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Analysis and Assessment of Noise Pollution in Pune City –A Review

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Abstract

Rapid growth of industries in India and excess amount of vehicular traffic in metro cities are main key factor to increased noise pollution in the region and it has severe impact on health of humans and animals, it has impact on physical health, mental health and on children's also, factors influencing generation of road traffic noise due to engine noise, aerodynamics and breaking elements. The Main objective of this paper is to present the brief literature about the road traffic noise in Indian metro city Pune. The paper discusses literature review, sources of noise pollution, effect of noise pollution, noise standards in India, traffic noise control measures and noise indicators related to vehicular traffic noise. The noise as of late has risen as one of the essential poisons of condition.

Noise has been a noteworthy supporter of irritation, which is substantiated by the aftereffect of ceaseless observing commotion at proportionate levels of public interest, training, administration, auxiliary outlining assumes a noteworthy part in noise administration. Noise represents an important health problem that can lead to hearing loss, sleep disruption, cardiovascular disease, reduce productivity, negative social behavior, annoyance reactions, absenteeism etc. Noise, adversely affects general health and well- being in the same way as does chronic stress. The aim of Enlighted government control should be to protect citizens from the adverse effects of noise pollution.

Keywords: - *Noise Pollution in Indian metro city Pune, Road Traffic Noise, Noise Indicator.*

INTRODUCTION

Noise pollution can be defined as any disturbing or unwanted noise that interferes or harms humans or wildlife. Although noise constantly surrounds us, noise pollution generally receives less attention than water quality and air quality issues because it cannot be seen, tasted, or smelled. Rapid growth of industries and vehicular traffic

Noise Pollution can be defined as unwanted or excessive sound that can have deleterious effects on human health, wildlife, and environmental quality. Noise pollution is commonly generated inside many industrial facilities and some other workplaces, but it also comes from highway, railway, and airplane traffic and from outdoor construction activities.

Noise is inevitable part of daily life – the television, a plane flying overhead, a faulty muffler on the passing car, dogs barking children laughing. Mild noise can be annoying; excessive noise can destroy a person's hearing. People do not easily become accustomed of noise. The slightest unwanted sound can become very annoying if it continues for any length of time.

Noise pollution affect well-being of human, animals, plants and structures. The characteristics of noise pollution is complex in nature and varies enormously from other form of pollution. The study will be conducted at pune city because pune is rapidly growing metro-city and noise pollution is one of the major problems in the city.

LITERATURE REVIEW

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become accustomed of noise. The slightest unwanted sound can become very annoying if it continues for any length of time. Noise pollution affects well-being of human, animals, plants and structures. The characteristics of noise pollution is complex in nature and varies enormously from other form of pollution. The study will be conducted at pune city because pune is rapidly growing and noise pollution is one of the major problems in the city. It was maintained that the vehicular traffic flow in Indian cities is mixed on the same rightof –way with disrupted traffic flow conditions. [2]

As compared to contemporary cities in most of Europe and North America, Indian cities confront many transports crisis typified by ill planning, clogging, noise pollution, inappropriate traffic facilities, injuries and inequality.

[3] An ambient noise level was observed in major cities in Kerala due to traffic operation. The commercial areas and silence zones of Thiruvananthapuram, Kochi and Kozhikode cities had noise level higher than the prescribed limits. Sound levels inside residential buildings at night during festival time exceed the limits by 30 to 40 dB. They also found that the announcements made from vehicles fitted with PA system can cause sound levels above100 dB(A) at a distance of 10 to 15 meters.

[4] During the observation at Vishakhapattanam a hospital in the silence zone is studied. It was found that Ambient Air Quality Noise Standards has increased by 10 dB(A) & this was in day as well as in night time also. Similarly, this noise level was in the range of 80±10 dB(A). [5] Apart from Vishakhapattanam similar study at Kolhapur city industrial-cumresidential zone showed highest Leq of 72.25 dB(A).This is followed by 64.47 dB(A) in commercial cum residential zone,63.71 dB(A) in educational zone,52.26dB(A)in recreational zone and 42.84 dB(A) in silence zone[6].

A survey of noise levels during day and night was carried out in various areas of Lucknow city. It was observed that in the residential area, the nose level ranged between 67.7-78.9 and 52.9-56.4, in commercial area between 74.8- 84.2 and 68.2-74.9 while in the industrial areas between 76.9-77.2 and 72.2-73.1 during day and night times respectively. It was recorded that the Noise levels in the city of Lucknow were higher than those suggested by the CPCB [7].

A survey of traffic noise in Delhi was undertaken with the aim to study the characteristics and various noise levels inside different types of vehicles such as buses, auto-rickshaws, cars, and trucks. The study comprised the measurements of average A-weighted levels and power spectra of noise in these vehicles from which L10, L50, L90 and the levels were approximately calculated. It was observed that auto-rickshaws marked the highest noise level followed by trucks, buses and cars. The study observed similar behavior in all the four types of vehicles in case of the power spectra [8]. During September-November 2011, ambient noise level monitoring was undertaken at various places in Chidambaram town of Tamilnadu, India. The data collected was used to calculate various noise parameters such as Equivalent Continuous Level (Leq), Noise Pollution Level (Lnp), Noise Climate (NC), Percentile Noise Levels (L10,L50,L90).

The comparative analysis of the data proved that the noise levels at various places of the Chidambaram town cross the permissible limits. The prominent reasons for these increased noise levels were Vehicular traffic and air horns. The study analyses the problems of decrease in efficiency in human beings at their work places caused on account of road traffic noise pollution in Chidambaram due to rapidly growing vehicular traffic. The present paper deals with monitoring of the disturbances and barriers because of vehicular road traffic interrupted by traffic flow conditions onpersonal work efficiency. Traffic volume count and noise indices data were collected concurrently at ten selected sites of the town, Chidambaram. The noise level values greatly surpassed the standard set by the Central Pollution Control Board.

