

THE RELATIONSHIP BETWEEN NOISE-EXPOSURE AND ABSENCE FROM WORK

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دراسة العلاقة بين التعرض للضوضاء والغياب عن العمل

الخلاصة :

تم الرجوع الى اصابير العاملين في المنشأة العامة للغزل والنسيج العراقية لعام ١٩٩٢ واستخرجت البيانات المتعلقة باصابات العمل والغياب لاسباب مختلفة. شملت الدراسة ١٨٩ عامل متعرض لضوضاء اكثر من ٩٥ ديسيبل (مجموعة متعرضة) و ١٨٩ عامل متعرض لضوضاء اقل من ٨٠ ديسيبل (مجموعة سيطرة)، بهدف دراسة العلاقة بين ضوضاء العمل والتعرض للاصابة او الغياب في كل المجموعتين. بينت الدراسة ان معدل انتشار اصابة العمل عند المجموعة المتعرضة كان ضعف (٣٦٣٪) ما وجد عند مجموعة السيطرة (١٩٦٪). أما نسبة الغياب (لاي سبب من الاسباب) فقد كان اعلى عند المجموعة المتعرضة مقارنة بمجموعة السيطرة. هذا ولم نجد فارق احصائي بين المجموعتين بالنسبة لطبيعة الامراض التي تعرض لها الافراد في المجموعتين خلال فترة الدراسة باستثناء اصابات العمل.

لقد توصلت الدراسة الى عدة توصيات.

SUMMARY :

In a retrospective study, recorded work injuries and absenteeism during the year 1992 were studied among textile workers. 189 workers exposed to high sound level - above 95 dB (A) - (EG) and 189 reference workers exposed to less noisy area - below 80 dB (A) - (RG). The prevalence of injuries were twice in the EG (36.6%) than in the RG (19.6%).

Absenteeism was higher in EG than in the RG. However, there were no significant difference between the two groups for diagnosed medical diseases except for accidents. Recommendation is given.

INTRODUCTION :

Noise is one of the most wide-spread pollutant in industrial working environment⁽¹⁾. It could have auditoru effects⁽²⁾ (e.g hearing loss) and / or non-auditory effects⁽³⁻⁴⁾ (e.g activity interference) which are non-specific, i.e many other conditions at and off work may cause similar signs and symptoms. Cohen⁽⁵⁾ found a higher incidence of diagnosed medical problems & absenteeism among workers in a

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shows IRS, ADL and ALS in two groups sex for sick leaves, annual leaves and leaves without permission, while table 4 shows the distributions of diagnosed diseases in both groups by sexes.

Table 1: Noise levels in dB (A) of weaving department (Exposed group) & other workshop area (Reference group).

Dept. or workshop	Site of measurement	Noise level dB (A)
Expose group (Weaving)	- at the door	98-99
	- at middle of the hall	102-103
	- at end of the hall	94-95
	- at the machine	102-103
	- at the worker position	9-105
Reference group		
Winding	- at the middle of the hall	75-80
Finishing	- at the middle of the hall	70-80
Quality & control	- at the middle of the hall	65-75
Ind - Communication	- at the middle of the hall	60-70
Staff	- at the middle of the hall	60-70
Store	- at the middle of the hall	60-70

Table 2a (a) The prevalence rate (b) frequency distribution of all injuries for both groups.

(a)	EG			RG		
Sex	No. of workers	No. of accidents	Prev. rate	No. of workers	No. of accidents	Prev. rate
male	147	64	43.4	137	32	23.4
female	42	9	21.4	52	5	9.6
Total	189	73	38.6	189	37	19.8
(b)	EG		RG			
No. of injuries	No.	%	No.	%		
0	151	79.8	157	73.1		
1	20	10.6	24	12.7		
2	10	5.3	7	3.7		
3	8	4.3	1	0.5		
Total	189	100	189	100		

$$\chi^2 = 6.76 \quad d.f=3$$

$$P > 0.05$$

EG = expose group ; RG = Reference group.

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Table 3 The distribution of different types of absence indices for both groups by sex.

Absence Indices	male		Female	
	RG (147)	EG (137)	EG (42)	RG (52)
Sick leaves	1.8	1.6	1.6	1.6
IRS	6.2	4.0	4.7	3.5
ADL	3.4	2.4	3.0	2.2
ADS				
Annual leaves				
IRS	13.7	10.2	9.3	9.5
ADL	21.4	17.6	13.7	21.2
ALS	1.6	1.7	1.5	2.2
Leaves without permission				
IRS	2.1	0.9	1.7	0.5
ADL	3.5	1.2	2.2	1.1
ALS	1.6	1.4	1.3	2.2

IRS = Inception rate (spells) ; ADL = Average days lost ; ALS = average length of spell ; EG = Expose group ; RG = Reference group.

Table 4 The distribution of diagnosed diseases for both groups.

Recorded diagnoses	E G (189)		R G (189)	
	No.	Prev. %	No.	Prev. %
diseases of digestive system	52	27.5	55.0	29.1
diseases of respiratory system	51	27.0	83	44.9
diseases of musculo-skeletal system	43	22.8	49	25.9
Accidents	36	19.0	25	13.2
diseases of ENT	28	14.8	30	15.8
diseases of Genito-Urinary system	26	13.7	25	13.2
diseases of Eye	15	7.9	22	11.6
diseases of skin	11	5.8	9	4.8
diseases of Cardio-vascular system	6	3.2	11	5.8
mental disorders	6	3.2	5	2.6
unclassified dis	44	23.3	52	27.5

EG = Expose group ; RG = reference group Prev = Prevalence rate.

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DISCUSSION :

The results of the study shows that the prevalence rate of injuries in the EG was nearly twice as that in RG (Table 2a) for both sexes. Also the employees with two or three injuries (Table 2b) were more in the EG than in the RG. This finding agrees with that of Cohen⁽⁵⁾ and Rizk⁽⁷⁾ which could be explained by the fact that stress, general fatigue, visual fatigue, dizziness, are common symptoms among workers expose to high noise level, which make the employee not to pay attention to the areas of danger. For this reason, the errors of workers will be increased which in turn will lead to the increase in number of injuries, in addition to the environmental factors of work area. For the same reason, our results (Table 3) showed that the IRS and ADL in EG for annual leaves and leaves without permission were higher than that in the RG for both sexes; these results agrees with the finding of Cohen⁽⁵⁾. As for sick leaves, the IRS, ADL, and ALS were higher in EG than in the RG for both sexes; the increase of sick leaves in the EG is not the result of the organic disease but could be due to social or psychological problems. The stress symptom might be either the result of noise effects or aggravated in combination with noise exposure. As for the results of diagnosed medical diseases (Table 4), there were no significant difference between the two groups and for both sexes except for accidents where the prevalence was higher (19.0%) in the EG than in the RG (13.2%)>

The study concluded that the number of the recorded accidents in the EG was higher than that of the RG, and the noise plays a big role in increasing the number of days of absenteeism among EG than in RG. The study recommends a hearing conservation program for the workers, and advised the management to establish a uniform systematic method of recording & storing data relevant to injuries and sickness absence as it is an important item for the health and safety of workers.

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