

**UNIVERSITI TEKNOLOGI MARA**

**IMPACT OF OCCUPATIONAL ACTIVITIES AMONGST  
VISUAL DISPLAY UNIT (VDU) USER TO SHOULDER  
RANGE OF MOTION (ROM)**

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**Project paper submitted in partial fulfillment of the requirements for  
the degree of Bachelor in Environmental Health and Safety (Hons.)**

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### Declaration by Student

Project entitled 'Impact of Occupational Activities amongst Visual Display Unit (VDU) User to Shoulder Range of Motion (ROM)' is presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussion. This project was done under the guidance of Professor Madya Hazilia Binti Hussain as Project Supervisor, Professor Madya Rodziah Binti Ismail and Mr. Mohamad Ghazali Bin Masuri as Co-supervisor. It has been submitted to the Faculty of Health Science in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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## ABSTRACT

### IMPACT OF OCCUPATIONAL ACTIVITIES AMONGST VISUAL DISPLAY UNIT (VDU) USER TO SHOULDER RANGE OF MOTION (ROM)

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**Introduction:** Ergonomic risk associated with activities involving Visual Display Unit (VDU) could possibly increase among office workers due to length of work time and repetitive task of job. Common risks factors normally associated with VDU operations involve musculoskeletal disorders (MSDs) problem. The objective of this project is to study the impact of occupational activities amongst Visual Display Units (VDU) user to shoulder Range of Motion (ROM).

**Methodology:** The study was conducted among selected office and administration staff (n=40) in a manufacturing factory located at Shah Alam, Selangor. This study was a cross-sectional study. The sampling data was collected using Modified Nordic Musculoskeletal Disorder Questionnaire, interviews, range of motion measurement & photographs. Shoulder Range of Motion (ROM), were measured using Goniometer. Analytical and descriptive statistical analysis was determined using Statistical Package for the Social Science (SPSS) version 18.0.

**Result:** The result showed that shoulder Range of Motion (ROM) of the VDU users was normal when compare with American Academy of Orthopedic Surgeons, AAOS standards. Paired t-test and Wilcoxon Signed Rank Test showed that there were no significant different between right and left shoulder ( $p>0.05$ ) between VDU users accept for shoulder abduction. Level of education and training shows association with the awareness of VDU users on the knowledge and the important of ergonomic ( $p<0.05$ ). There was an association of flexion for right and left shoulder and abduction of right shoulder ( $p<0.05$ ) with the occupational activities of VDU users which are computer usage and keyboard and mouse usage per hour. Whereas, frequency of using office phone have significant with abduction right shoulder.

**Conclusion:** In conclusion, repetitive motion of VDU users showed development of MSDs Symptom, which indicating chronic ergonomic problems. There was a mean different between right and left shoulder indicate that job tasks may have MSDs linkage. On the other hand, there was an association between the occupational activities of VDU users with their shoulder range of motion. Solutions and recommendations were derived from this study to reduce problems of MSDs among VDU users.

**Keywords:** *Musculoskeletal Disorder, Visual Display Units, Shoulder Range of Motion*