



Effects of Noise Pollution on Human Health

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Abstract: Now a day, noise pollution is not a new problem for common man, especially in most of the industrial towns and metropolitans cities. Noise pollution means any sound that is undesired by the recipient. The effect of sound on human depends upon its frequency. Human ear are known to be sensitive to an extremely wide range of intensity varied from 0 to 180 dB. The noise is generated by the human through various ways. In present research article, various sources of noise pollution, measurement of noise, dB scale, equipments used in the measurement of noise levels, impacts of noise, adverse health effects of noise pollution, control of indoor noise, control technologies available for noise pollution and Indian penal codes to prevent noise pollution are the main points of focus of attention. Noise must be controlled and prevented by using various effective techniques at the source itself is today's need. The objective of this work is to know about the various ways of generation of noise, their effects on human, its prevention and control.

Keywords: Noise Pollution, Hypertension, Prevention, Human being, dB scale, Impacts of noise.

I. INTRODUCTION

The word noise is derived from the Latin word nausea. Noise means wrong sound in wrong place at the wrong time. Noise pollution may be defined as unwanted sound which gets damped into the atmosphere without regarding to the adverse effects it may have. **1-4** Different people have not affected equally by the same noise. There occurs a vast variation in the individual sensitivity to sound and people are affected differently when they are at home and when they are at work. Sound is measured by several complex systems, but the best known unit of measurement is the decibel (dB). Some peoples can hear frequencies that others are not able to detect. Sources of noise pollution include inter alia, vehicular traffic, neighbourhood, electrical appliances, TV and music systems, public address systems, railway and air traffic and electricity generating sets. Most of the people inhabiting metropolitan cities or big towns and those working in factories are susceptible to the adverse effects of noise

II. CAUSES OF NOISE POLLUTION

1. Industrialization: Most of the industries use big machines which are capable of producing large amount of noise. Apart from that, various equipments like compressors, generators, exhaust fans, grinding mills also participate in producing big noise. Therefore, you must have seen workers in these factories and industries wearing ear plugs to minimize the effect of noise

2. Poor Urban Planning: In most of the developing countries, poor urban planning also play a vital role. Congested houses, large families sharing small space, fight over parking, frequent fights over basic amenities leads to noise pollution which may disrupt the environment of society

3. Social Events: Noise is at its peak in most of the social events. Whether it is marriage, parties, pub, disc or place of worship, people normally flout rules set by the local administration and create nuisance in the area. People play songs on full volume and dance till midnight which makes the condition of people living nearby pretty worse. In markets, you can see people selling clothes via making loud noise to attract the attention of people.

4. Transportation: Large number of vehicles on roads, aeroplanes flying over houses, underground trains produce heavy noise and people get it difficult to get accustomed to that. The high noise leads to a situation wherein a normal person lose the ability to hear properly.

5. Construction Activities: Under construction activities like mining, construction of bridges, dams, buildings, stations, roads, flyovers take place in almost every part of the world. These construction activities take place everyday as we need more buildings, bridges to accommodate more people and to reduce traffic congestion. The down point is that these construction equipments are too noisy.

6. Household Chores: We people are surrounded by gadgets and use them extensively in our daily life. Gadgets like TV, mobile, mixer grinder, pressure cooker, vacuum cleaners, washing machine and dryer, cooler, air conditioners are minor contributors to the amount of noise that is produced but it affects the quality of life of your neighbourhood in a effects on the health of the environment are quite severe. Not only is the local wildlife affected by the pollution, humans also face a number of problems due to it.

III. EFFECTS OF NOISE POLLUTION

1. Hearing Problems: Any unwanted sound that our ears have not been built to filter can cause problems within the



body. Our ears can take in a certain range of sounds without getting damaged. Man made noises such as jackhammers, horns, machinery, airplanes and even vehicles can be too loud for our hearing range. Constant exposure to loud levels of noise can easily result in the damage of our ear drums and loss of hearing. It also reduces our sensitivity to sounds that our ears pick up unconsciously to regulate our body's rhythm.

2. Health Issues: Excessive noise pollution in working areas such as offices, construction sites, bars and even in our homes can influence psychological health. Studies show that the occurrence of aggressive behavior, disturbance of sleep, constant stress, fatigue and hypertension can be linked to excessive noise levels. These in turn can cause more severe and chronic health issues later in life

