

**“A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING
UTILIZATION OF SAFETY MEASURES AMONG WORKERS IN
SAKTHI SUGARS LIMITED, SAKTHINAGAR, BHAVANI TALUK,
ERODE DISTRICT, TAMILNADU”.**

By

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**Dissertation Submitted to the
THE TAMILNADU DR M.G.R. MEDICAL UNIVERSITY,
Chennai, Tamilnadu**



**In partial fulfillment
of the requirements for the degree of
Master of Science
in
Community Health Nursing
Dharmarathnakara Dr.Mahalingam Institute of
Paramedical Sciences & Research
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MARCH 2010

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This is to certify that the dissertation entitled “a study to assess the knowledge and practice regarding utilization of safety measures among workers in Sakthi Sugars Limited, Sakthinagar, Bhavani Taluk, Erode District, Tamilnadu”. Is a bonafide research work done by **Mr. T. Natarajan** in partial fulfillment of the requirement for the degree of **Master of Science in Nursing, Department of Community Health Nursing.**

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This is to certify that the dissertation entitled “a study to assess the knowledge and practice regarding utilization of safety measures among workers in Sakthi Sugars Limited, Sakthinagar, Bhavani Taluk, Erode District, and Tamilnadu” is a bonafide research work done by **Mr. T. Natarajan** under the guidance of **Prof. Jinu.K.Rajan, M.Sc., (N), Head of the Department of Community Health Nursing.**

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ABSTRACT

STATEMENT OF THE PROBLEM:

“A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING UTILIZATION OF SAFETY MEASURES AMONG WORKERS IN SAKTHI SUGARS LIMITED, SAKTHINAGAR, BHAVANI TALUK, ERODE DISTRICT, TAMILNADU”.

OBJECTIVES:

1. To assess the level of knowledge and practice of utilization of safety measures among workers.
2. To find out the correlation coefficient between knowledge and practice of utilization of safety measures among workers.
3. To find out association between knowledge and practice with selected demographic variables regarding utilization of safety measures.

MAJOR FINDINGS OF THE STUDY

- ❖ Most of the samples (35%) were between the age of 29-38 yrs.
- ❖ 80% were males and 20% females.
- ❖ Most of the samples (40%) were illiterates.
- ❖ Majority of the samples (40%) were having Rs.4001-6000/-.
- ❖ Most of the samples (33%) were having 6-10 years of working experience.
- ❖ Majority of the samples (41%) were working in manufacturing section.
- ❖ Most of the samples (30%) were once in a week and twice in month doing over time duty.
- ❖ 35% of samples have source of information from mass media.

- ❖ The data showed that 40% of workers had inadequate knowledge, 37% had moderately adequate knowledge and 23% of workers had adequate knowledge regarding utilization of safety measures.
- ❖ 40% of workers had good practice and 60% workers had poor practice.
- ❖ The mean percentage knowledge and practice scores were 50.5% and 54.5% respectively.
- ❖ The data showed that when knowledge increases the practice also increases moderated ($r=0.1328$).
- ❖ It was assessed that educational qualification, income, working experience, place of work and source of information were significant with knowledge level, and whereas age educational qualification, income, working experience, place of work and source of information were significant with practice level of workers regarding utilization of safety measures.

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LIST OF ABBREVIATIONS USED

et al.	=	And others
DMIPSR	=	Dharamarathnakara Dr.Mahalingam Institute of Paramedical Sciences & Research
Fig	=	Figure
H ₁	=	Research hypothesis
H ₂	=	Research hypothesis
OHN	=	Occupational Health Nurse
CHN	=	Community Health Nurse
HOD	=	Head of the Department
Fre	=	Frequency
No.	=	Number
Prof	=	Professor
S.D	=	Standard deviation
=	=	Equal to
WHO	=	World Health Organization
ILO	=	International Labour Organization
±	=	More than or less than
%	=	Percentage

CHAPTER - I

INTRODUCTION

“Safety awareness saves lives”

WHO and ILO (1950), According to Joint Committee of occupational health in all occupations should be (i) care and improve the physical, mental and social well being of the workers, (ii) prevent hinderness to health including those which occur due to work place, (iii) protect the workers engaged on occupations and (iv) provide them a healthy environment.

Rahman et.al., 2001 The condition or state of being safe; freedom from danger or hazard; exemption from hurt, injury, or loss. Freedom from whatever exposes one to danger or from liability to cause danger or harm; safeness; hence, the quality of making safe or secure, or of giving confidence, justifying trust, insuring against harm or loss, etc.

Work place hazards are too common every where. There is need for research and action, a) to reduce the environmental health hazards of poverty, b) to guide economic development in ways that produce healthy environment for the public and workers as well as economic being.

NEED FOR THE STUDY

Safety measures result in improving the conditions under which workers are employed and work. It improves not only their physical efficiency, but also provides protection to their life and limb. Inadequate provision of safety measures in factories

may lead to increase in the number of accidents. Human failure due to carelessness, ignorance, inadequate skill, and improper supervision have also contributed to accidents, and the consequent need for safety measures.

Stanhope, (2008) states that, Occupational Safety and Health Administration is a federal agency is to determine and set the standards for hazardous exposures in the workplace, enforce the occupational health standards, educate employers about occupational health and safety and monitor compliance with occupational health and safety.

Park.K, (2007) states that, According to Joint International Labour Organization committee defined 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 among 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 worker in an occupational environment adapted to his physiological and psychological equipment and to summarize the adaptation of work to man and of each man to his job.

Olszewski et.al.,(2007), occupational health and safety objectives, occupational health nurses have the opportunity to develop and implement workplace policies and programs promoting safety measures and healthy work environment. Occupational health nurses can implement strategies to increase quality and years of life and eliminate health disparities in the American work force.

Siriruttanpruk.S and Anantagulanathi.P (2007) reported that in Thailand, Incidence rate of occupational injuries and diseases was 3 – 4 % each year, due to lack of staffs and other resources.

Fingerhut. M et.al.,(2006) conducted a study on occupations risk to global burden of disease reported that 42% of injuries, 21% of hearing loss, 18% of asthma , 9% of eye problems, 8% of lung cancer and 2% of skin cancer concluded that 2.2 million total death worldwide.

Nelson et.al.,(2006) concluded the contribution of occupational risks to the global burden of diseases reported that 8,50,000 death occur worldwide for every year.

Su.Y.M.(2005) states that Occupational injuries are a public problem, estimated to kill more than 3,00,000 workers world wide every year and to cause many more cases of disability.

Rao.K.S., (2005) states that International labour organization is a specialized agency which allows for representation from workers and explores organization as well as Government, making it unique. Indian labour organization and World health organization recommended that the aim of occupational health as stated in the promotion and maintenance of the highest degree of physical, mental and social well being of the workers in all occupation. It seeks the promotion of social justice and internationally recognized human and labour rights.

Prabakaran (2005) stated that, one of the methods to prevention of occupational disease can be done through periodical assessment, examination and rehabilitation.

Ramanakumar.V.A. (2005) observed that workers had negative attitudes towards occupational safety, work without safety measures, work with all equipments, improper checks on fire fighting equipment, lack of training in use the safety equipment and alcoholism during work.

Odhiambo.C.B. et al. (2005), inspected 120 factories observed that 73% of all workplace there was no or insufficient personal protective equipment. At 55% of the work places the working conditions were unsafe. At 6.5% of the work place there was a complete first aid kit and they maintain first aid kits as a show.

Nishta. S et.al.(2004), conducted a study on injury prevention and control reported that, to prevent worksite injuries, a national consensus has been achieved to develop a comprehensive policy and to enact and enforce legislation for occupational health and safety, to include preventive health in the mandate of organization dealing with worksite safely and to study patterns of occupational injuries and their determinants with a view to defining precise targets for preventing interventions.

Mishra.A.K et.al.(2004), reported in India 20 million workers are involved in manufacturing of sugar. It is magnitude that the risk of Bagassosis, one of occupational health problems.

Singh.M.B. et.al.(2003) A study on occupational morbidities and their association with nutrition and environment factors among industrial workers of Rajasthan, India, reported that, main disease conditions are aches (19.4%), respiratory symptoms (12.1%) and fever (7.7%) where higher in industrial workers.

Rotti.S.B et.al.,(2003) conducted a study on Bagassosis among industrial workers in Pondicherry, That the workers have been existence for over a century, symptomatic Bagassosis due to dusty worksites and duration of service.

Banerjee et.al.,(2002) states that Employment hazards of working women in industries may have adverse effects on pregnancy outcome. Heavy lifting, standing long duration, irregular working hours, shifting duties etc, all have been reported to be associated with several adverse outcomes.

Kanjana (2002), reported that nurses role in occupational health services through prevention, promotion of health by nutrition, maintaining environmental sanitation, specific protection by immunization and safety measures, early diagnosis and treatment by placement and periodic health check up, coordinated with department like job training, vocational training and rehabilitation and also nurse should play a important role in efficient management of creches.

Stanhope, (2002) states that, Occupational Safety and Health Administration is an federal agency is to determine and set the standards for hazardous exposures in the workplace, enforce the occupational health standards, educate employers about occupational health and safety and monitor compliance with occupational health and safety.

Susan L. Ettner et.al., (2001), a study on workers perception of how job affects health. Main objectives focused on that malleable feature of work environment are associated with perceived effects of work on health, even after controlling for personality traits and other sources. He took 2046 workers and asked to rate the impact of the jobs on their physical and mental health.

All the figures are often described as the tip of the iceberg theory because many work related health problem go unreported. In India although labor laws are there, poor educational status of worker, relaxation in the implication of law related to industrial health and hazards. It is observed that many industries are not having adequate facilities and there is least motivation for use of safety measures. Salem is an industrial area and it is a major productive place of sugar products. Hence, being a community health nurse the investigator was facilitated to assess the safety practices and health of the workers in the sugar industries.

STATEMENT OF THE PROBLEM:

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OBJECTIVES:

1. To assess the level of knowledge and practice of utilization of safety measures among workers.
2. To find out the correlation and coefficient between knowledge and practice on utilization of safety measures among workers.
3. To find out association between selected demographic variables with knowledge and practice on utilization of safety measures.

OPERATIONAL DEFINITIONS:

- Assess** : It is the statistical measurement of the utilization of safety measures.
- Knowledge** : Facts, information and skills acquired by a person through experience or education. The theoretical or practical understanding of a subject.
- Practice** : Perform an activity or exercise (a skill) repeatedly or regularly in order to acquire, maintain or improving proficiency in it.
- Safety measures** : It refers to the actions to protect the workers from health hazards of working environment.
- Utilization of Safety measures** : Operationalized as the usage of safety measures by the workers in the industries and personal safety measures.
- Worker** : A person who is working in industry, irrespecting of the department.

ASSUMPTIONS:

1. The workers may have inadequate knowledge regarding utilization of safety measures.
2. The selected variables have influence on worker's knowledge and practices regarding utilization of safety measures.
3. There are number of workers with occupational health hazards.

HYPOTHESIS:

H₁- There is a significant less knowledge and practice among the workers.

H₂ – There is a significant association between level of knowledge and practice of workers and demographic variables regarding utilization of safety measures.

DELIMITATIONS:

The study was limited to the workers who were

- ❖ available during the data collection period
- ❖ above the age of 18 years
- ❖ willing to participate in the study
- ❖ working in a sugar factory
- ❖ able to understand and speak Tamil

LIMITATIONS:

1. The results of the study could not be generalized as the study is conducted only in Sakthi Sugars Limited.
2. The data was collected only in the selected departments such as manufacturing, cane, electrical and mechanical section.
3. The study was limited to age group of 18-58.

CHAPTER- II

REVIEW OF LITERATURE

A literature review is a written summary of the state of existing knowledge on a research problem. The task of reviewing research literature involves the identification, selection, critical analysis and written description of existing information on a topic (**Polit and Hungler, 2008**).

The literatures of the present study are reviewed under the following subheadings:

1. General Information on Safety and occupational health hazards
2. Review of literature related to safety measures and occupational hazards
3. Studies related to safety measures and occupational health hazards

1. GENERAL INFORMATION ON SAFETY AND OCCUPATIONAL HEALTH HAZARDS:

The condition or state of being safe; freedom from danger or hazard; exemption from hurt, injury, or loss. Freedom from whatever exposes one to danger or from liability to cause danger or harm; safeness; hence, the quality of making safe or secure, or of giving confidence, justifying trust, insuring against harm or loss, etc.

Occupational health is essentially preventive medicine. The World Health Organization Committee on occupational health in the first session, held in 1950 gave the following definition.

“Occupational health should aim at the promotion and maintenance of the highest degree of physical, mental and social well being workers in all Occupations”.

Occupational Environment

“Occupational Environment” is meant to the sum of external conditions and influences which prevail at the place of work and which have a bearing on the health of the working population. Basically there are three types of interaction in a working environment.

(a) Man - Physical - Chemical - Biological agents.

(b) Man - Machine

(c) Man-Man

These environments can be explained in the following information.

Occupational Hazards (Industrial Hazards)

An industrial workers may be exposed to five types of hazards, depending upon his occupation.

(a) Physical Hazards

(b) Chemical Hazards

(c) Biological Hazards

(d) Mechanical Hazards

(e) Psychosocial Hazards

PHYSICAL HAZARDS:

Heat and Cold:

The common Physical hazard in most industries is to heat the direct, effects of heat exposure, burns, heat exhaustion, heat stroke and heat cramps. The indirect effects are decreased efficiency, increased fatigue and enhanced accidents rates. Important hazards associated with cold work are chibtam, erithrocyanosis, immersion foot and frostbite as a result of cutaneous vasoconstriction.

Light:

The workers may be exposed illumination or excessive brightness lachrymatos. The acute effects of poor illumination are eyestrains, headache, and eye pain congestion around the cornea and eye fatigue. The chronic effects of health include “minor’s nystagms”. Exposure to excessive brightness or glare is associated with discomfort, annoyance and visual fatigue.

Noise:

The effects of noise are of two types

- Auditory effects – Temporary or permanent hearing loss.
- Non auditory effects – nervousness fatigue interference with communication by speech, decreased efficiency and annoyance.

Vibration:

Vibration is a frequency range of 10 to 500 Hz that may be encountered in work with pneumatic tools such as drillers and hammers. A vibration usually effects the hands and arms. Exposure to vibration may also produce injuries of hands, joints, elbows and shoulders.

Ionizing Radiation

Ionizing radiation is finding increasing application in medicine and Industry certain tissues such as bone marrow are more sensitive than others and from a genetic, stand point there are special hazards when the gonads are exposed.

Ultra Violet Radiation

Occupational exposure to ultraviolet radiation occurs mainly in are welding such radiation mainly affects the eyes.

(b) CHEMICAL HAZARDS:**(1) Local Action**

Some chemicals cause dermatitis eczema ulcers and even cancer by primary irritant action. Occupational dermatitis is a big problem in industry.

Roa Banelji (1952) were the first to draw attention in India to the revalence of Occupational dermatitis due to machine oil, rubber X-rays Caustic alkalies and lime.

(2) Inhalation

Dusts

Dusts finely divided solid particles with size ranging from 0.1 to 150 microns. They are released into the atmosphere during crushing, grinding, abrading, loading and unloading operations. Dusts are produced in a number of industries - mines, quarry, pottery, textile, wood or stone working industries.

Dusts have been classified into organic and inorganic dusts, soluble and insoluble dusts. Inorganic dusts are silica, mica, coal, asbestos dusts etc. Organic dusts are cotton, dust and the like. The soluble dusts dissolve slowly and enter the systemic circulation and are eventually eliminated by body metabolism. The insoluble dusts are more or less permanently in the lungs that cause danger.

(3) Gases

Exposure to gases is a common hazard in industries. Gases are sometimes classified as simple gases (example Oxygen, hydrogen) asphyxiating gases (example sulphur dioxide, chlorine) and aesthetic gases (example, chloroform, ether, trichloroethane).

(4) Metals and their Compounds:

A large number of metals and their compounds are used throughout the industries. The industrial physician should be aware of the toxicity of lead, antimony, arsenic, beryllium, cadmium, cobalt, manganese, mercury, phosphorus, chromium and others.

Occupational diseases may also result from ingestion of chemical substances such as lead, mercury, cadmium, phosphorus etc. usually the substance are swallowed in minute amounts through contaminated hands, food or cigarettes.

(c) BIOLOGICAL HAZARDS:

Workers may be exposed to infective and parasitic agents at the place of work, persons, working among animal products and agricultural workers, are specially exposed to Biological Hazards.

(d) MECHANICAL HAZARDS:

The mechanical hazards in industry center round machinery, protruding and moving parts and the like. About 10 percent of accidents industry are said to be due to mechanical causes.

(e) PSYCHOLOGICAL HAZARDS:

The Psychological hazards arise from the workers failure to adapt to the alien Psychological environment. Frustration lack of job satisfaction, insecurity poor human relationship, emotional tension are some of the psychological factors which may undermine both physical and mental health of the workers. The capacity to adapt to different working environments is influenced by many factors such as education cultural back ground, family life, social habits and whatever the expects for employment

Reports from various parts of the world indicate, the physical factors (heat, noise, poor lighting) also play a major role in adding to a precipitating mental disorders.

OCCUPATIONAL DISEASES:

Occupational diseases are usually defined "as diseases arising out of or in the course employment",

Due to the Hazardous environment explained above member of disease can occur which are grouped below:-

Diseases due to physical agents:

- (1) Heat** : Heat, Hyperpyrexia, heat exhaustion, heat syncope, heat cramps, burns and local effects such as Prickly heat.
- (2) Cold** : Frost bite, Chilblains
- (3) Light** : Occupational cataract, miner's nystagms.
- (4) Pressure** :Caisson diseases air embolism blast (Explosion)
- (5) Noise** : Occupation deafness
- (6) Radiation** : Cancer, Leukemia, aplastic anemia and Pancytopenia.
- (7) Mechanical factors** : Injuries and accidents.
- (8) Electricity** : Burns

II. Diseases due to Chemical agents:

- (i) Gases** : CO₂, CS₂, NH₃, N₂, H₂S, SO₂, Co, HCL these cause gas Poisoning.

(ii) Dusts (Pneumoconiosis)

Inorganic dusts:

- (a) Coal Dust - Anthracosis
- (b) Silica - Silicosis
- (c) Asbestos - Asbestosis, Cancer lung
- (d) Iron - Siderosis

(iii) Organic dusts (Vegetable)

- (a) Cane fibre - Bagassosis
- (b) Cotton dust - Byssinosis
- (c) Tobacco - Tobacosis
- (d) Hay or grain - Farmers lung

(3) Metals and their Compounds:

Toxic Hazards from lead, mercury, cadmium, manganese, beryllium, arsenic, Chromium etc.

(4) Chemicals : Acids, Pesticides and Alkalies

(5) Solvents : Carbon, bisulphide, benzene trichloroethylene, Chloroform etc.

(III) Occupational Cancer:

Dermatitis, eczema.

(VI) Diseases of Psychological origin:

Industrial neurosis, hypertension, ulcer etc.

1. Now in the modern world the chemical Industry is grown in leaps and bounds
2. 5 Million Chemicals are synthesized in last 40 years.
3. 50-70 thousand chemicals are used extensively in millions of different chemical products.

Hippocrates have impressed the industrial health problem in a large level.

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In India according to factory act (1948) schedule section, 9-90 following five diseases are notifiable and combinable.

1. Chronic ulceration and its sequel.
2. Anthrax
3. Contact Dermatitis by direct contact with chemicals and paints.
4. Primary epitheliomatous cancer of skin.

Dermatitis due to oils, compounds containing mineral oil base.

