



NOISE POLLUTION: THE HARMFUL EFFECTS ON HEALTH (SHORT COMMUNICATION)

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Cite This Article: Gurinderdeep Singh, “Noise Pollution: The Harmful Effects on Health (Short Communication)”, International Journal of Multidisciplinary Research and Modern Education, Volume 3, Issue 1, Page Number 201-202, 2017.

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Abstract:

Globally, i.e., noise named as undesirable sounds and its ability to hear from one person to another affects the lifespan and measured in dBs. Noise pollution is one of the fundamental aspect of the environmental pollution. In any type of pollution, pollutant (a foreign substance in excessive concentration) is of prime importance. As for health is concerned, noise pollution causes principally sleep disturbance, psychological symptoms, cardiovascular diseases and other mental stress, cognitive and memory loss in children and adults also as a feeling of inadequacy, lack of confidence, insomnia, fatigue, blood pressure, deafness and hypertension.

Key Words: Environmental Pollution, Noise Pollution & Decibel

Introduction:

Throughout the lifespan, a global phenomenon in the environment is the sound and the ability of the organism to speech starts in utero and remain stable generally. It is preserved in the two states primarily during sleep and another in the unconscious state. Natural sound in air is a vibration which creates rhythm but if it is increased its intensity that named as unwanted.¹The basic characteristics of the sound has loudness, frequency, periodicity and duration. The loudness is measured in terms of decibels (dB), a logarithmic scale. At certain frequencies hearing ability is lost and intensity is adjusted intended for frequency to give A-weight (dBA). If these characteristics affected by any factors called unwanted sound ² Unwanted sound is called noise. Noise word derives from Latin word nausea which means wrong sound in the wrong place and at the wrong time³ If that noise affects the environment defines environmental noise which originates in the workplace.⁴ Among workplace, noise from community, residential or domestic is defined under environmental noise sources except the industrial workplace. Environmental noise pollutant becomes the major factor of annoyance and increasing worldwide. Chiefly environmental noise is closely associated with the major sources as construction of buildings, traffic on road and rail, aircraft and neighbourhood. In work environment, exposure to high noise levels has been the acknowledged cause of hearing loss and other adverse effects on health. On health concern, other adverse effects of health effects are sleep disturbance, psychological symptoms, cardiovascular diseases and other mental stress, cognitive and memory loss in children.⁵The recent various reports point out that in the aircraft the noise affects the health in Cardiovascular effects, Children’s learning, Sleep disturbance and night noise effects, Nocturnal effects, Psychological factors and annoyance and Obesity⁶By the environmental laws, in 1981 Air Act (Prevention and Control of Pollution) noise has been notified as a pollutant which breaks the calmness of the atmosphere with in the environment.⁷Noise pollution and its various affects on health as a whole has been studied variously following is the table related to this,⁸

S.No	Average hearing loss, in dB	Effects
1	0	Threshold of hearing
2	<25	No real difficulty in hearing
3	25- 40	Difficulty in hearing soft speech
4	40 -50	Difficulty in hearing normal speech
5	>50	Hearing aid is required
6	50 - 70	Difficulty in hearing loud speech
7	70 – 90	Only shouted speech is understood
8	>90	Unable to hear even amplified speech

Noise disturbs physiologically and psychologically that affects the human body in numerous ways as given below:

Auditory Effects: Over a period of long life span, if people gets exposed to the noise level where noise affects intensely causes hearing threshold and again continuously exposure of about 100 decibels receives hearing inability as an adverse effect on person. Progressively person perceives acoustic trauma due to very high intensity of impulsive noise as in case of fire crackers.

Speech Interference: The maximum acceptable level of noise under is 55db and background noise level is of 70db in television and radio as well as in telephones and serious interference with verbal communication is

inevitable. In speech interference, a person faced the problem to understand another person during conversation and communication on telecommunication medium with a high background noise level.

Sleep Interference: As per environment laws the preferable level is below 40dB. The awakening of person depends upon intensity of noise, the depth of sleep, age, effect of alcohol or drugs, accumulated sleep and degree of fluctuation. In health hazard, frequent sleep interference deprives the restorative process for his organ to renew their energy supply and nutritive elements provided by good night's sleep.

General Annoyance: It occurs at about 75-85db which results blood vessel constriction, abnormal breath rate and muscle tension variations, which decreases the work efficiency of the person in terms of its task and reduces the performance and carries mental illness.

Behavioural Effects: Noise pollution results in poor attention and concentration which further affects the hearing capability of individual. Normally, it causes irritation and learning disabilities. Furthermore, continuous noise effects a person and can cause nervousness.

Emotional Effects: The high noise levels continuously cause reaction and personality disturbance in a person. In the children, it causes a feeling of inadequacy, lack of confidence, insomnia, fatigue, bp, deafness and hypertension. It also causes mental illness and becomes a factor of psychological stress.

Pathological Effects: These effects are often produced by particular noise frequencies that ranges from high frequency sound or above normal audible range (ultrasonic sound is of above 20000hertz) within the semi-circular canal of the inner ear and make that person also suffers from nausea, excessive fatigue, headache and vomiting. Even the low frequency sounds below the normal audible range (infra sound having frequency less than 16 hertz) causes nausea, dizziness, loss of balance and nervous fatigue. Pain, numbness and blue coloration (Cyanosis) of fingers are results of moderate vibration whereas severe vibration results into damage to bones and joints with swelling and stiffness.⁸

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