

## Health problems among Colombo Municipal Council workers

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### Abstract

#### *Objectives*

1. To identify occupationally related and non-related health problems among sewage / drainage cleaners, garbage collectors, and truck drivers in the context of physical, mental and social health and to compare their distribution among the different groups.
2. To identify the health hazards they are exposed to in the course of their work and to describe the available preventive methods.

### Method

A descriptive cross sectional study was conducted in four centres in the Colombo Municipal Council-District 4 area. An interviewer administered questionnaire was given to 114 male drainage/sewage collectors (DSC), solid waste collectors (SWC) and truck drivers (TD).

### Results

The main health problems were back pain (38% SWC, 63% DSC, 25% TD) and traumatic injuries (32% each in SWC and DSC). Other health problems recognized were itchy rashes, chronic cough and shoulder pain. There was a lower prevalence of non - occupationally related diseases in the study group. Alcohol consumption was higher among the solid waste collectors (72.3%) than the drainage cleaners (46.8%) and the prevalence of smoking was higher among drainage cleaners (70.2%) than the solid waste collectors (63.8%). Except for the difference in the occurrence of shoulder pain ( $p = 0.04$ ), which was greater in sewage/drainage cleaners than other workers, the differences of symptoms and diseases among the 3 groups were not statistically significant ( $p > 0.05$ ). A significant number of SWC and DSC reported cuts (74% and 49%), needle pricks (42% and 49%) and exposure to toxins (6% and 4%). Gloves and boots were available for 44% of SWC and 32% of SDC, but usage was less than 25% in both groups.

### Conclusion

Back pain, traumatic injuries, itchy rash, and cough were the common health problems among solid waste collectors and drainage cleaners. Needle prick injuries, cuts and exposure to toxins were the major health hazards. The availability and the use of safety equipment were unsatisfactory.

### Introduction

Garbage collection and cleaning of drains and sewers are professions which have an adverse social perception, possibly due to the inherent nature of the work. The level of hygiene and health status of such workers is a concern that is widely debated, but only a few studies or programs have been conducted to assess and improve the health status of such workers.

Therefore a study to determine the health problems and health hazards of such workers is timely. This study was designed to identify the occupationally related and non-related health problems among sewage / drainage cleaners, garbage collectors, and truck drivers in the context of physical, mental and social health and to compare their distribution among the different groups. It also aims to identify health hazards they were exposed to in the course of their work and to describe the available preventive methods.

### Method

A descriptive cross-sectional study was carried out in four centres in the Colombo Municipal Council (MC) District 4 area. The study population consisted of sewage/drainage cleaners (DSC), solid waste collectors (SWC) and truck drivers (TD) of the area. A total of a hundred and fourteen workers (47 DSC, 47 SWC and 20 TD) participated in the study. The total population of the DSC and TD and a randomly selected sample of SWC participated in the study. The study instrument was a structured, interviewer administered questionnaire in Sinhalese, which

was pre-tested on a pilot sample of 15 workers at the Kirulapone solid waste depot.

## Results

The study sample consisted of male workers with ages ranging from 30-39(14%), 40-49(65%) and 50-59(21%). All workers had received schooling with the majority being educated up to year 9. None of the workers had received higher education. The duration of service was more than 15 years in 80%. The monthly salary ranged from Rs.12,000 to Rs.18,000.

## Occupation related health problems

The most common problems among the 47 solid waste collectors interviewed were short to long term back pain(18), occupationally related trauma (15), chronic cough (8), and eczema(8). Of the 47 DSC interviewed, 25 suffered from short to long-term back pain, 15 from occupationally related trauma, 15 from eczema and 13 from chronic cough. The commonest health problems among the 20 TD interviewed were short to long-term back pain(5), rhinitis(4), chronic cough(4) and sweat rash(4). Findings are summarised in table 1.

