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Assessment of noise pollution in commercial and residential areas and its impact on the health/surrounding Environment: A Review

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Abstract - *The examination looks at the issue of sound contamination in the wake of its evil impact on the life of the general population(health) and the surrounding environment. A cross sectional review of the population in the world calls attention that the main sources of noise pollution are industrial, commercial, traffic and various public and private ceremonies using loud speakers in the residential zones . They also describe the current standards and practices and some of the suggestion in literature to study the impact and comparison.*

***Key Words*: Noise pollution, ambient noise quality standards**

1.INTRODUCTION

This paper emphasizes on the literature review on the noise pollution and its impact on human/surrounding environment. Sound that is undesirable or upsets one's personal satisfaction is known as noise. At the point when there is part of upset in nature, it is named as noise pollution. Sound end up unwanted when it bothers the typical exercises, for example, working, dozing, and amid discussions. There are immediate connections among noise and health. There are numerous specialization as noise quality assessment, pollution monitoring, noise pollution control, noise quality data analysis. Pollution monitoring and control is always an extensive area for research. As the industrialization results in increase of noise pollution in industries. Moreover the population increasing day by day results into more vehicles which caused increase in noise pollution. The State to take necessary measures for abatement of noise including noise emanating from vehicular movements, use of loudspeakers/public address system.

Table -1: Ambient noise standards in respect of noise

Category of Area Zone	Limits in dB Day	Limits in dB Night
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

Source: Environment (Protection) Act, 1986 as amended in 2002.

2.LITERATURE REVIEW

2.1.Ghuncha firdaus, ateeque ahmad October 25, 2010

This present investigation audits the information on sources, intensity and wellbeing implications of contaminations gathered through househol review utilizing polls from two differentiating thickness territories; one from high-thickness (density) zone and another from low-thickness territory. The examination uncovers that huge increment in population, mechanical exercises, unchecked development in vehicular rush hour gridlock and quickly changing way of life are the central point that have made and exasperated the issue of contamination in the investigation region. The real wellbeing implications incorporate irritation, unsettling influence in rest, obstruction with correspondence and other destructive impacts. With the assistance of regression investigation, the circumstances and end results connection between the power of contamination and event of sicknesses among examined sample housesold of Delhi has been built up by this examination. A few recommendations, for example, arrive utilize and transportation arranging are additionally given in this paper for moderating and dealing with the pollution issue in the feasible urban advancement points of view.

2.Dibyendu Banerjee 2012 This article audits the writing on research directed amid the most recent two decades on traffic noise impacts in India. Street/road traffic activity noise considers in India are less and confined just to the metropolitan zones. The examinations throughout the years have additionally centered around the checking, recording, investigation, displaying, and to some degree mapping related topics. Irrelevant investigations are seen in territories of physiological and rest look into introduction impact setting. Most effect considers have been related with inconvenience and attitudinal reviews as it were. Minimal

logical writing exists identified with impacts of activity commotion on human physiology in the Indian context. The discoveries of this survey inquiry and examination observe that very little investigations are accessible identifying with traffic noise and noise impacts. Every one of them are subjective response and just a little bit of them measure the introduction impact chain and model the noise index with disturbance. The audit of papers demonstrated that road traffic noise is a reason for inconvenience to a variety of degree among the respondents. A speculation of effects and meta-investigation was impractical because of fluctuation of the examination structures and yields favored.

3. Mangalekar S.B.,Jadhav A.S. and Raut P.D. 2012 In the present examination, persistent checking of noise levels Leq dB (A) was completed for three days in the period of December, 2011 at six distinct sites inside the Kolhapur city. Based on area these sites were grouped into mechanical, business, private and quiet zones separately. The normal noise level at industrial, commercial, residential and silence region are 74.28 dB (A), 65.52 dB (A), 58.88 dB (An) and 50.02 dB (A) separately. The outcomes demonstrated that there is an upgraded weight of noise at all destinations because of increment in number of vehicles and offices of transportation. All the sites under investigation indicates higher sound level than the recommended limit of Central Pollution Control Board (CPCB). From the present investigation, it can be confirmed that the expanded utilization of vehicles is the fundamental reason of increased noise level in the Kolhapur city. In this way, there is a requirement for expanded mindfulness among individuals including the Government authorities to keep the long term health dangers related with noise pollution.

