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Strategy for Handling Musculoskeletal Problems in Employees of Kediri District Hospital

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ABSTRACT
Office employees who work with computers typically spend prolonged periods—approximately 8 hours per day from morning until evening, five consecutive days a week (Monday to Friday) characterized by static working postures and limited physical activity. Musculoskeletal problems such as complaints of neck, shoulder, back and knee pain are often found by RSUD Kabupaten Kediri employees. This condition can cause musculoskeletal disorders, which can significantly reduce work productivity. Therefore, a residency is conducted to develop community-based physiotherapy services. An analysis was conducted, followed by the implementation of solutions through awareness campaigns, educational sessions, and the distribution of brochures discussing ergonomic posture, musculoskeletal pain, and prevention and management strategies. The study was carried out for one month and involved 10 respondents who met the inclusion criteria using purposive sampling. Research instruments included the Nordic Body Map, VAS, and RULA. The Fishbone diagram, USG method, and SWOT analysis was used in this recidency.Education and socialisation have been proven effective in reducing musculoskeletal complaints among employees who work with computers at RSUD Kabupaten Kediri. Additionally, prevention and management strategies, such as self-guided stretching exercises, can alleviate musculoskeletal pain, while awareness campaigns about proper ergonomic practices when using computers are also crucial for preventing musculoskeletal issues.

Keywords **:** Ergonomic, Musculoskeletal, Pain, Self Stretching

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INTRODUCTION

Technological advances during the globalization era have caused the industry to develop increasingly rapidly, resulting in the use of various types of work equipment with sophisticated technology (Ariyanto et al., 2024). Employees in carrying out their work in the office will spend working time from morning to evening for approximately 8 hours a day and during work days. This long time is usually used in a static position in front of a computer as a work medium. Work with long hours and static positions, both standing and sitting, will cause discomfort (Pramana, 2020). In carrying out work activities using computers, employees generally have a static neck, hand, shoulder and sitting position for a long time. So that it can result in injuries including to the neck, shoulders or spine (Adiatmika, 2020).

Work musculoskeletal disorders (WMSDs) are injuries or disorders of nerves, muscles, and tendons that are associated with repetitive work that cause various risk factors. Continuous computer use involves the wrist when typing in an extension position and when using a mouse in a pronated position (Patel et al., 2018). Studies conducted in the United States and Germany have indicated a high incidence of WMSD among computer users (Vahdatpour et al., 2019). Office workers spend an average of three-quarters of their working hours in a sitting position. Much of this sitting time is recognized as prolonged, pain disorders occur very often at least every 30 minutes the risk of diseases that may have a significant impact on cardiovascular and musculoskeletal (Vahdatpour et al., 2019).

RSUD Kabupaten Kediri is a regional public hospital in Kediri Pare Regency, established in 1974. Based on the results of the interview, employees at RSUD Kabupaten Kediri who work using computers have working hours from 07.00 - 16.00 WIB from Monday and Friday working consecutively and are given one break time, namely 12.00 - 13.00 WIB. The results of observations conducted on RSUD Kabupaten Kediri employees obtained a lack of education provided by the hospital, both self-stretching or good positions, poor ergonomics when in front of the computer, improper handling or massage. Employees experience complaints of musculoskeletal disorders while working from the results of the interviews conducted, there were 10 employees experiencing complaints in the neck, shoulder and waist muscles. This muscle fatigue causes employees to become easily tired.

Musculoskeletal problems such as complaints of neck, shoulder, back, and knee pain are often found by RSUD Kabupaten Kediri employees. Therefore, the author conducted a residency at the RSUD Kabupaten Kediri to find out the factors that cause problems, problem priorities, and strategies that will be given to overcome problems in the surrounding environment.

METHOD

The study was carried out for one month and involved 10 respondents who met the inclusion criteria using purposive sampling. The inclusion criteria for this study were RSKK Kabupaten Kediri employees who worked in front of a computer for 8 hours per day, 5-6 days per week. The Nordic Body Map is a widely used ergonomic tool, usually presented in the form of a questionnaire, designed to assess and record musculoskeletal complaints or pain in various parts of the body. The Rapid Upper Limb Assessment (RULA) is used to evaluate the ergonomic risk of work-related musculoskeletal disorders (WMSDs) by analysing the posture

of the neck, upper body, and upper limbs. In addition, pain intensity is measured using the Visual Analogue Scale (VAS). Fishbone diagram is used to identify the factors causing musculoskeletal complaints in employees in the RSUD Kediri district environment. By using USG and SWOT analysis to identify problems that cause musculoskeletal complaints in employees in the RSUD Kediri district environment.

