

Prevalence of Occupational Health Problems among Employees Working at a Suburban Sanitary Land Filling Waste Management Site in Sri Lanka.

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Abstract –

Occupational health problems are common among the employees of waste management sites.

The objectives of this study were to assess the prevalence of occupational health problems, socio demographic data and associated factors among the employees. All the employees underwent general medical examination and further details were collected using an interviewer administered questionnaire. Majority were males (87.8%). 58.5% were educated up to Ordinary Level. 65.9% of participants use alcohol and 51.2% are smokers. The common respiratory problems were cough (68.3%) and shortness of breath (43.9%). Gastritis (26.8%) and diarrhoea (22%) were the common gastrointestinal problems. Common musculoskeletal problems were backache (56.1%) and knee pain (41.6%). 61% of employees had normal BMI. 14.6% of participants had Diabetes Mellitus and 12.2% had Hypertension.

A majority use protective equipments such as boots (70.7%), helmets (61.0%), gloves (58.5%) and masks (46.3%). 36.6% of them have got injured at the workplace at least once while working. 61% were vaccinated and 73.2% had participated at annual health clinics. 90.2% have their meals at the working place. We noted that there is high prevalence of occupational health problems related to respiratory, gastrointestinal and musculoskeletal systems among employees.

Key Words: Employees, Occupational, Health Problems

INTRODUCTION

“An occupational disease is not characterized merely by the disease itself, but by a combination of a disease and an exposure, as well as an association between these two.” (WHO, 1999).

Waste management has become a huge problem in the modern world. It causes many occupational health problems among employees involved in waste management. There’s a big impact on health of residents who live closer to sanitary landfilling waste disposal sites.

This is a huge environmental problem and has adverse effects on human health.

According to the World Health Organization (WHO) guidelines, there should be proper equipment for the

safety of the workers who are involved in waste management.

But the problem is whether the employees comply with the policies.

When considering solid waste management strategy in Sri Lanka, “Karadiyana” is extending to an area of 25 acres and

collecting about 500MT of garbage daily from Maharagama, Dahiwala, Mt.Lavinia, Sri JayewardenapuraKotte, Homagama, Kesbewa, Boralesgamuwa and Moratuwa Municipal Council areas using the system known as "Sanitary Landfilling". There is a staff of 41 employees comprising of labourers, rag pickers and recycling assistants, machine operators, drivers and the rest in management and security service. Rag pickers separate the plastic, tin, iron, glass, copper and degradable waste. The recyclable materials such as glass, steel and plastic are sold to buyers. They have been given uniforms, boots, helmets, masks, gloves and goggles by the government with the intention of minimizing their exposure to garbage and vaccines are given free of charge to prevent communicable diseases among them (Eg: Hepatitis B and Tetanus). But they are reluctant to use those resources owing to ignorance.

Apart from the above factors their education level, knowledge regarding such diseases and its prevention, their own values regarding health and social stigma will be directly affecting their health. And also their socio – economic status increase the risk of having such health problems.

There are only few studies on this subject. With this background, this study was carried out to assess the varied occupational health problems among employees at Karadiyana sanitary land filling waste disposal site.

Objectives

To determine the prevalence of occupational health problems among employees working at Karadiyana sanitary landfilling waste management site.

1.To identify the common types of occupational health problems.

2.To determine the prevalence of occupational health problems and their associated factor.

3.To describe the socioeconomic and demographic characteristics of the employees.

METHODOLOGY

This study was conducted at Karadiyana sanitary landfilling waste management site and focused on all the employees who were working at Karadiyana sanitary landfilling waste management site during the period of data collection (November,2015).

This was a descriptive cross - sectional study

Study sample

The sample size was calculated using the following formula

$$n = \frac{Z^2 p (1-p)}{d^2}$$

According to the formula sample size was 384. Although there were only around 41 workers employed at Karadiyana sanitary landfilling waste management site at that time. Therefore all employees were selected as the study sample.

