Jurnal Riset Multidisiplin Edukasi
https://journal.hasbaedukasi.co.id/index.php/jurmie
Halaman : 937-944

EFFECT OF WORK POSTURE ON MUSCULOSKELETAL SYMPTOM AMONG TAILORS IN PALEMBANG

Fadillah[1], Selvi Triani[2], Rury Tiara Oktariza[3]
Muhammadiyah University Of South Sumatera [1,2,3]
Email: fadillahsayuti@gmail.com

Informasi

Volume : 3
Nomor : 1
Bulan : Januari
Tahun : 2026
E-ISSN : 3062-9624

Abstract

Tailors are one of the professions at risk of experiencing musculoskeletal complaints due to work posture, such as prolonged sitting and repetitive movements. The purpose of this study is to determine the effect of work posture and musculoskeletal complaints among tailors in Palembang. This research employed an observational analytic method with a cross-sectional approach. The sampling technique used in this study was accidental sampling, with a total of 97 participants consisting of 46 males and 51 females. The age distribution included 29.9% aged ≤ 35 years and 70.1% aged > 35 years. The Rapid Entire Body Assessment (REBA) method was used to evaluate work posture risk, while the Nordic Body Map (NBM) questionnaire was used to identify musculoskeletal complaints. Data analysis was conducted using univariate and bivariate methods with the chi-square test. Based on the REBA calculation, 75.3% of the participants were found to have a moderate risk work posture, and 24.7% had a high-risk work posture. The NBM questionnaire results showed that 78.4% of participants had mild complaints, and 21.6% had moderate complaints. Statistical analysis revealed a significant relationship between work posture and musculoskeletal complaints among tailors in Palembang (p-value 0.002).

Keyword: *Work Posture, Musculoskeletal Complaints, Tailors*

A. INTRODUCTION

Based on ILO (International Labour Organization) data from 2013, there are 2.3 million fatalities annually caused by workplace accidents and occupational illnesses. Among these, musculoskeletal disorders are the most common occupational illnesses worldwide.[1] In Indonesia, the highest number of occupational illnesses is caused by musculoskeletal disorders (16%), followed by cardiovascular diseases (8%), neurological disorders (5%), respiratory disorders (3%), and ENT disorders (1.5%). One of the occupational illnesses caused by non-ergonomic work procedures is musculoskeletal complaints.[2]

Musculoskeletal complaints are caused by occupational factors or are known as Work-Related Musculoskeletal Disorders (WMSDs), which are injuries or disorders affecting muscles, nerves, tendons, joints, cartilage, and spinal discs that are microtraumatic, accumulating in the body due to workplace conditions and job characteristics.These

complaints can occur due to activities exceeding the capacity or limitations of musculoskeletal components.[3]

Several factors can cause musculoskeletal complaints, such as overexertion, occupational factors (posture, duration, load, and frequency), individual factors (age, work period, smoking habits, exercise habits), environmental factors (temperature, vibration, lighting, pressure), and psychosocial factors.[4]

Tailoring is a job with a high risk of musculoskeletal disorders (MSDs) due to prolonged static work postures and repetitive tasks in quick succession. Tailors often use both hands continuously, standing or sitting for long periods, exerting pressure on the back, arms, shoulders, and legs, which can lead to pain or damage to skeletal components, such as the neck, back, waist, and even legs.[5]

Based on these issues, this study focuses on analyzing the effect of work posture and musculoskeletal complaints. The objective is to determine the relationship between work posture and musculoskeletal complaints among tailors in Palembang.

B. RESEARCH METHOD

This study employs a cross-sectional research design. The population for this study consists of tailors in the subdistricts of Seberang Ulu I, Seberang Ulu II, and Plaju, Palembang City, who meet the inclusion and exclusion criteria. Sampling was conducted using the accidental sampling method, resulting in a total sample size of 97 participants.The data collection method in this study was conducted through primary data collection from respondents using the NBM (Nordic Body Map) questionnaire to assess musculoskeletal complaints and the REBA (Rapid Entire Body Assessment) observation sheet to evaluate the work posture of the tailors. The data analysis used in this study is the Chi-square test.