Disease	Percentage	Population
a) Occupational skin disease	1.7	86
b) Silicosis	3.5	43
c) Lead Poisoning	1.7	100
d) Noise indeed hearing Learning difficulty	1.7	17
e) Mercury Poisoning	2.6	37

(WHO Report 2002)

2. REVIEW OF LITERATURE RELATED TO SAFETY MEASURES AND OCCUPATIONAL HAZARDS:

Benson et.al., (2008), states that there is a strong connection between the health and well being of people and their working environment. When people feel valued, respected and satisfied in their jobs and work in safe, healthy environment, they are more likely to be more productive and committed to their work. When the workplace is very unsafe, stressful or unhealthy ultimately both the organization and the employee are hurt. Every one can benefit from a healthy place. He coined that, “Healthy employee + Healthy organization = Healthy work place”.

Banerjee et.al., (2008), states that Employment hazards of women working in industries may have adverse effect on pregnancy outcome. Heavy lifting, standing long duration, irregular working hours, shifting duties etc. all have been reported to be associated with several outcome including spontaneous abortion.

Foulds.L, (2007) states that industrial situations the hands forearms are most at risk. The use of proper gloves, coupled with a high standard of hygiene can minimize dermatitis and provide adequate protection.

Jaaratham .J, (2006), states that workers in developing countries are often inadequately trained to handle the new technologies and industrial processes. Many workers have come from a rural agricultural background where the place of work and type of work hazards are completely different. All these contribute to a general state of ignorance on health risks and safe workplace practices.

Joshi. S (2006) concluded prevention of occupational health hazards in mechanical industries, Pune reported that more than 70% occupational hazards and

accidents occur in developing nations. In India 23 injuries per 100 factory workers, 4 per 1000 in Japan and 10 per 1000 in Singapore. In Europe about 10 million occupational accidents happens in every year.

Rao.K.S, (2006) According to WHO (1953), “Occupational health is the promotion and maintenance of the highest degree of physical, mental and social wellbeing of the workers in all occupation”. An industrial worker may be exposed to five types of hazards depending upon his occupation; Physical hazards, Chemical hazards, Biological hazards, Mechanical hazards and Psychological hazards. Physical hazards include heat, cold, light, noise, radiation and pressure factors. Chemical hazards include gases, dusts, metal and their components chemical and advents. Biological hazards include bacterial, Viral, fungal infections. Mechanical hazards include accidents in industry. A psychological hazard includes lack of job satisfaction, fear and leading physical symptoms.

Mahajan.G, (2004), states that the physical, chemical, biological agents in the working environment may affect the health and efficiency of the worker. A man has to expose these agents for atleast 6-8 hours daily so, this working environment should be healthy and free from any harmful agents as far as possible. A healthy environment is an addition to being beneficial for the workers is conducive to higher work productivity.

Grainger et.al., (2004) OHN in South Africa reported that complex legislation for nursing practices includes the demographic profile of workers, mortality and morbidity profiles, occupational injuries and diseases, changes in technology and poor working conditions are present challenges for OHN practitioners

to provide a comprehensive programme for the protection of workers health and occupational safety. OHN provide primary health care, as well as occupational health care in the clinics.

Tiwai et.al.,(2004) reported training and education to the workers is extremely important to make people aware and concerned about occupational health. A nurse has to imparting knowledge related to specific measures in preventing and management of industrial accidents. The OHN could play the role of health educator, demonstrator, modifier and consultant etc. and help workers improve their knowledge and practice to prevent health hazards at work.

Sisguard.T, et.al., (2003), states that the working environment was examined for dust, bacteria, endotoxins and molds. The mean personal samples of airborne reabsorbable dust and respirable endotoxin were highest in the sugar industry. Bagassosis was diagnosed only in sugar industry, found a dose response relationship between endotoxin exposure and bagassosis.

James et.al., (2003) Population of those working in industry is a subset of population larger community, in which the industry is located. Workers were usually the healthiest people in the community who exposed to specific hazardous material at the highest concentrations in work place. It is in the factory that the most accurate exposure and health data are available for extrapolation to the general community.

James.F et.al., (2002), states that Health, Safety and Welfare in 1987 recommended that provision of working environment, medical and nursing facility, provision of safe water disposed, "Safety officers" for every 1000 workers, Canteen for 250 workers, crèche for 30 women workers, welfare officer for 500 workers, Child

labour – prohibits employment of children below 14 years of age, Shift basis – prescribes 48 hours of work/week 8 – 9 hours/day, leave with pay – 1 day for every 20 days.

Olszewski et.al., (2002) OHN can play a key role in workplace related injury, disease, disability and death. Through healthy people 2020 occupational health and safety objectives, the OHN's have the opportunity to develop and implement workplace policies and programmes promoting not only a safe and health work environment but also improved health and disease prevention.

Coggon .D, (2001) British Government 2000 launched a new long term strategy for occupational health as “revitalizing health and safety” and target of 20% reduction in the incidence of work related ill health to be achieved by the year 2010.

Martinex et.al., (1999) ,described to promote an ongoing improvement in safety and occupational health for workers done through safety hygiene, the environment and occupational health. It is a multi disciplinary treatment, which is aimed at the prevention of risk at their source.

Plomp.H.N, (1996), described that Accessibility of occupational health services is considered to be adequate if workers with work related health problems are reached. To a large extent the utilization of occupational health service is determined by the organization of the access.

Phoon S. (1996) explained the causes of industrial accidents to the numerous varied and complex. The main factors which can start a chain of events leading ultimately to an accident may lie in a (b) work environment (b) Work Method (c) Worker.

An accident caused by material handling machine, falling of objects and fall of persons. Faults due to unsuitability of worker social and physical environment, improper work attitudes, lack of knowledge of skill for the jobs and poor supervision.

Rivarer FP (1995) said that injuries are the most important cause of mortality and disability important risk factors for injury are gender, age, socio-economic status, mental stress, working conduction, substance abuse and lake of environmental awareness. These factors interest to T^1 and T^{es} the risk of injury.

3. STUDIES RELATED TO SAFETY MEASURES AND OCCUPATIONAL HEALTH HAZARDS:

Joshi.S (2008) conducted a study on prevention of occupational health hazards in Pune, India reported that adoption of safer working practices, training, health education, improvement of safety systems and changes in behavioural and management practice could reduce the accident rates even in high risk industries by 50% or more within a relatively short time.

Thomson et.al., (2007), states that each year estimated 140 million of US workers are injured on the job of become ill from exposure to hazards at work. Those work related injuries and illness results in substantial human and economic costs for workers employers and society.

Joshi. S (2006) concluded prevention of occupational health hazards in mechanical industries, Pune reported that move than 70% occupational hazards and accidents occur in developing nations. In India 23 injuries per 100 factory workers, 4 per 1000 in Japan and 10 per 1000 in Singapore. In Europe about 10 million occupational accidents happens in every year.

Ramanakumar.V.A. (2006) observed that an overview of occupational health research in India, reported that workers had negative attitudes towards occupational safety, work without safety measures, work with ill equipment, improper training in the use of safety equipment and alcoholism during work.

Ramanakumar.K, (2005) reported that most of the fatal accidents resulted from the powered machinery are mainly due to lack of skills to operate them with an annual fatality rate estimated 22 per 100,000 workers. In spite of the enactment of legislation, the short coming in production and monitoring of the machinery in the field may be responsible for the high rate of accidents

Barrientos.C.M. et.al., (2005) reported global burden due to occupational injuries are a public health problem estimated to kill more than 3,00,000 workers worldwide every year and to cause many more cases of disability. The economically active population of about 2.9 billion workers was used as a surrogate of the population at risk for occupational injuries. Worldwide hazardous conditions in the work place were responsible for a minimum of 3,12,000 fatal unintentional occupational injuries. Together fatal and non-fatal occupational injuries resulted in about 10.5 million disability adjusted life years (DALYs). Occupational risk factors are responsible for 8.8% of the global burden of mortality due to unintentional injuries.

Ramanakumar.V.A, (2005) conducted a study on overview of occupational health research in India reported that Indian doctors and nurses are very poorly trained to deal with occupational health related morbidity. Indian Medical Association (IMA) educates all the people in occupational health issues.

Higgins.D.N. et.al., (2004) conducted a study on preventing young worker fatalities identified that 67 work related death of individuals younger than 18 years.

Nishtar.S et.al., (2004) conducted a study on prevention and control of occupational injuries is a national consensus has been achieved to develop a comprehensive policy and to enact and enforce the legislation for occupational health and safety, to include preventive health in the mandate of organizations dealing with worksite, safety and to study pattern of occupational injuries and their determinants with a view to defining precise targets for preventive intervention.

Rango .L.M. et.al., (2004) conducted a study on occupational exposure and health problems in small scale industrial workers in Tanzania concluded that there was low level use of personal protective equipments. The workers reported their needs as permanent work places, information on work related hazards, water and sanitation and legislation for small scale industries.

Odhiambo (2004) inspected 20 factories in Kenya and observed that 73% of all workplace there was no or insufficient personal protective equipment. At 55% of the work places the working conditions were unsafe. At 65% of the work places were inadequate complete first aid kit, but they maintain it for “show” to the officers of the Directorate of occupational health and safety.

Culp. et.al., (2003) conducted a study on occupational safety and health in Gambia reported that and occupational health nursing community to develop and international interest in worker health in countries with limited resources.

Rand.D.P.P et.al., (2003) conducted a study on the need for occupational health services in Bloemfontein recommended that industrial health nurse have an

important task in providing appropriate information to employers and employees. The occupational nurses face great challenges.

Melamed.S and Oksenberg.A (2002), conducted a study on “excessive daytime sleepiness (EDS) and risk of occupational injuries in non-shift day time workers” in Israel reported that excessive day time sleepiness is a prevalent phenomenon in non-shift day time workers. Workers with EDS had higher risk of sustaining an occupational injury. It can be reduced by adopting safety behaviour.

Kendrick (1993) said that falls are an important cause of injuries in many less developed countries but none of these studies give the details of the events leading to falls.

CONCEPTUAL FRAME WORK

Modified Rosenstoch (1974) and Becker's Health Belief Model (1978)

Theories and conceptual models are the primary means of providing a conceptual context for the study. The aim of the present study is to assess the knowledge and practices of workers regarding utilization of safety measures.

Conceptualization is the process of forming ideas, which are utilized, and forms conceptual framework for the development of research design. It helps the researcher to know what data need to be collected and gives direction to an entire research process.

The conceptual framework for the study is based on Health Belief Model. Health Beliefs are person's ideas and attitude, about health and illness. They may be based on factual information or wrong information. The health belief usually results from within a person. So, the investigator felt that Becker's model is suitable as conceptual framework for this study, to asses the knowledge and practices of mothers of school age children regarding worm infestations.

Rosentoch (1974) and Becker's Health Belief Model (1978), address the relationship between a person's belief and behaviours, it is the way of understanding and predicting how clients will behave in relation to their health care. This model helps the nurses to understand the various behaviours including mother's perception, beliefs and various actions in order to plan the effective care.

This model describes about the following three variables:

Worker's perception: Worker's perceived knowledge regarding utilization of safety measures.

Modifying factors: The worker's perception is influenced and modified by demographic variables like age, sex, education, monthly income, work experience, place of work, over time duty, source of information, knowledge and practices on utilization of safety measures. The worker's perception is also influenced by cues of action, like health care personnel, mass media, information from friends and relatives etc.

Preventing health Hazards: This part indicates that worker's may try to take action to prevent health hazards in industries. So the worker's are likely to adopt the healthy practices. Some of the perceived barriers like knowledge, illiteracy, practice, and lack of awareness may lead to unhealthy practices.

CONCEPTUAL FRAME WORK

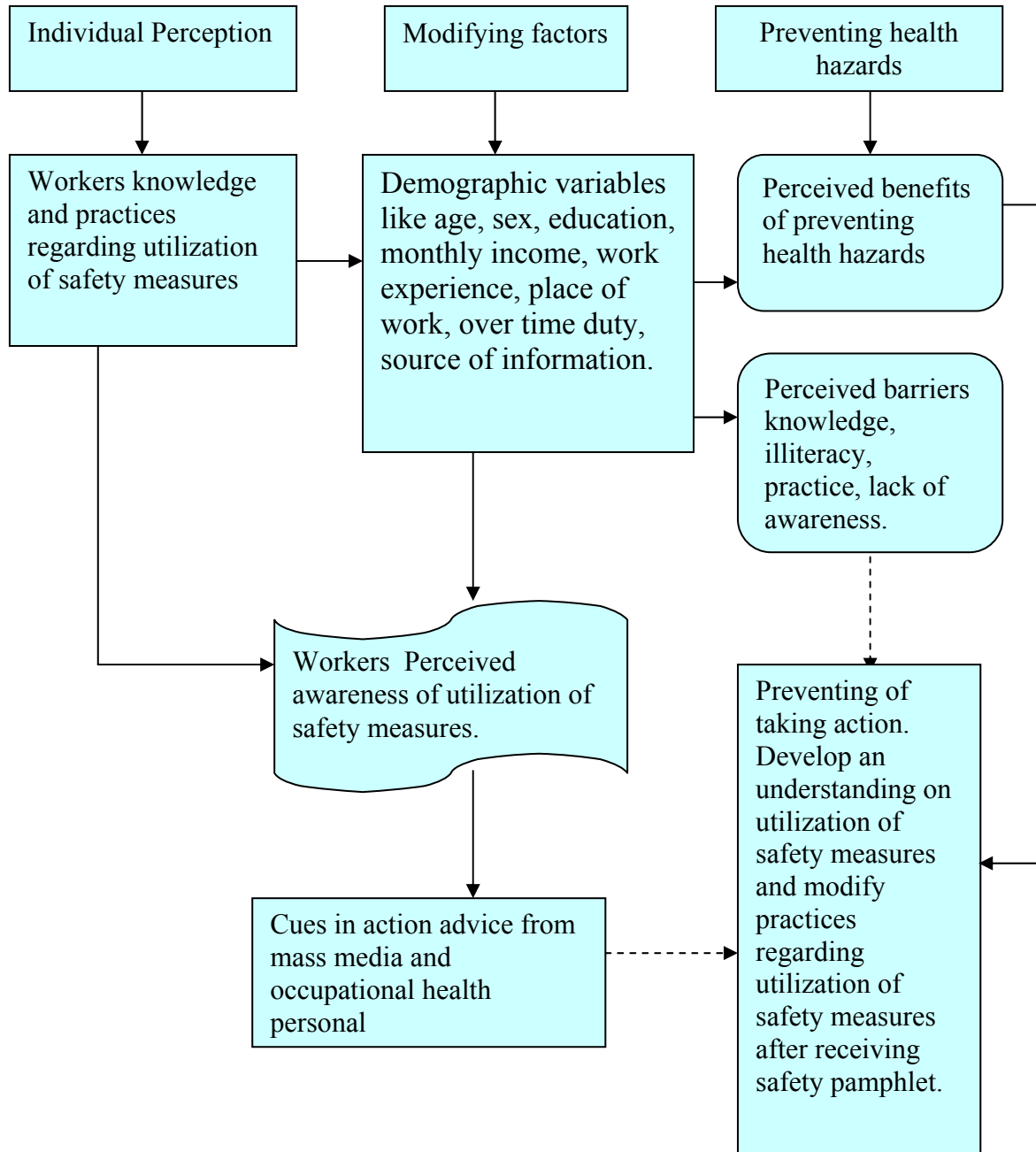


Fig. 1: Conceptual frame work on Utilization of safety measures among the workers

Modified Rosenstoch (1974) and Becker's Health Belief Model (1978)

CHAPTER- III

METHODOLOGY

Research methodology is a way to solve systematically the research problems. According to Sharma (1990) the research methodology involves the systematic procedure by which the researcher starts from initial identification of the problem to its final conclusion.

The study was aimed at evaluating the knowledge and practice of workers regarding utilization of safety measures.

This chapter deals with the description of methodology, different steps, which were undertaken for gathering and organizing data for the investigation. It includes description of research approach, research design, setting, target population, sample size and sampling technique development and description of tools, pilot study, data collection and plan for data analysis.

RESEARCH APPROACH

A research approach tells the researcher as to what data to be collected and how to analyze it. It also suggests possible conclusions to be drawn from the data. In this study, the researcher sought to assess the knowledge and practice of workers regarding utilization of safety measures. In view of the nature of the problem selected for the study and the objectives to be accomplished, non-experimental (quantitative) approach was used for this study.

In the analysis of data, the association between demographic variables and the knowledge and practice of workers regarding utilization of safety measures and the relationship between knowledge and practice of workers regarding utilization of safety measures represents the effect of the independent variable.

The nature of the study is also analytical where hypothesis are tested, examining relationship of knowledge and practice with demographic variables.

RESEARCH DESIGN

Research design is the researcher's overall plan for obtaining answers to the research questions. The investigator has employed descriptive research design with the help of questionnaire on knowledge and practice of workers regarding utilization of safety measures.

VARIABLES UNDER STUDY

- **Study variable includes:** knowledge and practice of workers regarding utilization of safety measures
- **Extraneous variables includes:** Age, sex, education, income, work experience, place of work, over time duty and source of information.

POPULATION

Population includes "All possible elements that could be included in research" (Polit 2002). The population for the study includes industrial workers.

SAMPLE

Sample is small proportion of the population selected for observation and analysis the numbers of the samples are study subjects. The sample for the study consisted of workers (Who met inclusive criteria) in Sakthi Sugars Limited, Sakthinagar, Bhavani, at Erode District.

SAMPLE SIZE

Sample size is 100 workers.

SAMPLING TECHNIQUE

The sampling technique used for selecting the sample is simple random sampling technique.

Simple random sampling is a sample selected in such a way that every item in population has equal chance of being included (Rao.B, 2002).

Lottery method was used to select the sample. The workers names were written in chits and lots were taken from the box.

SAMPLING CRITERIA

Inclusion Criteria

The study was limited to

- The workers who were in day shift
- The workers who were to participate in the study
- The workers who were able to understand and speak Tamil.

Exclusion Criteria

- Those who are working in administrative setup.
- Those who were exposed to any safety awareness campaign.
- Those who were on leave in the concern department.

SITE

The site for the study is Sakthi Sugars Limited, Sakthinagar, Bhavani Taluk, Erode District.

SETTING

The setting for the study is selected department workers in Sakthi Sugars Limited, Sakthinagar, Bhavani Taluk, Erode District.

DATA COLLECTION TOOLS

Collection is the gathering of information needed to address a research problem.

Tools are the procedure or instruments used by the researcher to collect data.

The following tool was used in the study.

- Structured interview schedule to assess the knowledge and practice of utilization of safety measures.

DESCRIPTION OF TOOLS

The tool consists of 3 sections.

SECTION I

Demographic Data

It includes items for obtaining information regarding age, sex, educational qualification, income, working experience, place of work, overtime duty and source of information.

SECTION II

Structured Questions on knowledge on utilization of safety measures.

It consists of 3 subsections (Total -25).

Subsection 1

8 general questions on safety measures and occupational hazards.

Subsection 2

9 questions on occupational safety and hazards.

Subsection 3

8 questionnaires on prevention of occupational hazards.

SCORING:

Each correct answer carries 1 mark. Level of knowledge is categorized as inadequate (<50%), moderate (51-75%), adequate (>75%).

SECTION III

It consists of 10 Yes / No questions to assess the practice of utilization of safety measures among the workers.

Each “yes” answer carries one mark. Level of practice is categorized as poor (1-50%), good (51-100%).

VALIDATION OF THE TOOLS

The tool was given to 4 experts in the field of community health nursing and 1 experts in medical field. Items in the structured questionnaires were modified according to the suggestions given by the experts.

RELIABILITY

It was done by test and re-test method. The structured questionnaire was administered to 10 workers from the selected Sakthi Sugars Limited, Modakurichi. After four days, the same tool without any manipulation was administered to the same workers.

The relative score position of the subjects were almost same. The co-efficient of correlation was found as indicated in high degree of reliability of the questionnaire.

PILOT STUDY

It is a small scale version (or) trial run of the main study.

After getting permission from the concerned authorities, pilot study was conducted from 01/11/2009 to 07/11/2009. During pilot study the tools was used to 10 workers working in Sakthi Sugars Limited, Modakurichi, Erode district. The topic was explained and the interview was conducted. Data analysis was done by using descriptive and inferential statistics and found that the study was feasible .Data was collected by structure knowledge and practice questionnaire.

