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Original Research Paper

Relationship Between Working Posture and Musculoskeletal Disorders Based on REBA and Nordic Body Map Analysis in Peanut Farmers

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Abstract: This research was conducted on peanut farmers in Manggung Hamlet, Tileng Village, Girisubo District, Gunungkidul Regency, Yogyakarta. Based on the results of observations, it can be seen that when harvesting peanuts, farmers were found in a bent and squatting position. In this position, farmers experience pain in the neck, back and knees when working. This study aims to determine the relationship between farmers' working posture and the level of Musculoskeletal Disorders (MSDs) complaints. The risk level of working postures is assessed using the Rapid Entire Body Assessment REBA method. The number of respondents in this study was 50 peanut farmers. The research results showed that assessment of working posture of peanut farmers using the REBA method, which obtained a score of 13, can be concluded from the total score in the high risk category where immediate action is needed to improve work posture. The frequency based on working posture shows that farmers who have a high-risk working posture are 21 respondents with a percentage (42%), and farmers who have a very high-risk working posture are 29 respondents with a percentage (58%). There is a relationship between the working posture of peanut farmers and the musculoskeletal disorders when they are working with a p-value of 0.034 (significant relationship).

Keywords: Musculoskeletal Disorder, Nordic Body Map, Peanut Farmers, REBA, Work Posture.

1. Introduction

A farmer is someone who is engaged in agriculture, especially by managing land to plant and care for plants such as peanuts with the hope of obtaining these crops as consumption materials, seeds, and processed materials directly. Farmers can also provide raw materials for industry, such as peanuts and corn for snacks, wool or cotton for weaving and making clothes. Peanuts in Indonesia have a high potential to be developed, this is because peanuts are considered to have good economic value, so they can provide quite large market opportunities. So that it can be concluded, peanuts rank second after soybean as a potential legume crop in Indonesia [1].

Working as a farmer is an advantage for the people of Dusun Manggung, Tileng Village, Girisubo Sub-District, Gunungkidul Regency, Yogyakarta, because it can help the economy and obtain staple foods for daily life. The majority of people who work as farmers, not only in the regions, farming is also one of the jobs occupied by Indonesian people. Working as a farmer certainly requires considerable skills or expertise and energy to be able to cultivate agricultural land so as to obtain maximum and quality results [2] [3].

Farmers spend time every day in the fields, even if only to supervise the fields or hoe, plant and harvest. Farmers harvest peanuts manually in a bent position with their backs as the main support. Involves various muscle groups, especially the supporting muscles of the spine which function to maintain posture, balance, and other important activities. This working attitude allows farmers to experience lower back pain [4].

The 2018 World Health Organization (WHO) states that musculoskeletal conditions are the second highest cause of disability in the world, with low back pain being the main cause of disability globally. The Global Burden of Disease (GBD) study provides evidence of the impact of musculoskeletal conditions, highlighting the significant burden of disability associated with these conditions. While the prevalence of musculoskeletal conditions varies by age and diagnosis, between 20% - 33% of people worldwide experience pain due to musculoskeletal conditions [5].

Data from the Central Statistics Agency (BPS) until 2019 noted that the agricultural, forestry and fisheries workforce in Indonesia reached 34.5 million people [6]. The informal sector, especially in agriculture, is considered a dangerous sector for workers of all ages. Agricultural workers have a high rate of occupational accidents and diseases, due to exposure to various hazards, including working with various machine tools, the need to lift heavy loads, or repetitive work and work that requires awkward positions which can lead to Musculoskeletal Disorders MSDs [7] [8].

Musculoskeletal Disorders are disorders that occur in the human body as a result of bodily activities carried out when moving when the load is too heavy which can cause muscle fatigue. This MSD disorder occurs in parts of the body, muscles and bones that experience a decrease in the movement system. Someone who does less ergonomic forms of work can experience musculoskeletal disorders in their body, especially for those who work in the field of ergonomics. body, especially for those who work in agriculture [9] [10] [11].

