

NOISE IN THE LIFE OF YOUNG MAN

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Abstract: *There are involved many different internal and external factors and factors in our health. Noise is the most frequent factor in the work environment, and it acts negatively mostly in environment. From a medical point of view, the environment defined as the sum of physical, chemical, biological and social phenomena and processes that directly or indirectly affect human health, individuals and populations. Cause of most diseases can be found in breach of the relationship between the human organism and the environment in which one lives.*

Key words: *noise, work environment, environment, internal and external factors in health, effects of noise, performance and noise, damage of hearing*

Age

The role of age is not well understood. There are a lot of data on the effect of aging on hearing loss. But this is not the same as the change in sensitivity to noise. In practice, based on the belief that more young people are more sensitive, respectively children. On the other hand, it does not apply to the disruptive effects of noise and sleep disturbance from noise, where people are less tolerant. As shown in various studies, children from noisy locations are more aggressive than children from quieter locations. At higher dB noise disrupts children less than adults, but since a very early age begins the degeneration of hair cells organ of Corti.

Education

Education has been for a long time one of the most important determinants of health. Investment in education is an investment in health therefore likely that the cutting the investment in education and training with will cause pressure on increasing the cost of medical services. Probably the most significant impact on health is the boundary between primary and secondary education. The more students continue their education at secondary schools and gets high school diploma, the chance to grow a healthier population. In the case study of the relationship of psycho social risk factors and cardiovascular disease experts found a significantly increased risk of cardiovascular disease in people with primary education, compared with secondary and tertiary education). From the differences in socioeconomic status we can conclude that people working physically

are less sensitive to noise than people with higher education. People with higher incomes also have higher demands for quality of the environment and worse deal with noise disruption.

Performance during the work

Performance is influenced by noise in a positive and negative sense. Noise has a positive impact on performance by simple and monotonous activities, by which increase of the stimulant effect is desired. Negative effects depends on many personal characteristics. However, we can say that by noise are harmed complex activities dependent on the continuous attention, the activities related to creative intellectual work, knowledge handling and developing concepts and working strategies. Overload by noise occurs by the mobilization of forces, when it is not possible to maintain balance and performance decreases. To spare the adaptation potential of the organism, it is necessary to reject the noise or restrict it to a minimum. Threshold of noise load limit is 45 db (A) of admissible traffic for school work.

Annoyance from noise

A positive relationship exists between noise and adverse exposition to noise and length of stay in the home or other environment. Resentment may occur after several year latency and deepens over time and fixes. By students in the dormitories, it was found that students more sensitive to noise perceived the disruption in a room urgently. The situation has not changed by noise tolerant students. More sensitive students often show symptoms of anger, tension, nervousness, anxiety and inferiority. They respond to noise with greater excitement, alarm, stronger vasoconstriction, faster heartbeat, indicate more health problems and depression, report more subjective stress reaction. To the effects of noise on humans belongs hearing damage, reduction of communication, sleep disruption, influence on physiological functions and mental health deterioration in cognitive performance challenges, influence on social behavior and cause negative emotional reactions.

Effects of noise besides hearing

Cause of most diseases can be found in breach of the relationship between the human organism and the environment in which one lives. Nonspecific effects of noise are usually observed in early stage (neurosis, vegetative disorders and cardiovascular system disorders) and after that come to specific effects. Any increase in the decibel noise can cause deterioration of the nervous system by about 0.5 %. The literature describes the non-specific effects of noise on different organs.

Psychological effects of noise are expressed by feelings of discomfort, confusion, annoyance, anxiety, fatigue, fear of mental depression, neurosis, character change, the hatred (there is disruption of interpersonal relationships in school and family). Also, the noise of negligible intensity can affect significantly harmful (such as dripping water, rustling paper and other unpleasant sounds).

Psychomotor effects of noise lead to reduced accuracy of performance, deterioration in quality and reduction of the speed of psychomotor performance. In noisy environments, the productivity decreases. Another consequence is usually a high blood pressure. It was found that people working in noise that exceeds threshold, five times more suffer from cardiovascular diseases.

Noise inhibits activity of the digestive system slows the peristaltic movements of the stomach and intestines, reduces the secretion of saliva, leading to digestive disorders. In addition, it was found that gastric ulcers and duodenal ulcers are most common by people working or living in a noisy environment. Noise causes over activity of the pituitary, thyroid and adrenal glands.