DATA COLLECTION PROCESS

Data collection is the gathering of information needed to address a research problem.

Data collection for the main study was done from 11/11/2009 to 30/11/2009. Total samples of the main study were 100 workers in Sakthi Sugars Limited, Sakthinagar. After getting consent, data was collected from the samples by administering structured interview questionnaires.

PLAN FOR DATA ANALYSIS

S.No.	Data Analysis	Methods	Remarks
1.	Descriptive	Mean, Standard deviation percentage	Assess the level of knowledge, and practice of utilization of safety measures.
2.	Inferential statistics	Chi-square test	Analyses the association between demographic variables and knowledge, and practice.
		Karl Pearson correlation coefficient	Analyses the correlation between knowledge and practice of utilization of safety measures.

Data analysis is the systematic organization and synthesis of research data by testing of research hypothesis using those data.

The data obtained was planned to be analyzed on the basis of the objectives of the study using descriptive and inferential statistics.

- Organize data in master coding sheet.
- Demographic variables are to be analyzed in terms of frequencies and percentage.
- Knowledge and practice scores are to be presented in form of mean, mean percentage and standard deviation.

- Chi-square test to determine the association between demographic variables and knowledge, attitude and practice of workers regarding utilization safety measures.

ETHICAL CLEARANCE

The proposed study was conducted after the approval of dissertation committee of the college and General Manager of Sakthi Sugars Limited and from concerned study participants.

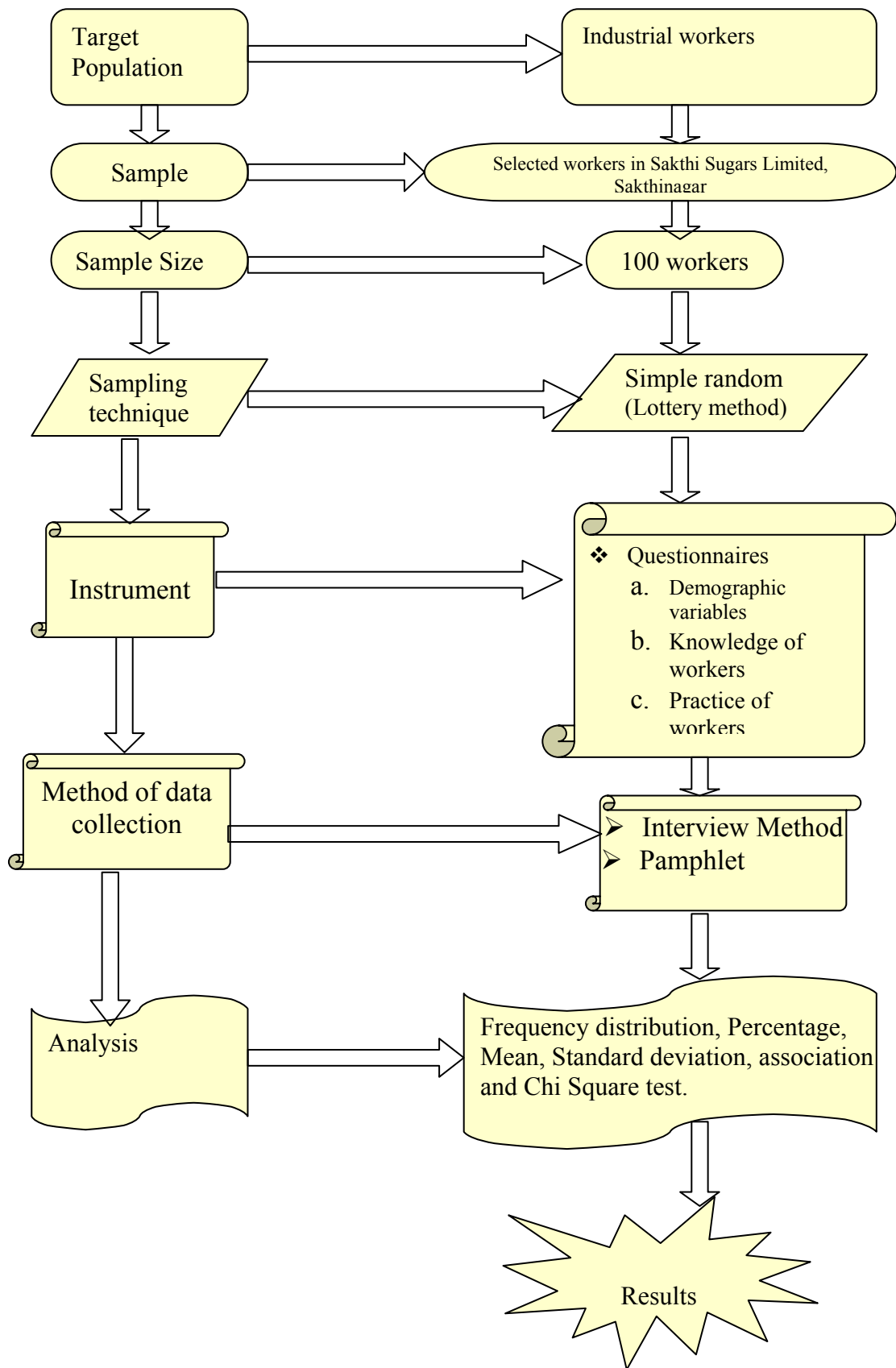


Fig. 2: Schematic representation of research design of the study

CHAPTER - IV

DATA ANALYSIS AND INTERPRETATION

Polit & Hungler, (2004) defines as categorizing, ordering, manipulating and summarizing of data to reduce it to intelligible and interpretable form, so that research problem can be studied and tested including relationship between the variables.

This chapter deals with analysis and interpretation of the data elicited from a sample of 100 Industrial workers on knowledge and practice regarding utilization of safety measures. The data which are necessary to provide the adequacy of the study are collected through the semi structured interview schedule and analyzed using relevant descriptive and inferential statistics. The substantive summaries of the findings were arranged in connection with the objectives of the study.

The data collected was calculated based on the objectives of the study

- ❖ To assess the level of knowledge and practice of utilization of safety measures among industrial workers.
- ❖ To find out the correlation coefficient between knowledge and practice of utilization of safety measures among industrial workers.
- ❖ To find out association between selected demographic variables with knowledge and practice of utilization of safety measures.

ORGANIZATION OF FINDINGS

The data was organized, analyzed and presented under following heading.

Section – I

Frequency and Percentage distribution of selected demographic variables.

Section – II

Percentage of different aspect of knowledge and practice regarding utilization of safety measures.

Section – III

Correlation coefficient between knowledge and practice regarding utilization of safety measures.

Section – IV

Association between the knowledge and practice of the selected demographic variables among the Industrial workers.

SECTION I

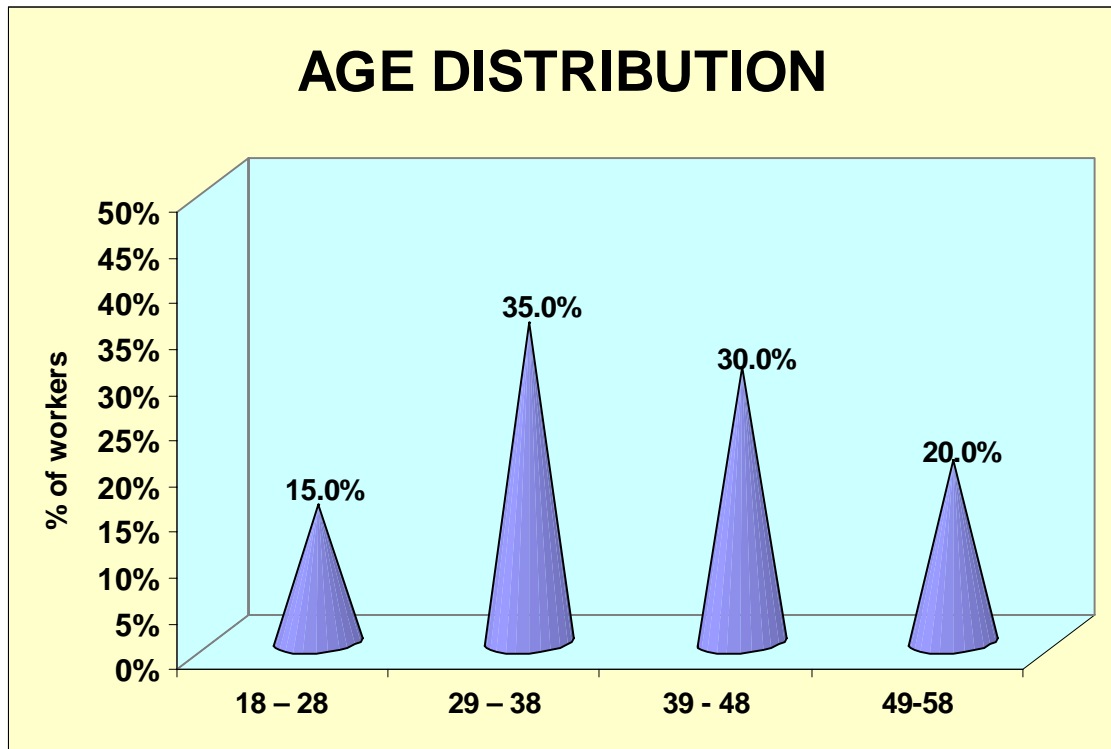
DISTRIBUTION OF DEMOGRAPHIC VARIABLES

TABLE 1: DISTRIBUTION OF DEMOGRAPHIC VARIABLES

DEMOGRAPHIC VARIABLES		Frequency	%
Age	18 – 28	15	15.0%
	29 – 38	35	35.0%
	39 - 48	30	30.0%
	49-58	20	20.0%
Sex	Male	80	80.0%
	Female	20	20.0%
Education	Illiterate	40	40.0%
	School education	30	30.0%
	Technical education	20	20.0%
	Professional education	10	10.0%
Income	BelowRs.2000/-	10	10.0%
	Rs.2001- 4000/-	20	20.0%
	Rs.4001-6000/-	40	40.0%
	Rs.6001 and above	30	30.0%
Working experience	Below 1 year	13	13.0%
	2-5 Years	30	30.0%
	6-10 years	33	33.0%
	Above 11 Years	24	24.0%
Place of work in industry	Manufacturing section	41	41.0%
	Cane section	18	18.0%
	Electrical section	24	24.0%
	Mechanical section	17	17.0%
Overtime duty	No overtime duty	19	19.0%
	Once in week	30	30.0%
	Once in month	21	21.0%
	Twice in month	30	30.0%
Source of information	Friends/relatives	15	15.0%
	Mass media	35	35.0%
	Health personnel	30	30.0%
	Others	20	20.0%
Total		100	100%

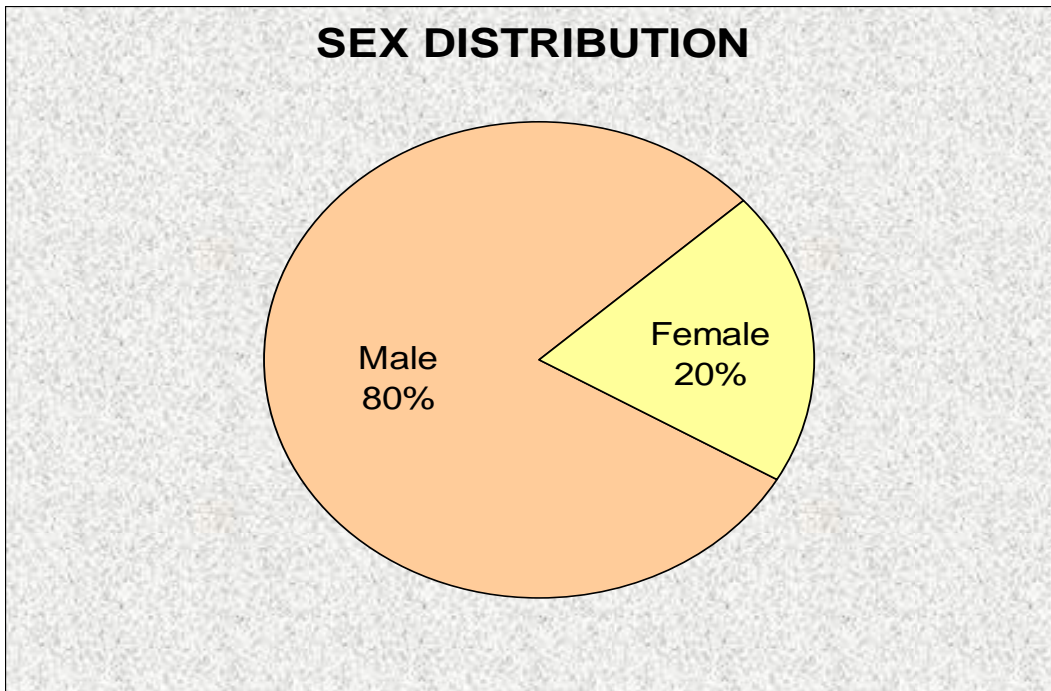
Table 1 shows the distribution of demographic variables according to their age, sex, education, income, and working experience, place of working in industry, overtime duty, source information and community.

Fig. 3: Cone diagram shows distribution of age among the workers



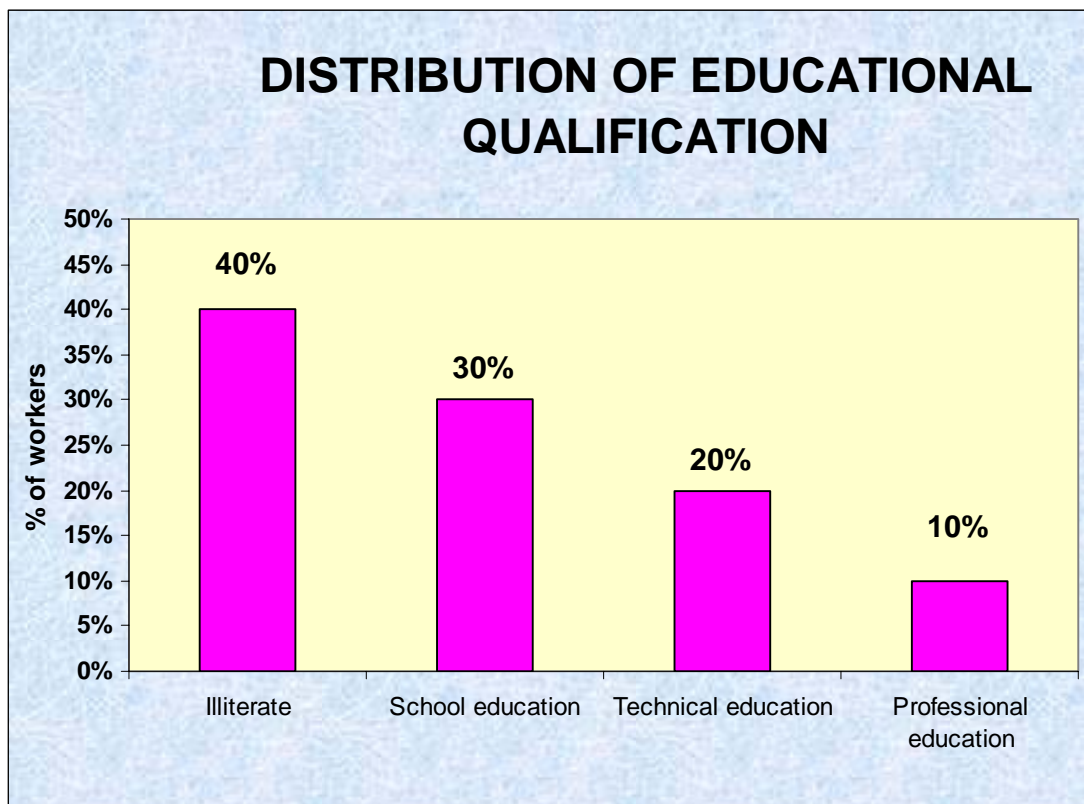
The above figure shows distribution of the workers according to their age. That 15.0% of samples are in the age group of 18-28 years, 35.0% are in the age group of 29-38 years, 30.0% are in the age group of 39-48 years and 20.0% are in the age group of 49-58. It shows that highest percentage was in the age group of 29-38 years

Fig. 4: Pie diagram shows distribution of sex among the workers



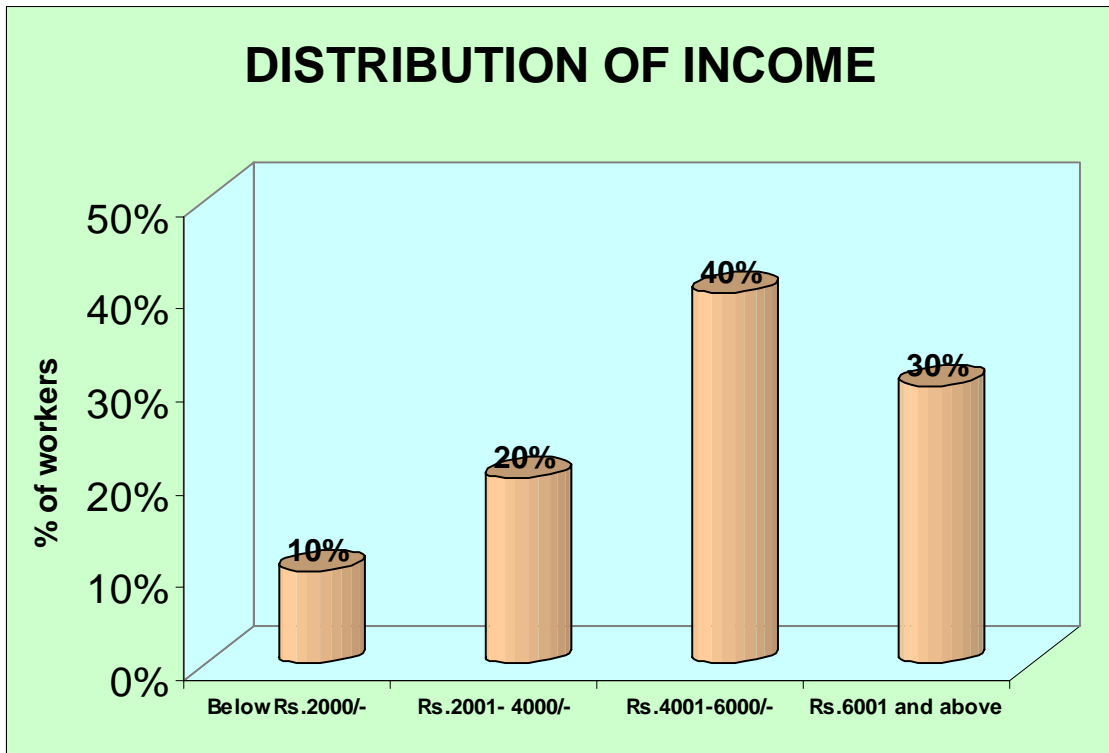
The above figure shows distribution of the workers according to their sex. That 80.0% of samples are male, and 20.0% are female.