An interviewer-guided questionnaire was used.

Data collection method

Ethical approval from the Ethical Review Committee of the Faculty of Medical Sciences, University of Sri Jayewardenepura was obtained. Permission to conduct the research study was obtained from Waste Management Authority (Western Province) and management of the Karadiyana Waste Management Facility.

Written Informed Consent was taken after explaining the study with its risks and benefits by using information sheet

and consent form. The interviewer assisted questionnaire was administered to those who consent to participate, without any disturbance to their daily activities. The response rate was 100%.

Data analysis

Data were analyzed using descriptive statistics including percentages and statistical significance studies. Statistical Package for the Social sciences (SPSS 15.0 Version) software was used for the analysis. Fisher’s exact test was used for comparison between groups as appropriate.

Monthly Income from the salary		
Rs.10,000 – 19,999		
Rs.20,000 – 29,999	02	4.9
Rs.30,000 – 39,999	15	36.6
≥ Rs.40,000	21	51.2
	03	7.3

There were 41 participants and the response rate of 100% (41/41)

Table 1 shows the distribution of the study participants by socio-demographic characteristics.

Among employees who had participated in the study the majority were male (87.8%). 46.3% were in the age group

RESULTS AND DISCUSSION

Table 1: Socio-economic and Demographic Characteristics

Characteristic	Frequency (n=41)	Percentage (%)
Gender		
Male	36	87.8
Female	05	12.2
Age Category		
18 – 29 years	07	17.1
30 – 49 years	19	46.3
50 – 64 years	15	36.6
(All are in between 18 – 64 years)		
Civil Status		
Married		
Unmarried	35	85.4
	06	14.6
Education		
< grade 5		
Grade 5 to O/L s	06	14.6
O/L to A/L s	24	58.6
> A/L s	08	19.5
	03	7.3

between 30-49 years and 36.6% were in age group between 50-64 years. Out of the total participants 85.4% were married at the time of data collection. Majority had educated up to O/L s (58.5%). Over half of the participants (51.2%) earn between Rs.30, 000/= to Rs.39,999/= per month.

Table 2: The prevalence of the most common types of occupational health problems

Health Problem	Frequency (n=41)	Percentage (%)
Respiratory Problems		
Cough (dry/phlegm)	28	68.3
Shortness of breathing	18	43.9
Chest tightness	13	31.7
Allergic rhinitis	10	24.4
Wheeze/Bronchial Asthma	07	17.1
Gastrointestinal Problems		
Gastritis(burning epigastric)	11	26.8

pain)		
Diarrhea	09	22.0
Vomiting	09	22.0
Hemorrhoids	08	19.5
Fullness(flatulence)	08	19.5

Musculoskeletal Problems

Back pain	23	56.1
Knee pain	17	41.6
Shoulder pain	15	36.6
Muscle cramps	09	22.0
Neck pain	08	19.5
Leg pain	07	17.1
Myalgia	04	9.8

Other Problems

Headache	28	68.3
Vision Problems	19	46.3
Fever	14	34.1
Skin diseases	12	29.3
Dizziness	11	26.8
Fatigue	11	26.8
Cut injuries	10	24.4
Dental problems	10	24.4
Urinary problems	09	22.0
Infected ulcers	09	22.0
Skin allergies	08	19.5
Eye allergies	08	19.5
Abdominal pain	06	14.6
Pimples	06	14.6
Mouth ulcers	04	9.8
Dry skin	03	7.3

Table 2 shows the distribution of prevalence of most common health problems experienced among participants within three months and at the time of data collection.

Cough (dry/phlegm) was the most common respiratory problem (68.3%). Among study participants the most common type of gastrointestinal problem was Gastritis (26.8%). Back pain (56.1%) was the commonest musculoskeletal problem. From the other problems Headache (68.3%), Vision problems (46.3%), and Fever (34.1%) were the common complains.