Materials and methods

In studies conducted from January 2009 to March 2009 through an Internet questionnaire, we contacted 224 residents of Kosice. Range of the age of the respondents was from 12 to 75 years. We allocated 108 adolescents aged 12-22 years from the total sample. Age limits for the period of adolescence are not well defined, but we consider the lower limit of age approximately 12 years and the upper limit from 20 to 22 years. We tried to determine the health status of respondents in relation to noise, such as addressing the perceived noise in their neighborhood, leisure and lifestyle they have. The results we obtained are graphically illustrated.

RESULTS OF THE STUDY

EDUCATION OF ADOLESCENTS

In a questionnaire we obtained results from 40 adolescents with primary education, 2 university educated adolescents, 31 college students, 27 high school students and 2 adolescents with secondary education without A levels (Fig. 1).

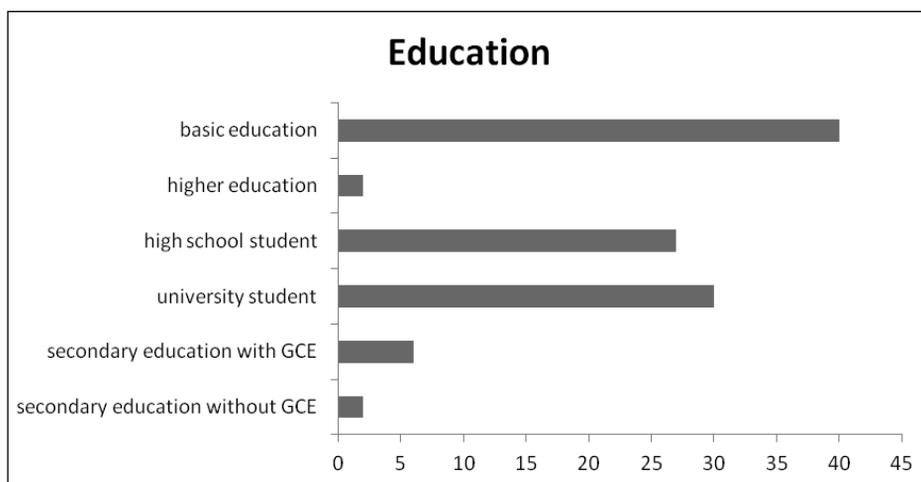


Fig. 1. Educational attainment of adolescents.

Noise disruption by relax and learning

In noisy environments, there is a reduced ability to learn, to read and perceive speech, there is a long-term impairment of memory and concentration. Fig. 2 shows that by learning the noise disrupts 56 respondents, 26 respondents occasionally and does not disrupts 26 respondents.

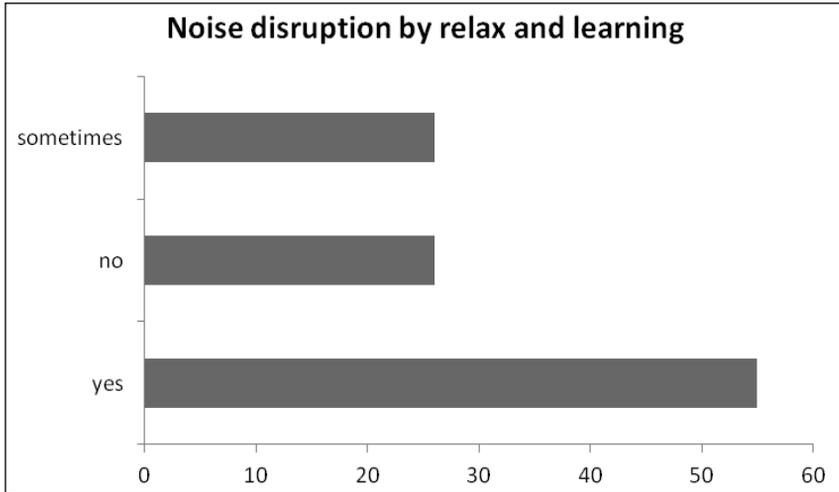


Fig. 2 Noise disruption by relax and learning by adolescents.

Noise disruption by relax or learning in relation to education

Interviewed respondents answered to the question: “Does the noise disrupt you by relax or learning?”. As shown in Fig. 3, college students are more disrupted by noise by relax and learning. However, respondents with primary education are disrupted by noise only occasionally. With higher education increases sensitivity to noise. Fig. 4 shows the results of 108 adolescents surveyed.