*Table 1: Occupation related health problems among the workers.*

Disease/ symptom	Solid waste collectors n = 47		Drainage cleaners n = 47		Truck drivers n = 20	
	No. of workers	treatment taken	No. of workers	treatment taken	No. of workers	treatment taken
Back pain	18 (38.3%)	8 (44.4%)	25 (53%)	20 (66.6%)	5 (25%)	5 (100%)
Trauma	15 (32%)	13 (86.6%)	15 (32%)	10 (66%)	2 (10%)	2 (100%)
Chronic cough	8 (17%)	5 (62%)	13 (27%)	10 (77%)	4 (20%)	4 (100%)
Itchy rashes	8 (17%)	7 (87.5%)	15 (32%)	15 (100%)	1 (5%)	1 (100%)
Rhinitis	4 (8.5%)	0	8 (17%)	6 (75%)	4 (20%)	2 (50%)
Nail disease	2 (4.2%)	1 (50%)	3(6.37%)	2 (66%)	0	0
Folliculitis/ Cellulitis	2 (4.2%)	2 (100%)	2(4.25%)	2 (100%)	0	0
Shoulder pain	0	0	10 (21%)	2 (21%)	2 (10%)	2 (100%)
Sweat rash	20 (4.2%)	0	5 (10.6%)	2 (40%)	4 (20%)	2 (50%)
Urticaria	1 (2.1%)	0	5 (10.6%)	5 (100%)	0	0

SDC had a statistically higher prevalence of shoulder pain than others (p=0.04). The difference in prevalence of itchy rashes (p=0.08), chronic cough (p=0.448), trauma (p=0.141) and back pain (p=0.08) among 3 groups of workers was not statistically significant.

## Non-occupation related health problems

Prevalence of diabetes mellitus and hypertension in SWC was 1/47 (2.12%) and 0/47; in DSC 3/47 (6.38%) and 3/47 (6.38%); and in garbage truck drivers 2/20 (10.28%), and 2/20 (10.28%). All were on regular treatment.

Tuberculosis, ischemic heart disease or other chronic diseases were not reported.

## Social and psychological health problems

Table 2 depicts the social/psychological health problems among the study population. Alcohol consumption and smoking were the main problems identified. Alcohol consumption was seen in 32 SWC, 22 DSC and 12 TD with a mean of 2.11, 1, 0.5 bottles per week respectively. Smoking was seen in 29 SWC, 33 SDC, and 13 TD with a mean of 9.3, 11.7, and 8.7 cigarettes per day respectively. There was no statistically significant difference in the patterns of consumption of alcohol and smoking among the different groups.

*Table 2: Social and psychological health problems*

Health problem	Solid waste collectors n = 47	Drainage/sewage cleaners n = 47	Garbage truck driver n = 20
Alcohol consumption	32 (72.3%)	22 (46.8%)	12 (60.4%)
Smoking	29 (63.8%)	33 (70.2%)	13 (65.1%)
Gambling	4 (8.5%)	2 (4.2%)	0
Betel chewing	1 (2.1%)	5 (10.6%)	0
Family problems	1 (2.1%)	0	0

*Job satisfaction*

The job satisfaction as perceived by the workers is shown in Table 3. The majority was satisfied with their current line of work (42 SWC, 37 DSC and 18 TD) as it provided them with a reasonable, steady income (including good tips from

residents), a pension system and good working hours. Forty SWC, forty DSC and twenty TD stated that there was no stress associated with the work due to well-established employer- employee relationship, good co-worker relationship and teamwork.

*Table 3: Job satisfaction among the workers.*

Opinion		Solid waste	Drainage/sewage	Garbage truck
		collectors	cleaners	driver
Satisfied with current work	Agree	42 (91.4%)	37 (78.7%)	18 (90%)
	Disagree	5 (8.6%)	10 (21.3%)	2 (10%)
No stresses with work	Agree	40 (85.1%)	40 (85.1%)	20 (100%)
	Disagree	7 (14.9%)	7 (14.9%)	0

*Exposure to health hazards*

The main health hazards reported were cut injuries (SWC 35, DSC 23, TD 7), needle /nail prick injuries (SWC 20, DSC 23, TD 2) and contact with toxins/irritants (SWC 3, DSC 2)(table 4). Sixty three percent of SWC and 65% of DSC have received treatment for their cut injuries. However, only 40% of SWC and 34% of DSC had received treatment for the needle prick injuries. All TD who experienced needle prick and cut injuries sought treatment.

