



RESEARCH ARTICLE

OCCUPATIONAL HEALTH AND SAFETY OF WORKERS IN SMALL-SCALE INDUSTRIES IN
KARNATAKA: AN ANALYSIS OF NATURE AND MAGNITUDE

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ARTICLE INFO

Article History:

Received 12th April, 2018
Received in revised form
19th May, 2018
Accepted 24th June, 2018
Published online 31st July, 2018

Key words:

Small scale industries,
Socio-economic conditions,
Occupational health amenities,
Occupational safety measures,
Occupational health problems.

ABSTRACT

Occupational and safety issues have a connection with various components in the regional economy since the provisions of health, hygiene and safety in the workplace contributes to economic growth processes in a number of ways. This paper attempts to examine the socio-economic conditions of the workers in SSIs and to assess the magnitude of common occupational health and safety measures among workers in SSIs and also to find out the major occupational health problems that are being faced by the workers in SSIs. This study is mainly based on primary data. Karnataka state is selected for the purpose of the present study. The total sample size of the study was 200 workers in SSIs. Simple statistical tools and techniques like simple averages, ratios, and percentage were employed for analysis of data. The main findings reveals that the majority of workers in SSIs were male. 63.50 per cent sample respondents have completed secondary and higher secondary education. It has been found that a majority of sample respondents are not only dissatisfied with all aspects of health amenities but also safety measures which are existing in their working place. Significant proportion of sample respondents have been suffering from joint pain, back pain, gastric ulcer, piles and generalized weakness.

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Citation: Prashanth Vadigeri, 2018. "A prospective randomised comparative study of efficacy and safety of combination of inj. dexmedetomidine -inj. propofol and inj.", *International Journal of Current Research*, 10, (7), 71972-71977.

INTRODUCTION

Occupational health and safety (OHS) primarily seeks to maintain the working ability of the labour force as well as to identify, assess and prevent hazards within the working environment. These issues to improve workers' efficiency and well being and maintain industrial production through the design of an improved workplace. OHS applications therefore work together to satisfy the needs of changing local people's attitudes, local work methods and/or traditional ways of doing things. These issues are important for many developing countries, because the effects of poor health and lack of safety facilities exist in various workplaces are a hindrance to the national economy and social progress. Since implementing the full concept of OHS is a priority, understanding the meaning of the terms related to OHS is a major source of workplace improvement. It is therefore important for both foreign and local investors to investigate workplaces, to know how a tool, machinery and production process would match the local workers' physical and mental capabilities of the local population. Occupational and safety issues have a connection with various components in the regional economy since the

provisions of health, hygiene and safety in the workplace contributes to economic growth processes in a number of ways (Takala 2000). Occupational and safety issues are also related with the production economy and social progress, and thus, important components of gross domestic product (GDP) which are considered as inputs into the national economy through industrial development. ILO (1999) indicated that approximately 4% of GDP disappears in many countries, soaring even up to four-fold that, on OHS losses due to lack of basic health and safety facilities in workplace. Occupational health and safety is becoming a cross-disciplinary area which concerns itself with protecting the safety, health and welfare of people engaged in work or employment. In 1995, the ILO and the WHO provided for a broad definition of the concept as: "Occupational health should aim at: the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; the prevention amongst workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the workers in an occupational environment adapted to their physiological and psychological capabilities; and, to summarize: the adaptation of work to man and of each man to his job (World Health Organisation, 1995). This understanding of the concept shows the comprehensive emphasis on individual worker's physical

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DOI: <https://doi.org/10.24941/ijcr.31286.07.2018>

mental and social well-being, general health and personal development which marks a shift from the previous monodisciplinary risk-oriented conceptualization. Occupational health and safety (OHS) management therefore protects the safety, health, and welfare of people at their workplaces. It also focuses on the maintenance and promotion of workers' health and capacity to work; the improvement of working environment and work to become conducive to safety and health as well as the development of work organizations and working cultures in a direction which supports health and safety at work and in doing so also promotes a positive social climate and smooth operation and may enhance productivity of the undertakings (Stellman, 1998). The concept of working culture is intended in this context to mean a reflection of the essential value systems adopted by the undertaking concerned. Such a culture is reflected in practice in the managerial systems, personnel policy, principles for participation, training policies and quality management of the undertaking. An analysis of occupational hazards and risks represent an important step toward an understanding of the health and safety policy prescriptions needed to protect the welfare of workers (Ametepheh, Adei and Arhin 2013).