C. RESULTS AND DISCUSSION

RESULTS

Table 1. Respondent Characteristics Based on Age and Gender

	Charateristic	**Frequency**	**Percentage %**
Age	≤ 35 years old	29	29,9
	> 35 years old	68	70,1
Gender	Male	46	47,4
	Female	51	52,6

Based on Table 1, there were 97 respondents in total, consisting of 46 males and 51 females. Of those aged ≤ 35 years, there were 29 individuals (29.9%) and those aged > 35

years were 68 individuals (70.1%). All respondents had a work duration of more than 8 hours per day.

Table 2. Distribution Respondent's Work Posture

Work Poosture	Frequency (F)	Percentage (%)
Not at risk	-	-
Low risk	-	-
Moderate risk	73	75,3
High risk	24	24,7
Very high risk	-	-
Sum	**97**	**100**

Based on the results of respondents' work posture measurements using the REBA method, it is known that they fall into the moderate-risk category (scores 4-7) and the high-risk category (scores 8-10). This study shows that work postures with moderate risk are the most prevalent among respondents (75.3%). Data on the distribution of respondents' work postures can be seen in Table 2.

Table 3. Distribution Of Musculoskeletal Symptom Of Respondent

Musculoskeletal Symptom	Frequency (F)	Percentage (%)
No symptom	-	-
Mild symptom	76	78,4
Moderate symptom	21	21,6
Severe symptom	-	-
Sum	**97**	**100**

Based on Table 3, regarding the distribution of respondents' musculoskeletal complaints, it is known that the most common complaints experienced by respondents are mild complaints (78.4%).

Table 4. Distribution of Symptom's Location

Number	Musculoskeletal symptom	Result			
		Yes	%	No	%
1	Pain the upper neck area	73	75,3	24	24,7
2	Pain in lower neck area	59	60,8	38	39,2
3	Pain in left shoulder	59	60,8	38	39,2
4	Pain in the right shoulder	82	84,5	15	15,5
5	Pain in left upper arm	24	24,7	73	75,3
6	Pain in the back	46	47,4	51	52,6
7	Pain in the right upper arm	33	34,0	64	66.0
8	Pain in the lower back	63	64,9	34	35,1
9	Pain in the buttocks	39	40,2	58	59,8

10	Pain in the hips	17	17,5	80	82,5
11	Pain in the left elbow	6	6,2	91	93,8
12	Pain in the right elbow	6	6,2	91	93,8
13	Pain in the lower left arm	4	4,1	93	95,9
14	Pain in the lower right arm	7	7,2	90	92,8
15	Pain in the left wrist	7	7,2	90	92,8
16	Pain in the right wrist	7	7,2	90	92,8
17	Pain in the left hand	31	32,0	66	68,0
18	Pain in the right hand	37	38,1	60	61,9
19	Pain in the left thigh	9	9,3	88	90,7
20	Pain in the right thigh	11	11,3	86	88,7
21	Pain in the left knee	17	17,5	80	82,5
22	Pain in the right knee	19	19,6	78	80,4
23	Pain in the left calf	53	54,6	44	45,4
24	Pain in the right calf	52	53,6	45	46,4
25	Pain in the left ankle	9	9,3	88	90,7
26	Pain in the right ankle	7	7,2	90	92,8
27	Pain in the left foot	31	32,0	66	68,0
28	Pain in the right foot	34	35,1	63	64,9

Based on the data in Table 4, it can be seen that the most frequent musculoskeletal complaints in the cervical region occur in the upper neck area (75.3%), in the superior extremity region in the right shoulder (84.5%), in the inferior extremity region in the left calf (54.6%), and in the axial region in the lower back (64.9%). Among various body locations experiencing musculoskeletal complaints, the right shoulder is the most frequently reported by respondents.

