



Analysis of Long Work, Work Posture and Low Back Pain Complaints in Rice Farmers

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ABSTRACT

Low back pain is caused by non-ergonomic work and is a real health problem. Muscle disorders will be aggravated by certain situations such as improper sitting position, age, posture and chairs that are not ergonomic. This research is a qualitative descriptive study using a case study approach and extracting data or information through in-depth interviews and testing by conducting triangulation efforts to check data from various sources at various times. The informants consisted of 7 rice farmers, one village head, one health centre doctor, and one farmer leader. The research location is in Sei Bingai District, Langkat Regency, in February - July 2021. The results of the research on the causes of low back pain occur due to the workload and dynamic work postures of farmworkers, namely based on an assessment using the REBA method, the results obtained 85.71% received a value of 7 with a moderate risk level and a value of 10 with a high-risk level of 14.29%. It can be concluded that complaints of low back pain in rice farmers in Sei Bingai District, Langkat Regency occur due to posture and length of work.

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1. INTRODUCTION

Each year, the International Labor Organization (ILO) estimates that over 2.3 million people die due to work-related accidents or diseases. Additionally, the ILO estimates 160 million cases of work-related disorders each year (ILO, 2015) .. Occupational diseases are evolving at a breakneck pace. Technological and social advancements, together with shifting global economic conditions, increase existing health risks and contribute to the spread of new illnesses (Nasution, 2020).

In 2011, Indonesia registered 96,314 occurrences of Occupational Diseases (PAK) and Occupational Accidents (KAK), resulting in 2,144 deaths and 42 handicapped workers (Hasibuan, 2020). PAK and KAK cases climbed to 103,000 in 2012. From these facts, it can be stated that occupational disorders are prevalent in Indonesia and that the country's occupational health situation remains poor (Siregar, 2020).

Until now, the agricultural sector in Indonesia is still the most important role side by side with other industrial sectors. The prevalence of incidence of musculoskeletal disease based on diagnoses from Indonesian health workers is 11.9% and based on diagnosis or symptoms by 24.7%. Although the agricultural sector is decreasing its contribution to state income, most of Indonesia's population still depends on the sector; about 34,577,831 million farmers are engaged in all agricultural sector commodities (BPS, 2020).

According to BPS RI (2020), agriculture in North Sumatra occupies the seventh position that produces the most rice in Indonesia, with the amount of rice produced 2,078,902 thousand tons of GKG (milled dry grain). If converted to rice, rice production in North Sumatra province in 2019 reached about 1,186.35 thousand tons. According to BPS Sumatera Utara (2020), with the number of farmers in North Sumatra as many as 2.67 million people (38.48%) work as farmers in February.

Farmers are jobs that require much energy. Agricultural activities that farmers often carry out, such as ploughing, hoeing, planting, fertilizing, and harvesting, affect the working position of farmers. Many of the farmers experiencing occupational health problems specialize in health sciences/medicine and its practices that aim to get the highest degree of health, both physical, mental, and social, with preventive and curative efforts, against diseases or health disorders stemming from occupational and environmental factors, as well as against common diseases (Wibowo, 2014).

Muscle disorders will be aggravated by certain situations such as improper sitting position, age, posture and chairs that are not ergonomic. The pressure between the vertebrae will increase during sitting, such as the way to sit in a vehicle where there is vibration, and a person is not ready to change his sitting attitude. Another factor that causes complaints of muscle disorders, then improper sitting position is the most common factor found. Unnatural or unsanitary sitting positions will cause isometric muscle contractions (against resistance) in the main muscles involved in the work. Sitting position both upright and bent for a period of more than 30 minutes can cause disruption to the muscles (Harahap, 2018).

According to Tarwaka (2015), low back pain or lower back pain occurs in the lower back. These muscle complaints generally occur due to excessive muscle work due to given a workload that is too heavy with a long duration of loading time. Farmers in Sei Bingai Sub-district have a model of working by tormenting and hoeing with a working time of 5-8 hours, many of the farmers who work using a hoe have complaints of back pain when working because the position of the farmer's home is bent 51-600 so that it makes the farmers had trouble with his back. With the existence of farmers who experience pain in their backs taken from the author's observations, the authors are interested in raising the issue entitled

"Analysis of Working Postures and Low Back Pain Complaints in Rice Farmers in Sei Bingai District, Langkat Regency 2020", which makes the farmers' bodies experience low back pain while working.

2. RESEARCH METHODE

This research is qualitative descriptive research using a case study approach and extracting data or information through in-depth interviews, and tested by conducting triangulation efforts aimed at checking data from various sources with various times. Informant consists of 7 Farmers, 1 Village Head, 1 Health Center Doctor and 1 Tani Union Research Location in Sei Bingai District of Langkat Regency, in February - July 2021.

3. RESULT AND ANALYSIS

Matrix 1. Farmers Work Time when Planting Rice

No	Informan	Statements
1	MR (Petani)	8 hours
2	S (Petani)	9 hours
3	SM (Farmers)	7 hours

The above statement states that all informants work very long, 2 farmers have a working length of 7 hours and 4 farmers have a working length of 8 hours, and 1 person has a working length of 9 hours, so it can cause farmers to get symptoms of back pain after finishing work.

