

Role of Ergonomics in Health Care

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Ergonomics is the science of fitting the work environment to the worker. A fundamental principle of ergonomics is to design the work area and the task around the human body, rather than force the worker to adapt to poor design and task function. Ergonomics is an applied science concerned with designing products and procedures for maximum efficiency and safety. It is concerned with the “fit” between people and their work. It takes account of the worker’s capabilities and limitations in seeking to ensure that tasks, equipment, information, and the environment suit each worker [1].

In the health care field ergonomics has many essential roles to play like, understanding human limitations early in the development of medical devices can reduce errors and avoid performance problems exacerbated by stress and fatigue. Using ergonomics in a design process can reduce the costs of procuring and maintaining products. Ergonomics can minimise the incidence of injury or longer term malaise from poor working environments. An ergonomics task analysis can help identify key components of surgical skill, ensuring that students have affordable, appropriate, valid, and reliable training [2].

Over the period of time health care field undergone tremendous transformation in all the aspects. Despite the success of ergonomics in many areas its contribution in health care field is limited in terms of different aspects like availability, accessibility, geographical distribution, cost-effectiveness as well as user-friendliness.

Laparoscopic surgery provides patients with less painful surgery but is more demanding for the surgeon. The increased technological complexity and sometimes poorly adapted equipment have led to increased complaints of surgeon fatigue and discomfort during laparoscopic surgery. Ergonomic integration and suitable laparoscopic operating room environment are essential to improve efficiency, safety, and comfort for the operating team. Understanding ergonomics can not only make life of surgeon comfortable in the operating room but also reduce physical strains on surgeon. The importance of ergonomics in the setting of laparoscopy cannot be over-emphasised. Studies have

shown that correct ergonomics can reduce suturing time. Pressure-related chronic pain among surgeons has been shown to be relieved by the use of ergonomically designed products [3]. As more complex laparoscopic procedures are performed, the need for instrumentation that improves dexterity (degrees of freedom) in an ergonomic manner becomes important [4].

In field of dentistry also ergonomics has important role to play. Proper ergonomic design is necessary to prevent repetitive strain injuries, which can develop over time and can lead to long-term disability. Literature suggests that the prevalence of musculoskeletal pain in dentists, dental hygienists and dental students ranges between 64% to 93%. The successful application of ergonomics assures high productivity, avoidance of illnesses and injuries, and increased satisfaction among workers. Unsuccessful application, on the other hand, can lead to work-related musculoskeletal disorders. Good ergonomic design of tools, processes and furniture does improve personnel comfort, health, morale, productivity and readiness. It is critical to seek prompt medical aid for symptoms of ergonomic stress/detect risk factors [5].

To conclude, it is imperative to underline the importance of ergonomics developments in the health care field in coming future. More research in ergonomics is needed to help health care personnel to make them more efficient.

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