Fig. 5: Bar diagram shows distribution of educational qualification among the workers



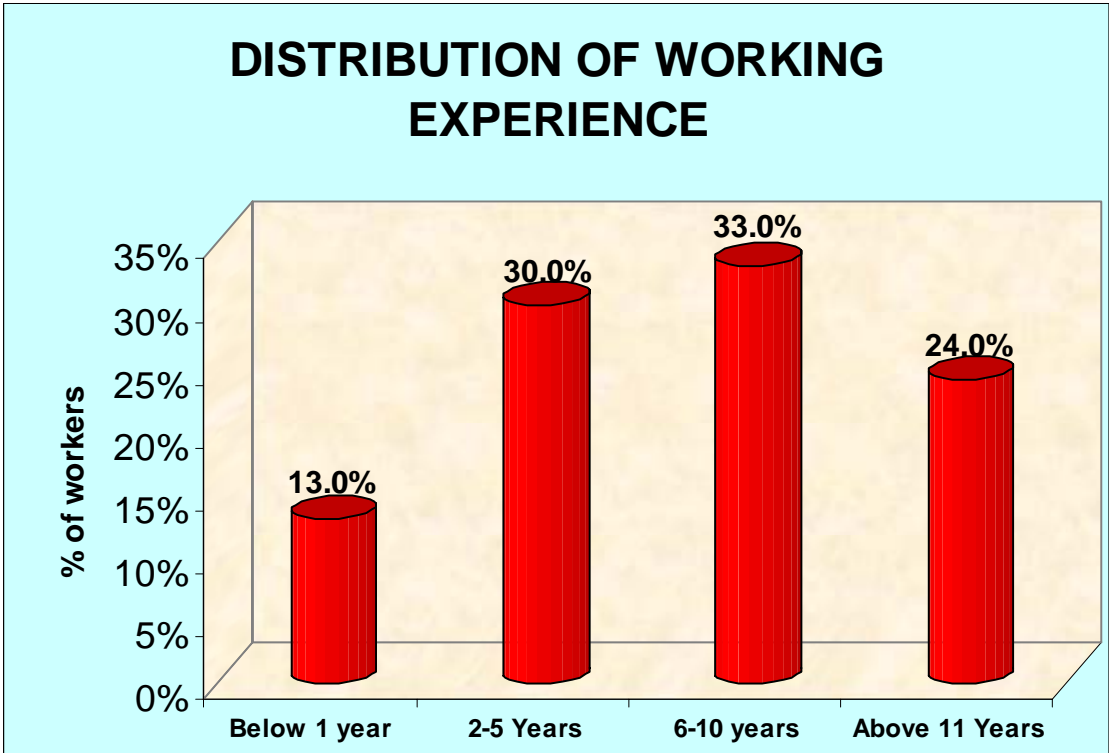
The above figure shows distribution of the workers according to their educational qualification. That 40% of samples are illiterate, 30.0% of samples are school education, 20% of samples are technical education, 10% of samples are professional education. It shows that highest percentage was illiterate.

Fig. 6: Cylinder diagram shows distribution of income among the workers



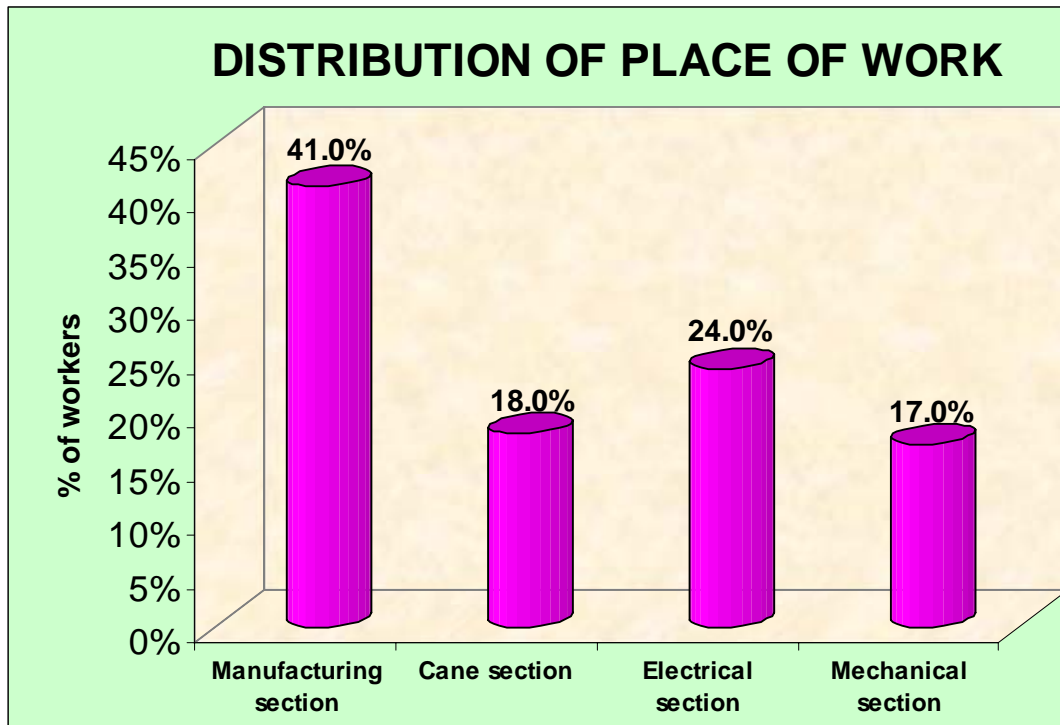
The above figure shows distribution of the workers according to their income. That 10% of samples are below Rs.2000/-, 20.0% of samples are Rs.2001-4000/-, 40% of samples are Rs.4001-6000/- and 30% of samples are Rs.6001/- and above. It shows that highest percentage was Rs.4001-6000/-.

Fig. 7: Cylinder diagram shows distribution of working experience among the workers



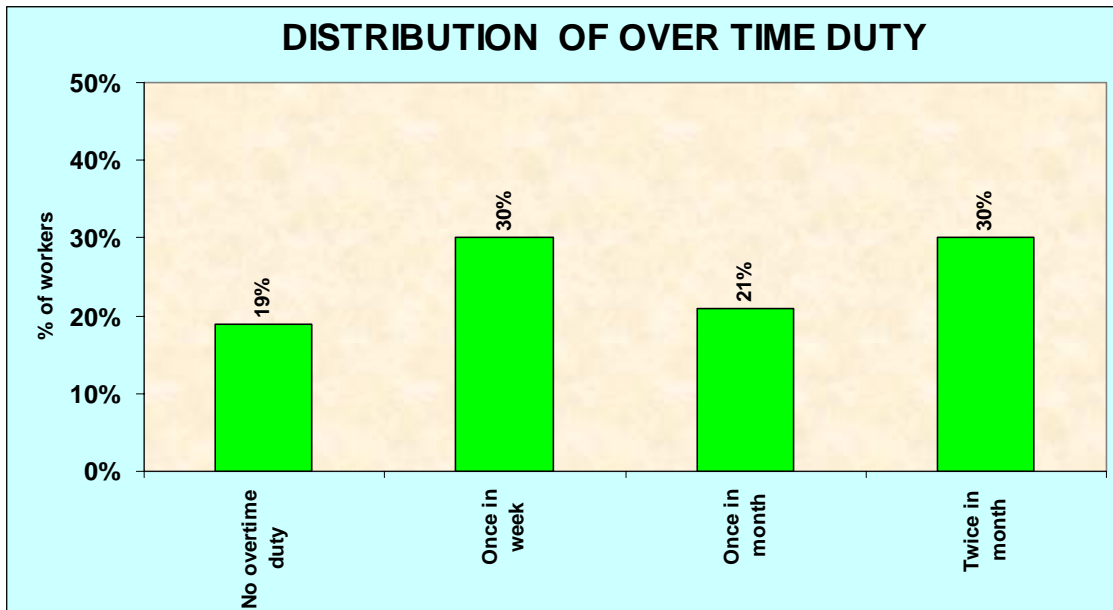
The above figure shows distribution of the workers according to their working experience. That 13.0% of samples are below 1 year, 30.0% of samples are 6-10 years, 33.3% of samples are 6-10 years, 24.0% of samples are above 11 years. It shows that highest percentage was 6-10 years.

Fig. 8: Cylinder diagram shows distribution of place of work among the workers



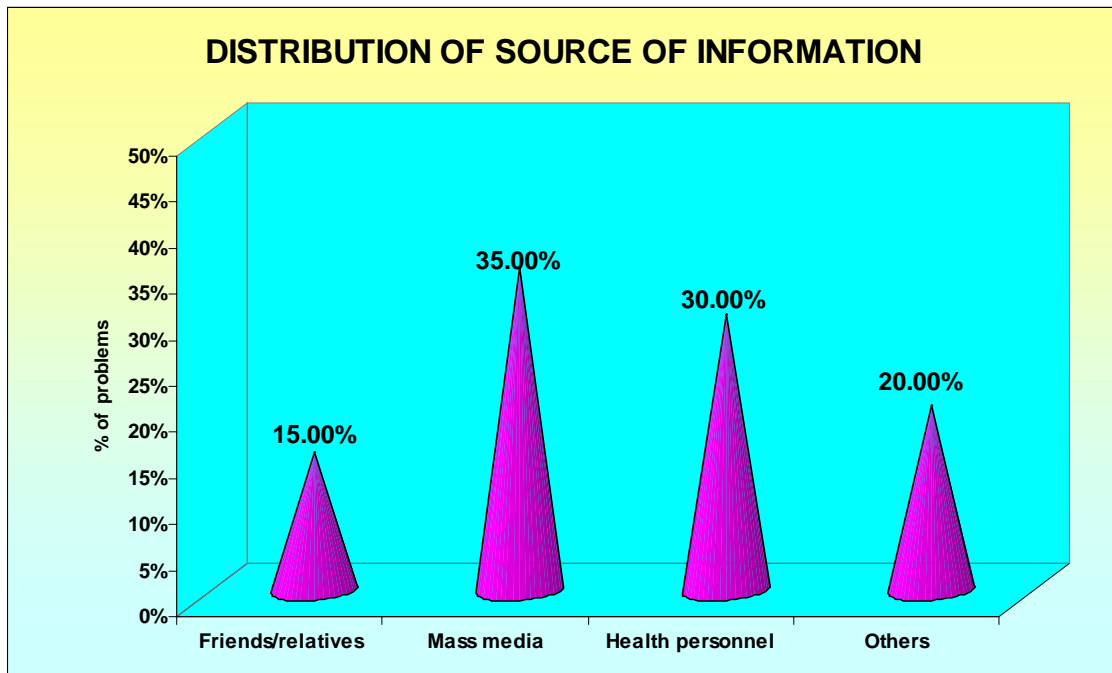
The above figure shows distribution of the workers according to their place of work.. That 41.0% of samples in manufacturing section, 18.0% of samples in cane section, 24.0% of samples in electrical and 17.0% of samples in 17.0% mechanical section.

Fig. 9: Bar diagram shows distribution of over time duty among the workers



The above figure shows distribution of the workers according to their over time duty. That 19.0% of samples are no over time duty, 30.0% of samples are once in week, 21.0% of samples are once in month and 30.0% of samples are twice in month.

Fig. 10: Cone diagram shows distribution of source of information among the workers



The above figure shows distribution of the workers according to their source of information. That 15.0% of samples are getting information from friends / relatives, 35.0% of samples are getting information from mass media, 30.0% of samples are getting information from Health personnel and 20.0% of samples are getting information from others.

SECTION II
ASSESSMENT OF KNOWLEDGE AND PRACTICE REGARDING
UTILIZATION OF SAFETY MEASURES
PART A

Table 2: UTILIZATION OF SAFETY MEASURES KNOWLEDGE SCORE

S.no	Aspect	No. of questions	Min – Max score	Knowledge		
				Mean score	Sd	%
1	Basic knowledge	8	0-8	4.51	2.312	56.3%
2	Various type of occupational hazards	9	0-9	4.22	2.368	46.8%
3	Safety measures used to prevent occupational hazards	8	0-8	3.89	2.470	48.6%

Table no.2 shows the Industrial workers knowledge score on each aspect of utilization of safety measures among industrial workers. The Industrial workers scored average score on utilization of safety measures.

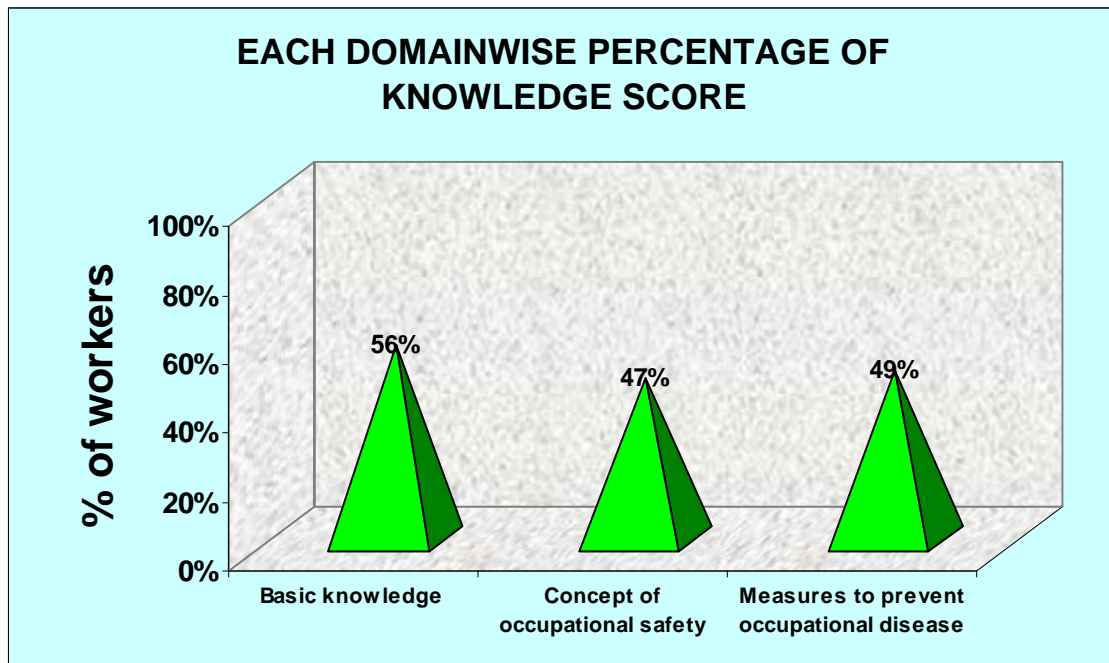


Fig. 11: Pyramid diagram shows each domain wise percentage of knowledge score among the workers

Table 3: OVERALL KNOWLEDGE SCORE

	No. of questions	Min – Max score	Knowledge		
			Mean score	Sd	%
Overall mean score	25	0-25	12.63	5.683	50.5%

Table no.3 shows the industrial workers overall knowledge score on utilization of safety measures among industrial workers. Industrial workers scored moderately adequate score on utilization of safety measures.

Table 4: LEVEL OF KNOWLEDGE

Level of Knowledge	No	Percentage
Inadequate	40	40.0%
Moderately Adequate	37	37.0%
Adequate	23	23.0%

Table no. 4 shows the overall level of knowledge for industrial workers .In group of Industrial workers about 40% are having inadequate knowledge and 37% are having moderately adequate knowledge and 23% are having Adequate knowledge regarding utilization of safety measures.

Score 0 - 25

- <= 50% inadequate knowledge = 0 – 12.5 score
- 51 -75% moderately adequate knowledge =12.6– 18.5 score
- 76 -100% adequate knowledge = 18.6 - 25 score

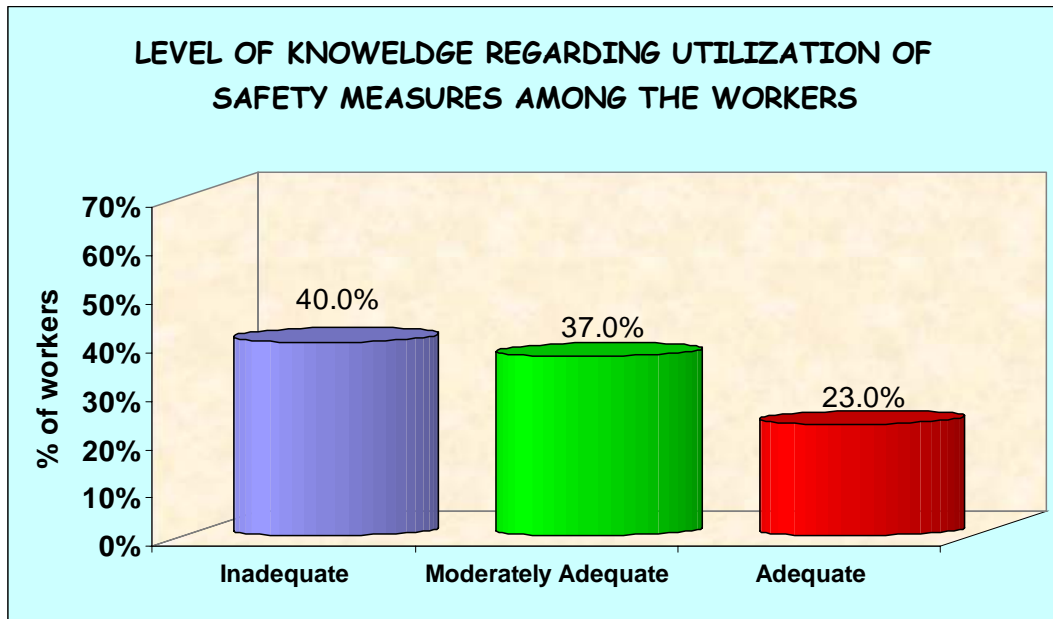


Fig. 12: Cylinder diagram shows level of knowledge score regarding utilization of safety measures among the workers

PART B

THE LEVEL OF PRACTICE OF INDUSTRIAL WORKERS REGARDING UTILIZATION OF SAFETY MEASURES.

Table: 5 Overall Assessment of practice

	No. of questions	Min – Max score	practice		
			Mean score	Sd	%
Overall mean score	10	0-10	5.45	1.977	54.5%

Table no.5 shows the industrial workers overall Practice score on utilization of safety measures. Most of the industrial workers show poor practice with regard to utilization of safety measures.

