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COURSE TITLE: ENVIRONMENTAL HEALTH (PUH 302)

ASSIGNMENT TITLE: NOISE

1. Mention the different sources of noise in your environment.

2. Briefly recount one of your experiences of what you considered a noisy environment that can be deterimental to health.

**SOURCES OF NOISE IN THE ENVIRONMENT**

Noise is a wrong sound, in the wrong place, at the wrong time. The sources of noise are many and varied. These are automobiles, factories, industries, air-crafts etc. Noise levels are particularly acute near railway junctions, traffic round-abouts, bus terminuses and airports. Use of pressure horns, recreational noise of loudspeakers with full volume during festivities particularly at night are other sources of noise production. The domestic noises from the radios, transistors, T.V sets- all add to the quantum of noise in daily life. The sources of noise pollution are classified into two broad categories: Internal and external sources of noise pollution.

1. External sources of pollution

These are the major sources of noise pollution in the environment. They are sources that are extremely difficult to control. They include.

a. Industrial sources. The industrialization has resulted in the rise of noise pollution. The industries include textile mills, engineering plants, printing presses, and metal industries. Most industries use heavy machines capable of producing very high levels of noise. They have equipment such as compressors, exhaust fans, grinding mills, and generators which increase the overall noise levels in the environment. Workers in these environments are in great health risks in case they do not take proper measures like wearing earplugs to minimize the effect of the noise.

b. Vehicles for transportation: Automobile revolution has turned out to be a big source of environmental noise in urban regions. The continuously use of horns in an attempt to alert the driver in front of them to move produce unbearable noise to the people living in the neighboring areas, the commuters or passersby, and the environment as a whole. Most airports are located near residential areas and for this reason, the jet-planes taking off and landing in such areas normally produce high sound levels.

c. Poor urban planning: Poor urban planning thus contributes to environmental noise through fights or social and basic amenities, noise from small manufacturing industries, wrangles over parking space, family quarrels from the neighboring houses, and noise from playing children.

d. Military equipment. Artillery tanks, rocket launching, military airplanes drills, explosions, and shooting practice are serious noise polluters.

e. Public Address System: People need only the slightest of an excuse for using loud speakers. The reason may be a religious function, birth, death, marriage, elections, dem­onstration, or just commercial advertising. Public system, therefore, contrib­utes in its own way towards noise pollution.

f. Agricultural Machines: Tractors, thrashers, harvesters, tube wells, powered tillers etc. have all made agriculture highly mechanical but at the same time highly noisy. Noise level 90 dB to 98 dB has been recorded in some farms using heavy types of machinery and equipment.

2. Indoor sources of noise

They are noises associated with human activities within a household or building. They also occur due to operations of building services and office services.

a. Household: The household is an industry in itself and is a source of many indoor noises such as the banging of doors, noise of playing children, crying of infants, moving of furniture, loud conversation of the inhabitants etc. Many households also own entertainment equipment such as Hi-Fi Systems, Television sets, and loudspeakers that may further contribute to the overall noise emanating from indoor household activities. Household equipment like pressure cookers, vacuum cleaners, washing machines, sewing machines, mix-grinders, desert coolers, exhaust fans, and air-conditioners equally produce a lot of noise.

b. Inside building services Construction works, workshops and automobile repairs cause noise pollution. The equipment used in such jobs produces a lot of noise that causes nuisance and may hamper hearing ability.

c. Office equipment: In offices, there are printers, photocopiers, and typewriters among other equipment that contribute to noise pollution in the working places and its environment.

2. Briefly recount one of your experiences of what you considered a noisy environment that can be detrimental to health.

Environmental Noise: Environmental noise is noise that physically disrupts communication, such as very loud speakers at a party or the sounds from a construction site next to a classroom.

**LOUD BACKGOUND NOISE**

In my own experience, loudspeakers playing music during sleep time or hours is really detrimental to health. As it affects the body by causing: sleep disturbance, annoyance, stress and mood changes immediately you wake up, you can get easily irritated by everything around you once you wake up, and it also causes lack of sleep.