Most of the musculoskeletal complaints experienced by farmers were pain. Pain experienced by farmers is subjective, seen by carrying out the Nordic Body Map (NBM) questionnaire system, namely conducting interviews with farmers and showing the position of pain in the body on a questionnaire paper that already has pain points on the body. Besides that, to see the work posture of farmers using an ergonomic approach, it can be done by determining the angle of the farmers' body parts based on the Rapid Entire Body Assessment (REBA) method. Interviews were used to subjectively find out MSDs pain complaints felt by farmers and the movement abilities experienced related to crop yields [3] [12].

A sample of 50 farmers who work as peanut harvesters by picking peanuts manually is needed, before selecting the subjects to be involved in the research the researcher must first determine the number. Determining how many samples are needed is often a problem in planning a study. There are no definite rules about how many samples to represent the population. However, in general it can be said that the larger the sample, the more likely it is to reflect the population. From the results of observation through observation, seeing and observing the activities of farmers while working in the fields for one day. Then there are two farmer working positions that are not ergonomic, namely bending and squatting work positions which trigger the emergence of MSDs complaints in farmers. Complaints of pain that are felt can interfere with activities in work which will be able to affect the ability of farmers who cannot work optimally because they are hampered by complaints of pain experienced.

The problem of muscle pain and injury that breeders complain about raises the risk of MSDs. From these problems the REBA method is a method developed in the field of ergonomics that can be used appropriately to assess body posture, then the NBM quizzer method is to find out the discomfort of farmers while working. Based on the explanation above, the researcher is interested in conducting research on how the relationship between farmer's posture and MSDs risk is based on the REBA method when farmers are working on removing peanuts in the field. There is still little research analyzing musculoskeletal disorders in peanut farmers, especially on the use of REBA in analyzing their work posture.

This study aims to determine the relationship between farmers' work postures and the level of musculoskeletal disorders (MSDs). The difference with previous studies is that the study focused on the peanut farming sector in Dusun Manggung, Gunungkidul, Indonesia. The application of the REBA method to peanut harvesting activities (especially bending and squatting) provides a new perspective on the risk of work postures in this sector.

2. Literature Review

One of the occupational categories most at risk for musculoskeletal disorders (MSDs) is farmers. Heavy workloads, repetitive motions, and non-ergonomic work postures are frequently the causes of these illnesses. The Nordic Body Map (NBM) and Rapid Entire Body Assessment (REBA) are two examples of ergonomic risk analysis techniques that are frequently used to evaluate the connection between work posture and the risk of musculoskeletal illnesses [13] [14].

2.1. Musculoskeletal Disorders in Farmers

Musculoskeletal Disorders (MSDs) are disorders of the muscles, joints, and soft tissues that often occur due to work activities involving unergonomic postures for long periods of time. According to various studies, poor work postures, such as bending and squatting for long periods of time, can increase pressure on muscles and joints, especially in the neck, back, and knees, contributing to complaints of pain and muscle fatigue [2] [15] [16]. Ergonomic methods such as Rapid Entire Body Assessment (REBA) and Nordic Body Map are often used to assess the level of MSD risk based on the work posture and physical complaints experienced by workers. Previous studies have indicated that agricultural workers, including farmers, are at high risk of experiencing MSDs due to heavy physical demands and lack of application of ergonomic principles in their work activities. Therefore, research evaluating farmers' work postures, especially in the peanut farming sector, is critical to understand specific risk factors and design mitigation strategies to reduce MSD complaints and improve farmer welfare.