Review of literature and issues for research: The review of the literature in the relevant field gives a conclusion that illness or diseases of workers not only affect the workers themselves but also the employers as there are certain epidemics as HIV/AIDS have significant impact on world of work. Some authors also linked the mental health, stress and different technologies. Some mentioned that the production cost and efficiency mainly depends on workers health and safe etc. Leser (1947) mentioned that much sickness and fatal disease amongst wage earners is directly or indirectly due to the nature of workers employment. The conditions surrounding the job, air, heat light and physical strain may affect the workers health adversely miners for instance are likely to contract asthma, silicosis and tuber colossi. Hyeshook Park (2002) in his study found that overall mortality rate and accident rate among these enterprises was not better than national average. As for occupational health hazard in these workers number of hazard per work place was smaller but the profession of exposed workers per workplace was higher as compared to the larger companies. Ashish and Papri (2004) in their article mentioned about inter relation between mechanization of process of production, quality of workers and their life, say decent workplace remain a distant reality. Gradual mechanization of the process of production combined with effective managerial strategies have allowed the employers to achieve greater control over the process of production. Apart from the above reviewed studies, still there are numerous studies on OHS of workers in (Abeysekera and Shanavar 1988, Ahasan 2001a, Ahasan 2001, Ahasan and Ertain 2001, Brown and Nguyen-Scatt 1992, Clernstine 2002, Elglstrand 1985, Jahan 1989, Kagi 1998, Leanien 2000, Raihan 1997, Takala 2002, Zohar 1980, Ahasan 2002 and Zaid 2002, Ametepheh, Adei and Arhin 2013, Vinotha P, Surviya R. and Valarmathi 2015). None of them however, adequately addressed what are the socio-economic conditions of the SSI workers? What is the magnitude of common occupational health and safety measures among SSI workers? What are the major occupational health problems that are being faced by the SSI workers in work place? These aspects though important they are have not been examined comprehensively as yet. It is therefore important to know the above mentioned research questions on OHS of worker in SSIs in India in general and in

Karnataka in particular. These issues have to be studied in greater detail. Further the most important problem to be reckoned in undertaking such a study is that very little has come to be known about the occupational health and safety of workers in small scale industries. Data for such a particular study can be collected only by an empirical study designed specifically for these purpose. By keeping these all aspects in mind the present study on OHS of workers in SSIs in Karnataka has been undertaken.

Relevance of the study: Health and safety issues are concerned with the human workforce, and the design of the working environment to obtain maximum satisfaction in productivity, and worker's health safety and well being. The researcher carried out the study with an objective of finding out the occupational health and safety measures carried out in small scale industries in Karnataka. To provide better life and health to the workers in the SSI's units, this study is to find out the major problems face by the workers in small scale units and suggest policy prescriptions that will improve health and safety in working environment. Against these backdrops this study was aimed with the following objectives.

Objectives of the study

The objectives of the study are to;

- Examine the socio-economic conditions of the workers in SSIs;
- Assess the magnitude of common occupational health and safety measures among workers in SSIs;
- Find out the major occupational health problems that are being faced by the workers in SSIs and
- Offer policy inputs to ensure better occupational, health and safety of workers and their by improving the productivity of SSIs and income of the workers.

MATERIALS AND METHODS

Source and Nature of the Data: The study is mainly based on primary data. Primary data can be only collected by an empirical study designed specifically for this purpose. The primary data were collected from the selected workers who are working in SSIs in Belagavi District in Karnataka State, for this purpose a structure and pre-tested questionnaire schedule has been used.