Table 6: LEVEL OF PRACTICE

Level of practice	No	Percentage
Good	40	40.0%
Poor	60	60.0%

Table no. 6 shows the overall level of practice for Industrial workers. Industrial workers about 40% are having good level of practice and 60% are shows poor practice regarding utilization of safety measures

Score 0 - 10

$\leq 50\%$ Poor practice = 0 – 5 score

51 -100% Good practice = 6 – 10 score

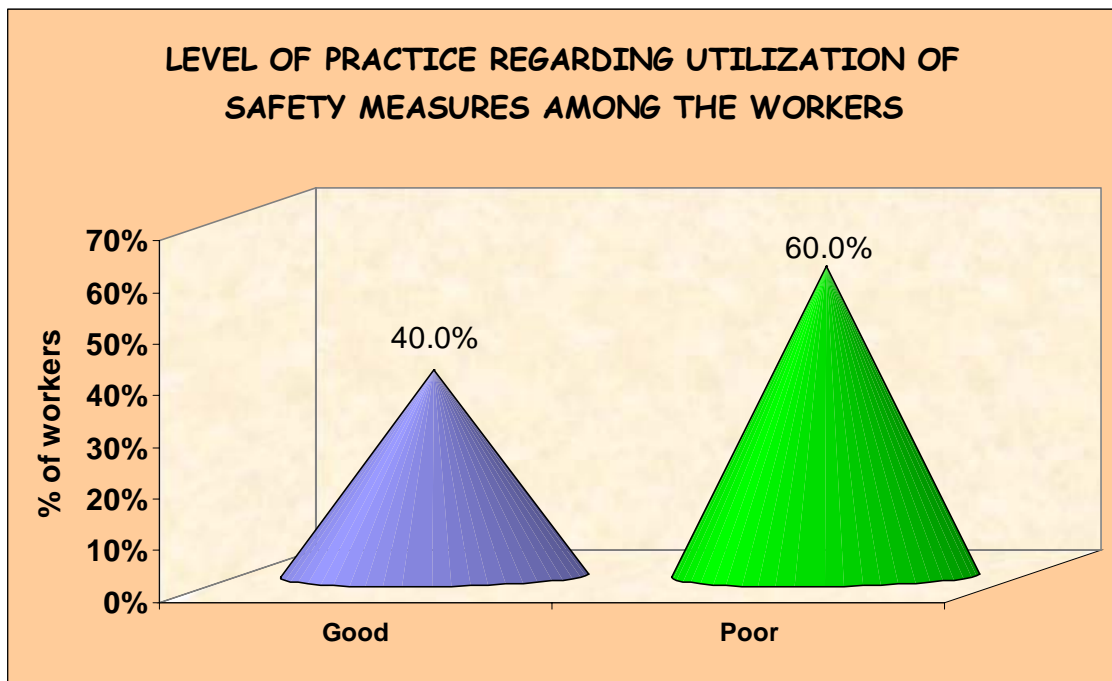


Fig. 13: Cone diagram shows level of practice score regarding utilization of safety measures among the workers

SECTION III
CORRELATION COEFFICIENT BETWEEN KNOWLEDGE AND PRACTICE REGARDING UTILIZATION OF SAFETY MEASURES

Table: 7: Correlation between knowledge and practice of industrial workers

	Karl Pearson correlation coefficient	Interpretation
Correlation between knowledge and practice	r = 0.1328 P=0.1879	Moderate positive correlation It means , there is a moderate correlation between knowledge and practice score

Interpretation for r-value

Pearson correlation coefficient is denoted by “r”

“r” always lies between -1 to +1

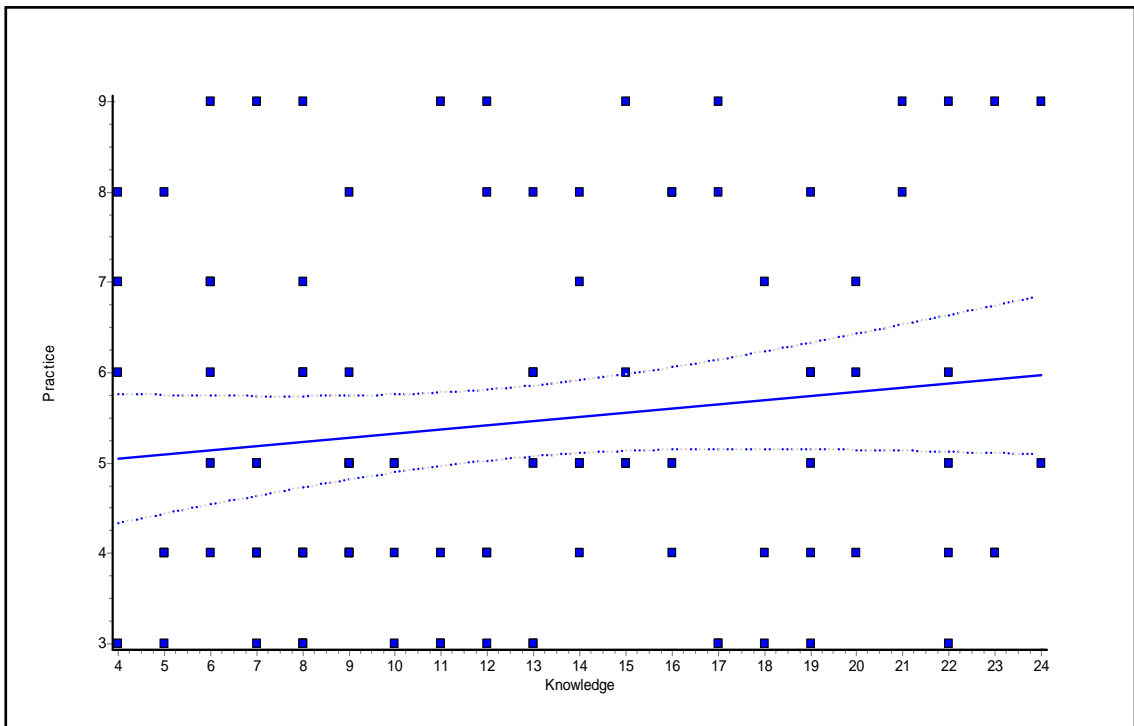


Fig. 14: Scatters diagram shows correlation between knowledge and practice regarding utilization of safety measures among the workers

SECTION IV
ASSOCIATION OF KNOWLEDGE WITH THEIR SELECTED
DEMOGRAPHIC VARIABLES

Table8: Association between level of Knowledge and Demographic variables

DEMOGRAPHIC VARIABLES		Level of knowledge						Chi square test
		Inadequate		Moderate		Adequate		
		Fre	%	Fre	%	Fre	%	
Age	18 – 28	7	7.00%	5	5.00%	3	3.00%	$\chi^2=4.306$ P=0.6354 NS
	29 – 38	15	15.0%	10	10.0%	10	10.0%	
	39 - 48	12	12.0%	11	11.0%	7	7.00%	
	49-58	6	6.00%	11	11.0%	3	3.00%	
Sex	Male	30	30.0%	31	31.0%	19	19.0%	$\chi^2= 1.054$ P=0.5904 NS
	Female	10	10.0%	6	6.00%	4	4.00%	
Education	Illiterate	26	26.0%	11	11.0%	3	3.00%	$\chi^2=29.861^*$ P=0.0001
	School education	10	10.0%	15	15.0%	5	5.00%	
	Technical education	4	4.00%	6	6.00%	10	10.0%	
	Professional education	0	0.00%	5	5.00%	5	5.00%	
Income	BelowRs.2000/-	4	4.00%	4	4.00%	2	2.00%	$\chi^2=43.929^*$ P=0.0001
	Rs.2001- 4000/-	12	12.0%	5	5.00%	3	3.00%	
	Rs.4001-6000/-	23	23.0%	17	17.0%	0	0.00%	
	Rs.6001 and above	1	1.00%	11	11.0%	18	18.0%	
Working experience	Below 1 year	11	11.0%	1	1.00%	1	1.00%	$\chi^2=20.702^*$ P=0.0021
	2-5 Years	10	10.0%	12	12.0%	8	8.00%	
	6-10 years	16	16.0%	12	12.0%	5	5.00%	
	Above 11 Years	3	3.00%	12	12.0%	9	9.00%	
Place of work in industry	Manufacturing section	21	21.0%	10	10.0%	10	10.0%	$\chi^2=16.555^*$ P=0.0111
	Cane section	8	8.00%	7	7.00%	3	3.00%	
	Electrical section	10	10.0%	12	12.0%	2	2.00%	
	Mechanical section	1	1.00%	8	8.00%	8	8.00%	

Overtime duty	No overtime duty	5	5.00%	7	7.00%	7	7.00%	$\chi^2=6.767$ P=0.3430 NS
	Once in week	15	15.0%	10	10.0%	5	5.00%	
	Once in month	7	7.00%	7	7.00%	7	7.00%	
	Twice in month	13	13.0%	13	13.0%	4	4.00%	
Source of information	Friends/relatives	5	5.00%	8	8.00%	2	2.00%	$\chi^2=33.802^*$ P=0.0001
	Mass media	5	5.00%	16	16.0%	14	14.0%	
	Health personnel	12	12.0%	12	12.0%	6	6.00%	
	Others	18	18.0%	1	1.00%	1	1.00%	

* = Significant, NS = Not significant

Table no 8 shows the association between socio-demographic variables and level of knowledge. Educational status, income, working experience, place of work and source of information are associated with level of knowledge. Statistical significance was calculated using Pearson chi square test/Yates corrected chi square test.

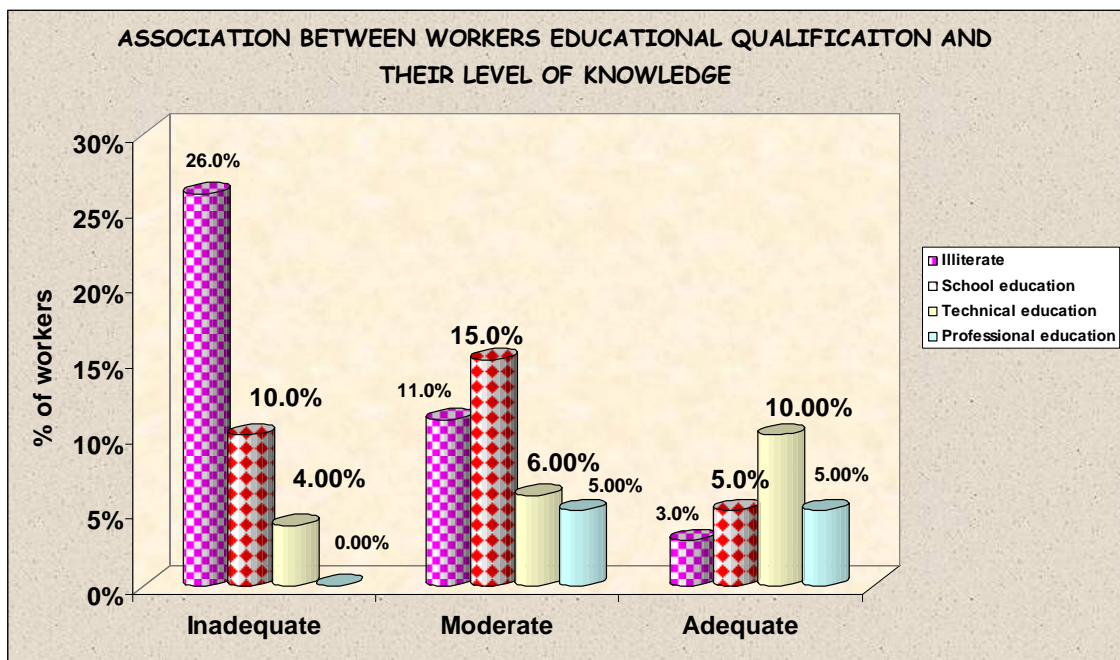


Fig. 15: Cylindrical diagram shows association between workers educational qualification and their level of knowledge

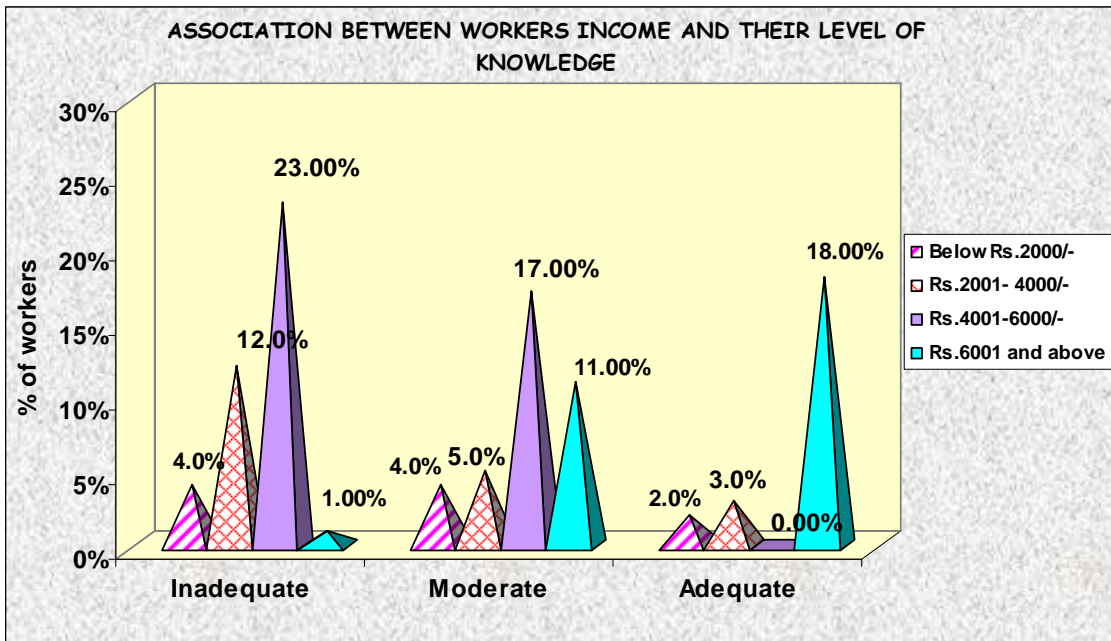


Fig. 16: Pyramid diagram shows association between workers income and their level of knowledge

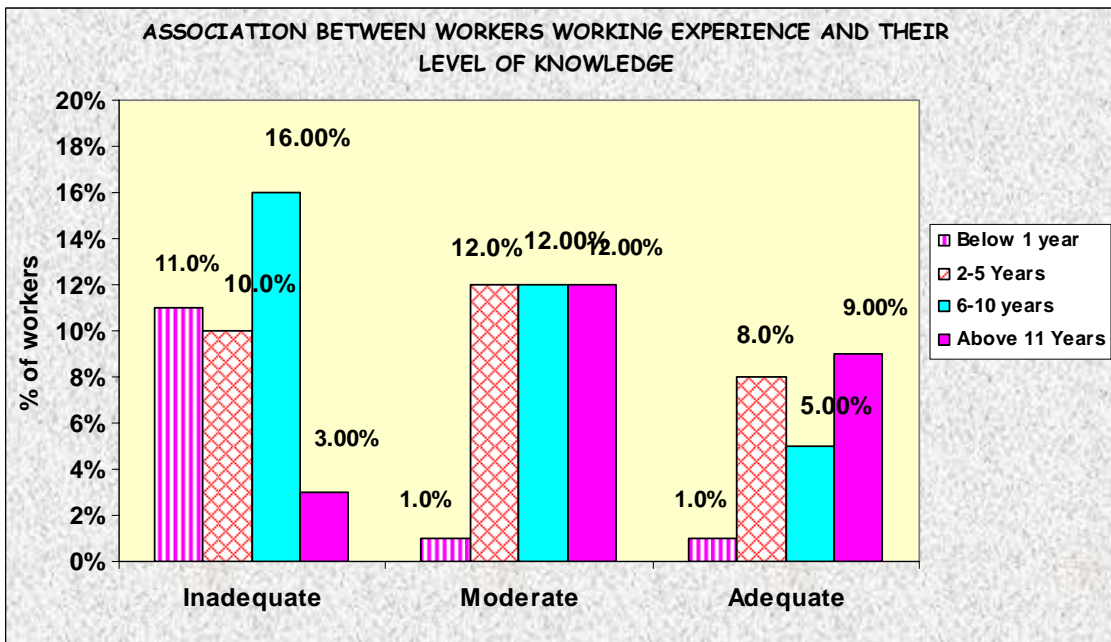


Fig. 17: Bar diagram shows association between workers working experience and their level of knowledge

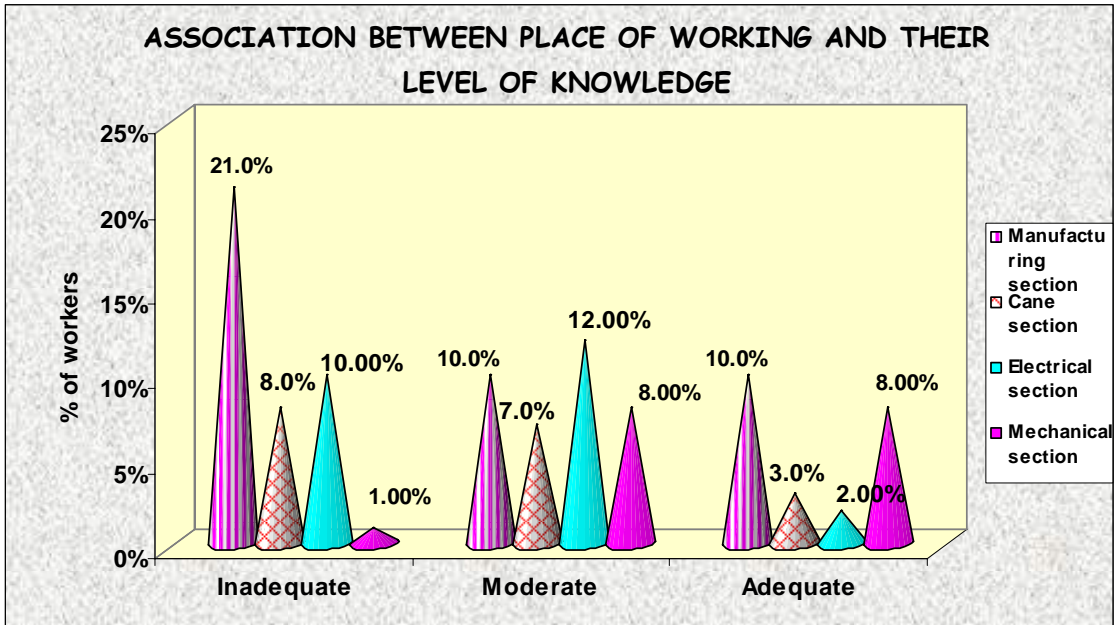


Fig. 18: Cone diagram shows association between place of working and their level of knowledge

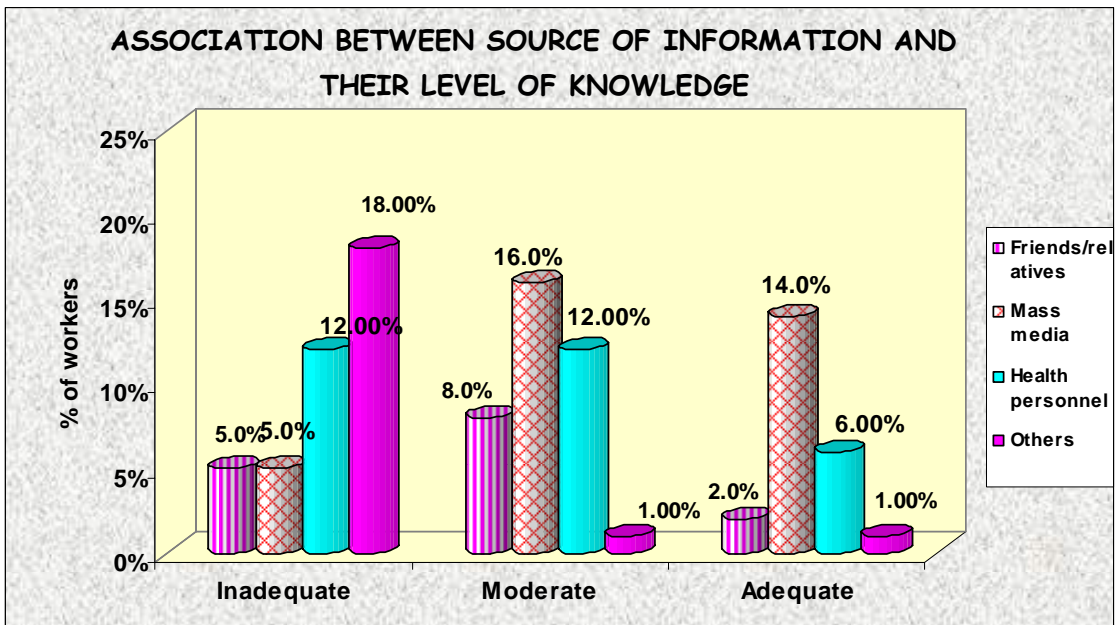


Fig. 19: Cylindrical diagram shows association between source of information and their level of knowledge

Table 9: Association between level of Practice and Demographic variables

Demographic variables		Level of practice				Chi square test
		Good		Poor		
		Freq	%	Freq	%	
Age	18 – 28	13	13.0%	2	2.00%	$\chi^2=39.286^*$ P=0.0001
	29 – 38	27	27.0%	8	8.00%	
	39 - 48	20	20.0%	10	10.0%	
	49-58	0	0.00%	20	20.0%	
Sex	Male	48	48.0%	32	32.0%	$\chi^2= 0.000$ P=1.000 NS
	Female	12	12.0%	8	8.00%	
Education	Illiterate	34	34.0%	6	6.00%	$\chi^2=36.875^*$ P=0.0001
	School education	21	21.0%	9	9.00%	
	Technical education	5	5.00%	15	15.0%	
	Professional education	0	0.00%	10	10.0%	
Income	BelowRs.2000/-	5	5.00%	5	5.00%	$\chi^2=22.847^*$ P=0.0001
	Rs.2001- 4000/-	15	15.0%	5	5.00%	
	Rs.4001-6000/-	32	32.0%	8	8.00%	
	Rs.6001 and above	8	8.00%	22	22.0%	
Working experience	Below 1 year	13	13.0%	0	0.00%	$\chi^2=48.497^*$ P=0.0001
	2-5 Years	29	29.0%	1	1.00%	
	6-10 years	14	14.0%	19	19.0%	
	Above 11 Years	4	4.00%	20	20.0%	
Place of work in industry	Manufacturing section	30	30.0%	11	11.0%	$\chi^2=12.978^*$ P=0.0047
	Cane section	10	10.0%	8	8.00%	
	Electrical section	16	16.0%	8	8.00%	
	Mechanical section	4	4.00%	13	13.0%	
Overtime duty	No overtime duty	12	12.0%	7	7.00%	$\chi^2=1.281$ P=0.7336 NS
	Once in week	20	20.0%	10	10.0%	
	Once in month	11	11.0%	10	10.0%	
	Twice in month	17	17.0%	13	13.0%	
Source of information	Friends/relatives	8	8.00%	7	7.00%	$\chi^2=16.905^*$ P=0.0007
	Mass media	18	18.0%	17	17.0%	
	Health personnel	14	14.0%	16	16.0%	
	Others	20	20.0%	0	0.00%	

* = Significant, NS = Not significant

Table no 9 shows the association between socio-demographic variables and level of practice. Age, educational status, income, working experience, place of work and source of information are associated with level of practice. Statistical significance was calculated using Pearson chi square test/Yates corrected chi square test.