RESULTS

Figure 1. Fishbone

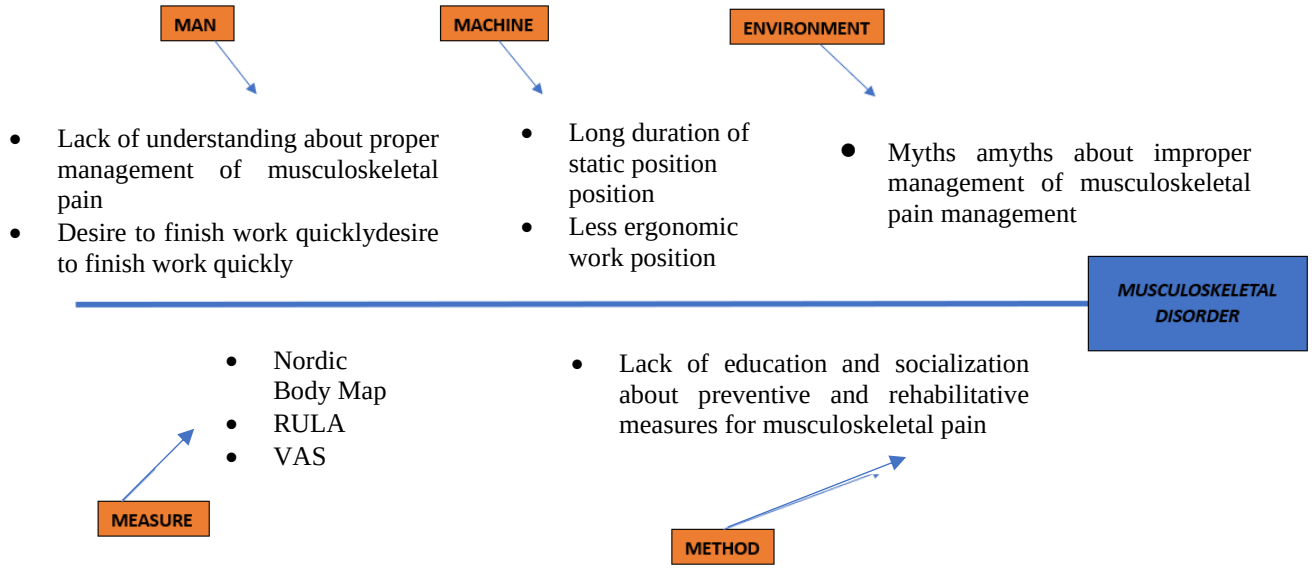


Table 1. USG

No.	Indicator	U	S	G	UxSxG	Ranking
1	Lack of understanding regarding preventive measures for musculoskeletal pain.	4	3	3	36	4
2	Lack of understanding regarding the proper management of musculoskeletal pain	4	3	3	36	4
3	Poor ergonomic working position	5	4	4	80	2
4	Long duration of static position	4	4	3	48	3
5	Lack of socialization of ergonomic working position.	5	5	5	125	1
6	No standardization of ergonomic working position	5	5	5	125	1
7	Lack of socialization regarding preventive and rehabilitative measures for musculoskeletal pain	5	5	5	125	1

Table 2. Calculation Matrix Evaluation Factor Internal (IFE)

No.	Factors Analysis	Weight	Rating	Score
	Strength (S)			
1	Employee age in the productive age range	0,19	5	0,95
2	Employee physical condition is good	0,18	5	0,9
3	There is a desire to complete work quickly	0,16	4	0,64
Total *Strength*		0,53		2,49
	Weakness (W)			
1	Lack of understanding of the importance of paying attention to ergonomic work positions	0,19	5	0,95
2	Lack of understanding of preventive and rehabilitative measures for musculoskeletal pain	0,14	4	0,56
3	Long duration of static positions	0,14	4	0,56
Total *Weakness*		0,54		2,07
Total IFE		1		
S-W				0,42

Table 3. Calculation Matrix Evaluation Factor External (EFE)

No.	Factors Analysis	Weight	Rating	Score
	Opportuny (O)			
1	The importance of education about ergonomic work positions	0,20	5	1
2	Improving employee work quality through socialization about ergonomic positions	0,19	4	0,76
3	Improving employee work quality through socialization about musculoskeletal	0,19	4	0,76
Total *Opportunities*		0,58		2,52
	Threat (T)			
1	Lack of knowledge about ergonomic positions.	0,16	5	0,8
2	The prevalence of inappropriate musculoskeletal pain management.	0,14	5	0,7
3	Increasing prevalence of musculoskeletal pain complaints.	0,12	4	0,48
Total *Threats*		0,42		1,98
Total EFE		1		
O-T				0,54