Table 3: Physical Examination

Findings	Frequency (n=41)	Percentage (%)
Blood pressure		
>140/90 mmHg	18	43.9
<140/90 mmHg	23	56.1
BMI		
<18 – under weight	06	14.6
18 – 24.9 – normal	25	61.0
25–29.9–over weight	09	22.0
>30 – obese	01	2.4
Weight		
≤ 50 kg	14	34.1
≥ 51 kg	27	65.9

Above Table 3 shows the findings of the physical examination.

Considering physical examination findings, at the time of data collection considerable number of participants (43.9%) had a Blood Pressure reading above 140/90 mmHg. Majority were in the normal BMI level (61.0%).

Table 4: Psychosocial Aspects and Health Habits

Factor	Frequency (n=41)	Percentage (%)
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Post		
Management	09	22.0
Operators/ Drivers	06	14.6
Laborers	23	56.1
Police/Security	03	7.3
Period of service		
1-5 years	19	46.3
6-10 years	06	14.6
>11 years	16	39.0
Health Habits		
Smoking	21	51.2
Alcohol	27	65.9
Beetle chewing	20	48.8
Having meals during work		
Yes	37	90.2
No	04	9.8
Vaccinations		
Yes	25	61.0
No	16	39.0
Attending for Health Clinics		
Yes	30	73.2
No	11	26.8

Majority of the participants were labourers (56.1%). Considering the period of service 46.3% of participants were working over eleven (11) years. Among participants 65.9% had the habit of using Alcohol and 51.2% were smokers. Most of the participants (65.9%) use to take their meals during the working period at a separate place in the site. Over half of the participants (61.0%) had been vaccinated and (73.2%) had participated at health clinics which are conducted annually.

Table 5: Use of protective equipments

Findings	Frequency (n=41)	Percentage (%)
Use of protective equipment		
Yes		
No	30	73.2
	11	26.8
Use of		
Masks		
Helmet	19	46.3
Boots	25	61.0
Gloves	29	70.7
Goggles	24	58.5
	10	24.4

According to the above table over half of the participants (73.2%) were using protective equipments. They have mostly used Boots (70.7%), Helmets (61.0%) and Gloves (58.5%).

Table 6: Exposure

Findings	Frequency (n=41)	Percentage (%)
Exposure		
Blood	17	41.5
Stool	21	51.2
Fumes	31	75.6
Mosquitoes	41	100.0
Stray animals	34	82.9
Flies	41	100.0
Sharp	23	50.1
Prolong sitting/bend or standing		
Heavy lifting	34	82.9
Noise	22	53.7
Dust	39	95.1
Sun rays	41	100.0
	35	85.4

All the participants (100%) had been exposed to the Mosquitoes, Flies, and Dust. 95.1% of participants had been exposed to the Noise, 85.4% to the Sun rays, 82.9% to the Stray animals, and Prolong sitting/ bending / standing.

Table 7: Injuries

Figure.1.The relationship between age and vision problems

Findings	Frequency (n=41)	Percentage (%)
Injuries during working		
Yes		
No	15	36.6
	26	63.4
Type of injury		
Cut injuries		
Sharp injuries	06	40.0
Infections	03	20.0
Falls	02	13.3
Contusions	02	13.3
	02	13.3

According to the above table 36.6% of the participants had been injured while working in that work place. Among them the most common type was cut injuries (40.0%).

Table 8: Health history

Findings	Frequency (n=41)	Percentage (%)
Chronic health problems		
Diabetes Mellitus		
Yes		
No	06	14.6
Don't know	28	68.3
Hypertension		
Yes	07	17.1
No	05	12.2
Don't know	26	63.4
Epilepsy	10	24.4
Cancer	01	2.4
Under Treatments	01	2.4
	08	19.5

Considering about the Chronic health problems of the participants in this study (14.6%) of the participants had been suffering from Diabetes, (12.2%) from Hypertension and 19.5% had been taking continuous treatment for their chronic diseases.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.930(b)	1	.008		
Continuity Correction(a)	5.324	1	.021		
Likelihood Ratio	7.124	1	.008		
Fisher's Exact Test				.011	.010
Linear-by-Linear Association	6.761	1	.009		
N of Valid Cases	41				

P value = 0.011 shows that there's a significant relationship between aging and having vision problems.

