appears that loudspeakers are frequently used for religious functions (and temple prayers). Across various age groups, there is almost an equal

proportion of respondents reporting neighborhood, music and religions functions as sources of noise. There are no variations among male and female population. Proportion of female population vis-à-vis. the proportion of males' population is the same for each source of noise. The survey indicates that noise affects individuals in several ways. It results in improper communication, sleeplessness and reduced efficiency. Though the psycho-somatic effects (annoyance and depression) are also common yet the extreme effects e.g. deafness and mental breakdown are not ruled out. In a majority of cases, the affected party tenders a request to stop noise.

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