

Study of Health Status in Class IV Workers in Charitable Rural Hospital in India

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Abstract

Objectives: Occupational Health should aim at the *promotion* and maintenance of the highest degree physical, mental and social well-being of workers in all occupations; the *prevention* among workers conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the *placing and maintenance* of the workers in an occupational environment adopted to his physiological and psychological equipment, and, to summarize, the adaptation of work to man and of each man to his job. In view of the current health status of class IV workers working in hospitals was reviewed, exposure to occupational health hazards, hospital waste management and accordingly to plan and suggest preventive measures and for betterment of their working conditions was studied under this research. **Methods:** This study was carried out in charitable rural hospital in India for class IV workers in the year 2009. The workers were reviewed for general health parameters viz. physical examination, nutritional status, knowledge, attitude, practice of workers towards his work along with detail investigations like X-rays, blood, urine and sputum examinations. **Results:** During this study 72 workers were screened. This study included 28 (38%) males and 44 (62%) female workers. The 45% of workers were between the age group of 31 – 35 years and about 25% of workers were of younger age group of 21 – 25 yrs. There are more than 35 (approx. 48% of total workers) of workers chew tobacco and are alcohol addicts. The consumption of tobacco products and alcohol in male workers is more. Overall about 25% of the total workers have mild anemia, 33% have moderate anemia, and 15.30% suffer from severe type of anemia. When female workers were focused, it was observed that more than 20% of total female workers were suffering from severe type of anemia and 34% with moderate type of anemia. Significant number of the workers is having complaints of fall of heavy object (47%), Needle Stick injuries (62.50%), and facing Abuse of assault by patients or their relatives (10%) and blood contact (37.50%). Cases of needle stick injuries are quite high accounting for more than 60% which needs attention. **Conclusions:** The class IV workers are addicted to tobacco chewing and alcohol. Many of them suffer from anemia, hypertension, back ache acidity, skin diseases, fall of heavy objects, needle stick injuries. Significant number of workers is using personnel protective equipments (PPE) and is immunized.

Keywords: Class IV Workers; Occupational Health; Anemia; Needle Stick Injuries; Hypertension; Tobacco; Alcohol; Skin Diseases; Bio-Medical Waste Management; Hospital Acquired Infections; Personnel Protective Equipments; Immunization.

Introduction

Occupational Health should aim at the *promotion*

and maintenance of the highest degree physical, mental and social well-being of workers in all occupations. The 16th World Health Assembly (WHA) has recognized the need for drafting a *Global*

Plan of Action on Workers' Health 2008 - 2017 in collaboration with the International Labor Organization (ILO) [1,2]. Despite the availability of effective interventions to prevent occupational hazards and to protect and promote health at the workplace, large gaps exist between and within countries with regard to the health status of workers and their exposure to occupational risks in spite of working in hospitals. Increasing international movement of jobs, products and technologies can help to spread innovative solutions for prevention of occupational hazards, but can also lead to a shift of that risk to less advantaged groups.

Occupational Hazards at these places are unique. The workers working may be exposed to wide variety of hazards such as: 1. Physical 2. Chemical 3. Biological 4. Mechanical 5. Psycho-social. All doctors, paramedical staff, nurses are being given good medical care, facilities and benefits and most of them are insured. But the neglected group is of Class IV workers who are not privileged by these facilities. Class IV workers are of lower socio-economic class and often below poverty line in a developing country like ours. Usually untrained and illiterate and have minimum knowledge about hazards of hospital wastes. They are mostly hired on contract basis and are often underpaid. Hence it becomes mandatory and relevant to carry out the status of the Occupational Hazards in Class IV workers in hospitals. It must be studied and proper preventive measures should be advised at earliest.

This is another important aspect in health-care industry as hospital produces large amount of bio-medical waste which have numerous micro-organisms which can cause harm to many people as well as the environment at a time and lead to epidemics. Hence, this was a special mention in the survey so as to know how much information the workers have about the waste management.

Materials and Method

To study Health Status in Class IV workers the charitable hospital working since last 22 years working at a Charitable Trust Hospital was done during 2009.

All class IV workers working in various Departments of the hospital had their active participation in this research survey study. Performa which I used to analyze workers was done by preparing Annexure I prepared (given in the end). In this a detail questionnaire was prepared which included:

General Health Parameter's viz., Physical Examination (Height / Weight), Knowledge, Attitude, Practice (KAP) of worker towards his work, nutritional status, enquiring about the duration of work, use of Personal Protective Equipment, Previous / Present History, general & systemic Examination, Investigations in the form of Hb measure with the help of Sahil's Haemoglobinometer, urine analysis for diabetes, sputum examination, HBs AG by Elisa technique, HIV by Elisa technique.