Figure. 2. The relationship between age and Diabetes Mellitus

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.621(b)	1	.010		
Continuity Correction(a)	4.471	1	.034		
Likelihood Ratio	6.565	1	.010		
Fisher's Exact Test				.018	.018
Linear-by-Linear Association	6.459	1	.011		
N of Valid Cases	41				

P value = 0.018 shows that there's a significant relationship between aging and having Diabetes Mellitus.

Figure 3. The relationship between age and having Hypertension

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.870(b)	1	.002		
Continuity Correction(a)	7.003	1	.008		
Likelihood Ratio	11.310	1	.001		
Fisher's Exact Test				.004	.004
Linear-by-Linear	9.630	1	.002		
Association					
N of Valid Cases	41				

P value = 0.004 shows that there's a significant relationship between aging and having Hypertension.

Here all the employees have been categorized as ≤50 years and ≥51 years.

Figure 4. The relationship between employees and risk for having cut injuries

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10.351(b)	1	.001		
Continuity Correction(a)	8.127	1	.004		
Likelihood Ratio	14.062	1	.000		
Fisher's Exact Test				.002	.001
Linear-by-Linear	10.098	1	.001		
Association					
N of Valid Cases	41				

According to the P value (P=0.002) it is obvious that labourers are at risk of having cut injuries.

Figure 5. The relationship between employees and been injured at work

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.975(b)	1	.003		
Continuity Correction(a)	7.124	1	.008		
Likelihood Ratio	9.800	1	.002		
Fisher's Exact Test				.004	.003
Linear-by-Linear	8.756	1	.003		
Association					
N of Valid Cases	41				

According to the P value (P=0.004) it is obvious that labourers are at risk of injured while working.

Figure 6. The relationship between employees and knee pain

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.129(b)	1	.004		
Continuity Correction(a)	6.410	1	.011		
Likelihood Ratio	8.628	1	.003		
Fisher's Exact Test				.010	.005
Linear-by-Linear	7.931	1	.005		
Association					
N of Valid Cases	41				

It has been shown according to the above figures that labourers are at risk of having Knee pain.

P value is 0.01

Figure 7. The relationship between employees and having leg pain

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.606(b)	1	.010		
Continuity Correction(a)	4.631	1	.031		
Likelihood Ratio	9.210	1	.002		
Fisher's Exact Test				.012	.011
Linear-by-Linear Association	6.445	1	.011		
N of Valid Cases	41				

According to the P value of the Fisher's Exact Test (P=0.012) it has been proved that labourers are at risk of having leg pain.

Figure 8. The relationship between having a high blood pressure and dizziness

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.072(b)	1	.024		
Continuity Correction(a)	3.598	1	.058		
Likelihood Ratio	5.145	1	.023		
Fisher's Exact Test				.036	.029
Linear-by-Linear Association	4.948	1	.026		
N of Valid Cases	41				

It has been shown according to the above P value of the Fisher's Exact Test (P=0.036) that there is a risk of having dizziness when having high blood pressure among employees.

Figure 9. The relationship between heavy lifting and back pain

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.331(b)	1	.021		
Continuity Correction(a)	3.973	1	.046		
Likelihood Ratio	5.437	1	.020		
Fisher's Exact Test				.030	.023
Linear-by-Linear Association	5.201	1	.023		
N of Valid Cases	41				

It has been shown from above figures that there's an association between heavy lifting and back pain. P value of the Fisher's Exact Test is 0.03.

