

Ergonomics Impact on Government Employees Work Performance at Office of the Assistant Commissioner, Madhugiri Sub-Division, Madhugiri, Tumakuru District

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ABSTRACT - The factors creating inconvenience among employees to work with respect ergonomic was undertaken to study the ergonomic impact on employees performance at Government office of the Madhugiri sub Division, Tumkur District and to suggest valuable suggestions, recommendations to improve the workplace ergonomics at present setup. The research design for current investigation was considered for the study is descriptive research. The study is mainly based on both primary and secondary data. Primary data was collected using an interview (questionnaire) scheduled by survey method. Secondary data mainly consists of data and information collected from records, office websites, and discussion with the management of the organization and collected from journals, magazines and books. The result revealed that the factors identified are creating inconvenience among employees to work with existing ergonomic setup. There is a significant relationship between office ergonomic, socio demographic values, physical and mental discomforts to the work performance of the Government employees. It is evident from this study, the current office employees are came to know/aware of existence of Occupational Safety and Health Administration Act (OSHA Act) and there is an ergonomic impact on Government employees work performance at Office of the Assistant Commissioner, Madhugiri sub division, Tumakuru district.

Keywords: Ergonomics, Demography, Occupational Safety and Health Act, Work performance.

I. INTRODUCTION

Ergonomics is the study of designing equipments and devices that fit the human body, it's movements and it's cognitive abilities. Ergonomics is employed to fulfill the three main goals of health, productivity and good employee morale. Its relevant in design of such things such as furniture and easy to use interfaces to machines and equipment (Gowthami, M and Arokiya Sagayaraj, T, 2021) [1].

Office ergonomics is simply about making sure that office employees have the correct furniture, equipment and working conditions to be able to do their jobs effectively and comfortably. Proper ergonomic design is necessary to prevent repetitive strain injuries, which can develop over

time, lead to long term disability and obviously the work performance of the employees will be affected. Therefore, ergonomics is the science of fitting the work to the user instead of forcing the user to fit the work.

It is estimated that today atleast, 75% of all jobs involve some level of computer use associated with musculoskeletal disorders and also psychological stresses through office ergonomics and work pressure in their respective fields. Injuries resulting from repeated motion are growing according to annual statistics from the United States, survey of occupational injuries and illnesses over 402,000 carpal tunnel syndromes account for nearly two thirds all of work place related illnesses.

Our Government of India, launched a project called e-office in 2008. with the expectation of converting the Government office into a paperless office within a period of 5 years. e-office means, making all the Government office paper and projects through computer-based correspondence. Whether it may be I.T. offices or any Government Offices, Computer ergonomic effects are the same.

In this investigation the attempt has been made to know, how the ergonomics of the Government office will affect the work performance of the Government employees.

- United States department of Labor Occupational Safety and Health Administration. (OSHA)

Benefits of application of ergonomic principles in the workplace can result are hereunder:

- Lower injury and accident rates
- Improved reliability
- Greater user comfort
- Improved health and safety of employees
- Compliance with Government regulations like (OSHA) Occupational Safety and Health Administration standards.
- Improved Job satisfaction
- Increased work quality
- Increased work performance
- Less absenteeism
- Improved morale of workers.
- Less employee turnover
- Fewer errors
- Easier maintenance
- Improved aesthetics.

FACTORS AFFECTING GOVERNMENT EMPLOYEES' PERFORMANCE.

Key factors that affect employee productivity and performance fall into two categories.

1. Management (Government) driven factors with demographic variables and factors that arise from premises, Office's ergonomics and Infrastructural design of office.
2. Some of the Government driven factors and demographic variables that tends to affect employee's productivity and performance are
3. Working patterns, Designation work pressure, experience in service, Gender, number of years in usage of computers for extensive period of time and the ages of employees.
4. Non recruitment of sufficient number of employees to the Government sector offices, Tedious procedures and time lagging bill payments are notified in office tenders and establishment Procedures in the Government Offices.
5. There is no time limitation or time bondage for Government employees to execute their work as they are 24X7 Government workers or employees.