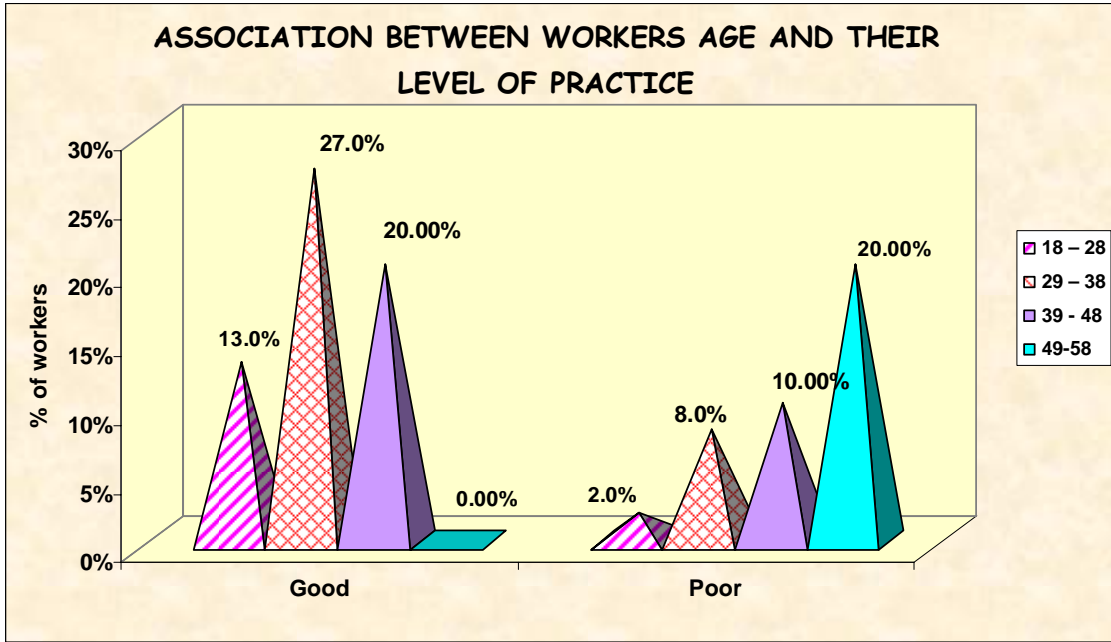


Fig. 20: Pyramid diagram shows association between workers age and their level of practice

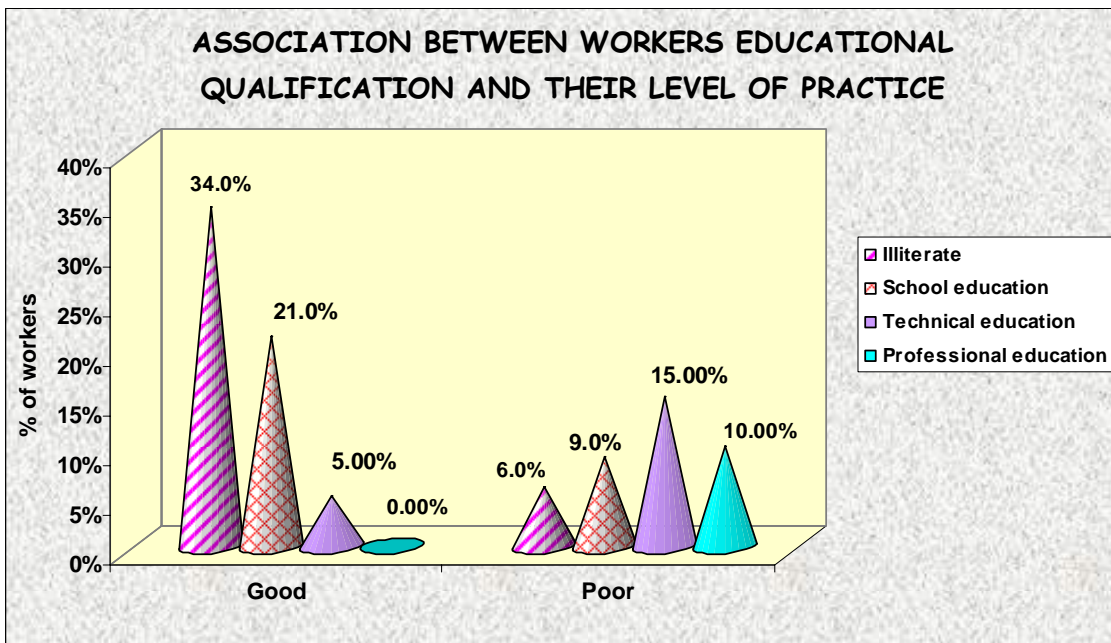


Fig.21: Cone diagram shows association between workers educational qualification and their level of practice

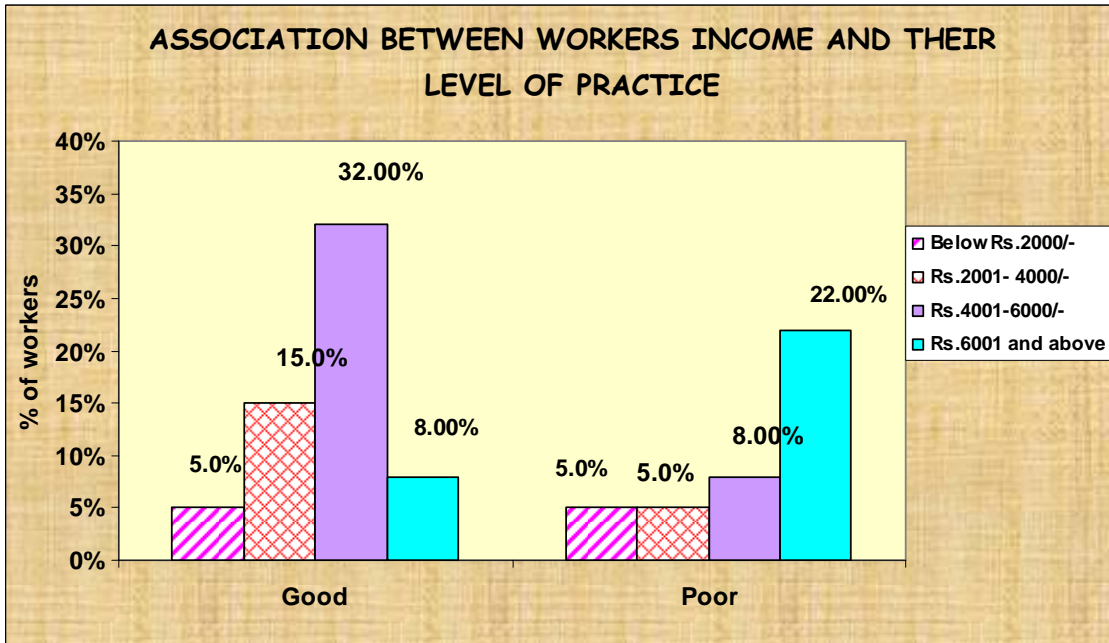


Fig. 22: Bar diagram shows association between workers income and their level of practice

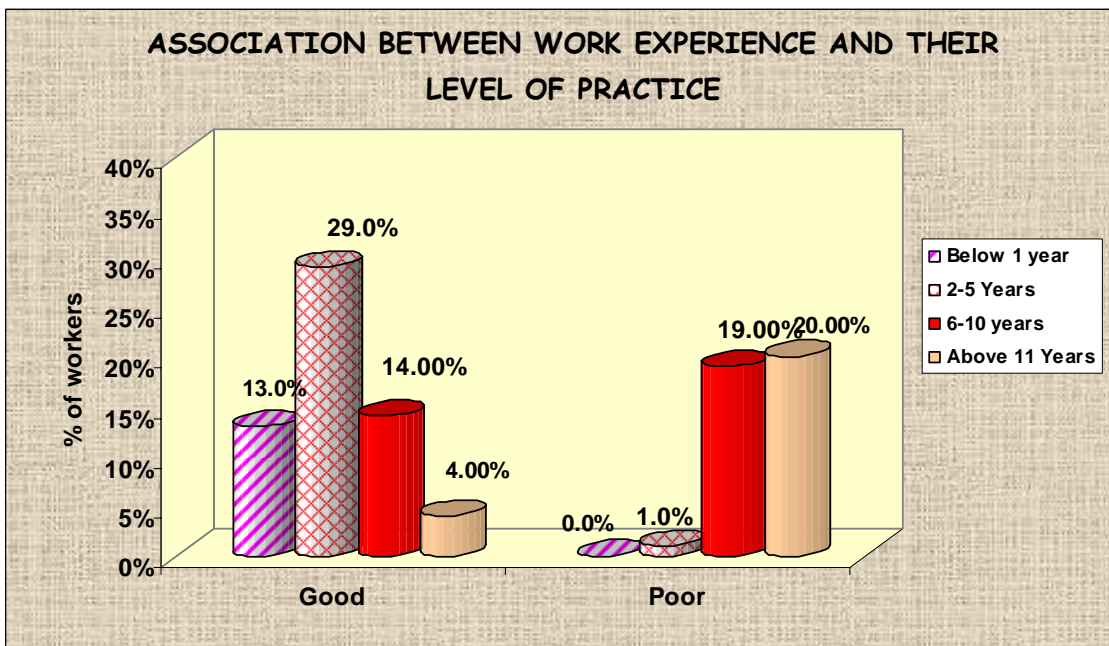


Fig. 23: Cylindrical diagram shows association between work experience and their level of practice

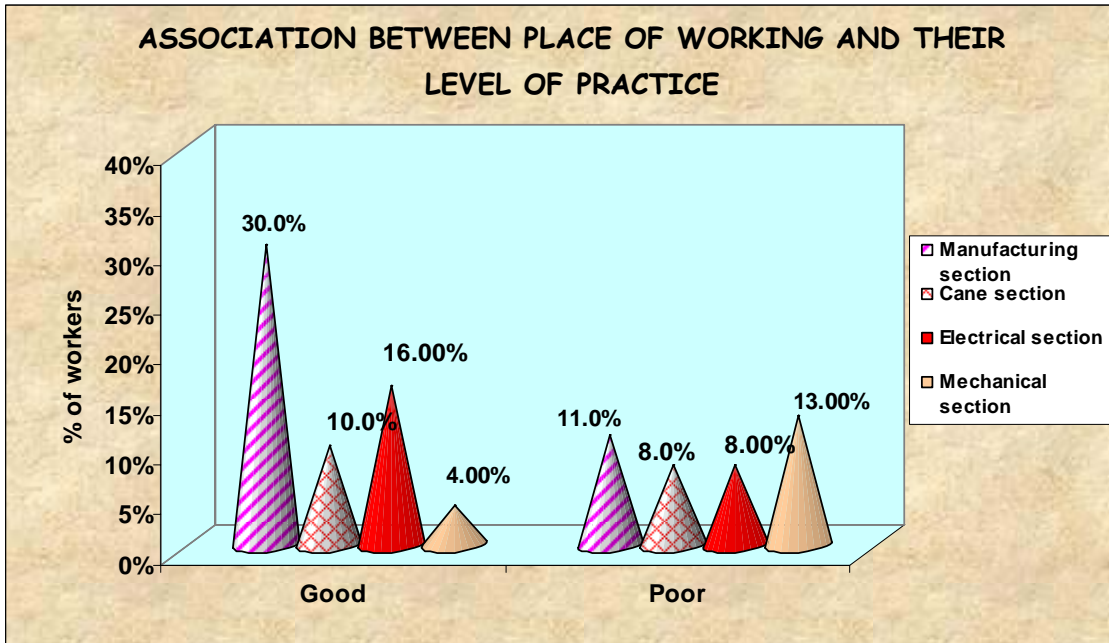


Fig. 24: Cone diagram shows association between place of work and their level of practice

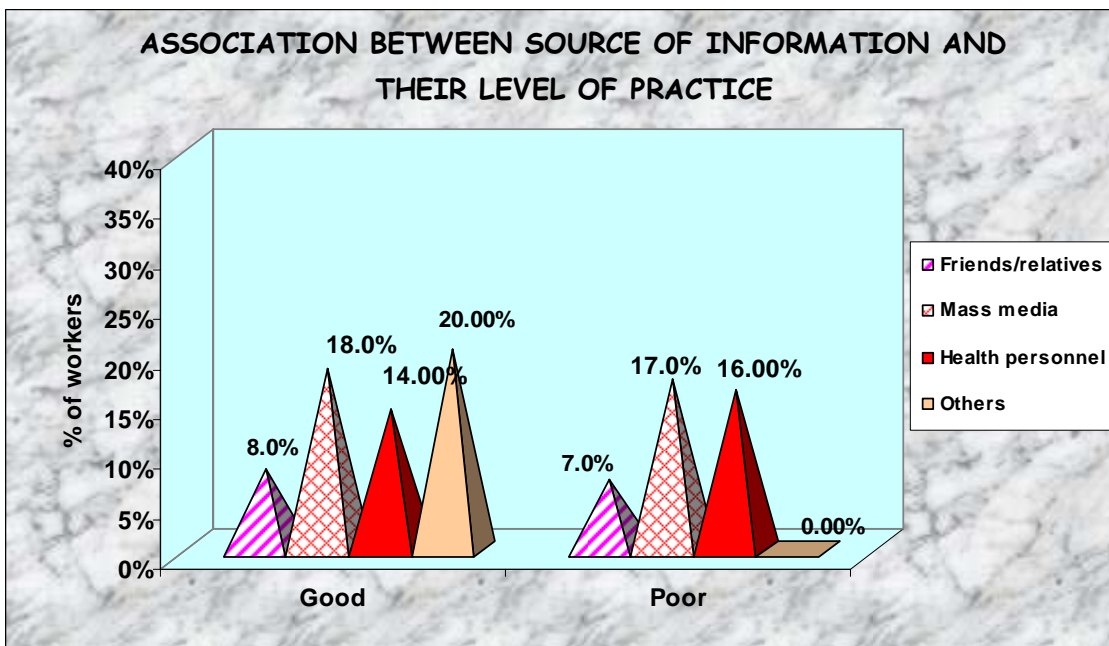


Fig. 25: Pyramid diagram shows association between source of information and their level of practice

CHAPTER-V

DISCUSSION

This chapter deals with the discussion of the study with appropriate literature review, statistical analysis and the discussion of the main findings of the study in relation to objectives and hypothesis of the present study.

STATEMENT OF THE PROBLEM:

“A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING UTILIZATION OF SAFETY MEASURES AMONG WORKERS IN SAKTHI SUGARS LIMITED, SAKTHINAGAR, BHAVANI TALUK, ERODE DISTRICT, TAMILNADU”.

OBJECTIVES OF THE STUDY:

1. To assess the level of knowledge and practice of utilization of safety measures among workers.
2. To find out the correlation coefficient between knowledge and practice on utilization of safety measures among workers.
3. To find out association between selected demographic variables with knowledge and practice on utilization of safety measures.

The first objective of the study was to “assess the level of Knowledge and practice of Utilization of safety measures among workers”.

Table 4 revealed that 40% of workers had inadequate knowledge, 37% of workers had moderately adequate and 23.00% of workers had adequate knowledge on utilization of safety measures.

Table 6 revealed that 40% of workers had good practice and 60% of workers had poor practice on utilization of safety measures.

The second objective of the study was to “find out the correlation coefficient between knowledge and practice on utilization of safety measures among workers”.

Table 7 showed that the mean and standard deviation of knowledge and practice was found to be 12.63 ± 5.683 and 5.45 ± 1.977 respectively. The correlation was determined by Karl Pearson correlation coefficient. The value was 0.1328 and $P=0.1879$. It means there is a poor correlation between knowledge and practice.

The third objective was to “find out association between selected demographic variables with Knowledge and practice on Utilization of safety measures”.

Association between knowledge and demographic variables

Table 8 showed that demographic variables such as age, sex, educational qualification, income, working experience, place of work, over time duty and source of information of the workers were associated with knowledge score of workers by Pearson chi-square test.

Among these demographic variables, educational qualification ($p=0.0001$), income per month ($p=0.0001$), working experience ($p=0.0021$), place of work ($p=0.0111$) and source of information ($p=0.0001$) were significant.

Association between demographic variables and practice

Table 9 showed among these demographic variables, age ($p=0.0001$), educational qualification ($p=0.0001$), income per month ($p=0.0001$), working experience ($p=0.0001$), place of work ($p=0.0047$) and source of information ($p=0.0007$) were significantly associated.

CHAPTER-VI

SUMMARY, CONCLUSION, NURSING IMPLICATIONS AND RECOMMENDATIONS

This chapter presents the summary of the study, conclusions and implications for nursing and recommendations.

SUMMARY OF THE STUDY

The purpose of the study was to assess the knowledge and practice of worker's regarding utilization safety measures, in Sakthi Sugars Limited, Sakthinagar. Structured questionnaires were used and data was collected by self report method.

The conceptual framework of this study was based on Modified Rosenstoch (1974) and Becker's Health Belief Model (1978) model. Simple random technique was used for selecting the samples. Descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (chi-square) was used to analyze the data and to test hypothesis.

MAJOR FINDINGS OF THE STUDY

- ❖ Most of the samples (35%) were between the age of 29-38 yrs.
- ❖ 80% were males and 20% females.
- ❖ Most of the samples (40%) were illiterates.
- ❖ Majority of the samples (40%) were having Rs.4001-6000/-.
- ❖ Most of the samples (33%) were having 6-10 years of working experience.
- ❖ Majority of the samples (41%) were working in manufacturing section.

- ❖ Most of the samples (30%) work once in a week and twice in month doing over time duty.
- ❖ 35% of samples have source of information from mass media.
- ❖ The data showed that 40% of workers had inadequate knowledge, 37% had moderately adequate knowledge and 23% of workers had adequate knowledge regarding utilization of safety measures.
- ❖ 40% of workers had good practice and 60% workers had poor practice.
- ❖ The mean percentage knowledge and practice scores were 50.5% and 54.5% respectively.
- ❖ The data showed that when knowledge increases the practice also increased moderately ($r=0.1328$).
- ❖ It was assessed that educational qualification, income, working experience, place of work and source of information were significant with knowledge level, and whereas age educational qualification, income, working experience, place of work and source of information were significant with practice level of workers regarding utilization of safety measures.

CONCLUSION

The present study assessed the knowledge and practice of workers regarding utilization of safety measures. It was determined that 40% of workers had inadequate knowledge on utilization of safety measures and 40% of the workers had good practice on utilization of safety measures. The reasons given by the workers for poor practice was lack of time, busy schedule, stress in their job.

NURSING IMPLICATIONS

The findings of the study have following implications in the areas of nursing service, nursing education, administration and nursing research.

