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Health Status of Sewermen and Street Cleaning Workers

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Abstract

This comparative study aims to investigate the effect of exposure to sewer environment on health status of sewer men (N=87) compared to street cleaning workers (N=91). Sewermen were found to have significantly more skin and kidney complaints than street cleaning workers. In addition they had lower systolic blood pressure than the latter group. No difference was found between both groups as regards the Zung scale for depression; while sewer men showed significantly less mean anxiety score than the other group. Some recommendations were set up.

Introduction

TO work in a sewer is to enter a lonely world of inky darkness and silence. The atmosphere feels damp and has a faint sickly musty odor sometimes replaced by more penetrating smell such as that of tar paraffins, petrol, benzene, or ammonia [1]. To these deplorable working conditions are added the hazards of explosion, gassing, as well as the risks of physical injury and accidents and even drowning. Health is not merely the absence of disease or infirmity but also a state of physical and mental well being [2]. Work is a human objective as well as a means of earning a living. The continuous interaction between man and his physical and psychosocial working environment may influence his health either positively or negatively. Sewermen have been shown to have high frequency of physical problems including headache, dizziness, sore throat, skin irritation, diarrhea and elevated blood pressure [3,4]. The

street cleaning workers should be exposed to the less prevalent health problems of which the sewer men exposed. Accordingly we aim to investigate the effect of exposure to sewage work and street cleaning work on worker's health status.

Subjects and Methods

This study was carried out on the sewer men and street cleaning workers at Nasr city/cairo from March, 1993 to December, 1993. The total number of sewer men was 90 men (87 shared in this study and three were absent) and the street cleaning workers were 95 men (The sharing rate was 95.8% as 91 were conducted). The workers were interviewed with a designed questionnaire, it included socio-economic data (age-sex, education, marital status, family size, and income) and chronic health condition as respiratory ailments, heart diseases, kidney diseases, gastrointestinal tract disturbances (GIT), skin diseases

and diabetes mellitus. The blood pressure was also measured. In addition Zung scale for depression [5] and Middlesex test for anxiety symptoms [6] were applied. The two scales were previously translated and standardized, for Egypt. The Zung scale contains 20 items with minimal score of 20 and maximal 80. Those till to 40 points were considered normal, while those over 40 points had different degrees of depression. The Middlesex test for anxiety comprised 6 items with a minimal score of 3 and maximal of 12, a score up to 8 was considered normal while over 8 had anxiety.

Results

Table 1 illustrates some characteristics of sewage and street cleaning workers. No significant difference was found between them as regards marital status (72.4% and 75.8% respectively were married), education (18.4% and 15.4% respectively had education), percapita income and household size. The mean age was found significantly different between sewer men (39.3±6.8) and street cleaning workers (42.3±7.2).

The mean age was found significantly less (39.3 years) in sewer men than in street workers (42.3 years).

Table 2 shows the health conditions of sewer men and street workers. No significant difference was found between them in respect to diabetes mellitus, respiratory, heart, or GIT ailments. However significant difference was found between them as regards skin complaints (35.6% and 33% respectively) and kidney ailments (29.9% and 15.4% respectively). The mean diastolic blood pressure (90.8 & 89.5 mmHg) was more elevated among sewer men than street workers and the systolic (132.9 and 138.6 mmHg) was lower in sewer men than other group.

Table 3 demonstrates score of depression (Zung) and anxiety (Middlesex) between both groups. No significant difference existed between sewage and street workers concerning depression, however the severe depression was less prevalent among the sewer men than the street workers. Also scores for anxiety were significantly lower in sewer men than in street workers.

Table (1): Some Characteristics of Sewer men and Street Cleaning Workers.

	Sewer men workers		Street cl. w.		Signif. test	P
	No. = 87	%	No. = 91	%		
Mean age ± SD (years)	39.3 ± 6.8		39.3 ± 6.8		t = 2.93 df = 2	0.00 0.69
<i>Marital status:</i>					chi-sq-	
Married	63	72.4	69	75.8	0.75	
Single	10	11.5	7	7.7		
Widowed / divorced	14	16.1	15	16.5		
<i>Education:</i>					df = 2	0.84
Illiterate	42	48.3	44	48.3	chi-sq=	
Read and write	29	33.3	33	36.3	0.35	
Primary and prep	16	18.4	14	15.4		
<i>Income per cap:</i>					df = 2	0.39
-LE 20	59	67.8	55	60.4	chi-sq=	
LE 20-30	23	26.4	26	28.6	1.9	
Over LE 30	5	5.8	10	11.0		
<i>Household size:</i>					df = 2	0.52
-5 persons	31	35.6	30	33.3	chi-sq=	
6-7	45	51.7	43	47.8	1.29	
Over 7 persone	11	12.6	17	18.9		

Table (2): Reported Health Condition of Sewermen and Street Cleaning Workers.