4.Surabhi Srivastava 2012 90db headache, 100 db causes hearing loss,195db lungs damage. Some occupation common noise are food blender, washing machine, vacuum cleaner, waste grinder, newspaper press, circular saw, textile loom. Four methods of controlling noise are enclosing the noise source, enclosing the noise receiver, putting the barrier between the noise source and the receiver,controlling the noise producer.One way to control the noise to connect the noise source to vibration control. In this paper the material is used in the construction of eco-friendly double-layered composite model is wooden (tamrid wood) frame along with the grips and aligned by rubber. Middle layer is composite material made from natural fibers, which has light weight, high strength to weight ratio and corrosion resistance. All the materials which are used have quality to absorb noise. So ,it is able to control vibration and effectively optimizes noise.

5. G.C. Kisku, Kailash Sharma, M.M. Kidwai, S. C. Barman, A.H. Khan, Ramesh Singh, Divya Mishra and S.K. Bhargava 2006 Automobiles, construction, festivals, factories, stations, diesel shades, garages and workshops are sources of noise. Vehicles are expanding tremendously past the conveying limit of the street. Study was done at 12 areas with sound level meter to evaluate day time and evening noise levels of Lucknow city. In residential areas, noise ranged between 67.7 to 78.9 and 52.9 to 56.4; in commercial cum traffic zones 74.8 to 84.2 and 68.2 to 74.9 and in industrial areas 76.9-77.2 and 72.2-73.1 dB (A) during day and evening respectively. Values were higher than their endorsed benchmarks which may represent a critical effect on personal life Noise significantly affects the nature of life (WHO, 1980). Impacts are seldom catastrophic and there disastrous and regularly just short lived, however unfriendly impacts can be aggregate with drawn out or repeated exposure. It regularly causes inconvenience and sometimes pain, noise does not make ears drain and noise actuated hearing misfortune as a rule takes a long time to create. Noise actuated hearing misfortune can infact disable the life, through a decrease in the capacity to hear vital sounds and to speak with family and companions. While the misfortunes are transitory at first, they turned out to be perpetual after continued exposure and there is no therapeutic treatment to check the impact. At the point when joined with presbycusis, hearing misfortune normally happening with the aging procedure, the outcome is an ultimately disability that develops inexorably with age. A wide green belt of thick vegetation can be created along the roadways. A tree belt 5 m width and of different height can lessen the noise level up to 10 dB (A). It will lessen the noise intensity by making check in its transmission way. Furthermore it can diminish significant measure of noise pollution load.

6.Indian Institute of toxicology research2010: According to report of Lucknow, In residential areas, the day and evening noise level were recorded between 55.1 to 68.8 and 54.6 to 67.9 dB respectively. All the values were higher than the prescribed limit reaches of 55 and 45 dB (A) for day and evening respectively. In commercial and traffic zone the day and evening time noise level were recorded between 58.8 to 85.7 and 53.9 to 67.3 dB respectively. Noise level at all the commercial areas during day and evening time were found over the recommended furthest reaches of 65 and 55 dB (An) individually with the exception of Chowk during the evening. In modern regions, Amausi and Talkotora the day and evening time noise level were recorded between 73.0 to 75.3 and 54.4 to 57.1 dB(A) separately. Noise level at all industrial areas in the day and evening was found underneath the prescribed limit reaches of 75.0 and 70.0 dB (A) respectively except from Amausi demonstrated minimal higher day time.

Day Time Noise Level

In residential areas, all the locations shows slightly decreasing trend over the last year level. In commercial cum traffic areas marginally bring down levels were recorded with the exception of Alambagh, Hussainganj which

indicated more elevated amounts in the course of the most last year .In industrial areas, in both the areas the noise level was recorded higher over a year ago information.

