

A Preliminary Study on Musculoskeletal Disorders (Msds) Among Office Workers.

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DOI: <https://doi.org/10.30880/peat.2023.04.01.017>

Received 11 January 2023; Accepted 12 February 2023; Available online 12 February 2023

Abstract: Working in the office usually involved in a repetitive movement, prolonged sitting, and many other activities that eventually can cause musculoskeletal disorder or MSDs. It is important to identify the effect of MSDs towards workers and ensure that the workers who spent most of the time in the office environment is safe from MSDs. The purpose of this study is to determine the prevalence of MSDs on the most common body parts among 55 MRT Corp employees in Standard and Compliance Division, measure the level of ergonomic awareness among those employees and subsequently, recommend counter measures to reduce the effect of MSDs among those employees. The method used in this study was questionnaire which consist of 6 sections which is section A for socio demographic, section B for work information, section C for social lifestyle, section D for awareness, section E for ergonomic practices and section F for Cornell Musculoskeletal discomfort Questionnaire (CMDQ). Statistical Package for the Social Science (SPSS) was used to analyze the data. The result of this study found that the most common body part to experience an MSDs was the neck with 78.1% experienced it at least once in the previous week. It also stated that the awareness level of ergonomics among those employees was high. It was recommended that MRT Corp should focused on creating extensive programs for workplace health promotion that provides workers guidance on managing a healthy lifestyle as well as advice and as well as training on workstation ergonomics and work organization to reduce the effect of MSDs among its employees.

Keywords: Musculoskeletal Disorder, Ergonomic, Office Worker

1. Introduction

Musculoskeletal disorders (MSDs) are a severe and expensive occupational health issue with ramifications for employees, companies, and society. Occupational MSDs afflict approximately 40 million workers [1]. Nearly one-fourth of the European labour force reported experiencing muscular pain in their neck, shoulders, and upper limbs, while roughly one-third reported suffering from low back pain (LBP) [2].

1.1 Problem statement and objectives

The prevalence of musculoskeletal issues among office employees globally might negatively impact their health and productivity. A recent survey of office personnel at Malaysian public universities found that 69.7% of office workers complained of severe neck, shoulder, and lower back discomfort [3]

During Hazard Identification, Risk Assessment and Risk Control (HIRARC) for every department in MRT Corp, it was found that almost every department listed an ergonomic risk in their HIRARC form. Hence, MRT Corp want to do an Ergonomic Risk Assessment for its employees thus making this study as a baseline for its ergonomic risk assessment

1.1 The objectives of this study are:

1. To determine the prevalence of MSDs on the most common body parts among office workers.
2. To identify awareness on ergonomics in an office setting.
3. To recommend control measures to reduce the effect of MSDs among office workers.

1.2 Expected outcome

The expected outcome of this study was determined the prevalence MSDs among body parts among MRT Corp employees in Standard and Compliance Division, the level of ergonomic awareness and recommended the counter measures to reduce the effects of MSDs among MRT Corp employees.

2. Materials and Methods

Research planning was done at the early stage of this study and proceed with research design and analysis.

2.1 Materials

Past study, journals and research was gathered to get better understanding of this study specifically in office environments. It is all related to the issues with ergonomics, MSDs, etc.

2.2 Methods

The study population and the method to gather data was discussed with supervisors. To achieve objectives stated, a set of questionnaires was distributed to targeted respondents. The data then analyzed using IBM SPSS Statistic software to achieve the objectives of the study. The research flowchart is as figure 1 below.

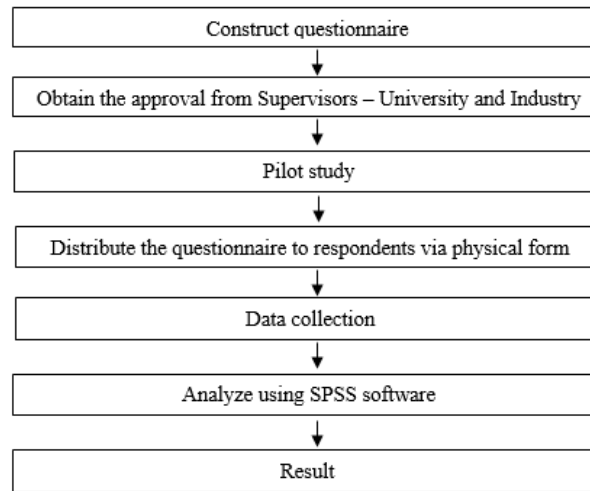


Figure 1: Research flowchart

3. Results and Discussion

Data were analyzed with the usage of Statistical Package for the Social Sciences (SPSS) to make the process of analysis easier. The statistical methods used for data analysis are descriptive statistics and inferential statistic. Descriptive statistics – e.g., Mean, mod and percentages while inferential statistic. – Pearson correlation statistic. All hypotheses will be tested at 0.05 significant levels.

Table 1 shows the reliability of the questionnaire was tested using Cronbach alpha method. It was found that the value of $\alpha=0.964$ which shows high significance reliability of questionnaire set.