Sampling Design and Size: Multi-stage stratified random sampling technique state as the first stage, region as the second stage, district as the third stage, taluks as the fourth stage, SSI units as the fifth stage and the worker as the final or ultimate stage have been adopted for collection of the data among OHS of workers in SSIs. Karnataka State is selected for the purpose of present study, because it is one of the five industrially advanced states in India. The Karnataka State has been classified into two sub-regions, viz., South Karnataka and North Karnataka. In the second stage out of the two regions, the North Karnataka was selected for the field study. From North Karnataka region, one district viz., Belagavi was chosen on the basis of proportion of SSI units, employment in SSIs, investment in SSIs and the like in the third stage. At the fourth stage of selection was the taluks. Belagavi districts consists of 14 taluks which are at different levels of development. Among them only four taluks were selected based on the socio-economic indicators. At the fifth stage, 20 SSIs from 4 selected

taluks were selected on the basis of nature of activity, type of organisation, ownership and the like. In the last stage from each sample small-scale industry. 10 respondents (workers) were selected by random sampling method. The total sample size of the study was 200 workers consisting of 10 workers each from 20 small scale industries.

Tools of Data Analysis: Simple statistical tools and techniques like simple averages, ratios, and percentage were employed for analysis of data, the results have been presented through bar diagrams.

Significance of the study: Generally, the studies on OHS of workers are concentrated on the macro level only. But this is a unique and comprehensive study of its first kind. It increases the scope and effectiveness of the workplace investigation of causes of WRPs and the identification, assessment and implementation of preventive measures in SSIs.

Limitation of the study: The study is confined only to one district of Karnataka and the study is confined to only 20 small scale industrial units. Further this study is confined only 200 sample workers of SSIs. Therefore the results obtained may not be generalized.

DATA ANALYSIS AND INTERPRETATION

Socio-Economic Condition of the Sample Respondents in SSIs: Socio-economic conditions such as gender, age, religion, marital status, education, housing conditions and household annual income have been made significant influence on the employment structure. Therefore, in the present study an attempt has been made to assess the significance of these variables. Table 1 provides the data on socio-economic conditions of the sample respondents in SSIs. The data clearly shows that, out of total 200 sample respondents, a majority of 148, accounting for 74 per cent of workers were male, whereas the minimum of 52 workers, accounting for 26 per cent were females. The data relating to age- group of workers reveals that the proportion of workers in SSIs tended to increase with increasing age -groups upto certain level i.e., from 18-28 to 39-48 years and thereafter (age- groups 49-58 to 59+ years) decline. This shows that workers in SSIs are mostly young at which their physical and mental powers are usually at their best. It has been observed that most of the sample respondents are the Hindus, followed by the Muslims and the Others. Marriage is one of the important determinant of the individual's status in society. The data on marital status of the sample respondent indicates that the largest proportion of 132 (66 per cent) respondents are married. Whereas the number of unmarried women is 60 (30 per cent) and only 8 (4 per cent) respondents are widows. Education is the key that opens the door to many opportunities. The data on educational status of sample respondents reveals that a majority of 127 (63.50 per cent) respondents have completed secondary and higher secondary education. The rate of illiteracy was awfully lower in the case of workers in SSIs. It has been observed that a great majority of sample respondents stay in semi pucca, followed by Kachha, pucca and RCC houses. The economic status is consequence of the employment status of the individual in order to ascertain sample respondents were asked to indicate their total family income. It can be seen from the data that a majority of 76 (38 per cent) sample respondents have the household annual income in the range from Rs. 75001 to 100000. Whereas, 114 (57 per cent) of sample respondents have the household annual income of < Rs. 75000.