Discussion

In this study all the employees (41) had been taken as the sample and the response rate was 100%. Majority of the participants were males (87.8%) and females were (12.2%) only. The mean age was 42.66±12.6 years (18-64 years), 63.4% below 50 years and 36.6% above 50 years old. 39.0% of participants had a more than 11 years of experience in this job. All were full time workers, majority had been working 6 days/week. Over half of the participants (51.2%) had a monthly income of Rs.30, 000/= to Rs.39, 999/=.

Out of the participants (56.1%) were laborers, others were management workers, security, police officers, technical officers and drivers. Majority of the participants 85.4% were currently married and (58.5%) of participants had an education up to Ordinary Level.

Another study had shown their results in the same way. "The mean age was 42.5 ± 7.2 years (24-65years) with average experience of 4.8 ± 0.7 years and 96% had more than 4-year service." (Jayakrishnan, Jeeja, and Bhaskar, 2013).

According to a research done in Alexandria, Egypt, 99.4% was male and 0.6% was female from the study population. (El-Wahab, et al., 2014).

Another research revealed that all participants were male, Mean age was 30.3, mean period of employment was 5.5 years, 53% of the participants were not educated, 55% of them were married and 45% were still single. (Mehrdad, R., et al., 2008).

It has been revealed in the current study that the most common health problem was respiratory problems. Cough (68.3%), Shortness of breathing (43.9%), chest tightness (31.7%), and Allergic rhinitis (24.4%) were the commonest among respiratory problems. Headache (68.3%) was also a common complain of the participants. Other than that considerable number of participants had been suffering from vision problems (46.3%). Not only that (34.1%) of the participants had been suffering from fever during a period of 3 months. Commonest gastrointestinal problem was Gastritis (26.8%). Other than that Diarrhea (22.0%), Vomiting (22.0%), hemorrhoids (19.5%), and fullness (19.5%) were also found. Most common types of musculoskeletal problems were back pain (56.1%), knee pain (41.6%), and shoulder pain (36.6%). All the health

problems occurred either during the study time or three months recall period.

Many studies done before shows the prevalence of occupational health problems among employees who had a close relationship with waste materials.

21% of respiratory diseases including infections and allergies, 33.2% with eye infections, 36.4% with skin infections, 47% with nail infections, 33.5% with genitourinary problems were found as observed morbidity, other than that water borne diseases like Jaundice, Leptospirosis, Typhoid, Diarrhoea and Vector borne diseases such as Malaria, Dengue. Musculoskeletal problems such as low back pain, neck pain, joint pains (elbow, ankle, knee, wrist, shoulder) were identified during physical examination. (Jayakrishnan, Jeeja, and Bhaskar, 2013). According to the findings of another study high prevalence of musculoskeletal problems, pulmonary diseases, Organic Dust Toxic Syndrome symptoms, gastrointestinal problems and irritation of the eye, skin and mucous membranes. (Poulsen, et al., 1995)

"The most frequently reported respiratory symptoms among domestic waste collectors were shortness of breath 40 (42.1%), followed by chest tightness 35 (36.8%), morning phlegm 31 (32.6%) and morning cough 19 (20%). This was slightly different in its distribution among office workers where chest tightness 30 (31.3%) was the most common symptom and followed by shortness of breath 26 (27.1%), morning phlegm 16 (16.7%) and morning cough 3 (3.1%)". (Ibrahim, et al., 2012)

According to the findings of another study it had revealed Cough (29.1%), Fatigue (27.5%), Headache (21.1%), Fever (9.5%), Malaise (8.9%), Night sweating (3.5%), Anorexia (6.9%), Dizziness (0.6%), Diarrohea (24.5%), Vomiting

(10.9%), Musculoskeletal complains (17.3%), Upper Respiratory Tract Infections (2.3%), Dysuria/Pyuria/Renal colic(4.2%), Dyspnea (2.6%), Hemoptysis (0.9%), Weight loss (3.5%), Tinnitus (0.9%), Acne and Scalpel furunculosis (1.2%), Pediculosis (1.4%), Eye infections (0.9%), Mouth ulcers (0.6%), 1.2% Rhonchi and Wheeze on auscultation, Abdominal distention (1.45%), Hepatomegaly (2.9%), Splenomegaly (1.7%), Abdominal tenderness (5.5%) were reported. And also fungal infections were frequent. (Scabies, *tineacorporis*, onchomycosis, Maculopapular rash, Eczema, Pruritus and Infected wounds in hands and legs. (El-Wahab, et al., 2014).