6. Physical and mental discomforts from both ergonomic setup and work pressure.

Factors that arise from premises, office ergonomics or Infrastructural design of office tends to affect employee productivity and performance.

- Furniture
- Work space availability
- Noise from public
- Light intensity
- Ventilation/Humidity.
- Premises hygiene/Welfare facilities.
- Easy to communicate with other employees.
- Essential tools and computers for working.
- Repetitive tasks.
- Seating / Standing postures for easy body movements at work.
- Performing actions with hands raised above shoulder height.

II. REVIEW OF LITERATURE

Ranasinghe (2011)[2], conducted a study in Srilanka to analyze the pressure of complaints of arm, neck and shoulder in relation to the effects of exposure to physical and psychological factors, among 2500 computer officer workers and concluded that the work related physical factors, psychological factors and lack of awareness were all associated with above complaints.

Gupta (2015)[3] from Delhi conducted a research on a study of occupational stress of Government and Private bank managers through Questionnaire of 46 items and concluded that occupational stress is higher among general bank manager and assistant in nationalized banks.

Shivani Thakur, et. Al., (2019)[4] conducted a research on depression, anxiety and stress among Government employees of district head quarters, Hamirpur HP and concluded that Government employees of Hamirpur show less Depression, anxiety and stress symptoms as compared to the past studies done on specific population.

Lin (2007)[5], conducted a prospective comparative intervention study in Taiwan over 3 months to evaluate the effect of ergonomic workstation design on musculoskeletal risk factors and musculoskeletal symptoms reduction among 40 female workers and concluded that majority of the activities are in the high risk category and demands immediate ergonomic intervention in the form of tool workstation and process design.

Antosz, et., (2020) [6], reported that Underworking (i.e. shirking) and overworking of employees can also have detrimental effects for the individual and the organization. These findings prompted to develop a computational model to investigate how work structure, specifically the way in

which managers distribute work tasks amongst employees, impacts work intensity and working time.

Rafaela Bortolini and N ria Forcada (2021)[7] investigated that, out of 1013 occupants in 43 academic buildings in Spain, with the aim to reveal the perception of the indoor environmental quality and workplace ergonomics of both lecturers and students. Further results revealed that in offices, air quality, thermal sensation in winter and adequacy of space were perceived differently by male and female. The findings will be of interest for tertiary building maintenance, design teams and ergonomists to enhance comfort in both groups of end users.

III. AIM OF THE STUDY

1. To identify the factors creating inconvenience among employees to work with respect to ergonomic setup.
2. To study the ergonomic impact on Government employee's performance at office of the Assistant commissioner.
3. To make valuable suggestions, recommendations to improve the workplace ergonomics at present setup of Government office.

IV. RESERCH FRAMEWORK

The study aims to identify the factors of office ergonomics and work patterns that are affecting their work performance and to support the employees to work efficiently and effectively in the Government office. Hence, the design used for the study is Descriptive research. The primary data has been collected with a questionnaire prepared by the researcher. The sampling unit of the research is the employees working in the Government sector. The key area where the study was carried out is the office of the Assistant Commissioner, Madhugiri Sub division, Tumakuru District in the year 2023. The population for the study is 23, the sample size was bounded to 22.

V. RESULTS AND DISCUSSION

TABLE 1.1: Distribution of employees or respondents by their age in association with physical discomfort:

OPINIONS[AGE]	NUMBER OF RESPONDENTS	NO RISK OF INJURY	SOME RISK OF INJURY
21-30 years	6	2	4
31-40 years	8	1	7
41-50 years	2	0	2
51-60 years	6	2	4
Total	22		

TABLE 1.2 : Distribution of respondents by their gender in association with physical discomfort.

OPINION[Gender]	NUMBER OF RESPONDENTS	NO RISK OF INJURY	SOME RISK OF INJURY
MALE	12	2	10

FEMALE	10	4	6
TOTAL	22		

TABLE 1.3 : Distribution of respondents by their designation in association with physical discomfort.