Matrix 2. Old Farmers Use Hoe

No	Informan	Statements
1	BC (Farmer)	"If you embrace it at least one day is not ready"
2	PW (Farmer))	"yes sometimes 4 hours sometimes 5 hours depending on the rice fields"

The above statement can be concluded that the longer the use of the hoe, the riskier the farmer feels pain in his back

Matrix 3. Farmer's Working Posture Against Low BackPain Complaints

No	Informan	Statements
2	S (Farmer)	Yes look down. Somewhat duck until ready is not calculated how many hours never bring the clock if you already feel brother matahri in the head has hot rest is eating. If it's going to be 4 o'clock, but there's time off."
4	PW (Farmer)	"If you adjust the same handle hoe if you have a wawak kayak gini ya a bit munduk... bow... Yes, I don't know if I'm ready if calculated 5 hours that's possible. It's like hoeing earlier 5 hours."
5	GD (Farmer)	"Adjusted the same again done if nanam ya nunduk, kayak bend that is if the ground gulut does not stir times. How do you not complain about it. 5 hours that maybe... 3 hours until the middle hours of 12 new again until it is finished"

The above statement can be concluded that all farmers hoeing and planting with a working posture of bowing and bending for hours, can cause pain in the back after working to plant rice.

Matriks 4. Hasil Penilaian Menggunakan Metode REBA

Final Score	Risk Level	Frequency	Risk Category	Action
1	0	0	Very low	No need for action
2-3	1	0	Low	Action may be needed.
4-7	2	6	Medium	Action required
8-10	3	1	High	Immediate action is needed
11-15	4	0	Very high	Action is needed as soon as possible

Based on the assessment using the REBA method, the safe posture value in the REBA assessment is 1, then the assessment based on REBA obtained 85.71% gets a value of 4-7, then the one who gets a value of 8-10 as much as 1 person with a percentage of 14.29%.

4. DISCUSS

Habits that are done daily are difficult to change and experience complaints; subjective dredging rarely maintains cleanliness and is lazy to use personal protective equipment. For more than two years, getting used to the humid conditions will make workers not use personal protective equipment (Etianopa, 2019). According to Utami (2017), length of work is the amount of time that can be seen with several risk factors. Length of work can be viewed as the worker's minutes of working hours/day that poses a risk. Length of work can also be seen as exposure/year to risk factors or job characteristics based on risk factors.

The results show all farmers hoeing and planting with a working posture of bowing and bending for hours, can cause pain in the back after working to plant rice. The best sitting attitude that does not adversely affect the attitude of the body and spine is the attitude of sitting with a little lordosa on the waist and a little kifosa on the back (Harahap, 2018). This results show statement can be concluded that the longer the use of the hoe, the riskier the farmer feels pain in his back. Fatmawati (2015) study shows long sitting is associated with complaints of low back pain in wood batik artisans. Saputra (2017) study showed that the working period of a worker will be related to low back pain complaints in production workers of PT Surya Besindo Sakti Serang.

Riningrum (2016) study shows that respondents who feel the complaint of low back pain is more experienced by workers who have a working period that has a working period of ≤ 4 years. This is because of workers with a working period of ≤ 4 years before working at PT. Apac Inti Corpora Semarang Sewing Garment previously never did sewing work in a sitting position long enough and continuous with 8 hours per day even sometimes with additional 1-4 hours. So that many ≤ 4 -year-old workers feel the complaint of low back pain.

The same research results were revealed by Hadyan (2017), which shows that the description of workers in Munca village, Pesawaran Regency, is about 6 to 8 hours of work a day. Doing it by using simple tools and carrying the harvest on your shoulders can cause back pain complaints. The results of Pantoiyo (2016) research show that the length of work

of employees in using computers is a very high risk, especially it can cause musculoskeletal complaints in employees with mild pain categories such as pain in the waist, pain in the upper neck, lower neck, back and below the waist.

The results of Utami (2017) research state that length of work can cause musculoskeletal disorders, one of which is back pain in rice farmers in Ahuhu Village, Meluhu District, Konawe Regency 2017. without paying attention to ergonomic factors will more easily cause complaints of low back pain. Hastuti (2015) research shows that long working hours or excessive working hours are very risky for workers. The length of time a person works well in a day is generally 6-10 hours.

Allah commands his ummah to rest as Allah says in Q.s An-Naba: 9-10

وَجَعَلْنَا نَوْمَكُمْ سُبَاتًا ۙ
وَجَعَلْنَا اللَّيْلَ لِبَاسًا

"

And We made your sleep for rest, and We made the night a garment," (Q.S. An-Naba'[78]: 9-10)

The Riningrum (2016) study showed that the attitude of work with low back pain complaints in 30 workers who experienced low back pain complaints was from 12 respondents who had a moderate risky work attitude, there were 8 workers (19.0%) felt the absence of low back pain complaints and 4 workers (9.5%) felt low back pain complaints.