There are some differences between the results and findings of the current study and previous studies. It may be due to that this current study had a small sample than other studies. In our study we considered only the health problems occurring during the study time and 3 months recall period. It may also be the reason for the differences. This study population was provided with protective equipment by the government. And also they were given free vaccinations and access to health clinics at least once a year.

It has been revealed that in the current study by physical examination that considerable number of participants (43.9%) had a blood pressure reading over 140/90 mmHg which is considered as above normal. (61.0%) were in normal BMI, (22.0%) of participants were in overweight and (14.6%) were in underweight and only (2.4%) were in obese. Over half of the participants (65.9%) were in above 51kg in weight at the time of data collection.

But in a study had been one in Malaysia, data collection was done by using an interview guided questionnaire and general physical examination and specific examination

were done by inspection, palpation, percussion, and auscultation. (Ibrahim, et al., 2012)

Results in the current study revealed that over half of the participants (73.2%) had used protective equipment such as Boots (70.7%), Helmets (61.0%), Gloves (58.5%), and Masks (46.3%).

But another study done in Kenya assessing the waste pickers and their health found that waste workers are not managed well and they wore no protective wear. And also they were not provided with washing facilities before they go home. Inadequate education on hygiene and health among workers will increase the situation. (Mugo, et al., 2015).

Apart from that another study done in Alexandria, Egypt, had been shown 66.2% were using protective wearing. 21.7% were not wearing personal protective wearing. (El-Wahab, et al., 2014).

The present study has been mainly focused on assessing the hazardous exposure of the waste workers. All the participants had been exposed to Mosquitoes (100%), Flies (100%), and Dust (100%). Other than that Noise (95.1%), Sun rays(85.4%), Prolong sitting/bending/standing (82.9%),Stray animals (82.9%),Fumes (75.6%), Heavy lifting (53.7%),Stool (51.2%) and Blood (41.5%) will also have a considerable impact with on health of the waste workers. Some other studies also have supported for this matter. They always contact with blood, fecal matter, broken glass, needles, sharp metal objects, air particulates, chemical fumes, run-off, mice/rats, flies, mosquitoes, stray animals and animal carcasses. (Cointreau-Levine, 1998).

According to the study done in Greece they had revealed that study participants were exposed to a number of pathogens such as bacteria, fungi, viruses, parasites, cysts,

toxic substances, chemical, exhaust fumes, noise, extreme temperatures and ultraviolet rays of the sun. Odor, dust, noise, unfavorable atmospheric conditions were considered as hazardous factors. (Athanasidou, Makrynos, and Dounias, 2010). Apart from that it had been revealed 10.4% were not exposed to the waste and they were inspectors and office workers. 85.8% were using personal hygiene practices. Prevalence of adverse health problems was notably higher among exposed municipal solid waste workers. (El-Wahab, et al., 2014).

The findings of the present study revealed that (36.6%) of the participants had been injured at the workplace while working. They were (40%) cut injuries, sharp injuries (20%), infections (13.3%), fallen (13.3%) and contusions (13.3%).

The results in this study have revealed that majority of the participants had used alcohol (65.9%), (51.2%) were smokers and (48.8%) were beetle chewing. Apart from that some other studies also have proven this characteristic. According to a study done in Malaysia majority of the domestic waste collectors and office workers were smokers. (Ibrahim, et al., 2012). Apart from that study done in Alexandria, Egypt, 3.5 – 8.1% were smokers. Another study done in Iran had proved that 52% of the population were smokers. (Mehrddad, R., et al., 2008).