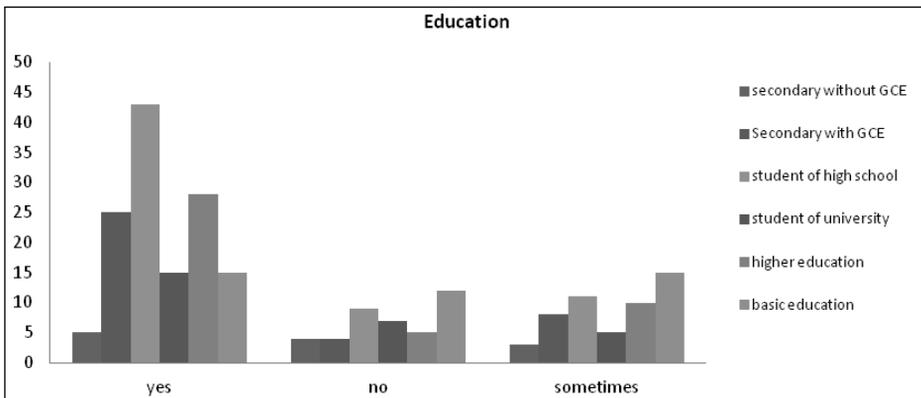


Fig. 3 The perception of noise disruption by relax and learning by 224 respondents.

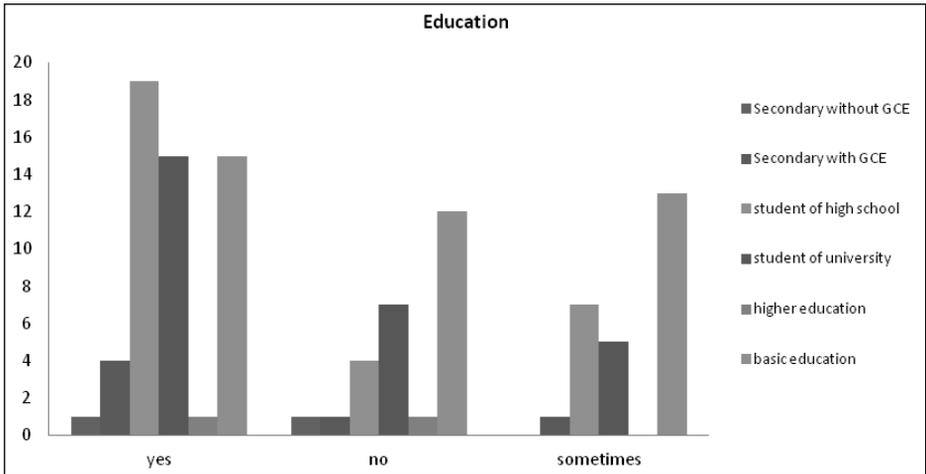


Fig. 4 The perception of noise disruption by relax and learning by 108 adolescents.

Noise disruption during the day and night

During the day the noise disrupts 23 adolescents, 14 adolescents in the night, during day and night 6 respondents and 65 respondents are not disrupted (Fig. 5).

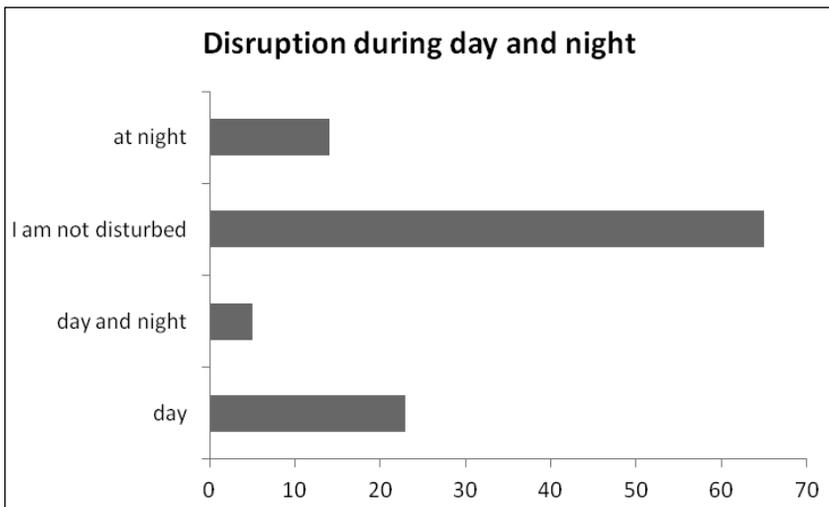


Fig. 5 Noise disturbance during the day and night for adolescents.

The orientation of windows in an apartment or house

Orientation of windows to a busy road or street increases noise in the room, unlike windows oriented to the meadows and parks. Mostly windows to the street (a busy road, parking lot) were reported by adolescents with primary education and

university students. For better orientation we give the survey results in Table. 1 and graphic evaluation on Fig. 6.