Muscle, tendon, nerve, ligament, or joint discomfort and dysfunction are symptoms of MSD. MSD frequently affects the hands, shoulders, neck, and lower back in farmers. Among the risk factors that cause MSD in farmers are:

- Bad work posture: When performing agricultural tasks, an unergonomic body position can put undue strain on the spine, muscles, and joints [17].
- Excessive workload: Lifting and carrying large objects on a regular basis might harm bones and muscles [10].
- Vibration: Agricultural machinery that vibrates may harm muscles and nerves [18].
- Age: The likelihood of developing MSD increases with age [19].
- Individual factors: Obesity and degenerative diseases are two examples of underlying medical disorders that can raise a person's chance of developing MSD [20].

Romansyah [16] researched the relationship between noise and vibration with musculoskeletal disorders in the use of tools by peanut farmers. Other researchers also analyzed peanut farmers in terms of the impact of the equipment used to musculoskeletal disorders [21] [22].

2.2. MSD Risk Assessment Methods: REBA and Nordic Body Map

The Rapid Entire Body Assessment (REBA) method is one of the effective ergonomic assessment tools in analyzing the risk of Musculoskeletal Disorders (MSDs) because it is able to evaluate the overall body posture by considering the workload, position of the limbs, and the force applied during work activities. REBA is very suitable for use in MSD analysis in farmers because this method can identify the level of injury risk based on various working positions that are commonly used in the

agricultural sector, such as bending, squatting, lifting, or pulling loads for long periods of time [23] [24]. In addition, REBA has the advantage of providing quantitative results that can be categorized into various levels of risk, making it easier for researchers and ergonomics practitioners to design appropriate interventions to reduce the risk of MSDs. REBA's accuracy in assessing unergonomic work postures makes it an ideal tool in identifying the need for posture improvement and the implementation of ergonomic strategies for farmers, thereby improving their health and work productivity.

Rapid Entire Body Assessment, or REBA, is a quick and easy way to evaluate your overall posture at work. This approach takes into account a number of variables, including the weight being lifted and the posture of the arms, body, and legs. The REBA assessment's findings are presented as a score that represents MSD's degree of risk [25]. Musculoskeletal problems are measured subjectively using the Nordic Body Map approach. Farmers are asked to annotate parts of the human body image that hurt or feel uncomfortable [13].

Bad posture at work is significantly linked to MSD among farmers, according to several research [4] [17] [26]. In order to evaluate the risk of MSD and determine which body parts are most frequently complained of, these studies employed the Nordic Body Map and REBA techniques. Overall, the findings indicated that MSD was more common among farmers with high REBA scores and Nordic Body Map concerns.

3. Methodology

3.1. Research design

This research was conducted using a correlational design, to find the relationship between working posture and musculoskeletal disorders based on REBA and Nordic Body Map analysis in peanut farmers. The relationship between variables is shown as in the following Figure 1.

X = Working posture based on REBA
Y = Musculoskeletal disorders based on Nordic Body Map

Figure 1. The Relationship Between Variables

3.2. Population and Sample

The population in this study were peanut farmers in Manggung Hamlet, Tileng Village, Girisubo District, Gunungkidul Regency, Yogyakarta, Indonesia. The research sample was taken as many as 50 farmers using the purposive sampling method, namely farmers who actively carry out the peanut harvesting process.

3.3. Data Collection Technique

Data collection was carried out through several techniques, namely:

- Direct Observation. Conducted to observe the work posture of farmers when harvesting peanuts, especially the bending and squatting positions, as well as other factors such as the duration and frequency of activity.
- Work Posture Assessment with Rapid Entire Body Assessment (REBA). Work posture data was analyzed using the REBA method to determine the level of ergonomic risk based on the scores obtained.

Table 1. REBA Criteria

Score	Risk Category	Required Action
1	Very Low Risk	No action needed
2 - 3	Low Risk	Action may be needed
4 - 7	Medium Risk	Action needed soon
8 - 10	High Risk	Immediate action required
11 - 15	Very High Risk	Immediate and thorough action needed

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- Structured Interviews. Conducted to obtain additional information regarding work history, work habits, work duration, and health complaints experienced by farmers.

