THE ADVERSE PSYCHOSOCIAL IMPACT OF NOISE POLLUTION AND ITS HEALTH HAZARDS

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ABSTRACT

The deafening crescendo of noise is one facet of the awesome environmental crisis threatening to overwhelm mankind. The blooming noise pollution problem is staring all development and developing nations in the face. Robert Koch, Nobel Laureate and great bacteriologist, had predicted nearly 100 years ago: "A day will come when man will have to fight merciless noise as the worst enemy of health." How prophetic he was! The tragic day may not be far off. Of all types of environmental pollutants, noise is the most prevalent and insidious pollutant, with deleterious physiological, psychological and social effects. Noise produces produces these damaging effects even when we think we are not disturbed, being so accustomed to the noise as to be consciously unaware of it. This subtle and insidious nature of noise makes it a 'slow agent of death'. The overall loudness and environmental noise is doubling every decade in pace with our social and industrial progress, and if the noise pollution escalates unabated, it could become lethal within a few decades. The sample consist of 150 respondents.Thus, this review article attempts to provide a holistic approach into delirious psychological impact of noise.

INTRODUCTION

According to the international programme on chemical safety (WHO,1994), an adverse effect of noise is defined as a change in the morphology and physiology of an organism that result in impairment of functional capacity, or an impairment of capacity to compensate for additional stress, or increases the susceptibility of an organism to the harmful effects of other environmental influences, this definition includes any temporary or long-term lowering of the physical, psychological or social functioning of humans or human organs. When considering the effects of noise on human health and quality of life, we have to take onto account the intensity of the sound in question, its duration, and the time and place at which it heard.

Review of Literature

The Health Council of the Netherlands (1994) classified the evidence of biochemical noise effects as limited. Yet, the results of the presented studies demonstrate that noise exposures over time periods of years may induce, in a certain percentage of exposed persons, permanent changes of the stress hormone regulation, along with possible consequences in terms of functional and organic damages. A decisive factor in the assessment of noise-induced health effects are persistent stress reactions. Up till now, the majority of studies investigating noise stress effects were based on measurements of the catecholamines adrenaline and noradrenaline and of cortisol[1].

[1]https://www. Researchgate.net.

Rajendra and Kulkarni (2010)[1] explore the efficiency of curb-side sound sensing to estimate road traffic conditions and formulate a set of hypotheses which attempted to correlate traffic conditions with the ambient traffic noise. They also present the evaluation of their hypotheses under various traffic conditions and their threshold-based-classification yields 70-90% accuracy in distinguishing congested from free-flowing traffic. He said the Rapid urbanization and increase in number of automobiles (two, three and four wheelers) are characteristics of developing countries like India.

Mental health effects

Mental health is defined as the absence of identifiable psychiatric disorders according to current norms (Freeman, 1984). Environmental noise is not believed to be a direct cause of mental illness, but it is assumed that it accelerates and intensifies the development of latent mental disorder. Studies on the adverse effects of environmental noise on mental health cover a variety of symptoms, including anxiety: emotional stress; nervous complaints; nausea; headaches; instability; argumentativeness; sexual impotency; changes in mood; increase in social conflicts, as well as general psychiatric disorders such as neurosis, psychosis and hysteria. Large scale population studies have suggested association between noise exposure and a variety of mental health indicators, such as the intake of psychotropic drugs; and consumption of tranquillisers and sleeping pills etc.

Exposure to high level of occupational noise has been associated with development of neurosis and irritability; and exposure to high levels of environmental noise with deteriorated mental health (Stansfeld, 1992). However, the findings on environmental noise and mental health effects are inconclusive (Berglund& Lindvall, 1995).

Interference with speech communication

Noise interference with speech comprehension results in a large number of personal disabilities ,handicaps and behavioral changes, problems with concentration, fatigue, uncertainty and lack of self-confidence, irritation, misunderstanding, decreased working capacity, problem in human relation, and a number of stress reactions have all been identified (Lazarus,1998). Particularly vulnerable to these types of effects are the hearing impaired, the elderly, children in the process of language and reading acquisition, and individuals who are not familiar with the spoken language (Lazarus, 1998).

Sleep disturbance

Exposure to nighttime noise also induces psychological secondary effects. These are effects, or so-called after-effects. These are effects that can be measured the day following the nighttime exposure, while the individual is awake. The secondary effects include reduced perceived sleep quality; increased fatigue; depressed mood; and decreased performance (Ohrstrom, 1993; Passchier-vermeer, 1993; Carter 1996; Pearsons, et al. 1995; Pearsons, 1998)[2].

Long – term effects on psychosocial well being have also been related to noise exposure during the night (Ohrstrom, 1991). Noise annoyance during the nighttime increased the total noise expressed by people in the following 24 hours. Various studies have also shown that people living in areas exposed to night time noise have an increased use of sedatives or sleeping pills.