Occupational Health Amenities: Occupational health should aim at the promotion and maintenance of the highest degree of physical mental and social well being of workers in all occupations. Survey of occupational health amenities indicated various occupational hazards among the workers in SSIs. Table 2 presents the data on respondents opinion about health amenities in their working place. The data reveals that a majority of the sample respondents are dissatisfied with all aspects of health amenities such as sanitation (71 per cent), electronic fans (58 per cent), ventilators (48 per cent), air conditioners (93 per cent), lighting (52 per cent), pure drinking water (47.50 per cent), ESI card (71 per cent) and lunch and rest room (66 per cent). Whereas a small proportion of sample respondents opened that they are highly satisfied with all these health amenities. However, on an average 32.08 per cent of sample respondents are even satisfied with the current health amenities in their working place. The responses clearly indicate the proportion of occupational health amenities was found to be lower in small scale industries in Karnataka in general and in the study areas in particular.

Occupational Safety Measures: The occupational safety measures are very much required to secure work conditions, they protect and promote occupational health and productivity of the workers in SSIs. Therefore an attempt has been also made to find out from respondents how satisfied they are with the current occupational safety measures which are facilitated in their working place. Table 3 provides the data on respondents opinion about safety measures in their working units. The data shows that most of the respondents 86 per cent opened that they are dissatisfied about the medical facilities provided by the employer, whereas a minimum of 14 percent respondents are satisfied with the medical facilities. It has been found that, a majority of 77 per cent respondent opinion are dissatisfied about the health facilities provided by the entrepreneur and 16.50 per cent of them opinion about the health facilities provided by the entrepreneur are satisfied and 6.50 per cent of them opinion are highly satisfied. Similarly 85 per cent respondents opinion are dissatisfied about the safety appliances provided by the entrepreneur and 15 per cent of them opinion are satisfied. While of 92.50 per cent respondents opinion are dissatisfied about the safety education provided by the entrepreneur and 7.50 per cent of them opinion are satisfied. It has been also observed that 95 per cent respondents opinion are dissatisfied about the danger signal facilities which are adopted in their working place and only 5 per cent of them opinion are satisfied. Whereas 97.50 per cent respondents opinion are dissatisfied about the ambulance service provided by the employer and 2.50 per cent of them opinion are satisfied. However, 59 per cent respondents opinion are dissatisfied about the first aid box, which is available in their working place and a good number of 41 per cent of them opinion are satisfied. While, 89 per cent respondents opinion are dissatisfied about the safety campaigns and poster helps in organization and 11 per cent of them opinion are satisfied.

Occupational Health Problems: Occupational health problems used to appearance in industrial sector in general and in small scale industries in particular. In view of this an attempt is made to find out the common occupational health problems among workers in SSIs. Table 4 provides data on occupational health problems amongst sample respondents in SSIs from last one month and a year. The data indicates that a great majority of sample respondents have been suffering from joint pain, back pain, gastric ulcer, piles and generalized weakness.

Table 1. Socio Economic Conditions of the Sample Respondents in SSIs

Socio-economic variables	Particulars	Frequency	Percentage
Gender	Male	148	74.00
	Female	52	26.00
	All	200	100.00
Age	18-28	32	16.00
	29-38	68	34.00
	39-48	70	35.00
	49-58	20	10.00
	59 & above	10	5.00
	All	200	100.00
Religion	Hindu	114	57.00
	Muslim	74	37.00
	Others	12	6.00
	All	200	100.00
Marital Status	Married	132	66.00
	Un-married	60	30.00
	Widowed	8	4.00
Educational Level	All	200	100.00
	Illiterate	15	7.50
	Primary	30	15.00
	Secondary	42	21.00
	Higher secondary	85	42.50
	Graduates & above	28	14.00
Housing Conditions	All	200	100.00
	Katcha	68	34.00
	S.pucca	92	46.00
	Pucca	24	12.00
	RCC	16	8.00
	All	200	100.00
Household Annual Income (Rs.)	< 25000	22	11.00
	25001 – 50000	38	19.00
	50001 - 75000	54	27.00
	75001 – 100000	76	38.00
	100001 & Above	10	5.00
	All	200	100.00

Source: Field Survey.