Table 5 Relation Of Distribution Of Work Posture With Symptom Musculoskeletal

Work Posture	**Musculoskeletal Symptom**						**P Value**
	Mild Symptom		**Moderate symptom**		**Sum**		
	N	**%**	**N**	**%**	**N**	**%**	
Moderate Risk	63	86,3	10	13,7	73	100	0,002
High Risk	13	54,2	11	45,8	24	100	
	76	78,4	21	21,6	97		

The analysis results show a significant relationship between work posture and musculoskeletal complaints with a p-value of 0.002 (<0.05). Respondents with moderate-risk work postures predominantly experience mild musculoskeletal complaints (86.3%), while

those with high-risk work postures predominantly experience mild musculoskeletal complaints (54.2%).

DISCUSSION

Based on research conducted on 97 respondents, two categories in REBA were identified: medium-risk and high-risk categories, where 75.3% experienced medium-risk work postures, and 24.7% experienced high-risk work postures.(Andriani 2020) This research aligns with Andriani et al. (2020), who reported that out of 75 respondents, 42 individuals (56.0%) experienced medium-risk work postures, and 33 individuals (44.0%) experienced high-risk work postures.[3] The results of this study are also supported by Putri, who found that most work postures fell into the medium-risk category (86%).[6] Another study by Irawati (2020) found that all respondents experienced risky work postures, leading to musculoskeletal complaints.[7]

Based on the NBM questionnaire, this study identified two categories of complaints: mild complaints and moderate complaints. A total of 78.4% fell into the mild complaint category, while 21.6% were in the moderate complaint category. This study is consistent with Kartika, which found that market tailors mostly experienced mild complaints, with the highest frequency found in moderate complaints 19 individuals or 63.3%) and the lowest frequency in mild complaints (11 individuals or 36.7%).[8] The findings are also in line with Hasrianti, who reported that musculoskeletal complaints were mostly mild (91.2%) and moderate (8.8%).[1]

In terms of musculoskeletal complaints based on body regions, it was found that the cervical region was the most affected, particularly the upper neck (75.3%). The upper extremity regions, specifically the right shoulder, were affected in 84.5% of cases. The lower extremity region affected areas such as the hips (54.6%), while the axial region was most affected in the lower back (64.9%), with the right shoulder being the most commonly affected area overall. This study aligns with research on ergonomic risks and musculoskeletal complaints among weavers in Palembang by Yosineda et al, which found that the most common complaints occurred in the upper neck (65.7%), lower neck (57.1%), hips (54.2%), and lower back (42.9%).[9] Other research also found that the majority of complaints were moderate (68.75%).[10] Tailors reported complaints such as pain or stiffness in the upper and lower neck, shoulders, back, hips, calves, and feet, with varying frequencies and durations among workers.[11]

Statistical analysis revealed a significant correlation between work posture and musculoskeletal complaints among tailors in Palembang City (p-value 0.002). This study supports the findings of Rumangu et al, which also found a relationship between work posture and musculoskeletal Results (p-value 0.004).[12] The same findings were reported in the study by Andriani et al,[3] which stated that there is a correlation between work posture and musculoskeletal complaints (p-value 0.032) and in Kartika's (2020) study (p-value 0.042).[8]

In this study, respondents worked with an upper arm angle that was too large due to excessively high table positions, and tailors frequently performed activities such as threading needles, cutting, and stitching. The muscles most commonly reported by tailors as being strained were skeletal muscles, including the shoulder, neck, back, and lower back muscles.[10] This condition is caused by unnatural work posture as tailors often lean forward with their heads bent while sewing. Moreover, during work, most of their body weight rests on the right foot, which operates the sewing machine pedal repeatedly. The habit of resting one leg on the table stand, which is higher than the sewing pedal, may lead to soreness and pain.[10]

The highest number of complaints was found in the shoulder area, which is attributed to tailors frequently bending their heads downward, resulting in a static posture for a prolonged period. Additionally, sewing involves repetitive movements that, if continued, can increase pressure on the muscles, thereby disrupting blood flow and reducing oxygen levels. Insufficient oxygen for an extended time may lead to anaerobic metabolism, resulting in the accumulation of lactic acid in the muscles. This lactic acid buildup can cause musculoskeletal complaints such as pain and soreness.[6,13]

D. CONCLUSION

The conclusion of this study is that there is an effect of work posture and musculoskeletal complaints among tailors in Palembang. The recommendation for future research is to examine other risk factors that are also suspected to contribute to musculoskeletal complaints, such as environmental factors, psychosocial factors, and individual factors, and to conduct work posture analysis using methods other than REBA.