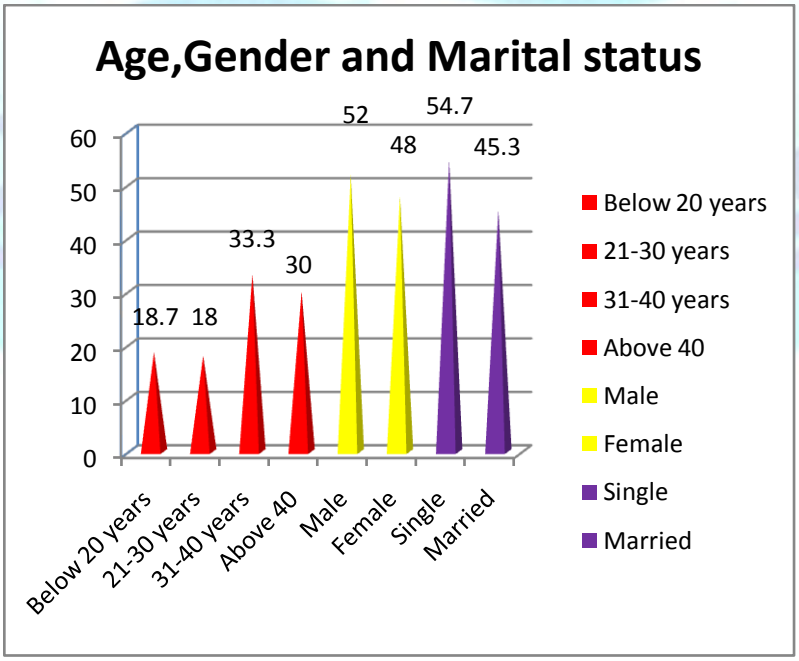
[2]Dr.MedBull(2003) (68)(1) Noise pollution non-auditory effects on health pp.243-257.

A Profile of the Sample Respondents
Personal Details
Table - 1

Particulars		Number of respondents	Percentage
Age	Below 20 years	28	18.7
	21-30 years	27	18.0
	31-40 years	50	33.3
	Above 40	45	30.0
Gender	Male	78	52.0
	Female	72	48.0
Martial Status	Single	82	54.7
	Married	68	45.3

Source: Primary Data

Age is the key variable in understanding the socio-economic status of an individual. Biologically, age signifies the physical and mental maturity of an individual. Nearly 50 (33.3%) of the 150 respondents of our study area are in the age-group of 31-40 years, 45 (30%) respondents are in the age –group of above 40, 28,(18.7%) respondents are in the age –group of below 20 years 27(18%) of the respondents are in the age group of 21-30 years.



Equipment	Noise limit
Small motor bike or scooter	80
Passenger car	82
Large bus or commercial vehicle	91
Domestic air conditioner	68
Refrigerator	46
Domestic generator	85
Compactors(rollers) front loaders, concrete mixers, cranes(moveable)	75

- Public awakening is very essential for the control and prevention of noise pollution
- Attempt should be made to reduce the noise at source design and fabrication of silencing devices and their use in engines

Conclusion

Since it is not possible to completely eliminate annoying sounds, efforts should be made to establish counseling centers in different areas. Residents should be motivated to visit the counseling centers regularly to gain awareness of the adverse health effort of noise and also learn practically useful control measures. The counseling centers should be employ psychologists to teach effective stress management techniques such as progressive relaxation therapy behavior modification, cognitive restructuring as well as yoga and meditation for reducing the negative psychological impact of noise. Attempts should also be made to inculcate positive pro environmental attitudes in the masses.

REFERNCES:

1. Elmenhorst E-M, Quehl J, Müller U, Basner M; Nocturnal air, road, and rail traffic noise and daytime cognitive performance and annoyance. J Acoust Soc Am., 2014; 135(1):213–222.

2. Basner M; Nocturnal aircraft noise increases objectively assessed daytime sleepiness. Somnologie., 2008; 12:110–117.

3. Passchier-Vermeer W, Passchier WF; Noise exposure and public health. Environ Health Perspect., 2000; 108(Suppl 1):123–131

4. Stansfeld SA, Matheson MP; Noise pollution: nonauditory effects on health. Br Med Bull., 2003; 68(1):243–257.

5. Basner M, Babisch W, Davis A, Brink M, Clark C, Janssen S, et al; Auditory and non-auditory effects of noise on health. Lancet Lond Engl., 2014; 383(9925):1325–1332.

6.EvansG.W. Hugge, S.Bullinger.M. (1995) Chonic noise and stress, Psychological Science6,333-338.