Disease within the last month	Sewermen W.		Street cl. w.		Signif. test	<i>p</i>
	No. = 87	%	No. = 91	%		
<i>Skin:</i>					Yates	0.00
Yes	31	35.6	3	3.3	chi-sq=	
No	56	64.4	88	96.7	28.04	
<i>Kidney:</i>					chi-sq=	0.02
Yes	26	29.9	14	15.4	5.34	
No	61	70.1	77	84.6		
<i>Respiratory:</i>					chi-sq=	0.15
Yes	22	25.3	15	16.5	2.09	
No	65	74.7	76	83.5		
<i>Heart:</i>					chi-sq=	0.44
Yeas	14	16.1	11	12.1	0.59	
No	73	83.9	80	87.9		
<i>G.I.T.:</i>					chi-sq=	0.57
Yes	12	13.8	10	11.0	0.32	
No	75	86.2	81	89.0		
<i>Diabetes mell.:</i>					chi-sq=	0.47
Yes	6	6.9	9	9.9	0.52	
No	81	93.1	82	90.1		
Mean systolic blood pressure ± SD (mmHg)	132.85 ± 19.6		138.57±22.6		t = 1.79	0.04
Mean diastolic blood pressure ± SD (mmHg)	90.86 ± 3.9		89.45 ± 5.4		t = 1.99	0.02

Table (3): Some Psychological Trouble According to Zung Scale for (Depression) and Middlesex Test for Anxiety.

Some psychological trouble	Sewermen W.		Street cl. W.		Signif. test	p
	No. = 87	100%	No. = 91	100%		
<i>Zung scale for depression:</i>						0.5
Normal	8	9.2	7	7.7	Chi-sq= 2.15 df = 3	
Mild	53	60.9	52	57.1		
Moderate	18	20.7	17	18.7		
Severe	8	9.2	15	16.5		
Mean Zung scal ± SD	32.1 ± 13.0		31.7 ± 12.7		t = 0.19 chi-sq = 1.71	0.42 0.43
<i>Middlesex for anxiety:</i>						
Normal	58	66.7	54	59.3	df = 2	
Mild	23	26.4	26	28.6		
Moderat / sever	6	6.9	11	12.1		
Mean anxiety ± SD	7.1 ± 2.1		7.6 ± 2.2		t = 1.71	0.04

Discussion

Health hazards of sewer could show us in small scale what a community might face in case their sewage system is not functioning. Many types of occupational dermatites occur in sewermen depending on chemical irritant in the particular sewer [7]. Also in this study sewage workers were found to have significantly more skin ailments than street workers. Ilo [7] also reports an elevation of blood pressure in sewermen which is in conjunction with our results for mean diastolic blood pressure (90.86) while the mean systolic blood pressure was lower in sewermen than street workers (132.85 and 138.57 respectively); this could be related to high psychological stress of the street workers than the sewermen, however, the underground work of the latter group could affect the diastolic blood pressure of them. In addition it was found that more of sewermen had kidney

problems than the street workers. Although Lundholm and Rylander [8] reported that sewage workers had more gastrointestinal symptoms than the other group. This was not found in this study, probably due to the unawareness of both workers groups and their nutritional hygienic practices. An Egyptian study in an industrial community in Cairo in 1985 [9] revealed that 11.6% of patients in general practice had depression and 8.8% had neurosis. This was found to have a relation to job. Also, Miskriky et al. [10] found that sewermen in Portsaid had lower anxiety score than the street cleaning workers while no significant differences were found in relation to depression, contradictory results revealed that the sewermen were less exposed to depression than the street cleaning workers as the latter group could be exposed to sights of others who considered the work as shaimful. So, we stress on the importance of preemployment examination, periodic examination of

workers with screening tests for blood pressure, simple psychological tests to early diagnosis and early treatment of any health hazards to prevent the diseases as well as the occurrence of complications.

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