Nursing education

Integration of theory practice is valid and it is important in nursing education. In-service education programme should be conducted so that will gain knowledge regarding utilization of safety measures and provide information to their workers and will emphasize them to practice those measures. The nurse educator should invite the community health nurses to the industrial based education programme to give the directions and guidance to the workers.

Nursing administration

Since, the study reveals that there is below average knowledge and practice of the workers regarding utilization of safety measures. It is necessary to include regular health education programme and proper supervision by the safety officer in the concerned departments.

Comprehensive health education chart explained concept of basic knowledge of occupational hazards and safety measures, concept of occupational safety, measures to prevent occupational hazards.

Regular supervision by safety officer to identify the occupational health hazards and occupational health diseases.

Nursing practice

Present study will help the nursing professionals working in community setup and industrial setup to know the utilization of safety measures to plan the health education programme to prevent hazards and diseases. Motivate the instructions to administrators to promote the use of safety measures.

Nursing research

One of the aims of nursing research is to expand and to broaden the scope of nursing. The fresher can use this for their reference Research can help to develop alternative strategies to promote utilization of safety measures. Based on this study, result, recommendations for further study can be conducted.

RECOMMENDATIONS

1. Same study can be carried out in other departments and industries.
2. An experimental study with a STP may be conducted to determine the effectiveness of teaching programme.
3. Similar study can be carried out in other industrial settings.
4. Knowledge and attitude of the workers regarding the usage of safety measures also can be conducted to improve use of safety measures.
5. Comparative study can be done to assess the utilization of safety measures between small industries and large industries.

SUGGESTIONS:

1. Safety officer should be motivated to take keep interest in preparing teaching strategies suitable for workers.
2. Awareness campaign can be conducted on a regular basis with more emphasis on different aspect of use of safety measures.
3. In service educations can be planned for the workers to improve use of safety measures.
4. Periodical health education should be made to workers regarding use of safety measures.
5. Periodical education should be provided by the experts to fresher regarding the usage of advanced machineries.

BIBLIOGRAPHY

BOOKS:

1. Amelsvoort .L.G.P.M et.al., 2002, “**FATIGUE AS A PREDICTOR OF WORK DISABILITY**”, Occupational Environmental Medicine, Pp.No: 712 -718.
2. Arif A.A et.al., 2002, “**PREVALENCE AND RISK FACTORS OF WORK RELATED ASTHMA BY INDUSTRY AMONG US WORKERS**”, Occupational Environmental Medicine, Pp.No: 505 - 511.
3. Basavanthappa.B.T., 1999, “**COMMUNITY HEALTH NURSING**”, 2nd edition, Jaypee Brothers, New Delhi, Pp.No: 650-750.
4. Coggon, 2001, “**MONITORING TRENDS IN OCCUPATIONAL ILLNESS**”, Occupational Environmental Medicine, Pp.No: 691 - 693.
5. Fingurbut.M et.al., 2006, “**THE CONTRIBUTION OF OCCUPATIONAL RISKS TO THE GLOBAL BURDEN OF DISEASES**”, Medicine Lancet., Mar-Apr. 97(2), Pp. No: 313-321.
6. Gulani.K.K, 2005, “**COMMUNITY HEALTH NURSING PRINCIPLES AND PRACTICES**”, First edition, Kumar publishing house, New Delhi, Pp.No: 495 - 509.
7. Gupta.L.C., 1995, “**MANUAL OF FIRST AID**”, First edition, Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi, Pp.No: 1-30.
8. Kamalam.S., 2005, “**ESSENTIAL OF COMMUNITY HEALTH NURSING**”, 1st edition, Jaypee Brothers, New Delhi, Pp.No: 456-476.

9. Kasthuri Sundar Rao, 1999, “**AN INTRODUCTION TO COMMUNITY HEALTH**”, 5th edition, B.I. Publications Pvt. Ltd., New Delhi, Pp.No.:76-80.
10. Kenzie. J.F et.al.,2002, “**AN INTRODUCTION TO COMMUNITY HEALTH**”, Fourth edition, Jones and Bartlett Publishers, Singapore, Pp.No: 557 - 583.
11. Kothari.C.R, 2007, “**RESEARCH METHODOLOGY**”, New Age International (P) Ltd., New Delhi, Pp.No:72-85
12. Martinez .etal., 1999, “**OCCUPATIONAL HEALTH IN THE AUTONOMOUS COMMUNITY OF THE BASQUE COUNTRY**”, Revised established salud publication, Jul-Aug: 70(4) Pp.No: 437-444.
13. Melanie. Mc. Ewen, 2002, “**AN INTRODUCTION TO COMMUNITY BASED NURSING**”, First edition, Saunders company, London, Pp.No: 37 -39.
14. Nelson et.al.,2006, “**CONTRIBUTION OF OCCUPATIONAL RISKS TO THE GLOBAL BURDEN OF DISEASE**”, Medical Lancet, Washington, Mar-Apr 97(2), Pp.No: 313-321.
15. Park.J.E, 2006, “**TEXT BOOK OF PREVENTIVE AND SOCIAL MEDICINE**”, Bharnorsidhas Bhanot Publishers, New Delhi, Pp.No.:505 -525.
16. Polit.F.D and Hungler.P.B, 1999, “**NURSING RESEARCH PRINCIPLES OF METHODS**”, 6th edition, Lippincott Company, New York Pp.No: 627-652
17. Prabhakara .G.N, 2004, “**TEXT BOOK OF COMMUNITY HEALTH FOR NURSES**”, Peepee Publishers, Newdelhi, Pp.No: 455 - 465.
18. Rand .D.P.P et.al.,2003, “**THE NEED FOR OCCUPATIONAL HEALTH SERVICES IN BIOEMFORTEIN**”, Curationis, May 26(1), Pp.No: 43 - 56.
19. Rao .B.T, 2002, “**METHODS IN MEDICAL RESEARCH**”, 1st edition, Sree Graphics, Gunter. Pp.No: 152-167

20. Saiyed H N and Tiwari RR, 2005, “**OCCUPATIONAL HEALTH RESEARCH IN INDIA, INDIAN HEALTH**”, Gujarat, April 42 (2), Pp. No: 141 - 148.
21. Sato. N, 1997, “**DEVELOPMENT OF THE ROLE OF OCCUPATIONAL HEALTH NURSING IN USA AND PERSPECTIVE IN THE US AND JAPAN**”, Japan, Mar;3, 39(2); Pp.No: 61-65.
22. Schoemaker et.al.,2000, “**NOT FATAL WORK RELATED INJURIES, LONDON (UK)**”, Occupational Environmental Medicine, Aug.57 (8), Pp.No: 555 - 262.
23. Sitiruttanapruk .S and Anantagulnathi .p. 2004. “**OCCUPATIONAL HEALTH AND SAFETY SITUATION IN THAILAND**”. Indian Health. April 42(2), Pp.No:135 - 140.
24. Stanhope. 1996. “**COMMUNITY HEALTH NURSING**”. Fourth edition. Mosby publications. Philadelphia. Pp.No: 907 - 925.
25. Swarnkar. K, 2006, “**COMMUNITY HEALTH NURSING**”, 2nd edition. N.R. Brothers, Indore. Pp.No: 567-589.
26. Yoji Totsuka, et.al.,2005, “**SAFETY GUIDE BOOK**”, 1st edition, High Energy Accelerator Research Organization, UK, Pp.No: 1-20.

JOURNALS:

1. Altin. R et.al.,2002, “**PREVALENCE OF BAGASSOSIS AND RESPIRATORY SYMPTOMS AMONG SUGAR MILL WORKERS**”, Journal of Respiration, Turkey 69(1), Pp.No: 52 -56.
2. Banerjee. B et.al.,2001, “**WORK RELATED PHYSICAL EXERTION AND SPONTANEOUS ABORTION**”, Indian Journal of Public Health, Kolkata, Vol. 5(2), Pp.No: 248 - 249.

3. Barrientos. C. Met.al.,2005, **“THE GLOBAL BURDEN DUE TO OCCUPATIONAL INJURY”**, American Journal of Medicine, USA, OecA8 (6), Pp.No: 470 - 481.
4. Culp .K et.al.,2003, **“OCCUPATIONAL SAFETY AND HEALTH IN THE GAMBIA”**, American Article of Occupational Health Nursing, USA, Feb 51(2), Pp.No: 84 -88.
5. Foulds .L, 2005, **“OCCUPATIONAL DERMATITIS”**, Journal of Community Nursing, Feb., 19 (2). Pp.No: 30-35
6. Grainger. L and Mitchell. K, 2003, **“OCCUPATIONAL HEALTH NURSING IN SOUTH AFRICA”**, American Article of Occupational Health Nursing:, South Africa, Feb 51(2), Pp.No: 72 - 78.
7. Jerry .J, 2005, **“OCCUPATIONAL HEALTH TRENDS IN DEVELOPMENT”**, Indian Journal of Occupational and Environmental medicine. Pp.No: 30-33
8. Joshi .S, 2006, **“PREVENTION OF OCCUPATIONAL HEALTH HAZARDS IN MECHANICAL INDUSTRIES”**, Nightingale Nursing Journal, Pune, Pp.No: 24 - 27.
9. Kalampakorn .S, 2003, **“OCCUPATIONAL HEALTH NURSING IN THAILAND”**, American Article of Occupational Health Nursing Journal, Thailand, Feb 51 (2), Pp.No: 79 - 83.
10. Froneberg .B, 2007, **“OCCUPATIONAL HEALTH SERVICES IN ADAPTATION TO THE CHALLENGES OF GLOBAL MARKET COMPETITION”**, Indian Health, Jan 45(1), Pp.No: 3-7.

11. Kanchana. S., 2004, **“ASSESSMENT OF KNOWLEDGE AND UTILIZATION OF SAFETY MEASURES AMONG WORKERS ON OCCUPATIONAL HEALTH HAZARDS**, “Nursing Journal of India”, Vol. XIV. No.2
12. Nishtar. S et.al.,2004, **“INJURY PREVENTION AND CONTROL”**, Journal of Pakistan Medical Association, Pakistan, Dec. 54, Pp.No: 57 - 68.
13. Nowier. M. H et. al., 1996, **“OCCUPATIONAL AND SOCIO ECONOMIC ASPECTS”**, Journal of Public Health Association, Egypt, 68 (3 -4), Pp.No: 405 - 442.
14. Odhiambo, 2003, **“OCCUPATIONAL HYGIENE”**, International Occupational Hygiene Association, Kenya. Pp.No: 214-265
15. Olszewski et.al.,(2007), **“OCCUPATIONAL SAFETY AND HEALTH OBJECTIVES OF HEALTH PEOPLE 2010 - A SYSTEMATIC APPROACH FOR OCCUPATIONAL HEALTH NURSE PART II**, American Article of Occupational Health Nursing, USA, Mar 55(3), Pp.No: 114-123.
16. Leomi .F, 1995, **“INDUSTRIAL SOCIAL DISEASES”**, Italian Article, 3(1), pp. 33 -73. MaL D, 2000, Nurses Role in Occupational Health, “Nursing Journal of India”, No.3, Vol. LXXXXXI, Pp.No:56-61
17. Plomp .H.N, 1996, **“ACCESSIBILITY AND UTILIZATION OF OCCUPATIONAL HEALTH SERVICES”**, Scand Journal of Work Environmental Health, Netherlands, Jun 22(3), Pp.No: 216 - 222.
18. Rajnarayan R.T et.al.,2001, **“OCCUPATIONAL HEALTH NURSE”**, Nursing journal of india, Vol LXXXXXII Page No.8
19. Ramanakumar .V.A., 2005, **“AN OVERVIEW OF OCCUPATIONAL HEALTH RESEARCH IN INDIA”**, Indian Journal of Occupational

Environment Health medicine, Vol 9: Pp.No: 10 -14.

20. Sankariah and Lakshmi, 2000, “**OCCUPATIONAL RISK**”, Nursing Journal of India, Nov (11). Pp.No: 12-15

21. Singh M B et al.. 2005. “**OCCUPATIONAL MORBIDITIES AND THEIR ASSOCIATION WITH NUTRITION AND ENVIRONMENTAL FACTORS AMONG TEXTILE WORKERS OF DESERT AREAS OF RAJASTHAN. INDIA**”. Journal of Occupational Health. Sep 47(5), Pp.No: - 371 -377.

WEBSITES:

1. www.google.com
2. www.pubmed.com
3. www.yahoo.com
4. www.mamma.com
5. www.arokya.com
6. www.tnhealth.com

ANNEXURE I

LETTER SEEKING PERMISSION TO CONDUCT MAIN STUDY

From

Mr.T.Natarajan M.Sc., (N) II Year
(Speciality - Community Health Nursing),
Dr.Mahalingam College of Nursing,
Sakthi Nagar (Po),
Bhavani (TK),
Erode (DT),
Tamilnadu.

To

The Deputy General Manager- Administration
Sakthi Sugars Limited,
Sakthinagar
Bhavani Taluk,
Erode District.

Through,

The Principal,
Dr.Mahalingam College of Nursing,
Sakthi Nagar (Po),
Bhavani (TK),
Erode (DT).

Respected Sir /Madam,

Sub: Request for to conduct main study-reg..

I am II year M.Sc., Nursing student of Dr.Mahalingam College of Nursing, Sakthi Nagar. As a partial fulfillment of Master of Science in Nursing, I have undertaken the following research study, which has to be submitted to The Tamilnadu Dr.M.G.R.Medical University, Chennai.

“A study to assess the knowledge and practice regarding utilization of safety measures among workers in Sakthi Sugars limited, Sakthinagar, Bhavani Taluk, Erode District, Tamilnadu”.

ANNEXURE II



Sakthi Sugars Limited

Regd. Office & Factory : Sakthinagar - 638 315, Bhavani Taluk, Erode Dist., Tamilnadu.

Phone : (04256) 246241 - 246244, 246341 - 246344. Fax : 04256 - 246442

E-mail : unit1@sakthisugars.com

Admn/20-31/2009
12th November 2009

The Principal
Dr. Mahalingam College of Nursing
Sakthinagar 638 315

Madam,

Sub: Final M.Sc., Nursing student – Project work - Permission
granted – Regarding.

Ref: Your Letter dt. 10/11/2009

With reference to your letter cited above, permission is hereby
accorded to Mr. T. Natarajan, II M Sc Nursing student of your
college to undergo project work in our organization from November
2009.

In this regard, you may instruct the student to contact undersigned
to receive further guidance.

Yours faithfully,
For SAKTHI SUGARS LIMITED

ASST. GENERAL MANAGER – HRD.

ANNEXURE III

LETTER SEEKING EXPERT OPINION FOR TOOL VALIDATION

From

Mr.T.Natarajan M.Sc., (N) II Year
(Speciality - Community Health Nursing),
Dr.Mahalingam College of Nursing,
Sakthi Nagar (Po),
Bhavani (TK),
Erode (DT),
Tamilnadu.

To

Through,
The Principal,
Dr.Mahalingam College of Nursing,
Sakthi Nagar (Po),
Bhavani (TK),
Erode (DT).

Respected Sir /Madam,

Sub: Request for the validation the tool-reg.

I am II year M.Sc., Nursing student of Dr.Mahalingam College of Nursing, Sakthi Nagar. As a partial fulfillment of Master of Science in Nursing, I have undertaken the following research study, which has to be submitted to The Tamilnadu Dr.M.G.R.Medical University, Chennai.

“A study to assess the knowledge and practice regarding utilization of safety measures among workers in Sakthi Sugars limited, Sakthinagar, Bhavani Taluk, Erode District, Tamilnadu”.

ANNEXURE IV

CONTENT VALIDITY CERTIFICATE


This is to certify that the student Mr. T. Natarajan is studying in Final M.Sc., (N) Post graduate Degree course of Dharmarathnakara Dr. Mahalingam Institute of Paramedical sciences and Research, Sakthi Nagar.

Topic Entitled:

“A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING UTILIZATION OF SAFETY MEASURES AMONG WORKERS IN SAKTHI SUGARS LIMITED, SAKTHINAGAR, BHAVANI TALUK, ERODE DISTRICT, TAMILNADU”.

His content for the study is validated and was found reliable.

Date: 6/11/09
Place: pallakapalayam.


6/11/09, M. AMUDHA, M.Sc.
Signature of guide with seal CHN, N,
DHANVANTRI COLLEGE OF NURSING
6/235, Pallakapalayam (Munniyappan Koil)
Sankagiri West Post
TIRUCHENGODE TALUK

CONTENT VALIDITY CERTIFICATE

This is to certify that the student Mr. T. Natarajan is studying in Final M.Sc., (N) Post graduate Degree course of Dharmarathnakara Dr. Mahalingam Institute of Paramedical sciences and Research, Sakthi Nagar.


Topic Entitled:

“A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING UTILIZATION OF SAFETY MEASURES AMONG WORKERS IN SAKTHI SUGARS LIMITED, SAKTHINAGAR, BHAVANI TALUK, ERODE DISTRICT, TAMILNADU”.

His content for the study is validated and was found reliable.

Date: 4.11.09
Place: Erode




Signature of Principal with seal
Vellalar College Of Nursing
Maruthi Nagar,
Thindal, Erode - 12.

CONTENT VALIDITY CERTIFICATE

This is to certify that the student Mr. T. Natarajan is studying in Final M.Sc., (N) Post graduate Degree course of Dharmarathnakara Dr. Mahalingam Institute of Paramedical sciences and Research, Sakthi Nagar.


Topic Entitled:

“A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING UTILIZATION OF SAFETY MEASURES AMONG WORKERS IN SAKTHI SUGARS LIMITED, SAKTHINAGAR, BHAVANI TALUK, ERODE DISTRICT, TAMILNADU”.

His content for the study is validated and was found reliable.

Date: 11.11.09

Place: Moga (PB)


Signature of guide with seal
11/11/09
Dr. Mahalingam Institute of Paramedical Sciences and Research
Sakthi Nagar, Erode District, Tamil Nadu

CONTENT VALIDITY CERTIFICATE

This is to certify that the student Mr. T. Natarajan is studying in Final M.Sc., (N) Post graduate Degree course of Dharmarathnakara Dr. Mahalingam Institute of Paramedical sciences and Research, Sakthi Nagar.

Topic Entitled:

“A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING UTILIZATION OF SAFETY MEASURES AMONG WORKERS IN SAKTHI SUGARS LIMITED, SAKTHINAGAR, BHAVANI TALUK, ERODE DISTRICT, TAMILNADU”.

His content for the study is validated and was found reliable.

Date: 11/11/09.

Place: Perundurai -

R. Eswarajiu 11/11/09

Signature of guide with seal

PRINCIPAL
IRT SCHOOL OF NURSING
PERUNDURAI-638 054

CONTENT VALIDITY CERTIFICATE

This is to certify that the student Mr. T. Natarajan is studying in Final M.Sc., (N) Post graduate Degree course of Dharmarathnakara Dr. Mahalingam Institute of Paramedical sciences and Research, Sakthi Nagar.


Topic Entitled:

“A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING UTILIZATION OF SAFETY MEASURES AMONG WORKERS IN SAKTHI SUGARS LIMITED, SAKTHINAGAR, BHAVANI TALUK, ERODE DISTRICT, TAMILNADU”.

His content for the study is validated and was found reliable.

Date :

Place :


Dr. N. Mugundan
MBBS, DCC
Reg. no: 66982
Signature of guide with seal


MEDICAL OFFICER
M KAILASAM HOSPITAL
SAKTHINAGAR - 638 315

CERTIFICATE BY THE EDITOR

This is to certify that the dissertation entitled “A study to assess the knowledge and practice regarding utilization of safety measures among workers in Sakthi Sugars limited, Sakthinagar, Bhavani Taluk, Erode District, Tamilnadu” is a bonafide research work done by Mr. T. Natarajan, II Year M.Sc., (Nursing) student of Dharmarathnakara Dr.Mahalingam Institute of Paramedical Sciences & Research, Sakthi Nagar, Bhavani Taluk, Erode District. Mrs.T.S.Sumithra Devi., M.A., (M.Phil) edited this manuscript on behalf of the partial fulfillment of the prerequisite for the degree of **Master of Science in Nursing** (Community Health Nursing).