3.4. Data Analysis

Assessment of work posture using the REBA method is used to determine the risk level of farmers' body posture when working. The assessment of the level of risk is obtained from calculating the results of measuring the angle of the farmer's body in a bent position. Meanwhile, monitoring musculoskeletal muscle complaints uses the Nordic Body Map questionnaire. research data were analyzed using univariate analysis and bivariate analysis. Univariate analysis was carried out to determine the characteristics of respondents based on research variables. Bivariate analysis was carried out using the chi-square test to determine the relationship between work posture and musculoskeletal muscle complaints. The significance level value is 95% or the alpha value is 5%.

4. Finding and Discussion

4.1. Finding

1) Results of the Nordic Body Map Questionnaire

The results of the Nordic Body Map Questionnaire are as shown in Table 1.

Table 2. Nordic Body Map Score Results

	Location of NBM Complaints	NP (1)	SP (2)	P (3)	VP (4)
0.	Pain/stiffness in the upper neck	29	21	0	0
1.	Pain/stiffness in the lower neck	1	45	4	0
2.	Pain in the left shoulder	5	31	14	0
3.	Pain in the right shoulder	2	10	36	2
4.	Pain in the upper left arm	25	24	1	0
5.	Back pain	0	1	20	29
6.	Pain in the upper right arm	0	6	22	22
7.	Pain in the waist	0	0	20	30
8.	Pain in the buttocks	0	0	11	39
9.	Pain in the buttocks	0	1	25	24
10.	Pain in left elbow	17	28	2	3
11.	Pain in the right elbow	5	10	22	13
12.	Pain in the lower left arm	20	25	5	0
13.	Pain in the right arm	0	26	24	0
14.	Pain in left wrist	11	11	27	1
15.	Pain in the right wrist	0	27	15	8
16.	Pain in left hand	10	30	9	1
17.	Right hand pain	0	25	24	1
18.	Pain in left thigh	1	35	14	0
19.	Pain in the right thigh	1	18	22	9
20.	Pain in left knee	0	24	18	8
21.	Right knee pain	0	25	15	10
22.	Pain in left calf	0	32	15	3
23.	Right calf pain	0	33	19	3
24.	Pain in left ankle	3	27	18	2
25.	Pain in right ankle	0	24	24	2
26.	Pain in left leg	0	10	36	4
27.	Pain in the right leg	0	9	40	1

Information: NP: Not Painful, SP: Slightly Sick, P: Pain/Sick, VP: Very Pain/Sick

2) Calculation Based on Rapid Entire Body Assessment Method

Before determining the correlation between body posture and the risk of MSDs, an assessment of work posture at work stations was carried out using the REBA method by taking pictures of work postures starting from the neck, back, arms, wrists and feet. Assessment of work attitude is included in 2 parts, namely table A which consists of the neck (neck), torso (trunk), and legs (legs) and table B which consists of the upper arm (upper arm), lower arm (lower arm), and wrist (wrist).

Farmer's posture is categorized based on the level of risk to the musculoskeletal system. From the results of data processing, body posture needs to be corrected according to the REBA method. The following below is a table that explains the results of the recapitulation of the final REBA scores for farmers when working.