Aseng (2021) research results showed that work attitudes that are not ergonomic and bent work positions are a factor due to complaints of low back pain in farmers. The results of Suryadi (2020) research show that inappropriate work equipment factors can affect workers' work posture and cause back pain. One example of unsafe behaviour is a unsocial work attitude. Allah (SWT) has said in Surah Al-Qashash verse 26 mentioned:

قَالَتْ إِحْدَاهُمَا يَا أَبَتِ اسْتَجِرْهُ ۖ إِنِّي خَشِيتُ أَنْ تَكُونَ مِنَ الضَّالِّينَ

Means:

"For the best person you take to work is the one who is physically strong again trustworthy."

The verse explains that the person who is best to be employed is a person who is physically strong and trustworthy. A worker should work with a good attitude/working posture that is ideal for his work and under the type of work done. So that the worker avoids physical disability, pain due to a sitting position that is not ergonomic, for example, and other occupational diseases that can cause him to no longer be entrusted to work. Then in the Hadith narrated from Abu Sa'id, Sa'ad bin Sinan Al Khudri R.A, the Prophet (peace be upon him) said:

عَنْ أَبِي سَعِيدٍ سَعْدُ بْنُ سِنَانَ الْخُدْرِيِّ رَضِيَ اللَّهُ عَنْهُ أَنَّ رَسُولَ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ قَالَ : لَا ضَرَرَ وَلَا ضِرَارَ حَدِيثٌ حَسَنٌ رَوَاهُ ابْنُ مَاجَهَ وَالْذَاوِي وَغَيْرُهُمَا مُسْتَدْرَأً، وَرَوَاهُ مَالِكٌ فِي الْمَوْطَأِ مُرْسَلًا عَنْ عَمْرِو بْنِ يَحْيَى عَنْ أَبِيهِ عَنِ النَّبِيِّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ فَأَسْقَطَ أَبُو سَعِيدٍ وَلَهُ طُرُقٌ يَقْوَى بَعْضُهَا بَعْضًا

"It is not permissible to do actions (mudharat) that harm oneself and others." (Hadith Hasan narrated by Ibn Majah and Daruqutni and others by way of Musnad, also narrated by Imam Malik in Muwattha' mursal from Amr bin Yahya from his father from Rasulullah SAW, he does not mention Abu Sa'id. However, he has a way that strengthens some of them over others).

From this hadith, it can be understood that Islam teaches the importance of safety at work. Even far from that, that harm and harm must be abolished in the sense that it should not happen and be done (Watni Marpaung, 2018).

Ergonomics is a science, art, and technology that aims to spread tools, methods, and work environments to all human capacities and limitations in order for humans to function productively without being harmed by their labor (Tarwaka, 2015b). Workers' health problems As many as 9482 workers in 12 districts / cities across Indonesia make up 40.5 percent of their workforce, with 16% suffering from musculoskeletal ailments, 8% from cardiovascular disease, and 6% from nerve disorders. 3 percent respiratory diseases and 1.5 percent ENT issues. Workers suffer losses as a result of musculoskeletal problems, including the number of days lost due to illness and the high cost of compensation that must be expended (Widitia, 2020) (Ministry of Health, 2018).

The results of the Roma (2019) research show that the posture of the farmer's body at work determines the attitude of the farmer at work. Standing, sitting, bending, etc., are part of the many sitting postures performed by employees depending on the conditions of the existing work system. The results of Rohmawan (2017) research show that workers who have a risky work attitude have a higher risk of experiencing Low Back Pain complaints because doing non-ergonomic work attitudes continuously for years can certainly cause disturbances to the body. On the other hand, people who have a low-risk work attitude have a lower risk of experiencing low back pain. The results of Ningsih (2017) research show that the risk factors that cause low back pain in respondents are work activities and work attitudes that are less ergonomic.

According to Tarwaka (2015), research on working position is measured using REBA for joint analysis of positions in the upper limbs (arms, arms, and wrists), body, neck, and feet. The REBA method defines other factors considered to determine the final assessment of posture, such as force or strength, type of grip and type of muscle activity performed by the worker. In this study, Angulus software was used to measure the angular shape formed from the worker's position.

The same study from Nofita (2019) showed that the calculation of posture scores using Ergofellow showed that farmer one and farmer 2 planted rice obtained 7 REBA scores. The results of Sari (2020) research show that the work posture in research using the REBA method is carried out starting at the stage of the fisherman turning on the engine, throwing the net, pulling the net, tidying the net, and lifting the fisherman's results from the warehouse. The results of the research from Syafira (2019) showed that the results of the risk assessment using the REBA method on NI Lift workers during manual material handling drop activities (cleaning up the chain block that was wrapped around and would be lifted into the lift shaft) obtained ten results (that is, a high level of risk).

5. CONCLUSION

The public health office is expected to hold counselling activities with the village and farmers regarding the length of work, good working posture for farmers or farmworkers. Farmers or farm workers are expected to prioritize health by adequately resting and reducing working hours and workload, avoiding factors that cause low back pain and implementing safe working methods. Further researchers are expected to examine more deeply the development of farmers or farm workers while working, such as paying attention to the length of work and work posture for low back pain sufferers.

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