Evening time Noise Level

Each of the four zones indicated marginally higher pattern with the exception of Gomti Nagar which indicated larger amounts throughout the last year. Among commercial zones, every one of the areas somewhat bring down qualities aside from Aminabad and Hazratganj than the last year .Both the areas of industrial area, enrolled a decline in the noise level amid evening time as contrast with a year ago information.
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7.Indian Institute of toxicology research2007: In residential areas of Lucknow, the day and evening time noise level were recorded between 68.7 to 74.6 and 61.3 to 71.0 dB respectively. Noise level readings are higher than the prescribed limit of 55 and 45 dB for day and evening separately. In commercial and traffic region the day and evening time noise level were recorded between 73.5 to 79.5 and 60.8 to 75.2 dB individually. Noise level at all the commercial destinations during day and evening time are over the prescribed limit of 65 and 55 dB In industrial areas, Amausi and Talkotora the day and evening noise level were recorded between 72.1 to 77.8 and 68.5 to 70.9 dB respectively. Noise level at Talkatora in the day time and evening time were higher than the endorsed standard of 75 and 70 dB respectively.

Day Time Noise Level

In residential locations slight increment was recorded at all the areas in the course of the most last year level. In commercial cum traffic areas more elevated amounts were recorded at Hazaratganj, Chowk and Aminabad while at different areas marginally diminishing patterns was recorded throughout the most recent year . In industrial zone, in both the areas the noise level was recorded higher over a last ago information.

Evening time Noise Level

Among the four residential areas aside from Aliganj, where the level remained relatively same, slight increment was recorded at the rest of the areas in the course of the most recent year level. Among commercial areas, Charbagh and Chowk indicated nearly indistinguishable values from in the last, Hussainganj demonstrated marginally higher values though Aminabad and Alambagh somewhat bring down qualities than the earlier year. In both the areas of mechanical region, enlisted a slight diminishing in the noise level amid evening time over a year ago information.

Method and Material:

Altogether, 7 articles (5 research paper and 2 report) published in last 20 years were reviewed to reveal the status of environmental noise and its impact. 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 norms adopted to evaluate the quality of the articles included the following:
a. Well-defined demographic data (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)
d. Sample size: commercial, residential and industrial areas
e. Random sample selection

In 71.44% of the studies [ ]discussed above, the population (age, gender, and number) was well defined, and in the above studies, harmful effects of exposure to noise were methodically summarized. Except for 2 studies, statistical methods were applied in the rest of the discussed studies. In studies, noise modeling and noise mapping were carried out. In 7 studies, an exposure-effect relationship was established. Among these 7 studies, only in five studies, the exposure-effect relationship has been inferred on the basis of audiometric records and questionnaire surveys have been undertaken to reveal the effect of exposure to noise. The sample size of questionnaire surveys varied widely.
It is observed that 28.57% of the articles reported of using a large sample, which is statistically better. In all of the above articles, special emphasis has been given to zone-specific noise pollution monitoring and noise monitoring in workplaces, respectively. 44.89% articles reported details of subjective response data with the help of a questionnaire tool, while 10% of articles endorsed the harmful effect of festive noise. Sample sizes of these surveys are also different from each other. Thus, it is a herculean task to conduct a meta analysis of these articles for necessary review. It is found that the authors have studied different types of noise pollution in different cities/towns of India and their consequences. This study demonstrates that most of the researchers (77.5) have used statistical methods and drawn conclusion on the basis of their result. Nevertheless, the application of statistical tools to evaluate the data of all the aforesaid articles was not feasible because of the heterogeneity of the topic and variability of the methodology.

3. CONCLUSIONS

It is not possible to completely eliminate noise pollution but by regularly maintaining the vehicles, so that it should not produce noises and making strict by laws noise pollution can be reduced. By using the appliances noise reducing appliances[4] in residential and commercial to reduce noises. On going through the research paper noise pollution may cause high blood pressure, stress related illness, sleep disruption, hearing loss, and productivity loss. It pollution can damage physiological and psychological health. It can also cause memory loss, severe depression, and panic attack.

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