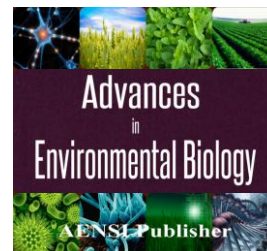




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Prevalence of Selected Health Issues among Workers in Small Scale Industries in Sri Lanka

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ABSTRACT

Background: Current study was done to assess the prevalence of selected health issues among workers, in small scale industries in a district in Sri Lanka. **Methods:** A cross sectional study was conducted among workers in four selected small scale industry categories namely food and beverages, apparel, non metallic mineral products and fabricated metal products in a district of Sri Lanka. Data was collected using an interviewer administered questionnaire. **Results:** Analysis was based on 727 workers. The prevalence of headache (2.2%, 95% CI 1.5 – 3.1) and eye problems (2.1%, 95% CI 1.4 – 2.9) were the commonest general health issues detected. Back pain was the most prevalent work related musculoskeletal pain reported by the participants (6.1%, 95% CI 4.8 – 7.8). Most of the work-related musculoskeletal pain was either of short duration (lasting 1- 6 days) or long lasting (more than 2 weeks). **Conclusion:** Musculoskeletal diseases are prevalent among the study population. This needs to be investigated in-depth to identify the correlates to plan interventions.

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INTRODUCTION

Sri Lanka is among the many developing countries that have a considerable number of small scale industries and a large number of workers who are working in various occupational settings. Small scale industry workers are a specific group of people who work under different conditions and work settings [1]. Majority of these workers are in the low socio economic category and are poorly educated. Due to these factors employers can exploit the workers exposing them to various occupational hazards. In addition due to lack of knowledge these workers may be unaware of the risks to which they are exposed and unable to avoid adverse effects [2]. It is known that the employees of small scale industries rarely benefit from existing occupational health and safety provisions [3]. Since the profession of industrial hygiene is still not currently recognized in Sri Lanka and, the occupational health and safety legislation is not well developed in the country it is a common belief that majority of these workers are exposed to occupational hazards and are at a great risk of developing diseases related to their occupation. Furthermore their ill health is compounded by various socioeconomic factors such as poverty, lack of education, poor working conditions, excess working hours and poor diet [3,4].

Although occupational health is an important area of the workers' health, there is paucity of data on major health issues among workers of small scale industries in Sri Lanka. Therefore it is important to identify health issues among workers and other related issues in the working environment in small scale industries in order to plan occupational health services for workers. If the workers are made knowledgeable of the risk factors and methods of overcoming them, they would be able to avoid adverse effects of risk factors in occupational settings. The aim of this paper is to identify selected occupational health issues faced by small scale industry workers in Sri Lanka that will be useful in planning interventions.

MATERIALS AND METHODS

This study was conducted among workers in selected small scale industries in Gampaha (1386.6 km²) district in Sri Lanka. The study population were workers in four selected small scale industry categories namely food and beverages, apparel, non-metallic mineral products and fabricated metal products. Since there was no

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unanimous agreement about the definition of the size of a small scale industry [5], it was defined as a work setting with less than 20 workers. This was in agreement with most criteria which defined it between 1-50 workers [6].

A representative sample of the study population was selected using a two stage cluster sampling method [7]. For the first stage of the sample, the worker strength in the selected four divisions of small scale industries in the district was listed out separately based on 2003/2004 census data. The number of workers from each division was calculated proportionate to the total number of small scale industry workers in each division. Thereafter the number of clusters for each industrial division was calculated based on ten from each factory or cluster. For the second stage using the lists prepared by the Census and Statistics Department Sri Lanka (which indicates the small scale industry divisions in Gampaha district) clusters from each industry division were selected randomly by generating random numbers. A sample of 800 small scale industry workers were estimated by including 80 clusters with ten subjects randomly selected in each cluster (with a design effect of 2 and 5% non-response rate). Trained data collectors visited each identified cluster (small scale industry) and collected the necessary data.

The interviewer administered questionnaire used in the study consisted of two parts. Part one consisted of the details regarding the small scale industry. The second part consisted of details of the eight randomly selected workers in each small scale industry. All analyses were performed using SPSS version 16.

Results:

Sri Lanka is divided into 25 administrative districts. A total of 102 small scale industries were surveyed in Gampaha district. Majority of the participants were from Food industry (40.2%) and the lowest number of participants were from Metallic industry (12.9%). A Majority of the participants (63.8%) were between 20 to 39 years. Most of them were males (68.6%) and majority of the participants were married. In relation to the socio-economic status, most participants had level of education more than grade 8 and more than half (55%) were earning a salary of Rs 10,000 to Rs. 20,000.