Exposure to needle prick injuries was significantly higher in DSC than other groups (p=0.01). A significantly higher incidence of cut injuries was noted among SWC as compared to other groups (p = 0.004).

Other types of trauma reported included falling from trucks, road traffic accidents, being run over by their own trucks and dog bites.

Table 4: Exposure to health hazards

Health hazard	Solid waste collectors n = 47	Drainage/sewage cleaners n = 47	Garbage truck driver n = 20
Needle/ nail prick	20 (42.5%)	23 ( 49%)	2 (10.2%)
Cuts	35 (74.4%)	23 (49%)	7 (33.8%)
Contact with toxins/irritants	3 (6.3%)	2 (4.2%)	0

Table 5: Availability and utilization of safety measures by the workers

Safety measure	Solid waste collectors	Drainage/sewage cleaners
Gloves Availability	18 (40%)	15 (31%)
Usage	10 (21%)	10 (21%)
Boots Availability	20 (44%)	15 (31%)
Usage	12 (25%)	10 (21%)

#### Safety measures

Only SWC and DSC had access to safety measures (Table 5). Eighteen SWC and 15 DSC were provided with gloves although only 10 workers of each group utilized them. Twenty SWC and 15 DSC had been provided with boots. However the utilization was poor. The reasons given for inadequate usage of available equipment were, the fact that gloves and boots resulted in increased perspiration that caused discomfort in work and that they were not accustomed to work wearing them. Safety helmets, goggles and facemasks were not available and the drivers had no safety equipment.

#### Discussion

The prevalence of back pain and trauma was high in all three groups of workers probably due to the fact that they were engaged in hard laborious work involving sharp heavy metal equipment. As described by Tuller (1), similar to other professions that require physical labour, garbage collecting can put tremendous strain on the body.

The prevalence of itchy rashes was high probably due to continuous contact with garbage, stagnant water and irritants without adequate skin

protection. Prevalence of chronic cough and allergic rhinitis could be high due to the fact that they are exposed to irritant gases, fumes and weather changes during their work in the fields. In a study by Mustajbegovic *et al* on respiratory function in street cleaners and garbage collectors, the prevalence of most of the chronic respiratory symptoms was statistically higher among the sanitation workers than the controls (2). This was reiterated by Tuller in his monograph, where he states that garbage collectors are many more times likely to suffer allergies, infections, and respiratory problems (1).

The percentage seeking treatment for their health problems was low. This may be due to reasons such as lack of knowledge about the necessity of treatment, lack of concern and previous similar experiences managed without treatment. All workers with chronic diseases were on regular treatment, perhaps because of advice received by their doctors and the media.

Alcohol consumption and smoking were the main psycho-social problems identified among the workers. Most employees admitted to increasing or starting these habits after joining the current line

of work. This may be to overcome the unpleasantness (smell, sight etc.) of garbage and due to the tiring nature of work, increased availability of these substances and influence of other workers.

The significantly high prevalence of health hazards may be due to the lack of concern of the public regarding the safety of garbage worker by discarding harmful objects without necessary precautions. Tuller further states that the risk of needle stick injuries and exposure to infectious diseases is a particular concern on routes near medical facilities (1).

The workers are also responsible for these accidents as many do not use the available safety measures. The authorities too have the responsibility of supplying standard safety equipment to the employees in adequate quantities.

### **Conclusions and recommendations**

At first glance, garbage collecting may not seem extremely hazardous but in reality it comprises of many health problems.

We recommend that health education programs should be conducted on a regular basis for both the workers and the relevant authorities regarding occupational health diseases and health hazards, and their prevention with emphasis on the advantage of prevention over cure.

Hospital should use appropriate containers for the disposal of sharps. Special bags/tags or signs should be used for them. Hospitals and house holders must take extra care when discarding sharp objects, toxins and irritants into garbage so as to prevent injury to others.

Workers should be provided with and encouraged to use safety equipment such as slip-resistant footwear to prevent falls, nose-and-mouth masks to prevent respiratory problems and heavy gloves during work in the field.

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### **References**

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