Table 3. REBA Analysis Results

Table Recapitulation	Score Group A	Score Group B	Score Group C	Score Reba	Level Risk	Action Repair
Farmer 1	7	5	8	10	Tall	Need Immediately
Farmer 2	7	9	11	13	Very high	Need Now
Farmer 3	7	9	11	12	Very high	Need Now
Farmer 4	7	9	11	13	Very high	Need Now
Farmer 5	7	9	11	12	Very high	Need Now
Farmer 6	7	9	11	13	Very high	Need Now
Farmer 7	7	9	11	12	Very high	Need Now
Farmer 8	7	9	11	12	Very high	Need Now
Farmer 9	7	9	11	13	Very high	Need Now
Farmer 10	7	7	9	11	Very high	Need Now
Farmer 11	7	7	9	11	Very high	Need Now
Farmer 12	7	5	8	10	Tall	Need Immediately
Farmer 13	7	9	10	12	Very high	Need Currently
Farmer 14	7	5	8	10	Tall	Need Immediately
Farmer 15	7	9	11	13	Very high	Need Now
Farmer 16	7	9	11	12	Very high	Need Now
Farmer 17	7	5	8	10	Tall	Need Immediately
Farmer 18	7	5	8	10	Tall	Need Immediately
Farmer 19	7	7	10	11	Very high	Need Currently
Farmer 20	7	9	11	13	Very high	Need Now
Farmer 21	7	5	8	10	Tall	Need Immediately
Farmer 22	7	7	9	11	Very high	Need Now
Farmer 23	7	7	9	11	Very high	Need Now
Farmer 24	7	7	9	11	Very high	Need Now
Farmer 25	7	5	8	10	Tall	Need Immediately
Farmer 26	7	9	11	13	Very high	Need Now
Farmer 27	7	9	11	13	Very high	Need Now
Farmer 28	7	9	11	13	Very high	Need Now
Farmer 29	7	5	8	10	Tall	Need Immediately
Farmer 30	7	7	9	11	Very high	Need Now
Farmer 31	7	5	8	10	Tall	Need Immediately
Farmer 32	7	5	8	10	Tall	Need Immediately
Farmer 33	7	5	8	10	Tall	Need Immediately
Farmer 34	7	5	8	10	Tall	Need Immediately
Farmer 35	7	5	8	10	Tall	Need Immediately
Farmer 36	7	5	8	10	Tall	Need Immediately
Farmer 37	7	5	8	10	Tall	Need Immediately
Farmer 38	7	5	8	10	Tall	Need Immediately
Farmer 39	6	8	10	12	Very high	Need Now
Farmer 40	7	5	8	10	Tall	Need Immediately
Farmer 41	7	7	9	11	Very high	Need Now
Farmer 42	7	5	8	10	Tall	Need Immediately
Farmer 43	7	7	9	11	very high	Need Now
Farmer 44	7	5	8	10	Tall	Need Immediately
Farmer 45	7	8	10	12	Very high	Need Now
Farmer 46	7	5	8	10	Tall	Need Immediately
Farmer 47	7	7	9	11	Very high	Need Now
Farmer 48	7	7	9	11	Very high	Need Now
Farmer 49	7	7	9	11	Very high	Need Now
Farmer 50	7	5	8	10	Tall	Need Immediately

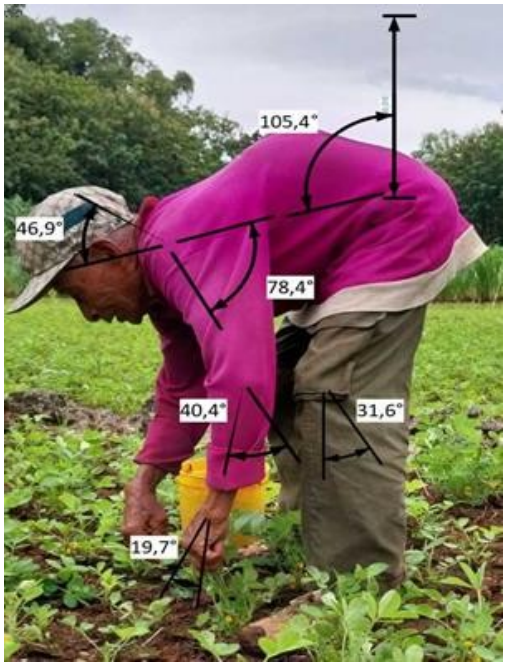

Figure 2. Work Posture of Peanut Farmers

4.2. Discussion

From Table 1, it can be seen that as many as 50 farmers in the torso, namely the back, waist, buttocks, and buttocks received the highest scores, namely 177, 180, 189, and 172. So that immediate action is needed to reduce the pain experienced by farmers during harvest peanuts. So that farmers avoid MSD disturbances and can work optimally.