Loud background noise from loudspeakers at a party or the sounds from a construction site next to my building. The use of loudspeakers and the music that accompanies them are often one of the biggest causes of neighborhood disputes which also leads to more noise. Unlike the noise from parties, where loud music is usually played for a set time period, some people think that music can be played as loud as they want it to be, no matter what time of day or night it is.



An image of a girl affected by noise while sleeping

FINDINGS OF HOW NOISE AFFECTS SLEEP

In today’s world, peace and quiet can be something of a rarity. Sleep is a fundamental human behavior which is essential for development, health and well-being. The sound of neighbors laughing late into the night, your partner snoring, music playing from across the hall, a buzzing phone on the bedside table, a television left on— – there are an array of everyday noises that can disturb you and have detrimental effects given the importance of sleep on overall health.

How Does Noise Affect Your Sleep?

Noise at night can prevent you from falling asleep initially, and sounds during the night can wake you leaving you unable to return to sleep. Even noises that don’t wake you can have a detrimental effect on sleep quality. While you snooze, the sleeping brain continues to register and process sound. Noises can create restlessness in sleep even if they don’t wake you fully, and these interruptions affect sleep quality and the movement from lighter to deeper stages of sleep.

Sleeping in a noisy space not only disrupts the quality of your sleep, but it can also leave you feeling less satisfied with your overall sleep experience. Part of the reason is because during sleep, the brain continues to register and process sounds, affecting everything from heart rate to blood pressure, which in turn can trigger nighttime waking. Noise—whether you are conscious of it or not—can cause you to wake up feeling unsatisfied and unrested.

THE EFFECTS

1. Frequent Waking Lowers Sleep Satisfaction: Not surprisingly, loud noises during the night will startle you out of your sleep. The degree to which this happens depends on the stage of sleep you’re in, the time of night, and how you feel about the sounds themselves. For instance, noise tends to be most disruptive during lighter stages of sleep, such as the first few moments after you close your eyes, or at certain periods in the middle of the night. But it can also rouse you from deep sleep, and tends to disturb sleep more during the second half of the night. While you may be able to fall back asleep after these interruptions, the result is that when you wake in the morning, you feel unsatisfied with the rest you got, even if you can’t pinpoint why this is the case.
2. Stressful Sounds Increase Sleep Struggles: You are also likely to wake up when the noise is familiar or emotionally charged, such as the cries of a hungry baby. Some people become accustomed to the background drone of city life or nearby traffic, but noises that could signal danger, like the squeal of car brakes or a honking horn, can jar you awake and have a negative effect on your health. These types of stress-inducing sounds lower both your ability to sleep and how good you feel in the morning.
3. Noisy Environments Cause Restlessness: Even though you may recall being asleep for most of the night, high noise levels are a source of increased restlessness during sleep. This includes twitching, moving, and shifting between stages of sleep. All that tossing and turning can lead to a subjective feeling of lower sleep satisfaction, as well as more measurable feelings of sleepiness and mood changes the following day.
4. Sleep is the paramount restorative process necessary to maintain normal levels of brain and behavioral functioning, mood and well-being while awake. Sleep disturbance is important because if it is sufficiently severe it reduces our nightly recuperation, which then affects our waking performance as well as our health and mood.
5. There is further complexity in sleep where noise can affect the cardiovascular system without producing full arousal i.e. awakening. Therefore, sleep disturbance is not a unitary concept; there is a full range of effect from full blown behavioral awakening signaled by the subject via a push-button, to subtle changes in autonomic physiology; these changes are not necessarily consistent within an individual for a given level of noise stimulus as there are complex patterns of neurophysiology associated with the different EEG-defined sleep stages and the time of night.

Indeed there is increasing evidence that quantitative and qualitative sleep disturbances may play a role in the development of cardiometabolic disease. A number of cardiovascular risk factors and cardiovascular outcomes have been associated with disturbed sleep: coronary artery calcifications, atherogenic lipid profiles, atherosclerosis, obesity, type 2 diabetes, hypertension, cardiovascular events.

There is clear evidence that sleep disturbances are associated with health deterioration, and growing evidence that exposure to noise pollution, around-the-clock, negatively affects health.