It has been found from this present study that (61.0%) of participants had been vaccinated and (73.2%) of participants had participated in health clinics conducted by the government on behalf of the workers. But there were no documents or knowledge regarding vaccination given for them as a proof. Majority of the participants (90.2%) were having their meals at the working place in a separate area during working. Although they have practiced hygienic measures, there were no evidence to prove regarding the safety of the water supply for this study setting and

sanitary facilities. Even though in some studies which had been done previously have proven that waste worker's poor personal hygiene, poverty, unawareness, poor hygienic condition, nature of the occupation and less attention on their health expose them to highly pathogenic bio aerosols which can spread various diseases. (Ray, et al., 2004).

It has been found that in the current study that (14.6%) of the participants had Diabetes Mellitus, (12.2%) of the participants had Hypertension, (2.4%) Epilepsy and (2.4%) Cancer. (19.5%) were taking treatments for their chronic illnesses. But (17.1%) of participants were not aware that whether they have Diabetes or not and (24.4%) were not aware that whether they have Hypertension or not. It might be the reason because that they did not have undergone a health clinic for the year 2015 at the time of data collection.

It is obvious to say that there's a relationship between vision problems and older age (>51 years) with the evidence of more over P value of the Fisher's Exact Test (P=0.011). Not only that it has been supported by the Fisher's Exact Test that there's a significant association between older age and Diabetes Mellitus (P=0.018) and Hypertension (P=0.004). A greater risk of getting respiratory, gastrointestinal, musculoskeletal problems among waste workers had been revealed by numerous studies. The results of the present study also have supported for the relationship between common health problems and their post (Laborer/ Not Laborer) to some extent. Laborers are in a great risk of been injured (P=0.004), having cut injuries (P=0.002), having knee pain (P=0.01) and having leg pain (P=0.012) according to the P value of the Fisher's Exact Test of Chi-square Test.

More over P value of the Chi-square test have shown that it is obvious to have a significant association between

weightlifting and back pain ($P=0.03$). And also results of this study have shown that there is a significant relationship between high blood pressure and dizziness, ($P=0.036$) according to the P value of the Chi-square Test.

CONCLUSION

The most common occupational health problems are respiratory problems such as Cough, Shortness of breath, Chest tightness, sneezing. Gastrointestinal problems are Gastritis, Diarrhea, Vomiting, Hemorrhoids, and Fullness. Musculoskeletal problems are Back pain, Knee pain, Knee pain and Shoulder pain. Other than Headache, Vision problems and Fever.

Majority of the participants are exposed to dust, mosquitoes and flies. Other than that common hazardous exposures are noise, sun rays, prolong sitting/bending/standing, stray animals, fumes, weight lifting, stool and blood.

Majority of the participants had been used protective equipment such as Boots, Helmet, Gloves and Masks.

Employees are get inured at work. The most common injuries are cut injuries, sharp injuries, infections, falls and contusions.

Majority were vaccinated and had participated for health clinics.

Diabetes Mellitus and Hypertension are common chronic health problems among waste workers.

There are relationships between older age and vision problems, older age and Diabetes Mellitus, older age and Hypertension, weight lifting and back pain, high blood pressure and dizziness.

Labourers are at a greater risk of getting injured at work, having cut injuries, having knee pain and having leg pain.

Majority of participants are Males, Laborers, currently married, educated up to O/Ls, below 50 years, had a income of Rs.30,000/= to 40,000/=, using alcohol and smokers.

Waste management sites such as Meethotamulla, Bluemendal can be and more researches should be done to assess the knowledge regarding the preventive practices of the occupational health problems among same kind of participants.

The study sample must be educated about the vaccination programme given for them by the government. And also educate about the importance of it. Not only that they should be encouraged to participate for health clinics. It will be very important if the employees are given a document about the vaccinations and records of the regular clinic visits.

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