METHOD

Altogether, 49 articles (47 journal articles and 2 conference proceedings) published in last 20 years were reviewed to reveal the status of environmental noise and its impact in India. Methods described by Online et al. [9] were adopted for conducting this review of literature. The related articles were searched by string search in search engines, database search (Google Scholar, Pub-Med, SCOPUS, Taylor Francis, Springer, Wiley online library, Elsevier etc.), conference proceedings search, and authors library search. String searches included few keywords, such as Broad traffic, noise pollution, Broad traffic noise, transportation noise, Vehicular noise, Impact of noise on health, noise in offices,

banks, hospitals, educational institutions, festival noise, sleep disturbance, annoyance, Broad traffic noise modeling, noise mapping, noise and traffic policeman, and noise impact assessment. All the relevant and identified articles and papers were read in full and used for information extraction and stored in the database with details of publication particulars, study location, period, approach, methodology for assessing noise exposure, sampling, results of exposure-effect, and major conclusion. To interpret the status and quality of work carried out in India, the methodology described by Online et al. [9] has been undertaken with some modifications to suit the purpose and objective of the review. The norms adopted to evaluate the quality of the articles included the following: -

a. Well-defined population study (i.e., age, gender, and number)

b. Precise description of subjective exposure to noise (viz.; location, specific time, and duration of noise monitoring, traffic volume, audiometric study, questionnaire survey)

c. Declaration of statistical methods used

d. Sample size: small (less than 50), medium (50–200), and large (more than 200)

e. Random sample selection accordingly, 49 relevant articles on noise and its impact in India were preferred for necessary review. For data analysis, a narrative synthesis is used in this review, as there are too much heterogeneity studies that preclude any meaningful statistical summary. In the case of the narrative synthesis, the summary of the findings is a narrative one instead of a statistical summary. The primary methodologies of the studies were tabulated (Table 1). Similarities and differences between studies were investigated.

EFFECT OF NOISE POLLUTION

Repeated Interference with Sleep

A much higher rate said they were stirred by extreme focus clamors, typically right on time around evening time when rest was not yet profound. After individuals have been sleeping for certain hours, they don't promptly awaken, in any event, when oppressed to extremely noisy clamors. Various individuals have various profundities of rest and they can conform to nighttime sounds.

Without a doubt, nonetheless, boisterous conditions close to neighborhoods around evening time should be stayed away from absence of ceaseless rest has as check it. Numerous methods for sound protection are accessible today and can be applied at moderately unassuming cost.

Effect on Hearing or Deafness

These impacts possibly happen to genuine significance if the sounds are particularly noisy. Ceaseless openness to clamor levels much over 100 dB adversely affects hearing capacity inside a genuinely brief time frame. Numerous laborers who are presented to the commotion of stream airplane or extremely loud studios for even moderate periods before long foster perceivable hearing deformities.

Effect on Communication or Speech Interference

Outer sounds can meddle with discussion and utilization of the phone, and well as the satisfaction in radio and TV projects and like side interests. It would thus be able to influence the effectiveness of workplaces, schools and different spots where correspondence is of imperative significance. The greatest acknowledged degree of commotion under such conditions in 55 dB. 70 dB is viewed as exceptionally uproarious and genuine obstruction with verbal correspondences is inescapable.

Mental or Physiological Effects

Many individuals grumble that commotion makes them deranged. Tests have been performed to endeavor to affirm or invalidate these cases. According to the H.M. Stationery Office report Noise; noise certainly does not contribute in the least to mental illness. Specialists and researcher have now restoratively affirmed that commotion upsets the natural living beings and their individual elements of the people. Fireworks and other extreme and constant explosives become actually agonizing leading to depression, psychological instability, cardiovascular infections, stomach ulcers and respiratory problems lessening human existence. Late explores have inferred that short opening to commotion (in overabundance of around 100 dB) prompts antagonistic consequences for hatchling, migraine and, unsteadiness, tardiness in digestion tracts, stomach issues and impacts on visions to the degree that these on occasion become hopeless. Prof. Bina iyer et.al

CONCLUDING REMARKS

This paper explores the sources, effects and suggestions for controlling the excessive noise, industries, highway transport, airports, railways and public address system turns out to be major sources of noise pollution. In our life by knowingly or unknowingly every one of the possibilities for real time control of noise pollution. This leads to marginal reduction of noise levels at the source. Another issue of noise contamination rose

as of late in India is a result of the unpredictable utilization of amplifiers. Its random use from strict spots and in execution of strict capacities and talks once in a while makes it so problematic. The appropriate move will be made to constrict the clamor levels and controlling contamination.

In future, state funded training, government and NGOs can assume huge part in controlling the clamor contamination. The occupants living there will undoubtedly experience the ill effects of medical issues and loser quality. According to the specialized perspective, it is important to take a few measures to lessen the clamor levels. Noise pollution is a silent attacker which is directly and indirectly responsible for health hazards, sickness and other ailments and loss of income due to reduced work. It has also added to the suffering firings of human beings.

To evaluate the different parameters related to road traffic noise in India, literature survey was carried out. Work regarding the noise pollution has already been done in developed countries, whereas a little could be done in developing country like India. Very high noise levels due to traffic causes disturbance and even some health problems. Mild noise can be annoying, excessive noise can destroy a person's hearing. The slightest unwanted sound can become very annoying if it continues for any length of time. Human being are contribute to noise pollution because most of our day-to-day activities. Now efforts shall be made to reduce the undesired noise levels using scientific methods of noise control.

In this research we are going to take various noise levels at different loacation's in pune city and check its noise level and their intensity in different day time hours.

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