This is in line with research [27] which states that after obtaining the final score for the body part identified as the level of pain in coffee farmers, it can be seen that the most common complaint is felt by coffee farmers. on the back where the pain score in this section is 177 and on the waist is 180, which if directly observed the work done by bending and moving continuously will cause pain in that area of the body. Then the results of processing the results of processing the questionnaire were grouped into four categories, namely Not Painful (NP), Slightly Sick (SP), Sick (P), and Very Sick (VP).

In the discussion section, it is known that the results have been obtained from the data processing. Analysis of the results of data processing includes analysis of the scoring results of the NBM questionnaire to find out which parts of the body experience complaints from farmers so that these results can be analyzed further, analysis of posture angle measurements using the REBA method with the help of Visio to determine the final REBA score for farmers, and analysis of the results univariate and bivariate used the Chi Square test with the help of SPSS which aims to determine the relationship between body posture and MSDs complaints in peanut farmers.

This is in line with research Tubagus et al [28] which used the NBM questionnaire to find out MSD complaints and REBA sheets to determine the risk level of MSDs. Data were processed using a data processing program and analyzed univariately and bivariately using the Spearman correlation test. However, the difference with this research lies in the title of the research, the location of the research, the number of respondents, the type of work the farmers do, and the test method.

From this study it can be seen that of the 50 farmers on the torso, namely the back, waist, buttocks, and buttocks, the highest scores were 177, 180, 189, and 172. So that immediate action is needed to reduce the pain experienced by farmers when harvesting peanuts. land. So that farmers avoid MSD disturbances and can work optimally.

This is consistent with Estrada et al study [29]. The back, shoulders, wrists, knees, and feet stand out among the body parts where discomfort is concentrated. The coffee cutters' neck level and

wrist/hand segment, the coffee pickers' back, shoulder–arm segment, and wrist/hand segment, and the processors' back area and shoulder–arm segment present the highest risk exposures.

Based on univariate analysis, it can be categorized into several variables, namely age, gender, weight, height, length of work, exercise habits and time off. To find out the effect on the level of MSD complaints, a comparison was made between the variable characteristics and the level of MSD complaints which were categorized into two, namely the Moderate level and the High level.

The frequency distribution of age and MSD complaints explains that of the 50 respondents studied, there were more respondents aged 46-55 years with a total of 16 people and a percentage of 32%. Regarding the level of MSDs complaints, respondents in the Moderate category were 32 people with a percentage of 64% and in the High category there were 18 people with a presentation of 36%.

Distribution of age frequency and complaints of MSDs, explaining that of the 50 respondents studied, respondents with female gender were more with a total of 28 people with a percentage of 56%. Regarding the level of MSDs complaints, respondents in the Moderate category were 32 people with a percentage of 76% and in the High category there were 18 people with a presentation of 24%.

Frequency distribution of weight and complaints of MSDs, explaining that of the 50 respondents studied, respondents with a body weight of 51 – 60 kg were more with a total of 23 people a percentage of 46%. Regarding the level of MSDs complaints, respondents in the Moderate category were 32 people with a percentage of 64% and in the High category there were 18 people with a presentation of 36%.

Distribution of height frequency and MSDs complaints, explained that of the 50 respondents studied, respondents with heights from 161 – 170 cm were more with a total of 21 people with a percentage of 42%. Regarding the level of MSDs complaints, respondents in the Moderate category were 37 people with a percentage of 74% and in the High category there were 13 people with a presentation of 26%.

The frequency distribution of length of service and complaints of MSDs, explained that of the 50 respondents studied, respondents with years of service from 26-40 years were more with a total of 21 people with a percentage of 42%. Regarding the level of MSDs complaints, respondents in the Moderate category were 32 people with a percentage of 64% and in the High category there were 18 people with a presentation of 36%.

