

## ABSTRACT

Ergonomics is an applied science that deals with the adaptation of work and the workplace to the characteristics and capabilities of the worker so that he or she may perform the duties of the job effectively and safely. The intent is to ensure that the working environment and working equipment are so designed to fit the job to the man rather than man to his job.

The health care services play an important role in the service sector. This health care service is the largest employer in all countries. It is estimated that there are around 35 million health care workers (HCWs) worldwide. These HCWs may include all persons working in health care delivery units such as hospitals, pharmacies, ambulances and private practices, etc. The job categories in health care are varied and include ancillary, laboratory and administrative support staff as well as staff dealing directly with patient care. Thus health care is a labor-intensive industry and it covers a highly diversified range of activities. Although some risks and hazards are common to whole sector other are more specific to certain categories of HCWs or to certain work practices. The risk for hospital workers was about 1.5 times greater than that for all workers working in any other health practices. These HCWs know that they face serious hazards to their own health and well being in the course of their jobs, which affect their family also.

Attention should be drawn to the fact that personnel working in the health care sector are generally viewed as “health service providers” and are rarely seen as “workers” in need of protection. Regulations governing hospitals are usually designed to protect patients, not the health care workers. From an occupation health perspective it is essential to consider health and safety aspect and to ensure that HCWs are medically fit for their roles and do not themselves pose a risk to their patients and to their family.

So, there is a need to identify occupational health hazards faced by HCWs that have direct effect on the physical and psychological cost of their work and to evaluate the work/ worker/ and working environment for developing guidelines for safe work surface for reducing occupational health hazards.

With this background the present study was conducted to find out occupational health hazards i.e. physiological and psychological, which have direct effect on the physiological and psychological cost of work of HCWs working in hospital. The main purpose of the study is to ergonomically assess the occupational health hazards faced by HCWs, which have direct bearing on their working performance.

Both the descriptive and experimental research design was planned. Descriptive research design was planned to find out the nature of work carried out by health care workers, nature and incidence of occupational health hazards experienced by them and psychological cost of work. The experimental design was planned to find out physiological cost of work in terms of energy expenditure, total cardiac cost of work, heart rate and postural stress.

The pre- coded personal interview schedule was constructed keeping in view the objectives of the study. This comprises of four sections: three sections include questions regarding descriptive study and fourth sections includes observation tables and recording tables for recording data of experimental study. The study was carried out in eight government hospitals of district Nainital, Pauri and Udham singh nagar of Uttaranchal state. The multistage purposive cum systematic sampling design was used to select the sample. The total sample size consisted of 120 HCWs working in selected hospitals. For the collection of experimental data 10 percent of selected sample of 120 HCWs i.e. 12 (6 nurses and 6 wardboys) were selected. In the present study HCWs include only nurses and wardboys. The data was coded according to code numbers assigned. It was further analyzed employing descriptive as well as relational statistics.

The results of the study showed that majority of HCWs were in middle age group. Most of them work in morning shift at the time of survey and the length of their duty is 6 hrs. It was found that majority of nurse and wardboys performed patient handling tasks such as assisting patient while eating/ drinking/taking medicines, lifting patient from lying to sitting on bed, bed making with patient in it, medical wound care, dressing of patient, rolling patient from side to side for access when washing or changing on the bed, etc and non patient handling tasks

such as writing up patients notes, bed making, pulling equipments, moving furniture, etc. Writing up patient's notes was performed by nurses. The joint pain emerged as major health problem among HCWs. The cause of these musculoskeletal symptoms could be rapid body movements combined with poor posture for any length of time. Main parts where HCWs experienced severe pain were neck, upper back, lower back and shoulder. In comparison to anthropometric measurements of HCWs, the height of hospital furniture/equipments was found to be too low.

It was noted that the percentage increase in heart rate and energy expenditure was more in nurses as compared to wardboys while performing selected patient handling tasks i.e. lifting patient from lying to sitting on bed, bed making while patient was in the bed and dressing of patient and non patient handling tasks such as bed making, moving furniture and pulling equipments. The percentage deviation in angle of spinal cord was also maximum among nurses.

Nurses in present study showed a tendency of high level of burnout and work induced stress was high in wardboys. Majority of HCWs were moderately satisfied with their job. There was significant relationship between age of nurses, years of working, marital status , working hours , BMI, working schedule of nurses and wardboys and burnout, work stress and job satisfaction. There was partial relationship between age, height, weight and BMI of nurses and wardboys with heart rate, energy expenditure and postural stress and physical fitness index while performing selected patient handling tasks and non patient handling tasks.

Thus, it can be concluded HCWs faced occupational health hazards while working in hospital. The cause of this may be understaffing, lack of regular training programs regarding proper procedure for lifting and other work motions, in adequate general safety precautions, standing and adopting awkward posture for long periods of time, too much weight on one leg and job performance by worker who is unfit or unaccustomed to the job assigned. Attention should be drawn to this fact ,it may be high risk to their health in future.