OPINION[designation]	NUMBER OF RESPONDENTS	NO RISK OF INJURY	SOME RISK OF INJURY
Tahsildar	1	0	1
FDA	5	0	5
SDA	2	0	2
VAO	5	0	5
Typist	1	0	1
Data entry operator	1	0	1
Driver	1	0	1
Group D	4	2	2
Gram Sahayak	2	0	2
Total	22		

TABLE 1.4: Distribution of respondents by their experience in service in association with physical discomfort.

OPINION [experience]	NUMBER OF RESPONDENTS	NO RISK OF INJURY	SOME RISK OF INJURY
4-5 years	5	3	2
6-10 years	6	2	4
11-15 years	2	0	2
16-20 years	2	0	2
Above 20 years	7	0	7
Total	22		

TABLE 1.5: Distribution of respondents by their number of years using computer in association with physical discomfort.

OPINION[number of years using computer]	NUMBER OF RESPONDENTS	NO RISK OF INJURY	SOME RISK OF INJURY
<1	1	1	0
1-5	6	0	6
6-10	3	0	3
>10	5	0	5

TABLE 1.6: Showing number of employees affected through office work stressed postures.

OPINION	NUMBER OF RESPONDENTS
Back bending, Lifting files using staircases	3
Operating mouse Operating keyboard Sitting position Talking on phones with neck bending	15
Standing position	4

TABLE 1.7: Showing the physical and mental discomforts which are experiencing from Government employees through office ergonomics and nature of work.

OPINION	NUMBER OF RESPONDENTS
Aching	15
Numbness	10
Cramping	10
Stiffness	7
Headache	15
Neck and muscle pain	16
Diabetic	2
Pain in fingers	12
Back pain	13
Eye related problems	15

TABLE 1.8: Showing opinions of Government employees regarding factors affecting their work performance.

FACTORS	SATISFIED	DISSATISFIED
REPETITIVE TASK	7	15
PERFORMING ACTIONS WITH HANDS RAISED ABOVE SHOULDER HEIGHT	0	2
IMPACT ON ROOM TEMPERATURE ON PERFORMANCE	20	2
INFLUENCE OF ROOM LIGHTING ON WORK PERFORMANCE	20	2
COMFORTABLE WITH FURNITURE SETUP	3	19
COMFORTABLE OFFICE DESIGN AND INFRASTRUCTURE	22	0
FIXTURES AND FURNITURE IN WORK PLACE	3	19
COMFORTABLE PROVISION FOR RELAXING DURING LEISURE TIME [if exists]	0	22
EASY TO COMMUNICATE WITH OTHER EMPLOYEES	22	0
ESSENTIAL TOOLS AND COMPUTERS FOR WORKING	13	2
WORK PRESSURE ON EMPLOYEES	4	18
VENTILATION FACILITIES	20	2
LEVEL OF NOISE AND DISTURBANCES FROM PUBLIC	7	15
SEATING OR STANDING POSTURES FOR EASY BODY MOVEMENTS AT WORK	22	0

TABLE 1.9: Showing number of respondents' feeling about present work postures.

FEEL ABOUT PRESENT WORK POSTURES	NUMBER OF RESPONDENTS
Highly comfortable	3
Comfortable	2
Neutral	2
Constrained	11
Highly constrained	4
Total	22

The obtained result revealed that the 31-40 years old respondents experiencing some risk of injury followed by 51-60 years old respondents (Table 1.1). Number of male

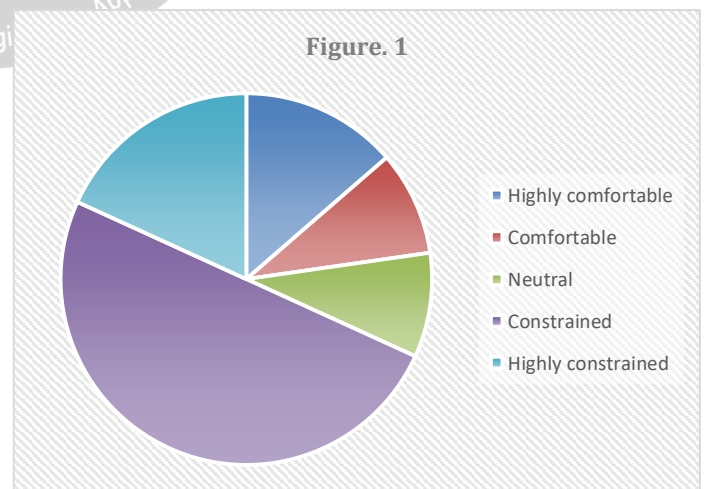
respondents are prone to some risk of injuries when compared to female respondents (Table 1.2). Designation through their nature of work performed from the employees does really matters and are more in the risk of injury column (1.3). As the number of experience in service increases, the employees are prone to some risk of injury. As the number of years using computers increases, the employees are at high risk of injuries, which was shown in the table 1.4.