E. REFERENCES

Hasrianti, Y Hubungan Postur Kerja dengan Keluhan Muskuloskeletal Pada Pekerja Di PT. Maruki Internasional Makassar. [Skripsi]. Makassar: Fakultas Kedokteran Universitas Hasanuddin; 2016.

Rahman, A. Analisis postur kerja da faktor yang berhubungan dengan keluhan Musculoskeletal disorders (MSDs) pada pekerja beton sektor intòrmal di Kelurhan Samata Kecamatan Somba OpuKabupaten Gowa Tahun 2017. [Skripsi]. Makassar: Universitas Islam Negeri Alaudin.

Andriani, B., Camelia, A., & Faisyn, H. F. Analysis of Working Postures with Musculoskeletal Disorders (Msds) Complaint of Tailors in Ulak Kerbau Baru Village. Ogan Ilir. Jurnal Imu Keschatan Masyarakat. 2020.11(01).75-88

Lisa P. S. The Intluence Of Work Tools Incompatibility With Muskuloskeletal Disorders (MSDs) Among Tailors In Kupang City. International Journal of Humanitics, Religion and Social Science. 2018. 2(S).2548-5725.www.doarj.ong13

Tanvaka. Ergonomi Industri: Dasar-dasar Pengetahuan Ergonomi dan Aplikasi di Tempat Kerja. Solo: Harapan Press; 2010.

Putri. A. A., Yulianti, A. B., & Ismawati, 1. Hubungan antara Posisi Kerja terhadap Keluhan Muskuloskeletal pada Penjahit Pabrik Garmen di Kota Cimahi. Jurnal Integrasi Kesehatan &Sains. 2020. 2(2),118-121.https://doi.ong/10.29313/jiks.v2i2.5652

Irawati, N., Yogisutanti, G., & Sitorus, N. Hubungan Antara Status Gizi, Masa Kerja dan Sikap Kerja dengan Gangguan Muskuloskeletal pada Penjahit di Jawva Barat. Jph Recode.2020.4(1),52-60.

Kartika, Paturusi A, Bawiling, S. Jurnal llmu Kesehatan Olahraga.2021; 2(1), 108-122.

Yosineba, T. P., Bahar, E., & Adnindya, M. R. Risiko Ergonomi dan Keluhan Musculoskeletal Disorders (MSDs) pada Pengrajin Tenun di Palembang. Jurnal Kedokteran Dan Kesehatan: Publikasi Ilmiah Fakultas Kedokteran Universitas Sriwijaya.2020. 7(1), 60-66.https://doi.org/10.32539/jkk.v7il.10699.

Agnestry, dkk. Hubungan Sikap Kerja dengan Musculoskeletal Disorders pada Penjahit Di Pusat Industri Kecil Menteng Medan. Jurnal Departemen Keselamatan dan Kesehatan Kerja. 2015

Wulandari, D. R., Moelyaningrum, A. D., & Hartanti, R. I. Risiko Ergonomi Dan Keluhan Muskuloskeletal disorders Pada Pekerja Jahit (Studi Di Ud. Ilfa Jaya Konveksi Banyuwangi Indonesia).Prosiding Seminar Nasional Dalam Rangka OSH Week, 2017;

119-131.

Rumangu, Oktavian, Puturusi Achmad, R. M. Hubungan posisi kerja dengan keluhan muskuloskeletal pada petani gula aren di Desa Rumoong Atas. PIDEMIA Jurnal KesehatarMasyarakat UNIMA,2021;2(2).

Guyton, A. C., Hall, J.E. Buku Ajar Fisiologi Kedokteran. (12 e.d). Jakarta : EGC ;2014.