

Adverse Effects of Noise Pollution on Children

Tamaz Patarkalashvili

Technical University of Georgia, Center studying Productive Forces and Natural Resources of Georgia. 66, M.Kostava Str. 0160, Tbilisi, Georgia.

*Corresponding Author: Tamaz Patarkalashvili, Technical University of Georgia, Center studying Productive Forces and Natural Resources of Georgia. 66, M.Kostava Str. 0160, Tbilisi, Georgia.

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Abstract

Increasing population growth, unprecedented rates of urbanization worldwide, growing air and noise pollution provoking different diseases in big cities is becoming the first-rate unsettled problems globally. Recent research shows that long-term exposure to air and noise pollution have detrimental effects on children's thinking cognition and academic performance and behavior. But unfortunately, there is limited scientific evidence and knowledge about possible underline mechanisms for these effects and consequences. Very few studies have been considered the impact of urban air and noise adverse effects on adolescents too.

Kew Words: pollution; air; noise; effect; children; detrimental; disease; cognition; urban

Introduction

Noise pollution can cause health problems for people and wildlife on land and under the sea. From traffic noise to rock concerts, loud or unbearable sounds can cause hearing loss, stress, and high blood pressure [1-3]. Noise from ships and human activities in the ocean is harmful to whales and dolphins that depend on echolocation to survive. Noise pollution is an invisible danger. It cannot be seen, but it is present nonetheless both on land and under the sea [4,5].

Sound is measured in decibels. There are many sounds in the environment, from rustling leaves (20 to 30 decibels) to a thunderclap (120 decibels), the wail of a siren (120 to 140 decibels). Sounds that reach 85 decibels or higher can harm people's ears. Sound sources that exceed this level include subway trains (90 to 115 decibels) and loud rock concerts (110 to 120 decibels) [6].

The most common health problem from noise pollution is noise induced hearing disease, sleep disturbances and stress. These health problems can affect all age group of people, especially children [7]. Many children living near noisy airports or streets have been found to suffer from stress and other problems such as impairments in memory, attention level and reading skill [8]. Noise pollution also impacts the health and well-being of wildlife. Animals use sound for a variety of reasons, including navigation, finding food, attracting mates and avoid predators. Noise pollution makes it difficult for them to accomplish these tasks which affects their ability to survive [9].

Results And Analysis

2.1 Noise and its Effects on Children

Children often participate in recreational activities that can harm their hearing. These activities include attending music concerts, especially pop and rock concerts, sporting events where crowds of audience cry and shout loudly. Small children play with noisy toys and video games in computers, play their own music players. All these of noise adversely affect on children. Many of them suffer from noise-induced hearing loss. Noise pollution can often harm children's physical and psychological health [10,11].

Adverse Health Effects:

- frequent exposure to noise sources can affect children's acquisition of speech, language and related skills, such as reading and listening;
- inability of concentration in a noisy environment affect children's capacity to learn;
- impair learning may be result of inability to concentrate in a noisy environment and can affect children's capacity to learn;
- tinnitus can be described as a ringing or buzzing sound in the ear as a symptom associated with many forms of hearing loss.

Some Sources of Adverse Noise Exposure:

- fireworks, gunshot-145 db.
- Jet-planes and helicopters -135 db.
- ambulance siren-125 db.
- rock concert, chainsaw-115 db.
- tractor-105 db
- hair dryer-95 db.
- busy city traffic- 85 db.
- washing machine- 75 db.
- speech-55-65 db.
- rainfall-45-55 db.
- whisper-15-25 db.

Conclusions

The rapid urbanization worldwide is resulting in uncontrolled number of light vehicles, growing number of slums, inadequate and overburdened infrastructure and such services as waste collection, road and transport infrastructure development etc. All these adverse factors increase air and noise pollution levels and deteriorate ecological sustainability of big cities [12, 13]. Municipal authorities and urbanists have been unready for these problems and could not keep pace with times. The results are uncontrolled development of cities and vicinities [14]. The problem of noise pollution has always been ignored until recently paying more attention to the air pollution. But due to the accelerated rates of automobilization and connected with it noise pollution made scientists and city authorities to pay more attention to this problem. [15]. Noise pollution in big cities is getting the constantly growing problem no lesser than air pollution and sometimes even more. Many people may not be aware of its adverse impacts on their health as it is invisible. Today noise pollution is a major problem both for human health and animals.[16]. Long-term exposure to loud noise can induce variety of adverse health impacts like increasing annoyance, sleep disturbance, negative effects on cardiovascular and metabolic system, as well as cognitive impairment in children. They suffer from chronic high annoyance and sleep disturbance. [17]. It is noticed that school children living in the neighborhood of big airports [18] suffer of reading impairment as a result of unbearable aircraft noise. Despite the fact that noise pollution is one of the major public health problems in most big cities of the world there have always been and continued tendency of underestimating it making major accent on air pollution. It's high time to change this attitude.

Recommendations

Recommendations minimizing adverse health risks from noise pollution for children:

- to walk away from sources of loud noises;
- to limit amount of time spent on noisy activities;
- to lower the volume of loudspeakers;
- to use earplugs or earmuffs during noisy events;
- to create quiet learning and sleeping conditions for children;
- to prevent children from noise induced hearing loss of such toys as talking dolls, loud musical instruments etc. that emit sound that can be hazardous to children;
- personal music players as iPod, MP3, etc. should be played at low levels. To use sound thermometers for noise level measurement. Noise levels at 85 db and above can be harmful to children's hearing.

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