Table 2. Respondents Opinion about Health Amenities in their Working Unites

Degree of Satisfaction	Health Amenities							
	Sanitation	Electronic fans	Ventilators	Air conditioners	Lighting	Pure drinking water	ESI card	Lunch & rest room
Highly Satisfied	0 (0.00)	20 (10.00)	32 (16.00)	0 (0.00)	25 (12.50)	40 (20.00)	28 (14.00)	21 (10.50)
Satisfied	58 (29.00)	64 (32.00)	72 (36.00)	14 (7.00)	71 (35.50)	65 (32.50)	30 (15.00)	27 (13.50)
Dissatisfied	142 (71.00)	116 (58.00)	96 (48.00)	186 (93.00)	104 (52.00)	95 (47.50)	142 (71.00)	152 (66.00)
All	200 (100.00)	200 (100.00)	200 (100.00)	200 (100.00)	200 (100.00)	200 (100.00)	200 (100.00)	200 (100.00)

Note: Figures in the parenthesis indicates percentage to the total.

Source: Field Survey.

Table 3. Respondents Opinion about Safety Measures in their Working Units

Degree of Satisfaction	Safety Measures							
	Medical facilities	Health facilities	Safety appliances	Safety education	Danger signal facilities	Ambulance service	First aid box	Safety campaigns
Highly Satisfied	0 (0.00)	13 (6.50)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Satisfied	28 (14.00)	33 (16.50)	30 (15.00)	15 (7.50)	10 (5.00)	5 (2.50)	82 (41.00)	22 (11.00)
Dissatisfied	172 (86.00)	154 (77.00)	170 (85.00)	185 (92.50)	190 (95.00)	195 (97.50)	118 (59.00)	178 (89.00)
All	200 (100.00)	200 (100.00)	200 (100.00)	200 (100.00)	200 (100.00)	200 (100.00)	200 (100.00)	200 (100.00)

Note: Figures in the parenthesis indicates percentage to the total. Source: Field Survey.

