



Role of ergonomics in the effective work practice of employees

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Abstract

The goal of ergonomics is to fit the task to the individual, not the individual to the task. Practicing good ergonomics achieves increased productivity, improved health and safety of workers, higher job satisfaction and better compliance with government regulations. The general ergonomics principles that should be applied to the workplace include aiming for dynamic versus static work, optimizing work surface heights, avoiding overload of muscles, avoiding unnatural postures, and training individuals to use the workplace, facility, and equipment properly. This study investigated the influence of workstation and work posture ergonomics on the job satisfaction of librarians in the different libraries in Thrissur District. The study adopted the survey research design.

Keywords: ergonomics, work place, employees, librarians, job satisfaction, work posture

1. Introduction

Job satisfaction is a frequently studied subject as evidenced in work and organizational literature. This stems from the fact that experts believe that the level of job satisfaction can affect labor market behavior. Low rate or lack of job satisfaction, according to Flanagan and Flanagan (2002), has been considered as one of the most important evidence of the worsening and deterioration work conditions of an organization as it could lead to quitting of a job, (Gazioglu and Tansel, 2002).

Ergonomics is the scientific discipline that is concerned with understanding of the interactions among humans and other elements of a system. It applies theory, principles, data and methods to design, so as to improve human well-being and overall system performance (International Ergonomics Association (IEA) (2000). Ergonomics aims at designing the workplace so that it will fit the needs and physical capabilities of employees, instead of physically forcing the worker's body to fit the job, (Ghosh *et al*, 2011) [6]. Ergonomic factors that can elicit job satisfaction could be derived from a wide range of issues that emanate from the workplace. For instance, if work environment is poorly designed, it could hinder or slow down the employee's performance in the workspace, and this could eventually lead to frustration which, in turn, affects job satisfaction.

The aim of ergonomics is to optimize safety, health, comfort and efficiency of the human in the work system. Physiological activities in foundries in an ergonomic sense involve reaching, bending, lifting heavy objects, using continuous force, working with vibrating equipment and repetitive motion. It is important to implement safety and health policy and program to protect workers. Ergonomics enhances human performance, including the health, safety and productivity of workers.

Review of Literature:

De Croon *et al* (2005) [2] pointed out that workstation design could result either directly or indirectly in physiological and psychological reactions. Incorrect and poor computer workstation set-ups produce a variety of problems. For one,

people may tend to have the feeling of a state of inadequacy of space, low job contentment, induced stress fatigue and, possibly increase in the levels of blood pressure. Secondly, decreased performance and negative health outcomes, like chronic fatigue, burnout and musculoskeletal disorders. According to Fraser (2009) [4], the optimal design and adjustment and use of computer workstations are important measures for the prevention of musculoskeletal injury. The aim should be to create a workplace in which employees can work in neutral condition, and this will eventually lead to minimizing the wear and tear on their bodies. Adeyemi (2010) [1] stated in her study that Nigerian academic library workers face a wide variety of ergonomic problems that are manifested in the forms of headache, tension and stress. She further emphasized that improper sitting and positioning of the computer monitors as well as lifting and carrying are some of the problems they experience. O'Neil (2005) [7] also pointed out that Occupational health statistics from the United Kingdom estimates that hundreds of thousands of workers have suffered from injuries due to prolonged standing and this has resulted in over two million days sick leave a year.

Objectives

1. To know the relationship between suitability of workstation and equipment designs and job satisfaction of the employees
2. To know the relationship between the conditions of work posture (sitting or standing) conditions of librarians and job satisfaction of the librarians

Research Methodology

The survey research design was employed through the use of a structured questionnaire. The data collected were analysed using descriptive statistics of frequency count, percentage, mean and standard deviation. Pearson Product Moment Correlation (PPMC) analysis was employed in testing hypotheses one and two. The hypotheses were tested at 0.05 significance level.

Data Analysis and Interpretation

Table 1: Demographic catechistic of respondents

Character	Information	Frequency	Percentage
Gender	Male	163	46.3
	Female	189	53.7
	Total	352	100%
Qualification	Degree	127	36%
	PG	183	52%
	Phd	42	12%
	Total	352	100%

Table 1 shows that 53.7% of respondents are female. 46.3% of respondents are male. 52 % of them are post graduated. 36 % of respondents hold degree qualification. Only 12% of them have PhD.

Objective 1: To know the relationship between suitability of workstation and equipment designs and job satisfaction of the employees

H₀: There is no significant relationship between workstation and equipment designs and job satisfaction of librarians.

Table 2: Workstation and equipment designs and job satisfaction

Variables	N	Mean	S.D	R	Sig
Job Satisfaction	352	2.70	0.43	0.46	0.00
Suitability of workstation and equipment designs	352	2.48	0.56		

A summary of data on the test of relationship between job satisfaction and workstation and equipment designs is presented in table 1. As is revealed in the table, there is a significant positive relationship between job satisfaction and workstation and equipment ($r = 0.46, P < 0.05$). The null hypothesis is therefore rejected as there is no sufficient evidence to accept it. This positive relationship implied that the more workstation and equipment design are suitable, the more the librarians will achieve job satisfaction.

Objective 2: To know the relationship between the conditions of work posture (sitting or standing) conditions of librarians and job satisfaction of the librarians

H₀: There is no significant relationship between the condition of work posture (sitting or standing) designs of librarians and the job satisfaction of librarians.

Table 3: Condition of work posture designs and the job satisfaction

Variable	N	Mean	S.D	R	Sig
Job satisfaction	352	2.70	0.43	0.15	0.005
Work posture condition	352	2.64	0.38		

There is a significant positive relationship between condition of work posture (sitting or standing) of librarians and their job satisfaction ($r = 0.15, P < 0.05$). The null hypothesis is therefore rejected as there is no sufficient evidence to accept it. The result here implies that adequate work posture could increase the job satisfaction of the library workforce.

Findings

Most of the respondents are female. 52% of them are holding PG. There is a significant positive relationship between job satisfaction and workstation and equipment. This positive relationship implied that the more workstation and equipment design are suitable, the more the librarians

will achieve job satisfaction. adequate work posture could increase the job satisfaction of the library workforce

Conclusion

The goal of this study was to find out the influence of suitability of workstation and equipment designs and the work posture ergonomics on job satisfaction of employees. This study has revealed that the importance of job satisfaction can hardly be over emphasized in that it seriously affects organizational behaviour and the achievement of organizational goal. This study has revealed that suitable workstation and equipment designs as well as condition of work posture are aspects of ergonomic factors that contributed significantly in attaining a higher level of job satisfaction of employees. In the light of the adverse effects of neglecting ergonomic principles in the designing of workstations and equipment at the workplace on job satisfaction, the resultant decrease in performance and production, and the numerous health effects that could result from poor ergonomics.

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