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PRisMA 2024: Psychosocial status among manufacturing industry workers in Perak

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Abstract
Psychosocial and mental health issues at the workplace contribute to significant effects on someone's life. The employer needs to assess the potential risk and take all necessary actions to control the risk. This study strictly followed the data collection and analysis process according to the recent guidelines published by the Department of Occupational Safety and Health (DOSH) Malaysia, Psychosocial Risk Assessment and Management at the Workplace (PRisMA) 2024. The alarming result of job control and work demand requires specific intervention by the employer. Addressing this issue properly may increase workers' productivity and quality of life.

Keywords: Psychosocial risk; LEO26; PRisMA 2024 guidelines; Mental health

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1.0 Introduction

Mental health issues in the workplace are not a new issue. In general, we spend 1/3 of our day at work. It makes the workplace a risky place in everyday life. Worryingly, these adverse effects can hurt life outside of work. Accordingly, it is essential that these risks are assessed and appropriate interventions devised to ensure the workforce remains productive and motivated. When we want to evaluate this risk, the psychosocial aspects of the workplace must be assessed. Psychosocial refers to social interaction and human thought and behavior. We need to understand the factors that plague individuals, their work activities, and their work environment. By understanding this context, the psychosocial assessment becomes more straightforward to complete. The Malaysian Department of Occupational Safety and Health has taken responsibility with the consultant team appointed to study and develop assessment instruments and guidelines for managing workplace psychosocial risks. This study adopted the Workplace Psychosocial Risk Assessment and Management guidelines, PRisMA 2024.

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2.0 Literature review

According to the International Labour Organization (ILO) & World Health Organization (2022), globally, 15% of working-age adults live with a mental disorder. The National Health Morbidity Survey (NHMS) stated that mental health problems increased from 10.7% in 1996 to 29.2% in 2015 (IPH, 2019) and projected that by 2020, mental illness would become the second most significant health issue affecting Malaysians, following heart disease. Despite the high prevalence of mental health issues in Malaysia, there remains low mental health literacy, which contributes to the stigma surrounding mental health and a significant treatment gap (Masuri et al., 2021). Local studies involving workplace psychosocial risk assessment can be concluded as limited. Reports from the authorities on this issue are also very limited. Some employers take a wait-and-see attitude in reporting workplace risks. It is hoped that with these guidelines, more workplace improvements can be made in the future. Much of the published research is focused on the individual's psychological status, but not on the individual's workplace psychosocial risk.

On average, individuals spend one-third of their daily time at work, and these hours can significantly influence the remaining two-thirds of their day (Masuri et al., 2022), meaning workplace experiences can impact their overall daily life. Among the primary causes of psychosocial risks are two conditions: work-related and non-work-related factors (Masuri et al., 2022). According to WHO (2002), some potential causes of work-related stress include overwork, unclear instructions, unrealistic deadlines, limited decision-making authority, job insecurity, isolated working conditions, surveillance, and inadequate childcare arrangements. Other than that, WHO (2019) has stated many factors that influence employees' mental health, including organizational issues such as poor communication and management practices, limited involvement in decision-making, long or rigid working hours, and lack of team cohesion, which can significantly impact mental well-being. A study found that mental health, particularly fatigue, hurts safe work habits, and the likelihood of workplace accidents rises (Hilton, Whiteford, 2010).

As a country's population grows, industries such as chemical processing, manufacturing, warehousing, mining, logistics, retail, maintenance, hospitality, and transportation services must shift to operating 24 hours a day to fulfil critical societal demands, such as ensuring food supply and managing imports and exports (Norazahar & Suppiah, 2023). Manufacturing workers with heavier tasks and fewer personal resources show a rise in mental health issues (Zhang et al., 2017). Another study by Sznajder et al. (2022) ruled out that nearly half of factory workers experienced at least one mental health symptom, such as feelings of worthlessness, depression, and difficulty concentrating with depression was linked to factors like night shifts, overtime, and high job strain. Wang et al. (2017) found that manufacturing workers who invest significant time and energy are more prone to experiencing negative emotions, highlighting the connection between occupational stress, burnout, and well-being. Other than that, unsupportive work environments were significantly linked to increased stress and anxiety among workers (Jiang et al., 2019). There is limited study on the relationship between psychosocial risk factors and mental health status among manufacturing workers, particularly in Malaysia. Thus, this study aims to 1) identify the psychosocial risk factors among workers of the manufacturing industry in Perak; 2) measure the level of stress, anxiety, and depression among workers of the manufacturing industry in Perak; 3) identify any relationship between the psychosocial risk factors and workers' level of stress, anxiety and depression and workers' sociodemographic data. This study will provide valuable insights for manufacturing employers on how psychosocial risk factors impact workers' mental health, and it plays a crucial role in raising awareness among employers and the community to support these workers. Moreover, this study lays the groundwork for future research on psychosocial risk factors and the prevalence of depression, anxiety, and stress among manufacturing workers.