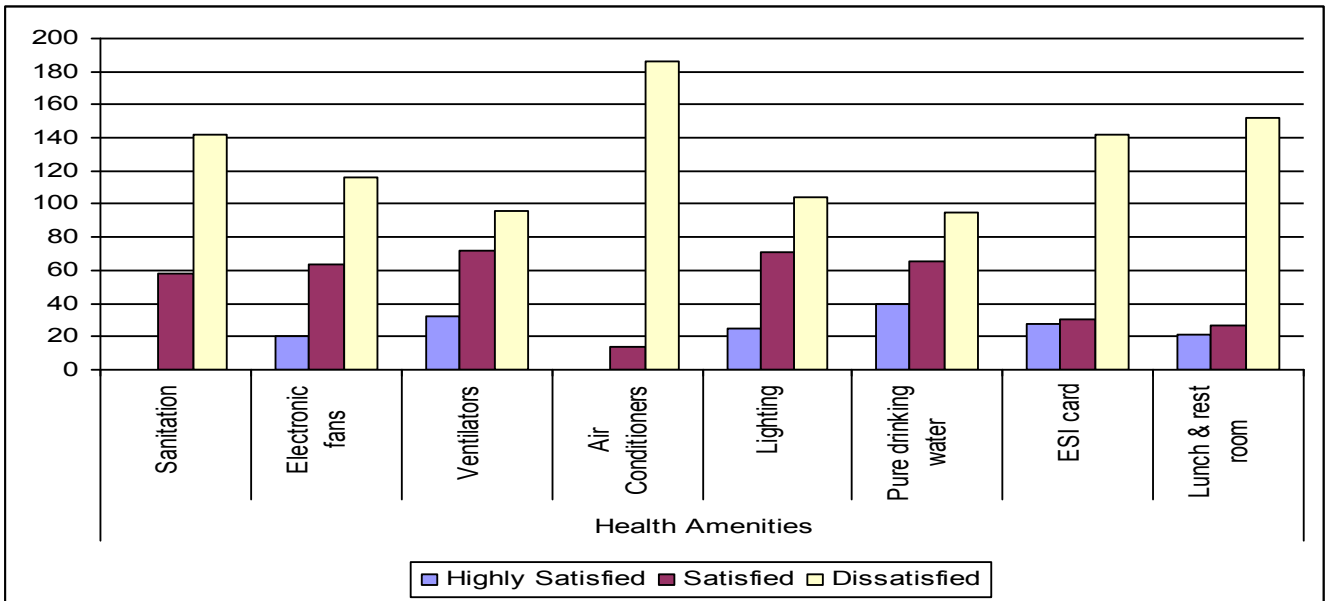


Figure 1. Respondents Opinion about Health Amenities in their Working Units

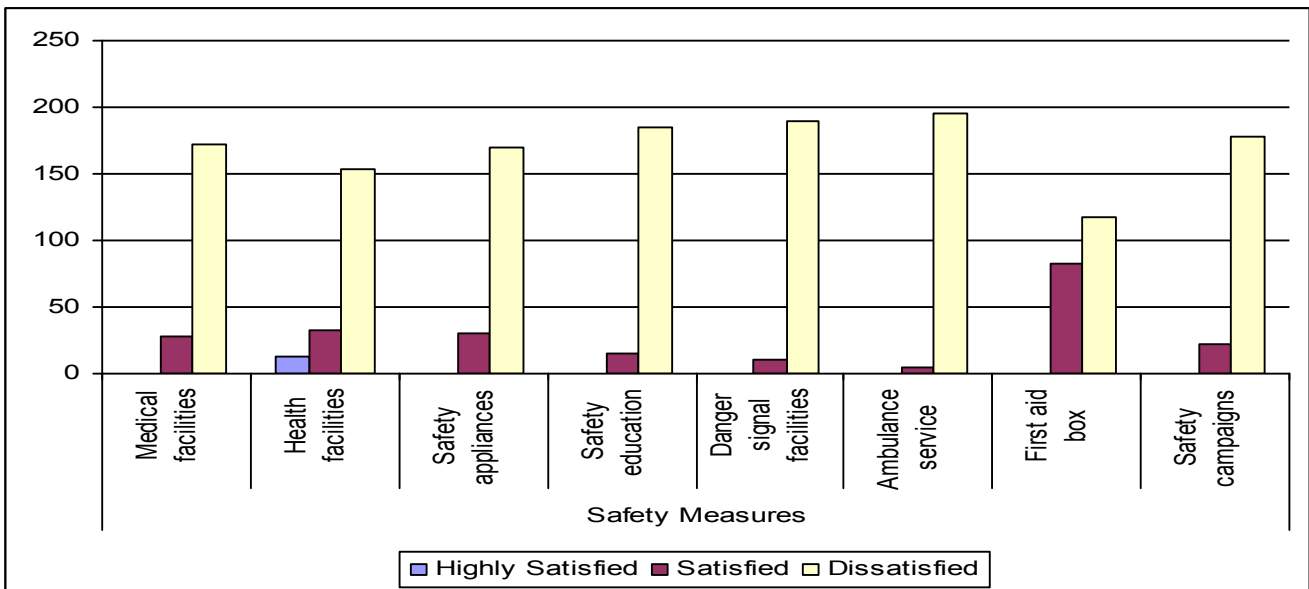


Figure 2. Respondents opinion about Safety Measures in their Working Units

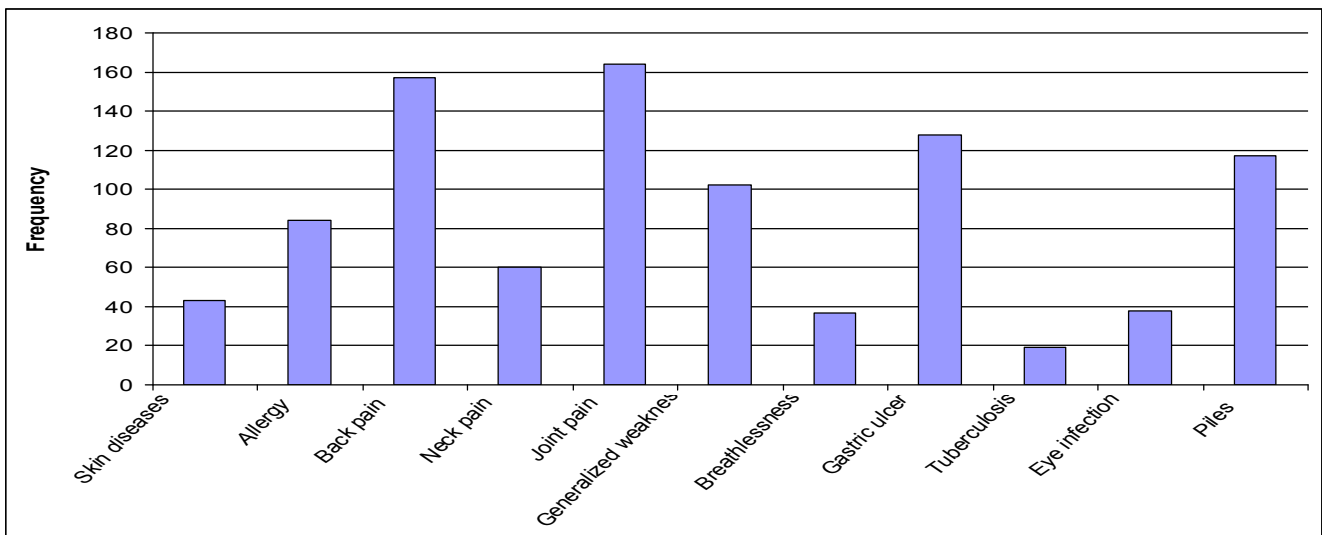


Figure 3. Occupational Health Problems amongst Sample Respondents (n=200) in SSI Units from last one Month and a Year

Table 4. Occupational Health Problems amongst Sample Respondents (n=200) in SSI Units from last one Month and a Year

Occupational health problems	Frequency	Percentage
Skin diseases	43	21.50
Allergy	84	42.00
Back pain	157	78.50
Neck pain	60	30.00
Joint pain	164	82.00
Generalized weakness	102	51.00
Breathlessness	37	18.50
Gastric ulcer	128	64.00
Tuberculosis	19	9.50
Piles	117	58.50
Eye infection	38	19.00

Note: Figures in the parenthesis indicates percentage to the total. Source: Field Survey.

The proportion of sample respondents who have been suffering from joint pain, back pain, gastric ulcer, piles and generalized weakness was estimated at 82%, 78.5%, 64%, 58.5% and 51%, respectively. However, the occupational health problems like skin diseases, allergy, neck pain, breathlessness, tuberculosis and eye infection have been also found amongst smaller proportion of the sample respondents who are working in small scale industries.

Conclusion and Policy Recommendations

To sum up it can be said that the health and safety is a vital concept in small scale industrial sector. It has been observed that a majority of sample respondents were male. Similarly, most of the sample respondents are the Hindus. It can be seen from the data that a majority of sample respondents have the household annual income in the range from Rs.75001 to 100000. The major proportion of sample respondents are not only dissatisfied with all aspects of health amenities but also safety measures which are existing in their working place. While a significant proportion of sample respondents have been suffering from joint pain, back pain, gastric ulcer, piles and generalised weakness. On the basis of the above finding the following policy recommendations are proposed; First of all, there is an urgent need to change the mindset of workers and employers in SSI sector through OHS education. Second, OHS training programmes should be organized at or near places of work with mandatory participation of entrepreneur/employers and their representatives. Third, it is recommended that the workers in SSIs properly use safety appliance in their work places. Lastly, entrepreneur should have provide the periodical medical check up to improve the health of workers in SSIs.

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