The frequency distribution of exercise habits and MSD complaints explained that of the 50 respondents studied, there were more respondents with exercise habits from the never category with a total of 18 people with a percentage of 36%. Regarding the level of MSDs complaints, respondents in the Moderate category were 32 people with a percentage of 64% and in the High category there were 18 people with a presentation of 36%.

The frequency distribution of exercise habits and MSD complaints, explained that of the 50 respondents studied, there were more respondents with exercise habits from the never category with a total of 18 people with a percentage of 36%. Regarding the level of MSDs complaints, respondents in the Moderate category were 32 people with a percentage of 64% and in the High category there were 18 people with a presentation of 36%.

The relationship between variables was carried out by bivariate analysis to determine the relationship between the independent variables and the dependent variable. The statistical test uses the chi square test, with a confidence level of 95% with an error rate of 0.05. This research will be statistically significant if the p value <0.05.

Based on the test results obtained a p-value of 0.025 <α 0.05 indicates that H0 is rejected and H1 is accepted, meaning that there is a statistical relationship between work posture and MSDs complaints. So that respondents with high work postures are at risk of experiencing MSDs disorders.

Based on the results of processing with the REBA method, a posture recapitulation score was obtained for peanut farmers while working, the lowest score for farmers was obtained with a score of 10 and the highest score of 13 with working posture in the high risk category for farmers as many as 21 people with a percentage of 42% and Very Risk The height is 29 people with a percentage of 58%. So that corrective actions that must be taken need to be done right now.

The results of the study showed that the relationship between work posture and MSD complaints explained that out of 50 respondents, 32 respondents experienced a moderate risk of work posture with a percentage (74%), and respondents who experienced a high risk of work posture. amounted to 18 people with a percentage (26%).

The existence of this relationship indicates that poor work posture will cause many problems with musculoskeletal disorders [30]. For this reason, there is a need for ergonomic interventions such as

preventive measures and corrective measures for existing work postures [31] [32]. This improvement can be done using the RULA, REBA, or total ergonomic approach methods by utilizing appropriate technology.

The implications of this study for farmers' occupational health and safety are that poor working posture during peanut harvesting can increase the risk of musculoskeletal disorders (MSDs), especially in the neck, back, and knees. With these findings, ergonomic intervention measures are needed to reduce injuries and improve farmer welfare, such as training in safer working postures or introducing ergonomic harvesting aids. The implications for farmer productivity are that MSD complaints experienced by farmers can lead to decreased productivity because muscle pain and fatigue can reduce farmers' ability to work for long periods of time. By improving working posture and reducing the risk of injury, farmers' work endurance can increase, which contributes to efficiency and better harvest results. Meanwhile, the implications for agricultural technology development are the need for ergonomic agricultural aids to reduce physical stress on farmers' bodies. The results of this study can also be a reference for agricultural technology developers in designing tools that support better working postures, such as low harvesting chairs, peanut pullers, or other equipment that reduces the need to bend or squat for long periods of time.

5. Conclusion

Based on the results and discussion, the measurement of pain using the Nordic Body Map (NBM) method in peanut farmers during work is very painful in the back, right upper arm, waist, buttocks, and buttocks. While for those who experience pain in the right thigh, knee, and right leg, this is due to the position of the work posture carried out by farmers, namely with the right leg bent when standing and the body bent over with long working hours. Assessment of the work posture of peanut farmers using the Rapid Entire Body Assessment (REBA) method is in the high-risk category where immediate action is needed to improve work posture. The frequency based on work posture shows that farmers who have a high-risk work posture are 42%, and farmers who have a very high-risk work posture are 58%. There is a significant relationship between the work posture of peanut farmers and complaints of MSDs while working.

The results of this study have significant implications for health, productivity, technological innovation, and agricultural policy, and may help create a healthier and more efficient working environment for peanut farmers.

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