Figure 2. Analysis Diagram SWOT

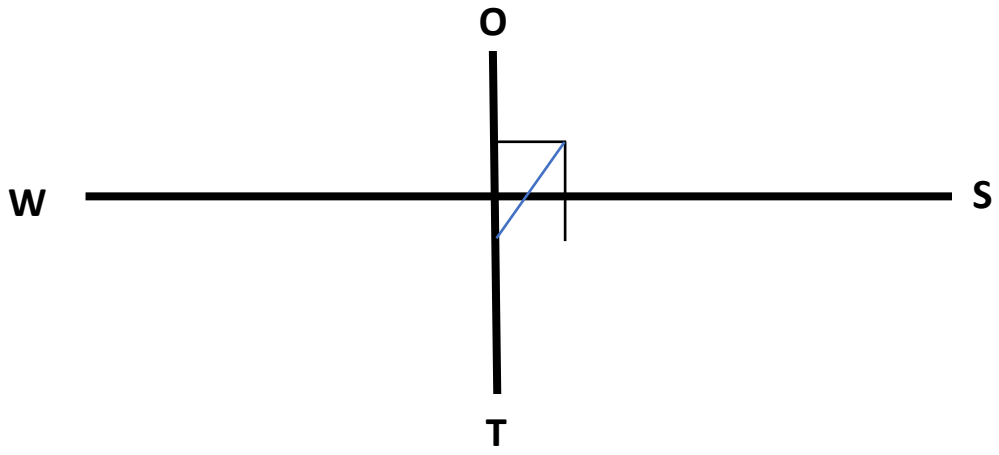


Table 4. Problem Solving Strategy

	Strength	***Weakness***
	- Employee age is in the productive age range - Good employee physique - Desire to complete work quickly	- Lack of understanding of the importance of paying attention to ergonomic work positions - Lack of understanding of preventive and rehabilitative measures for musculoskeletal pain - Long duration of static positions
Opportunity	**Strategy S-O**	**Strategy W-O**
- The importance of education about ergonomic work positions - Improving employee work quality through socialization about ergonomic positions	1. **Distribution of educational flyers regarding ergonomic positions and musculoskeletal pain** 2. **Conducting socialization regarding ergonomic positions and musculoskeletal pain**	1. Utilization of technology in the digital era as an educational medium, especially for hospital employees using video media 2. The creation of a routine program by the hospital for employees in the form of an appeal to routinely do self-stretching every 30 minutes while

- Improving employee work quality through socialization about musculoskeletal pain		
Threat	**Strategy T-S**	**Strategy T-W**
- Lack of knowledge about ergonomic positions - The prevalence of inappropriate musculoskeletal pain management - Increasing prevalence of musculoskeletal pain complaints	1. Make employees aware of the importance of maintaining an ergonomic position when working 2. Provide education in the form of appropriate preventive and rehabilitative actions	1. Improve time management so that employee performance continues to run optimally 2. Work together with the medical rehabilitation polyclinic at RSKK to provide socialization to employees and the community regarding ergonomic positions and musculoskeletal pain