Table 1: Cronbach's Alpha

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	
	Items	N of Items
.964	.967	33

3.1 Results

The population for this study is 55 respondents from MRT Corp Standard and Compliance Division. The number of respondents required has been referred from Krejcie & Morgan's table which with a total of 55 respondents, 48 samples are required to ensure the sample is the appropriate representative of the population [4]. The questionnaires have been distributed within the location's headcount. The questionnaires were given in hard copies. The respondents were both operational and administrative group of workers in the company. The entire questionnaire distributed that has been returned was 100%

The descriptive data for prevalence of MSDs in body parts of the respondents from MRT Corp S&C Division employees was analyzed in percentage value. Figure 2 shows the percentage of Cornell musculoskeletal discomfort for all 11 body parts mentioned in the CMDQ among MRT Corp respondents. From the analyzed data, the prevalence of MSDs in body parts among MRT Corp employees is the neck with 78.1% of respondents experienced it either 1-2 times in previous week, 2-4 times in previous week, once a day or even a few times a day.

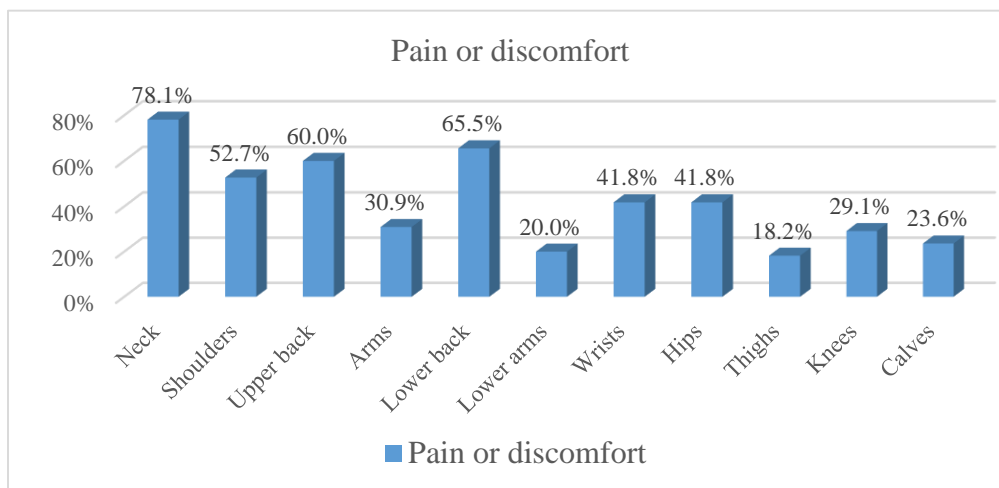


Figure 2: Prevalence of MSDs among body parts

Table 2 shows the percentage of ergonomic awareness among MRT Corp respondents. From total respondents, 74.5% were aware about ergonomics, 9.1% were not and 16.4% was not sure.

Table 2: Ergonomic awareness

Do you know about ergonomics?	Percentage
Yes	74.5%
No	9.1%
Not sure	16.4%

Table 3 shows the percentage of ergonomics application in MRT Corp employees work place. From total respondents, 41.8% applied ergonomics in their work place, 20% were not applied ergonomics in their work place and 38.2% were not sure if they applied ergonomics in their work place.

Table 3: Ergonomic application

Are you applying ergonomics in your work place?	Percentage
Yes	41.8%
No	20%
Not sure	38.2%

Table 4 shows the percentage of awareness of work-related risk factors if they do not apply ergonomics in their work place. From total respondents, 78.2% were aware of work-related risk factors if not apply ergonomics, 9.1% were not aware of work-related risk factors, and 12.7% were not sure whether they aware or not.

Table 4: Awareness of ergonomic work related risk factors

Are you aware of work-related risk factors if you do not apply ergonomics?	Percentage
Yes	78.2%
No	9.1%
Not sure	12.7%

Table 5 shows percentage of respondent's opinion on ergonomics impact on daily work performance. From total respondents, 72.7% agreed that ergonomics does improve daily work performance, 3.6% said ergonomics did not improve daily work performance and 23.6% were not sure whether ergonomics improve daily performance or not.

Table 5: Ergonomic impact on daily work performance

Do you think ergonomics might improve your daily performance in your work?	Percentage
Yes	72.7%
No	3.6%
Not sure	23.6%

4. Conclusion

The study was conducted to determine the prevalence of MSDs on the most common body parts among office workers, to measure the awareness level of ergonomics among office workers in Standard and Compliance Division at MRT Corp, and to recommend control measures to reduce the effects of MSDs among officer workers. Therefore, there were several conclusions that can be derived based on the findings in this study. Firstly, the study shown that the prevalence of MSDs on the most common body parts among office workers are pain or discomfort on neck with 78.1% of the respondents experienced it in the previous week, or worst, a few times in a day. Secondly, it was shown that the level or ergonomic awareness among office workers in Standard and Compliance Division in MRT Corp are high with 74.5% respondents aware of what is ergonomics, 41.8% applied ergonomic in their work place, 78.2% are aware of work-related risk factors if not apply ergonomics, and 72.7% agreed that ergonomics might improve work daily performance. Thirdly, the study shown that it is necessary for MRT Corp to do an ergonomic risk assessment for its employees to ensure that the health and wellbeing of its employees are taken care. Lastly, in this study it shows that the necessity of preventive maintenance focused on MSDs and health promotion need to be focused on working environment and working posture. Besides that, educational programs may have a valuable rule in MSDs prevention

Acknowledgement

This research was made possible by funding from research grant number ABC-XXXX provided by the Ministry of Higher Education, Malaysia. Many thanks to Faculty of Engineering Technology, Universiti Tun Hussein Onn Malaysia for the support in the process of completing this study.

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