

WORK-RELATED MORBIDITY IN OCCUPATIONAL NOISE EXPOSURE

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Introduction

The aim of the study was to identify the morbidity model induced by noise professional exposure for the purpose of health protection. As occupational exposure, the noise could induce, in some circumstances, not only an occupational disease but also a "work-related disease". By an epidemiological study the authors test the role of work - related diseases analyze performing the occupational etiological fraction which can attest the impact of exposure on workers health status.

Subjects and methods

We investigated the medical personal files of 778 workers, aged 33.09 ± 8.9 , with 11.9 ± 4.3 years length of occupational exposure to noise.

The stratified morbidity data analyze - by age and length of exposure, has been processed using EpiInfo software; the work conditions were evaluated according to the Romanian Safety Rules,

Results

The noise determinations are exceeding the acknowledge limit. (Table I)

Table I - Values of noise determinations

- Tubes knitting machine	=	Leq	=	102 dB (A)
- Strip knitting machine	=	Leq	=	102 dB (A)
- Sauer loom	=	Leq	=	100 dB (A)
- Rowing loom	=	Leq	=	92 dB (A)

The morbidity analyze shows as result of noise exposure impact only the following diseases hypertension, cardiac ischemia, digestive disorders and neurosis, considered as work related diseases. The absences of work due to work -related diseases represented about 15% among the total number of morbidity days.

The morbidity analyze by ages shows a different profile, with "neurosis" in the top for the young persons and "hypertension" (Table II)

Table II – Frequency of disease by age group

Group by age	Disease	Frequency (%)
< 40 years	neurosis	45
	digestive	19
	hypertension	17
	cardiopathic ischemia	12
	musculo-skeletal	7
> 40 years	hypertension	44
	neurosis	28
	cardiopathic ischemia	11
	musculoskeletal	
	1. digestive	6

The morbidity investigation by length of exposure shows a relationship between the value of morbidity indicators and the number of years of noise exposure (table III).

Table III – The number of morbidity days at 100 workers exposed to noise (gravity indicator)

Group	Gravity indicators by work related disease (%)				
	NEUROSIS	HYPERTENSION	CARDIOPATIC ISCHEMIA	DIGESTIVE	MUSCULO-SCHELETAL
Exposure < 5 years I.G. = 134.4	38.8	26.2	18.6	49.3	1.1
Exposure > 5 years I.G. = 392.8	149.9	123.95	48.8	40.5	30.7

A special attention has been paid to hypertension, as top disease of work - related morbidity. For comparison we have chosen as control group, subjects with no exposure to noise but with the same structure by age and exposure (table IV).

Table IV- Blood pressure indicators by type of exposure

MORBIDITY INDICATOR	NOISE EXPOSURE GROUP	CONTROL GROUP
ADRESSABILITY	6.5	1.7
GRAVIDITY	38.3	9.5
FREQUENCY	3.2	0.6

It also has been calculated, as for demonstration, the etiological occupational fraction. Its value was 72% and for that we can consider hypertension strongly related to noise exposure.

4. Conclusions

The analysis of work-related diseases must be performed to identify the impact of occupational exposure for workers health status. Using the formula of occupational etiological fraction we could demonstrate the role of noise professional exposure in the hypertension's occurrence.