Results

A complete health profile scan of 72 Class IV healthcare workers was done among them there were ward boys 15, Maussi/ Aayas 37, security Personnels 10, and sweepers 10. The female workers 61% were more in number than the male workers 39% which shows the preponderance of female workers over male workers. There are almost half i.e. 46% of workers belonging to age group of 31 to 35 yrs. There are 25% of the population belongs to category of 26 to 30 yrs.

We found 21% of the total workers fall under the category of undernourished people. The undernourishment was seen in 25% of female

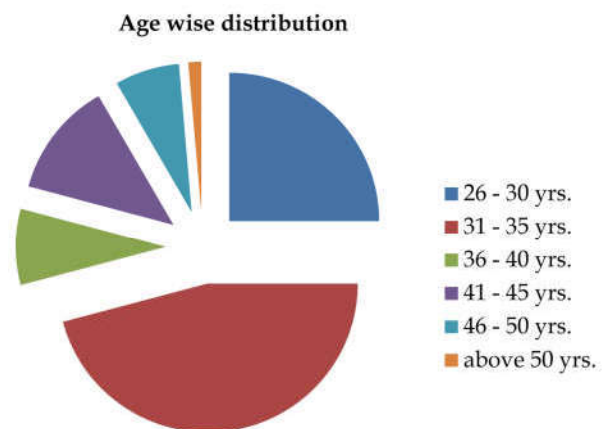


Fig. 1:

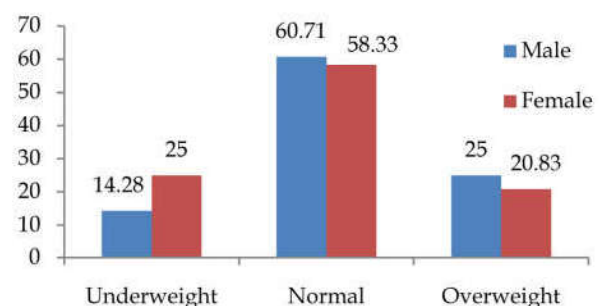


Fig. 2:

workers in comparison to male workers 15%. There are 60% of the total workers are among the class of normal individuals with their BMI in between 18.8 to 25. There are 19% of the workers who overweight with male workers 25% and female workers 20%.

There are 41% of workers in a habit of tobacco chewing/smoking and 10% of workers are found alcoholic.

We found 25% of total workers suffering from mild type of anemia (bet 8-10 gm%), moderate anemia (8-7 gm%) was there in 34% workers and severe anemia (<7 gm%) in 15%. It was nice to find 27% workers having normal Hb (M: 12-16gm/dl; F: 11-14gm/dl).

The history of injuries due to fall of heavy objects was there in 47% of workers. Significant 60% of workers had the history of needle stick injuries during their working tenure. Blood contact frequency

is seen more in female workers 41% then in male workers 32%.

Majority of female workers 64% complained of back-ache while 21% of male workers had back-ache.

Significant numbers of male workers are affected by acidity. During the survey, we found the significant number of workers 85% used gloves and mask during their working period when needed. The tetanus injection was received by 71% of workers. It is very poor to see that less than 20% of the workers have taken anti HB vaccine although they are most significantly involved in the direct blood contact and needle stick injuries.

The information about bio-medical waste management and disposal was there among 62% of healthcare workers. 10% workers had no information about hospital waste management.

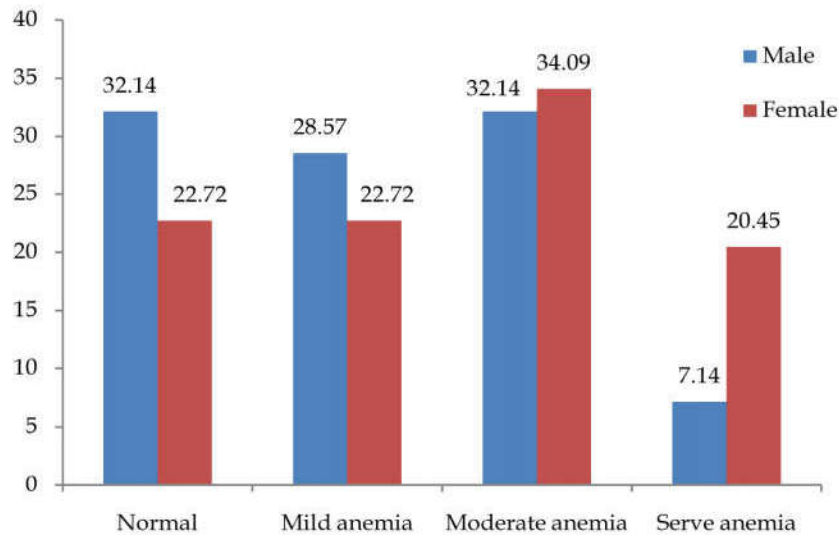


Fig. 3:

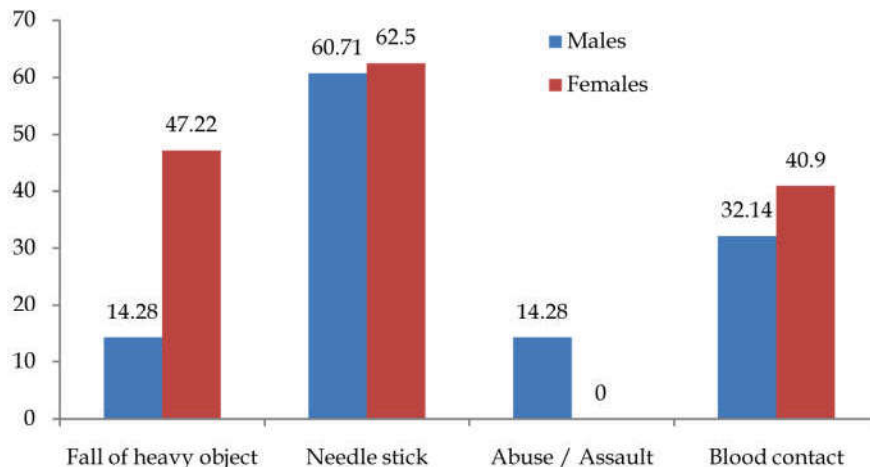


Fig. 4:

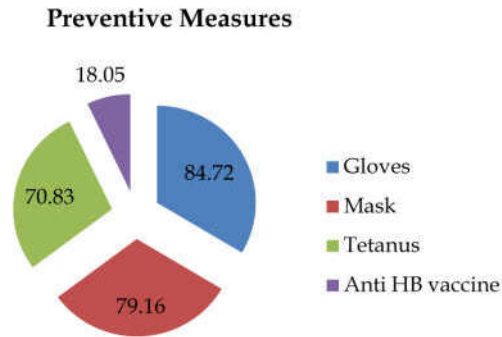


Fig. 5:

Discussion

A variety of jobs are performed in Healthcare Institutes and Hospitals which include direct patient care, laboratory, research work, laundry, pantry preparations, trades, security work, waste management, sanitary work, office and library work, housekeeping and maintenance, and pharmacy. The area of occupational hazards to which hospital health-care workers are exposed can be broadly classified in five major categories viz. physical,

Table 16: Knowledge about hospital waste management / disposal

Categories	No. of workers	% of total workers
Complete information	45	62.50 %
Partial information	20	27.78 %
No information	07	09.72 %
Total	72	100 %

Table 1: Showing Chemical agents commonly found in medical colleges and hospitals along with category of staff exposed

Employees potentially exposed	Selected chemical agents
Central supply workers	Cleaning and sterilizing agents
Dietary and housekeeping staff	Insecticides, detergents, disinfectants, solvents
Laboratory technicians	Tissue fixatives and reagents
Maintenance and facilities workers	Solvents, insecticides
Nurses	Medications, disinfectants, solvents, anti - cancer agents
Operating room staff	Anesthetic agents
Pharmacists	Medications and anti - cancer agents
Physicians	Anti - cancer agents, disinfectants
Workers in specially procedure rooms	Disinfectants, sterilants

Table 2: Showing Blood - borne pathogens and other infectious agents and diseases

Mode of transmission	Infectious agents / diseases
Blood and Body Fluids	Hepatitis B, Non - A, Non - B, Hepatitis, Hepatitis C, Acquired Immunodeficiency Syndrome (AIDS), Cytomegalovirus (CMV)
Faces	Hepatitis A, Salmonella, Shigella, Campylobacter
Virus / bacteria shedding in Urine and Stool	Rubella (German measles) B. coli infections
Respiratory secretions	Rubella (German measles), sore throat Rubella (Measles), Mumps, Influenza, Respiratory Syncytial Virus (RSV)
Contact with infected Skin Airborne i.e.	Scabies, psoriasis, boils, bed sores
Droplet nuclei transmission Saliva	Pulmonary tuberculosis, Varicella Zoster Virus (VZV), (Chickenpox only)
Secretions of lesions	Mumps, Herpes Simplex Virus (HSV) type I & II, Herpetic Whitlow, Varicella Zoster Virus (VZV), (Chickenpox & Shingles)
	Herpes Simplex Virus (HSV) type I & II, Herpetic Whitlow, Varicella Zoster Virus (VZV), (Chickenpox & Shingles)