The employees were dissatisfied with no leisure time, insufficient ergonomic furniture's, insufficient tools and computers, high work pressure, disturbance from public noise and repetitive motions from computer users (Table 1.5 and 1.6). These are all the main factors which are affecting the work performance of the Government employees in the office.

Computer related ergonomics like operating mouse, keyboards, sitting position for hours together, talking on phones with neck bending are the most stressful postures experienced by the Government employees to the least concerned standing position (Table 1.7). The report suggested that, the effects of job strain and job control on musculoskeletal symptoms in upper extremities and work performance were smaller among workers with higher physical demands. This could imply that high physical demand jobs limit job control or psychosocial variables may not adequately capture job strain among high physical demand groups (Kwon, et., al. (2023))[8].

The most discomfort experienced by the employees in present ergonomic setup are neck and muscle pain, eye related problems, headache, aching and back pain (Table 1.8).

Most of the employees feeling constrained towards the present ergonomic work postures and only three of them are highly comfortable (Table 1.9) (Fig. 1).



VI. SUGGESTIONS

The present investigation suggests that unsound ergonomic setup, unfavorable work situations can directly impact employee work performance regardless of personality

predispositions, whereas, development of reassuring or supportive work environments can definitely be a direct and positive impact on employees. The following suggestions can be adopted for the improvement of the office ergonomics and overall aspects and help to increase the employees work performance.

1. As there is no awareness regarding OSHA and office ergonomics, the employees have to be provided knowledge about aforesaid concepts by issuing print bills, poster, pamphlet, work related musculoskeletal disorders.
2. Provide training with respect to job and equipping tools, equipment's, computers and ergonomic furniture's.
3. Arrange your workstations so that items, you frequently use are within close reach.
4. Safety committees and safety meetings are more effective to recognize the ergonomic risk factors and suggest adjustments so employees can avoid injury and work more efficiently.
5. If the Government can make sufficient recruitments in the Government sector offices, the work pressure on the employees automatically decreases with the decrease of both physical and psychological work stress and increase in their work performance graph.
6. Organize an ergonomic program with the help of OSHA organization in the workplace considering the 10 main principles of ergonomics by the Government to know about employees' problems and situations and to make them understand that the Government care for them. After all the employees are the assets of the Government itself. This gives them social support, morality, feel secured in their workplace.

VII. CONCLUSION

In these days, ergonomics is coming into limelight in all sectors of the society like, Industries, IT offices, education institutions etc. After the introduction of e-Governance in the Government sector offices, the usage of computer has also been introduced among the Government employees. Without knowing computer ergonomics, work pressure due to imbalanced recruitment of vacancies, poor demographic variable associated with work performance employees unknown of OSHA Act and its advantages. Creating, computer related health problems like headache, vision discomfort, shoulder pain, back pain and wrist pain which are earlier more common in IT professionals, are now gradually building up in Governmental employees, and also giving rise to psychological distress in them. Ergonomic intervention will be effective in reducing the possibility of occurrence of such health problems. Ergonomics is an easy and inexpensive way compared to other treatment positions. This study had made an effort to study the Ergonomic impacts on employees work performance at Government office of Madhugiri Sub-division, Tumakuru District and it

can be utilized by all Government offices, throughout the country to assess the impact of ergonomic arrangements with their employee performance levels and to make necessary changes accordingly to reduce the mental and physical problems due to work stress and movements and thereby to increase their workforce efficiency.

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