Noise pollution – An insidious health hazard

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Number of times we used to hear different forms of pollution like water pollution, air pollution and soil pollution but it is very less often we have heard about noise pollution. We may define noise as any unwanted sudden or high intensity sound which one has to hear without his consent. Some common sources of this noise pollution are road traffic, industries, railway and air traffic and use of heavy generator in institutions. We may get some idea about the severity of this detrimental effect from the fact that in China, till third century B.C., instead of hanging men for dangerous crimes, noise was used for their torturing. This noise pollution is the most dreadful health hazard because of its insidious nature and some irreversible damage to the important structures of human body. A wide range of health hazards are resulted from this sort of pollution, ranging from deafness, tinnitus, hypertension, disturbed sleep, anxiety, psychiatric disorder, permanent loss of memory to difficulties in communication and even impendment in cognitive development in children. Among all the damaging effects on health, hearing loss is a major concern. The hearing loss from prolonged exposure to a certain degree of noise resulted from injury to the delicate sensory and neuronal components of the cochlea. In a study by Hong in more than 60% of occupational noise induced hearing loss, the affected range was the noise sensitive higher frequencies of 4 and 6 KHz. In another study the persuasiveness of hearing loss was 42% among noise exposed factory workers.

Noise is becoming an increasingly ubiquitous and unnoticed form of pollution even in the developed countries. Although it is a slow and subtle hazard to health, very little earnest attempts have been made to improve the same. The annoying effects of noise are perilous enough that noise pollution is considered next to crime by certain countries. We as health care professionals are at peril with certain specific situations like the utterance crowd of patients in OPD’s, continuous beep of monitors in operation theater and ICU, the noise of suction machine and even of the drilling done by orthopedic and ENT surgeons. Here I would like to mention another strong factor of injudicious use of loud speaker in the mosque and religious/political gatherings. Moshamer and colleagues in a study concluded that the overall effect of noise on hearing depend on the frequency and intensity of sound, numbers of years of exposure as well as individual susceptibility. Two recent studies showed that Noise Induced Hearing Loss occurred over a duration of 7-8 years. Another comparative cross sectional study done in stone crushing industry, the subjective hearing loss involved 21.5% of the individuals as compared to 2.8% of the control group. So keeping all this in view, the dire need of the time is to make the people aware that noise is a pollutant, followed by to pick the cases early, before the irreversible damage to hair cells has occurred. For this the best option available is the serial audiometries of the high risk population. Moreover certain preventive measure are of paramount importance including sound level detectors and protecting devices like ear plugs.

Health education and mass campaign has a prime role to overcome this pollution. Special emphasis must be given to those industrial/factory workers who are also at risk with other ototoxic agents like tobacco and certain drugs. They are more prone to the detrimental effects of noise pollution because of their synergistic action. Long term follow up of these individuals will unmask the value of intervention done. For the prevention of NIHL the interventional studies also need to involve appropriate control subjects. Inspite of the fact that this noise pollution is completely preventable, but still in construction workers, the incidence is very high. For keeping the inner ear sensorineural structures safe from the unwanted effects of noise, the use of hearing protective devices is the simple method but problem may still happen if there is marked fluctuation of sound pressure levels, lack of will from the management side and poor regulatory input.

Professional health workers must be religiously involved in “hearing health” of at risk noise exposed individuals and should do concerted efforts to make it certain that noise pollution are minimized both during professional hours and relaxation periods by adapting the measures to reduce the excessive noise level as well as prompt use of Hearing Protection Devices (HPDs), when appropriate.

There is a dismal requisite to break the silence of emerging menace of noise pollution and achieve a noise free environment. The time has come that the intensity of the issue is properly identified by the health professionals, ordaining and law implementing bodies. Lastly and more importantly is to create public awareness about the issue and involve the media to focus the matter. We may conclude that this deleterious effect may be comparable with cancer which is also most often difficult to detect and most of the times not curable.

REFERENCES