Table 3: Colour coding and type of container for disposal of bio-medical wastes

Colour coding	Type of container	Waste category	Treatment options
Yellow	Plastic Bag	Human / animal anatomical waste, microbiological, biotechnology waste, solid waste	Incineration / deep burial
Red	Disinfected container / plastic bag	microbiological, biotechnology waste, solid waste (contaminated blood articles)	Autoclaving / Microwaving / Chemical Treatment
Blue / White translucent	Plastic bag / puncture proof container	Waste sharps, solid waste (catheters, intravenous sets, etc.)	Autoclaving / Microwaving / Chemical Treatment and Destruction / Shredding
Black	Plastic bag	Discarded medicines, cytotoxic drugs, incineration ash, chemicals	Disposal in secured landfill

chemical, biological hazards, mechanical, psychosocial hazards. Ionizing and non-ionizing radiation, electricity, noise and heat are samples of physical hazards found in hospital vicinity.

Numerous chemicals found in medical laboratories, hospitals may be toxic or irritating to skin or any other body parts. They may be present viz. dusts, vapors or gases, or liquids and which may be medications or other substances used for therapeutic purposes. Chemicals can enter the body through contaminated food or cigarettes, absorption through skin, inhalation or by accidental needle stick. The major routes of entry are by inhalation and skin absorption.

Several toxic chemicals commonly used in Medical Colleges and Hospitals and the category of staff most likely to be exposed are given in Table 1.

One of the most common and most severe hospital injuries is the musculoskeletal injury, particularly of the lower back. In 1990 Canadian Hospitals reported 30,487 time-loss injuries. People employed nursing occupational sustained 53% of these injuries. The most sequent time-loss was to the back resulting from overexertion while moving objects or handling patients. Approaches to reducing back injury and disability must be comprehensive and involve ergonomic strategies, education, early and aggressive injury treatment a rid appropriate rehabilitation programs. Injuries also frequently by health-care workers include cuts, bruises and needle sticks.

Biological hazards or also termed as the hospital acquired infections are infectious agents such as bacteria, viruses, fungi and parasites which may be transmitted via contact with infected patients, contaminated objects, body secretions, tissue or fluids. Health care workers, particularly those in hospital environment are regularly exposed to biological or infectious agents.

A list of some infectious agents or diseases to which health care workers may be exposed is given

in Table [2,3,4,5,6].

Many factors in the hospital environment can affect the psychological and social well being of workers. Examples of work organization which can have an adverse impact on workers' health include: little decision making latitude, excessive job demands, role ambiguity, poor management ability, inadequate resources and shift work. Rotating shifts and night work can have a negative impact on general well-being and performance because of the constant disruption of an individual's biological clock. Shift work can also negatively affect workers' social well-being.

According to Bio-Medical Waste (Management and Handling) Rules, 1998 of India, Bio-medical waste means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in production or testing of biological [7].

The Class IV health-care workers must have complete knowledge about the hospital waste management / disposal in their appropriate forms so that they can protect themselves as well as the environment by disposing the right bio-medical waste in its appropriate forms.

Conclusions

This study shows us that the Class IV healthcare workers are exposed to the various occupational health hazards in their working environment. Significant numbers of workers have habits of tobacco chewing/smoking and alcohol addiction. There were 73% workers suffering from various grades of anemia. There was significant history of fall of heavy objects, needle stick injuries, facing abuse of assault, back ache, knee pain, blood contact related disorders. The workers are seen using personal protective equipments (PPE) like Gloves, Mask during their

working hours. Fortunately, none of the worker was found infected with Hepatitis B, HIV or any other severe infectious diseases. Proper knowledge about the hospital waste management / disposal must be imparted to the worker so that the infections do not spread and the environment remains healthy.

Workers should be advised about their nutritional status and to correct the anemia with proper balanced diet and certain medication. They should be given applications of ergonomics and proper work technique while lifting patients and doing housekeeping work. A complete pre-admission medical screening examination test of the worker must be done as it is very important that he/she is perfectly fit to serve in the medical healthcare industry. Regular periodic medical check-up during their job course is also advised.

A Short-Term Training Program for Workers Safety (STTP-WS) for minimum a week at least should be made compulsory for all Class IV healthcare workers before they commence to do any kind of job in the healthcare industry.

Disclosures

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