

**UNIVERSITI TEKNOLOGI MARA**

**PREVALENCE STUDY OF MUSCULOSKELETAL  
DISORDER SYMPTOMS AMONG VISUAL DISPLAY  
TERMINAL (VDT) USERS**

**NOOR HIDAYU ABDULLAH**

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

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### Declaration by Students

Project entitled "Prevalence Study of Musculoskeletal Disorder Symptom among Visual Display Terminal Users" is a presentation of my original research work. Wherever contributions 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 Mr K. Subramaniam as Project Supervisor and Miss Siti Rohana Bt Mohd Yatim as Co-supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

Students's signature:



(Noor Hidayu Binti Abdullah)

2007287924

880409015020

Date: 26 Mei 2011

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## ABSTRACT

### PREVALENCE STUDY OF MUSCULOSKELETAL DISORDER SYMPTOM AMONG VISUAL DISPLAY TERMINAL USER

NOOR HIDAYU ABDULLAH

**Introduction:** Ergonomic risk associated with activities involving Visual Display Terminal (VDT) could possibly increase among office workers due to length of work time. Common risks factors normally associated with VDT operations involve musculoskeletal disorders (MSDs) problem. Objective of this study is to determine the prevalence of MSDs symptoms and to associate muscular strength (pinch and grip strength) on wrist and finger muscular strength among VDT user.

**Methodology:** The study was conducted among selected office staffs (n=102) in a manufacturing factory located at Bangi, Selangor. This study is a cross-sectional study. The sampling data was collected using modified Nordic Musculoskeletal Disorder Questionnaire, interviews, body parts symptoms survey (BPSS) & photographs. Muscular strength (pinch and grip strength), were measured using JAMAR Hydraulic Hand Dynamometer & Hydraulic Pinch Gauge Strength Measurement. Analytical and descriptive statistical analysis was determined using Statistical Package for the Social Science (SPSS) version 18.0 was used in this study.

**Result:** Found that there is an association for MSDs symptom between the VDT levels of usage (VDT users >4 / <4 hours/day) on upper body parts: neck, wrist, finger, elbow, forearms, upper & lower back and hip (p value<0.01), shoulders (p value<0.05), while for lower body parts: lower legs, thigh & ankle (p value>0.05). Independent t-tests showed that there are significant different between grip strength (p value<0.01) and tip-pinch strength (p value<0.05) between VDT levels of usage (VDT users >4 / <4 hours/day), while there was no mean difference between key-pinch strength (p value>0.05) and palmar-pinch strength (p value>0.05) between VDT levels of usage (VDT users >4 / <4 hours/day). However, the study found that, there was no association between the MSDs symptom on wrist/finger(p value>0.05) with grip and pinch strength in VDT usage for more than 4 hours per day.

**Conclusion:** This study suggested that, the duration of VDT level of usage (VDT user > 4 hours/day working for at least 12 month) showed development of MSDs Symptom, indicating chronic ergonomic problems. There is a mean different between grip strength (p value<0.01) and tip-pinch strength (p value<0.05) between VDT levels of usage (VDT users >4 / <4 hours/day), indicate length of daily work may have MSDs linkage. On the other hand, there was no association between the MSDs symptom on wrist/finger (p value<0.05) among VDT user for more than 4 hours/day, indicating acute ergonomic problems. Solutions and recommendations derived from the study to reduce problems of MSDs among VDT users.

**Keywords:** *Musculoskeletal Disorder, Visual Display Terminal, Grip and Pinch test.*