Date:

Place: Sakthi Nagar



Signature of the Editor

ANNEXURE V
STRUCTURED QUESTIONNAIRE

Kindly read the following and please tick [✓] mark against the correct answer.

SECTION- A :DEMOGRAPHIC VARIABLES

1. Age
 - a. 18 - 28 Years []
 - b. 29 - 38 Years []
 - c. 39 - 48 Years []
 - d. 49 - 58 Years []
2. Sex
 - a. Male []
 - b. Female []
3. Educational qualification
 - a. Illiterate []
 - b. School education []
 - c. Technical education []
 - d. Professional education []
4. Income per month
 - a. Below Rs.2000/- []
 - b. Rs.2001/- – 4000/- []
 - c. Rs.4001/- – 6000/- []
 - d. Above Rs.6001/- []
5. Working experience
 - a. Below 1 year []
 - b. 2 - 5 years []
 - c. 6 - 10 years []
 - d. Above 11 years []
6. Place of work in the industry
 - a. Manufacturing section []
 - b. Cane section []
 - c. Electrical section []
 - d. Mechanical section []

7. Over time duty
 - a. No over time duty []
 - b. Once in a week []
 - c. Once in a month []
 - d. Twice in a month []
8. Source of getting information regarding occupational safety
 - a. Friends and relations []
 - b. Mass media []
 - c. Health personnel []
 - d. Others []

SECTION – B

PART-1

GENERAL INFORMATION ON SAFETY AND OCCUPATIONAL HAZARDS

1. Safety consists of
 - a. preventive []
 - b. promotive []
 - c. alieivative []
 - d. curative []
2. Occupational health includes
 - a. physical health []
 - b. mental health []
 - c. psychological health []
 - d. all of the above []
3. What is Hazard?
 - a. Causing harm to persons, []
 - b. Damage to property []
 - c. Environmental degradation []
 - d. All of the above []
4. Occupational hazards includes
 - a. Physical and chemical hazards []
 - b. Biological and mechanical hazards []

- c. Psychological hazards []
 - d. All of the above []
- 5. What are the reason for hazards in industries?
 - a. No adequate knowledge []
 - b. Carelessness []
 - c. Psychological problems []
 - d. All of the above []
- 6. Which of the following safety instrument used in industries?
 - a. Helmet []
 - b. Mask []
 - c. Hand Gloves []
 - d. All of the above []
- 7. What is mean by ILO?
 - a. Indian legal organization []
 - b. Indian labour organization []
 - c. International legal organization []
 - d. International labour organization []
- 8. High accidents rates in industries due to
 - a. Lack of legislation []
 - b. Lack of safety knowledge []
 - c. Careless worker attitudes []
 - d. None of the above []

PART-2

VARIOUS TYPES OCCUPATIONAL HAZARDS

9. Bagassosis caused by
- a. inhalation of Cotton dust []
 - b. inhalation Tobacco []
 - c. inhalation of grain dust []
 - d. inhalation of sugar cane dust []
10. Name the effect of the exposure to prolonged heat in the industry?
- a. Heat cramps & burns []
 - b. Loss of appetite []
 - c. Memory loss []
 - d. None of the above []
11. Name the effect of the exposure to prolonged cold in the industry?
- a. Frost bite []
 - b. Nose bleeding []
 - c. Cancer of skin []
 - d. Psoriasis []
12. Which is among the common type of skin disease occur in the industrial workers?
- a. Skin rashes []
 - b. Dermatitis []
 - c. Soreness of skin []
 - d. Cancer of skin []
13. Which is the common mechanical hazard occurs in the industry?
- a. Injuries, Accidents []
 - b. Joint pain []
 - c. Body Pain []
 - d. Tiredness []
14. Which is the common type of cancer that occurs because of occupational hazards?
- a. Lung cancer []
 - b. Breast cancer []

- c. Cervical cancer []
 - d. Blood cancer []
15. Which is the most common psychological problem among the factory workers
- a. Manias []
 - b. Schizophrenia []
 - c. Seizure []
 - d. Stress []
16. Insufficient lighting in the industries lead to
- a. redness of eye []
 - b. eye discharge []
 - c. eye strain []
 - d. all of the above []
17. Which of the following could likely happen to a person with broken ribs?
- a. Heart attack []
 - b. Nose bleed []
 - c. Loss of memory []
 - d. Pneumonia []

PART- 3

SAFETY MEASURES TO PREVENTIVE OCCUPATIONAL HAZARDS

18. How often the factories should be cleaned?
- a. Once in week []
 - b. Once in month []
 - c. Once in 6 months []
 - d. Once in year []
19. How will you protect from the heat?
- a. Exhaust fans []
 - b. Lighting []
 - c. Increase the diet []

- d. Reduce the tension []
20. How often you will go for the medical check-up
- a. Every day []
- b. Ever week []
- c. Every month []
- d. Every year []
21. Which way the sugar cane waste is disposed?
- a. Disposing in the water []
- b. Incineration []
- c. Disposing in the forest []
- d. Dumping []
22. How can we control the lung cancer
- a. Control of Air pollution []
- b. Reducing the intake of oily foods []
- c. Control of noise []
- d. Control of lighting []
23. How the industrial accidents can be prevented
- a. Adequate job training []
- b. Continuing education []
- c. Ensuring safe working environment []
- d. All of the above []
24. How do you prevent the psychological problems in the industry
- a. Job satisfaction []
- b. Increasing working hours []
- c. Reducing the number of workers []
- d. Providing good diet []
25. What is the safety measure used to protect the person from radiation?
- a. Apron []
- b. Lead apron []
- c. Helmet []
- d. Mask []

SECTION - II

PRACTICE REGARDING UTILIZATION OF SAFETY MEASURES

Kindly read the following and please tick [✓] mark against the correct answer.

1. Do you use apron when you are in job ?

Yes [] No []

2. Do you use helmet when you are in job?

Yes [] No []

3. Do you attend any safety campaign?

Yes [] No []

4. Do you use safety measures regularly?

Yes [] No []

5. Do you follow any relaxation technique when in stress?

6. Yes [] No []

7. Do you take adequate rest?

Yes [] No []

8. Do you know the occupational hazards?

Yes [] No []

9. Do you use drugs (or) alcohol during working time?

Yes [] No []

10. Do you go for regular check-up?

Yes [] No []

11. Are you utilizing factory provided safety measures?

Yes [] No []

tbtkf;fg;gl;l tpdhj; njhIH

gphpT – 1

fPNo nfhLf;fg;gl;l tpguq;fis \$He;J gb;J rhpahd ,lj;jpy; [✓] ,f;Fwpia
,ITk;:

jdpegUila tpguq;fs;

gFjp - I

1. taJ

- a. 18-28 taJ tiu []
- b. 29-38 taJ tiu []
- c. 39-48 taJ tiu []
- d. 49-58 taJ tiu []

2. ghypdk;

- a. Mz; []
- b. ngz; []

3. fy;tpawpT jFjp

- a. gbg;gwptpy;yhjtH []
- b. gs;spg;gbg;G []
- c. njhopw;fy;tp []
- d. caHepiyf; fy;tp []

4. khj tUkhdk;

- a. &. 2000f;F fPo; []
- b. &. 2001-4000 tiu []
- c. &. 4001-6000 tiu []
- d. &. 6001 f;F Nky; []

5. njhopy; mDgTk;

- a. 1 tUlj;jpw;F fPo; []
- b. 2-5 Mz;Lfs; tiu []
- c. 6-10 Mz;Lfs; tiu []
- d. 11 Mz;LfSf;F Nky; []

6. njhopw;rhiyapy; Ntiy nra;Ak; gFjp
- a. cw;gj;jp gFjp []
 - b. fUk;G gFjp []
 - c. kpd;dpay; gFjp []
 - d. ,ae;jpug; gFjp []
7. \$Ljy; Ntiy Neuk;
- a. \$Ljy; Ntiy Neuk; ,y;iy []
 - b. thuj;jpw;F xU Kiw []
 - c. khjj;jpw;F xU Kiw []
 - d. khjj;jpw;F ,uz;L Kiw []
8. njhopy; ghJfhg;G gw;wpa tpopg;GzHT vt;thW ngwg;gl;IJ?
- a. ez;gHfs; kw;Wk; cwtpdHfs; []
 - b. njhiyj;njhlHG rhjdq;fs; []
 - c. kUj;Jt cjtpahsHfs; []
 - d. kw;wit []

gFjp – II

m. njhopy; kw;Wk; ghJfhg;G topKiwfis gw;wpa:

1. ghJfhg;G topKiwfis; vd;gJ
- a. jLg;gJ []
 - b. caHepiyahf;Fjy; []
 - c. ePf;Fjy; []
 - d. Fzkhf;Fjy; []
2. njhopy; MNuhf;fpak; vd;gJ
- a. Njfepiy MNuhf;fpak; []
 - b. kdij rhHe;j MNuhf;fpak; []
 - c. kdtypik []
 - d. Nkw;fz;l midj;Jk; []
3. mghak; vd;why; vd;d?
- a. kdpjUf;F ghjpg;G cz;lhf;Fjy; []
 - b. nghUl; Nrikk; []

- c. Rw;Wg;Gwr; #o;epiy ghjpg;G []
- d. Nkw;fz;l midj;Jk; []
4. njhopy; mghak; vd;gJ
- a. ,aw;if kw;Wk; ,uhrhad nghUl;fs; ghjpg;G []
- b. Caphpay; kw;Wk; ,ae;jpu ghjpg;G []
- c. kdr;NrhHT []
- d. Nkw;fz;l midj;Jk; []
5. njhopw;rhiyapy; Mgj;J Vw;glf; fhuzpfs; vd;d?
- a. Nghjpa mwptpd;ik []
- b. Ntiyapy; m[hf;fpuij []
- c. kdg;Nghuhl;lq;fs; []
- d. Nkw;fz;l midj;Jk; []
6. njhopw;rhiyapy; fPo;fz;l ve;j ghJfhg;G Kiwia gad;gLj;jyhk;?
- a. jiyftrk; []
- b. Kf%b []
- c. ifAiw []
- d. Nkw;fz;l midj;Jk; []
7. l.vy;.X vd;why; vd;d?
- a. ,e;jpa rl;l mikg;G []
- b. ,e;jpa ciog;ghsH mikg;G []
- c. midj;J ehl;L rl;l mikg;G []
- d. midj;J ehl;L ciog;ghsH mikg;G []
8. njhopw;rhiyapy; mjpfkhf tpgj;J Vw;glf; fhuzk; vd;d?
- a. Fiwthd rl;l ep&gzk; []
- b. ghJfhg;G gw;wpa Nghjpa mwptpd;ik []
- c. Ntiy nra;gtHfspd; m[hf;fpuij eltbfi;ffs; []
- d. Nkw;fz;ltw;wpy; vJTk; ,y;iy []

M. njhopw;rhiyapy; njhopyhsHfSf;F tpiAk; gy;NtW tifahd

Mgj;Jf;fs; gw;wpa

9. NgNfh]p]; Vw;glf; fhuzq;fs; vd;d?

- a. gUj;jp Jfs;fis Rthrp;gjhy; []
- b. Gifapiy Rthrp;gjhy; []
- c. mhprpapd; ckpj;Jfs;fis Rthrp;gjhy; []
- d. fUk;Gf;foptpd; J}rpa Rthrp;gjhy; []

10. njhopw;rhiyfs;py; mjpfkhf ntg;gj;jpw;F cs;shtjhy; Vw;gLk; ghj;pg;Gfs; vd;ndd;d

- a. jPf;fhak;> jPg;Gz; []
- b. grpapd;ik []
- c. Qhgf kwjp []
- d. Nkw;fz;ltw;wpy; vJTk; ,y;iy []

11. njhopw;rhiyfs;py; mjpfkhf FspUf;F cs;shtjhy; Vw;gLk; ghj;pg;Gfs; vd;ndd;d?

- a. if> fhy; tpiw;gjy; []
- b. %f;fpypUe;J ,uj;jk; tby; []
- c. Njhy;Gw;WNeha; []
- d. Nrhhpah]p]; []

12. njhopw;rhiyfs;py; gzpGhp;gtUf;F Vw;gLk; nghJthd Njhy;tpahj;pf; vd;ndd;d?

- a. Njhy;gil []
- b. Njhy; mhpg;G []
- c. Njhy;g;Gz; []
- d. Njhy;g;Gw;WNeha; []

13. njhopw;rhiyfs;py; ,ae;jpu;jhy; Vw;gLk; nghJthd ghj;pg;Gfs; vd;ndd;d?

- a. fhaq;fs; kw;Wk; tpgj;Jfs; []
- b. %l;Ltyp []
- c. cly;typ []
- d. cly; NrhHT []

14. njhopw;rhiyfspy; gzpGhpNthUf;F nghJthf Vw;gLk; Gw;WNeHa; vd;d?

- a. EiuAPuy; Gw;WNeHa; []
- b. khHgf Gw;WNeHa; []
- c. fUg;igf;Foha; Gw;WNeHa; []
- d. ,uj;j Gw;WNeHa; []

15. njhopw;rhiyfspy; gzpGhpNthUf;F nghJthf Vw;gLk; ghjpg;G vd;d?

- a. gpj;Jgpbj;jy; []
- b. kdrpijT NeHa; []
- c. typg;G []
- d. kd mOj;jk; []

16. njhopw;rhiyfspy; ntspr;rk; Fiwthf cs;sjhy; Vw;gLk; ghjpg;G vd;d?

- a. fz;rptj;jy; []
- b. fz;zpypUe;J ePHtbjy; []
- c. fz; cWj;Jjy; []
- d. Nkw;fz;l midj;Jk; []

17. tpyh vYk;G ciltjhy; fPo;fz;ltw;wpy; vd;d ghjpg;G Vw;gLk;?

- a. ,Uja milg;G []
- b. %f;fpypUe;J ,uj;jk; tbjy; []
- c. Qhgfkwp []
- d. epNkhdpah []

., njhopw;rhiyapy; njhopyhHfs; filgpbf;f Ntz;ba ghJfhg;G Kiwfs;:

18. njhopw;rhiy vg;nghOnjy;yhk; Rj;jg;gLj;jg;gl Ntz;Lk;.

- a. thuj;jpw;F xUKiw []
- b. khjj;jpw;F xUKiw []
- c. MW khj;jpw;F xUKiw []
- d. tUl;jpw;F xUKiw []

19. njhopw;rhiyfsy; Vw;gLk; ntg;gj;jpd; ghjpg;gpypUe;J vt;thW
ghJfhj;J nfhs;s Ntz;Lk;.
- a. ntg;g ntspNaw;wp []
 - b. ntspr;rk ; []
 - c. czT gof;ftof;fj;ij mjpf;gLj;Jjy; []
 - d. kd mOj;jj;ij Fiwj;jy; []
20. ePq;fs; vt;tsTfhy ,ilntspapy; kUj;Jt ghpNrhjid nra;J nfhs;s Ntz;Lk;.
- a. jpdKk; []
 - b. vy;yh thuKk; []
 - c. vy;yh khjKk; []
 - d. vy;yh tUIKk; []
21. fUk;G Miyf;fopTfis vk;Kiwapy; ntspNaw;w Ntz;Lk;.
- a. fopTfis jz;zPhpy; ntspNaw;Wjy; []
 - b. fopTfis vhpj;jy; []
 - c. fhLfspy; ntspNaw;Wjy; []
 - d. kz;zpy; Gijj;jy; []
22. Eiuapuy; Gw;W Nehia vt;thW jLg;gJ
- a. fhw;W khRgLtij jtpHg;gjd; %yk; []
 - b. vz;nza; mjpfkhd czTg;nghUI;fs; cz;gij jtpHj;jy; []
 - c. ,iur;ry; fl;Lg;gLj;Jjy; []
 - d. ntspr;rj;ij fl;Lg;gLj;Jjy; []
23. njhopw;rhiyfsy; Vw;gLk; tpgj;Jfis vt;thW jLg;gJ
- a. Nghjpa njhopw;gapw;rp []
 - b. njhlHepiy njhopw;fy;tp []
 - c. ghJfhg;ghd #o;epiy []
 - d. Nkw;fz;l midj;Jk; []

24. njhopw;rhiyapy; Vw;gLk; kdr;rpjit vt;thW jLf;fyhk;?
- a. njhopy; kdepwT
 - b. NtiyNeuj;ij mjpfhpj;jy;
 - c. NtiyahI;fspd; vz;zpf;ifia Fiwj;jy;
 - d. Nghjpa cztspj;jy;
25. fPo;fz;ltw;wpy; ve;jKiwia cgNahfpg;gjd; %yk; fjpHtPr;rpypUe;J ghJfhf;fyhk;
- a. cly;ftrk;
 - b. nyl; cly;ftrk;
 - c. jiyftrk;
 - d. Kf%b

gphpT- 2

fPNo nfhLf;fg;gl;l tpguq;fis \$He;J gbj;J rhpahd ,lj;jpy; [✓] ,f;Fwpia ,ITk;:

- 1) ePq;fs; Ntiy Neuj;jpy; cly;ftrj;ij cgNahfpg;gPHfsh?
Mk; [] ,y;iy []
- 2) ePq;fs; Ntiy Neuj;jpy; jiyftrj;ij mzptPHfsh?
Mk; [] ,y;iy []
- 3) ePq;fs; Vw;fdNt ghJfhg;G gw;wpa tpopg;GzHT fy;tp
ngw;wpUf;fpwPh;fsh?
Mk; [] ,y;iy []
- 4) ePq;fs; ghJfhg;G Kiwia njhIHe;J cq;fs; Ntiyjsj;jpy;
cgNahfpf;fpwPHfsh?
Mk; [] ,y;iy []
- 5) kdr;NrhHTfis ePf;Fk; VjhtJ topKiwia gpd;gw;WfPHfsh?
Mk; [] ,y;iy []
- 6) Nghjpa Xa;T vLf;fpwPHfsh?
Mk; [] ,y;iy []
- 7) cq;fSf;F njhopw;rhiyfsy; Vw;gLk;> mghak; gw;wpa tpopg;GzHT
cz;lh?
Mk; [] ,y;iy []
- 8) ePq;fs; Ntiyjsj;jpy; ,Uf;Fk; NghJ kJ my;yJ NghijngHUI;fis
cgNahfpg;gPHfsh?
Mk; [] ,y;iy []
- 9) ePq;fs; njhIh;e;J kUj;JtghpNrhjid nra;Jnfhs;fpwPHfsh?
Mk; [] ,y;iy []
- 10) njhopw;rhiyapy; mspf;Fk; ghJfhg;G Kiwifis
cgNahfpf;fpwPHfsh?
Mk; [] ,y;iy []

ANNEXURE VI

LIST OF EXPERTS

1. Mrs. Amutha, M.Sc.(N),
Vice Principal,
Dhanvanthiri College of Nursing,
Sankari,
Namakkal District
2. Mrs. Kesiyaa, M.Sc.(N),
Vice Principal,
Vellalar College of Nursing,
Thindal,
Erode District.
3. Mrs. K. Kalaivani, M.Sc.(N),
Principal,
Baba College of Nursing,
Moga,
Punjab.
4. Mrs. R. Eswari, M.Sc.(N),
Principal,
IRT School of Nursing,
Perundurai Medical College,
Perundurai,
Erode District.
5. Mr. P.U. Ganesan, M.B.B.S, M.D (AM), M.D (Acu), FRHS, Ph.D.,
General Physician,
Saravan Hospital,
Anthiyur Main Road,
Appakudal.
6. Prof. Mr. Dhanapal, M.Sc., M.Phil, Ph.D.,
Department of Statistics,
J.K.K. Nataraja Dental college,
Komarapalayam,
Namakkal District.

ANNEXURE VII