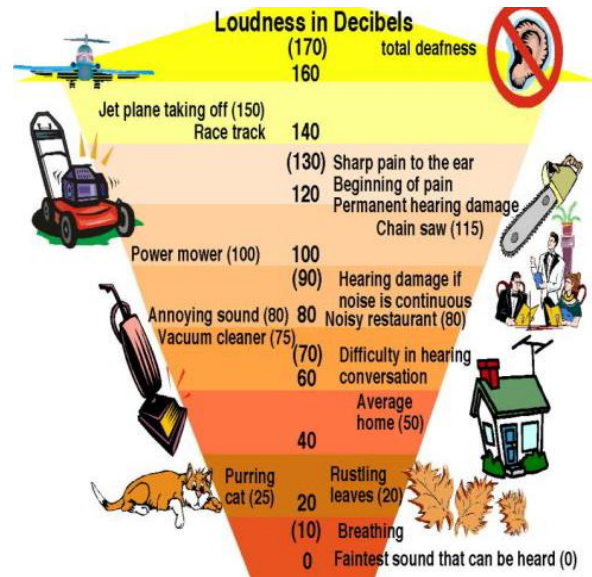
3. Sleeping Disorders: Loud noise can certainly hamper your sleeping pattern and may lead to irritation and uncomfortable situations. Without a good night sleep, it may lead to problems related to fatigue and your performance may go down in office as well as at home. It is therefore recommended to take a sound sleep to give your body proper rest

4. Cardiovascular Issues: Blood pressure levels, cardiovascular disease and stress related heart problems are on the rise. Studies suggest that high intensity noise causes high blood pressure and increases heart beat rate as it disrupts the normal blood flow. Bringing them to a manageable level depends on our understanding noise pollution and how we tackle it

5. Trouble Communicating: High decibel noise can put trouble and may not allow two people to communicate freely. This may lead to misunderstanding and you may get difficult understanding the other person. Constant sharp noise can give you severe headache and disturb your emotional balance.

6. Effect on Wildlife: Wildlife faces far more problems than humans because noise pollution since they are more dependent on sound. Animals develop a better sense of hearing than us since their survival depends on it. The ill effects of excessive noise begin at home. Pets react more aggressively in households where there is constant noise. They become disoriented more easily and face many behavioural problems. In nature, animals may suffer from hearing loss, which makes them easy prey and leads to dwindling populations. Others become inefficient at hunting, disturbing the balance of the eco-system. Species that depend on mating calls to reproduce are often unable to hear these calls due to excessive man made noise.

As a result, they are unable to reproduce and cause declining populations. Others require sound waves to echo-locate and find their way when migrating



Permissible levels for noise exposure for work zone area (factories Act 1948)

TABLE 1: AMBIENT NOISE LEVEL TO BE MAINTAINED (ENVIRONMENT PROTECTION RULES, 1986)

S/N	Area Code	Category of area	Limits in dB (A) in between	
			Day time (6 a.m. & 9 p.m)	Night time (9 p.m. & 6 a.m.)
1	A	Industrial area	75	70
2	B	Commercial area	65	55
3	C	Residential area	55	45
4	D	Silence zone	50	40

Table 2: Typical noise levels of various sources of noise

S/N	Sources of noise pollution	Level dB(A)
1	Air compressors	95-104
2	110 KVA diesel generator	95
3	Lathe machine	87
4	Milling machine	112
5	Oxy-acetylene cutting	96
6	Pulveriser	92
7	Riveting	95
8	Power operated portable saw	108
9	Steam turbine (12,500 kW)	91
10	Pneumatic chiselling	118
11	Quiet garden	30
12	Ticking clock	30
13	Computer rooms	55-60



Solution

S/N	Peak sound pressure level in dB	Permitted number of impulses or impact/day
1	140	100
2	135	315
3	130	1000
4	125	3160
5	120	10000

- 1.Planting bushes and trees in and around sound generating sources in an effective solution for noise pollution
2. Regular servicing and tuning of automobiles can effectively reduce noise pollution.
3. Buildings can be designed with suitable noise absorbing material for the walls, windows, and ceilings.
4. Similar to automobiles, lubrication of the machinery and servicing should be done to minimize noise generation
5. Soundproof doors and windows can be installed to block unwanted noise from outside.
6. Social awareness programs should be taken up to educate the public about the causes and effects of noise pollution .

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IV. CONCLUSION

Explores the sources, effects and causes of excessive noise on human health. Automobiles, industries, highway transport,airports, railways and public address system turns out to be major sources of noise pollution. Most of our day-to-day activities, by knowingly or unknowingly every one of us contribute to generate noise pollution. Often neglected, noise pollution adversely affects the human being leading to irritation, loss of concentration, loss of hearing. Efforts shall be made to identify the sources of noise pollution and the reasons for increase of noise levels. Efforts shall be made to reduce the undesired noise levels from noise generating sources. This leads to marginal reduction of noise levels at the source. If it is still un-bearable then scientific methods of noise control can be employed. The Statutory Regulations have prescribed the noise level exposure limits. The educated peoples may complain to the Statutory Board for violation of noise level limits by any noise generator. The suitable action will be taken to attenuate the noise levels and controlling pollution. In future, public education, government and NGOs can play significant role in controlling the noise pollution.

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