Tab. 1. An orientation of windows in an apartment or house by adolescents.

Orientation of windows	secondary without GCE	Secondary with GCE	student of high school	student of university	higher education	basic education
1 window oriented to street	0	1		2	0	5
windows oriented to yard, meadow, park	0	0	9	8	1	14
windows oriented to noisy street	2	5	18	21	1	21

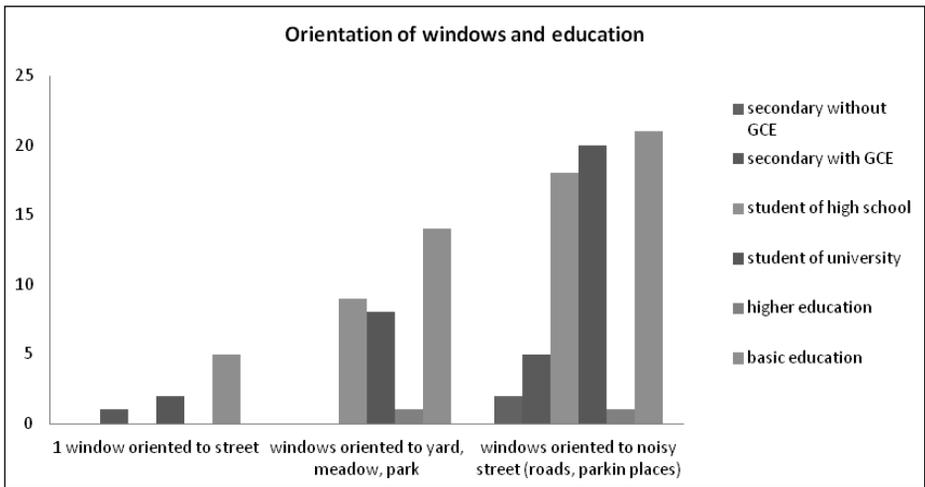


Fig. 6 Orientation of windows in an apartment or house by adolescents.

Discussion

In recent years there has been a significant increase of noise levels in the environment. Knowing and evaluating the impact of noise on human health (physical and mental) is an issue that requires a multidisciplinary approach. Noise awareness derives mainly from the knowledge of malignant causes of noise on the organism.

Investment in education is an investment in health. This also applies to the noise. The more students continue their education in high school and receives high school diploma, the higher is the chance to grow a healthier population. To maintain a balance in the body also a harmonious relationship with the environment around us is needed, which requires a healthy lifestyle. Increased level of noise coming from the environment is unnatural for human, and depending on its nature and quantity threatens person's health. Noise is able to excite even the toughest steel. Aerodynamic noise may cause damage to windows and crack walls, but the worst is when the noise damages the

finest and most complex organ - the human ear. From extensive research, it is known that each noise exposure over a lifetime contributes to the development of hearing damage. This means that each individual noise in the environment counts, eg.: workplace, transportation, leisure etc.! It turns out that aging does not worsen hearing, if one lives in a quiet environment. The natives, who never knew more powerful than the sound of birds singing, they hear in the 75th year of life as good as their 25-year civilized brothers.

Conclusion

Human does not have an organ that would not be threatened by noise. Noise also affects premature aging and shortens the life of the inhabitants of large cities from 8 to 12 years. From a physiological point of view, there does not exist an adaptation of the organism to a noisy environment. So if someone says that he is used to the noise, then it is only a subjective impression, but, in fact destructive noise exposure continues silently.

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HLUK V ŽIVOTE MLADÉHO ČLOVEKA

Abstrakt: Na našom zdraví sa podieľa mnoho rôznych vnútorných i vonkajších činiteľov a faktorov. Hluk je najfrekvencovanejším faktorom pracovného

prostredia, ale svoju daň si vyberá aj v životnom prostredí. Z medicínskeho hľadiska je životné prostredie definované ako súhrn fyzikálnych, chemických, biologických a sociálnych javov a procesov, ktoré priamo alebo nepriamo vplyvajú na zdravie ľudí, jednotlivcov i populácií. Začiatok väčšiny chorôb je potrebné hľadať v narušení vzájomného vzťahu medzi ľudským organizmom a prostredím, v ktorom človek žije.

Kľúčové slová: hluk, pracovné prostredie, životné prostredie, vplyv vnútorných a vonkajších faktorov na zdravie, účinky hluku, výkonnosť a hluk, hluk a poškodenie sluchu