Selected occupational health issues were divided in to two categories namely, general occupational health issues and work related musculoskeletal pain lasting more than a day (table 1). The prevalence of headache (2.2%, 95% CI 1.5 – 3.1) and eye problems (2.1%, 95% CI 1.4 – 2.9) were the commonest general health issues detected. Skin burns were the third highest general health issue reported by participants (0.88%, 95% CI 0.48 – 1.5). Rest of the general occupational health issues were below 0.5%. Back pain was the most prevalent work related musculoskeletal pain reported by the participants (6.1%, 95% CI 4.8 – 7.8). Knee pain was the second highest with a prevalence 5.4% (95% CI 4.2 – 6.9). Shoulder pain, neck pain and wrist pain had prevalence about 4.5% each.

Most of the work-related musculoskeletal pain was either of short duration (lasting 1- 6 days) or long lasting (more than 2 weeks) (table 1). The pain lasting up to and no more than two weeks were generally less prevalent in all work-related musculoskeletal pain. About 60% of the knee pains and wrist pains reported by participants were lasting more than two weeks.

Table 1: Selected occupational health issues occurred in the past month.

Table 1. Selected occupational health issues occurred in the past month.					
Selected health issue			Total % (95% CI)		
General occupational health issues					
Skin burns			0.88 (0.48 -1.5)		
Nose irritation			0.13 (0.01-0.49)		
Skin irritation			0.13 (0.01-0.49)		
Eye problems			2.2 (1.5 -3.1)		
Headaches			2.1 (1.4 – 2.9)		
Hearing problems / hearing loss			0.27 (0.07 - 0.69)		
Chest pain			0.48 (0.19 – 98)		
Throat pain			0.13 (0.01-0.49)		
Work related Musculoskeletal pain (lasting more than a day)					
Shoulder pain			4.4 (3.3 – 5.9)		
Wrist pain			4.5 (3.3 – 5.6)		
Knee pain			5.4 (4.2 – 6.9)		
Neck pain			4.7 (3.4 – 6.3)		
Backache			6.1 (4.8 – 7.8)		
	Type of Musculoskeletal pain				
	Shoulder pain	Wrist pain	Knee pain	Neck pain	Backache
Duration					
1-6 days	42.8 %	26.2 %	29.2 %	45.5 %	42.3 %
1-2 weeks	10.2 %	14.3 %	7.7 %	18.2 %	18.3 %
More than 2 weeks	46.9 %	59.5 %	63.1 %	36.3 %	39.4 %

The prevalence of wrist pain ($p=0.025$) and knee pain ($p=0.006$) were significantly associated with the industry category. Sex of the worker was not significantly associated any musculoskeletal disorders assessed.

Discussion:

Our study found that headaches and eye problems are the most common general occupational health issues reported in small scale industries in Gampaha district. All other selected general occupational health issues were found to be less than one per cent. This study also found back pain and knee pain among the most common work related musculoskeletal pain reported by the participants. Furthermore, majority of the work-related musculoskeletal pain found to be lasting few days or more than 2 weeks.

One of the main strength of this study was that it was conducted in a district that represent the major demographic and socio-economic profile of the whole country. The sampling frame of this study was based on census data which increase the generalizability of the findings. The response rate of our study was over 90%. However one of the important weaknesses of our study was that it only included four industry categories out of 27 industry categories in Sri Lanka. Another limitation of the study was that data was not collected by medical personnel so it may have introduced a non-differential misclassification bias irrespective of the meticulous attempts to train the data collectors [8]. The data collectors of this study collected data only during daytime which may resulted an under representation of night shift workers in small scale industries.

According to World Health Organization in most countries respiratory diseases and musculoskeletal disorders are considered the leading occupational diseases [9]. Our study also found musculoskeletal disorders among the most prevent occupational health issues among small scale industry workers. This finding can be compared with other developing countries in the region. A study done in India among workers engaged in the small-scale garment industry also found musculoskeletal problems as the commonest occupational health issue (69.94%) in their study. They further report the commonest body areas that are affected as neck (64.10%), low back (41.03%), hand, wrist, finger and shoulder [10]. One important difference between the two studies was that our study included four industry types while the Indian study only included garments industry. A similar study in Nepal conducted among small scale and household industry workers reports overall 33.3% musculoskeletal disorders [11]. Although this study includes main industry types such as metal, construction, garment and three other types of industries, most of the workers were of younger age group (< 20 years) than the current study. In addition, in these two studies majority of the workers were less educated and earned poor monthly income compared to the current study.

Majority of the musculoskeletal pain in our study were either lasting few days or of longer duration. Nearly 50% of the total musculoskeletal pain reported was lasting more than 2 weeks. This finding was in agreement with findings of other studies of small scale industries which report prevalence of specific chronic musculoskeletal pain in a similar range [12,13].

Conclusions:

In conclusion, this study found work related musculoskeletal pain in small-scale industries in Sri Lanka much more common than the work-related general health issues. Overall majority of the reported musculoskeletal pain was chronic duration in nature. Lack of experience and working long hours may have contributed to increase in work related musculoskeletal pain in this sector. Health promotional programs at workplaces focusing ergonomics will benefit the workers at small scale industries in Sri Lanka.

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