Figure 3. Educational Flyer on Self Stretching

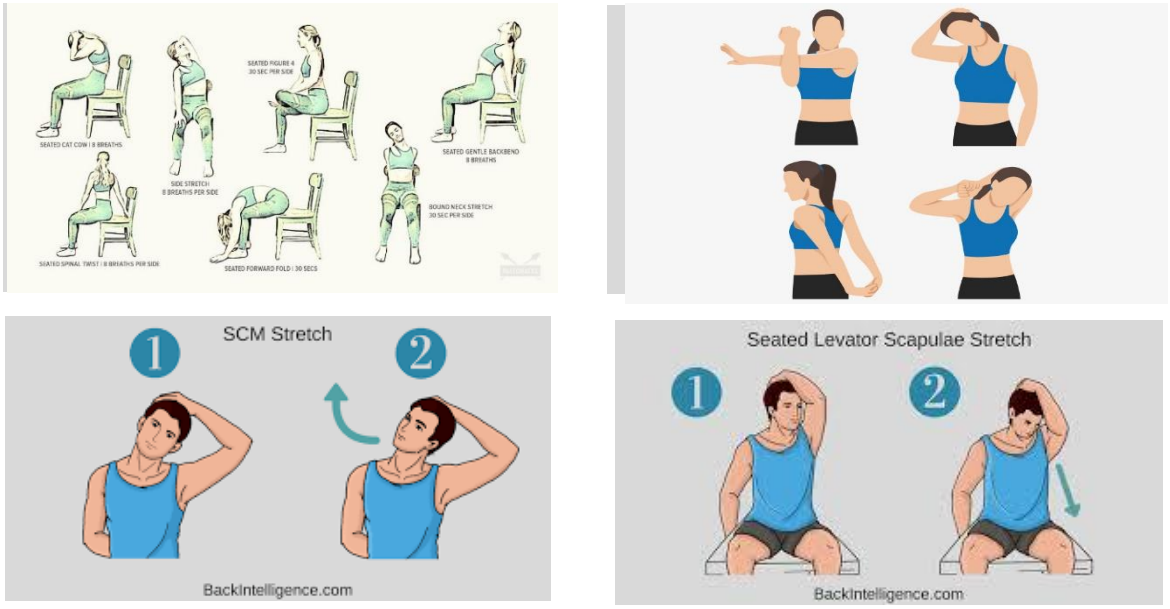
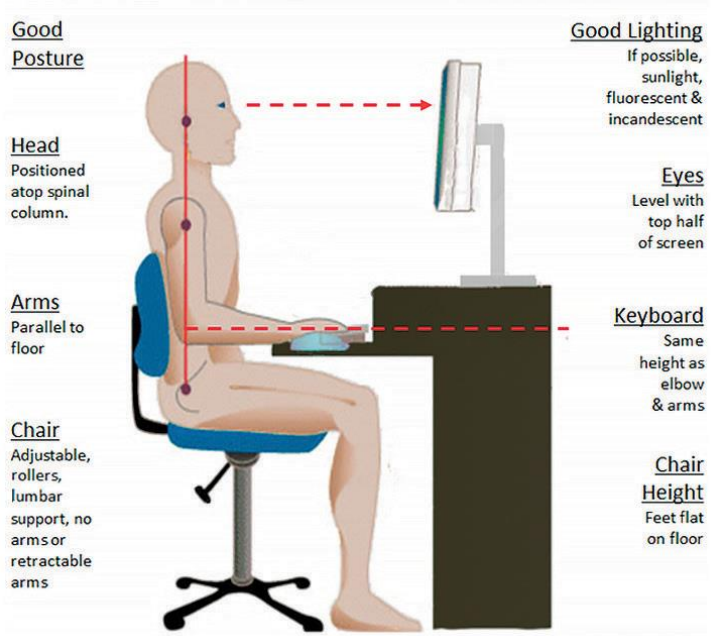


Figure 4. Ergonomic Position Figure. Adapted from Collins (2019)



DISCUSSION

Residency was conducted at Kediri District Hospital. Resident members conducted counseling activities on musculoskeletal complaints for employees who work in front of computers at Kediri District Hospital. Respondents were employees who work in front of computers at Kediri District Hospital who had musculoskeletal complaints. From the results of the examination, it was found that several employees complained of musculoskeletal pain. Through fishbone analysis, a number of factors were found that contributed to the occurrence of musculoskeletal complaints, such as lack of understanding regarding preventive measures for musculoskeletal pain, less ergonomic work positions, long duration of static positions, lack of socialization of ergonomic work positions, lack of education regarding ergonomic work positions, lack of socialization regarding preventive and rehabilitative measures for musculoskeletal pain. Based on the USG analysis, the priority problems that must be addressed immediately are the lack of socialization regarding ergonomic work positions, lack of socialization regarding preventive and rehabilitative measures for musculoskeletal pain. The intervention plan includes distributing flyers as educational media regarding ergonomic positions and musculoskeletal pain both in terms of prevention and rehabilitation, holding socialization regarding ergonomic positions and musculoskeletal pain both in terms of prevention and rehabilitation.

CONCLUSION

By distributing flyers so that employees at the Kediri District Hospital regarding ergonomic positions and musculoskeletal pain both in terms of prevention and rehabilitation,

holding socialization regarding ergonomic positions and musculoskeletal pain both in terms of prevention and rehabilitation, it is expected that employees who work in front of computers can overcome complaints of musculoskeletal pain and can increase good work productivity. Socialization of good and correct ergonomics when in front of a computer is also carried out to prevent musculoskeletal problems.

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