3.0 Methodology

This study utilized a cross-sectional design to identify the relationship between psychosocial risk factors and level of stress, anxiety, and depression and workers' sociodemographic data of the manufacturing industry in Perak with convenience sampling. This study has followed the protocol stated in the PRISMA guidelines (DOSH, 2024). Seventy-seven respondents working in the manufacturing industry in Perak participated in the study. The total number of respondents was calculated using the Raosoft Sample Calculator with a 5% margin of error and a 95% confidence interval. This study included participants aged 18 to 60 who had worked in the manufacturing industry for at least six months. The data was collected through Google Forms and distributed by handing it to the person in charge. The form included a demographic questionnaire and used validated instruments, namely the Depression, Anxiety, and Stress Scale (DASS-21) and Likelihood of Environment & Occupational Exposure Scale Towards Psychosocial Risk at the Workplace (LEO26). The flowchart below shows the PRisMA 2024 process.

DASS-21 consists of 21 questions, and it uses a 4-point Likert scale to measure each factor, with scores ranging from 0 to 3, to indicate the severity of an individual's symptoms over the past week. LEO26 includes 26 questions divided into three domains: job control, work demand, and job support, utilizing a 5-point Likert scale. The scale will be measured from 1 to 5 to indicate the severity and likelihood of potential environmental hazards and work activities that potentially contribute to their mental health status. Statistical analysis will be performed once the sample size is sufficient and the data collection period is completed. This study utilized a set of questionnaires comprising several sections: Demographic Data DASS-21 and LEO26. This study used the Statistical Package for the Social Sciences (SPSS) version 28 for statistical analysis. SPSS was employed to process, manipulate, and analyze the questionnaire data. The research involved two types of analysis: descriptive analysis to summarize the data and inferential analysis to draw conclusions and test hypotheses based on the data.

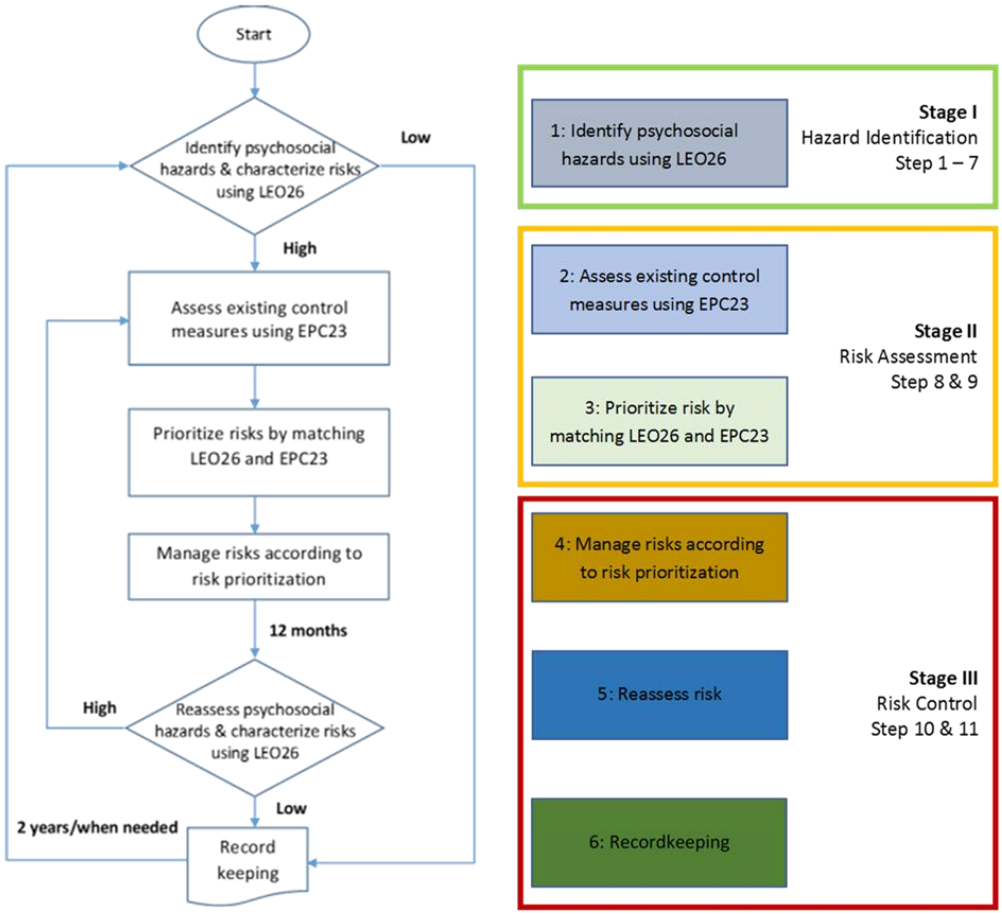

Figure 1. PRisMA 2024 process.

4.0 Result

A total of 77 manufacturing workers participated in this study. Table 1 presents the descriptive analysis of demographic variables and study measures such as gender, age, marital status, and type of work. Most respondents were male (87.0%, n=67), followed by female respondents (13.0%, n=10), and the majority were middle-aged adults (57.1%, n=44) and young adults (42.9%, n=33). Many of the respondents were married (93.5%, n=72), followed by single (5.2%, n=4) and divorced (1.3%, n=1). For the type of work, most contributors came from the production-related department, with a total of 67 respondents (87.0%), and from the administrative/supportive department, 10 in total (13.0%)

Table 1. Demographic characteristics of the respondents

Characteristics	Frequency(n)	Percentage (%)
Gender		
Male	67	87.0
Female	10	13.0
Age		
Young Adult	33	42.9
Middle Adult	44	57.1
Marital Status		
Single	4	5.2
Married	72	93.5
Divorced	1	1.3
Type of Work		
Production-Related	67	87.0
Administrative/support	10	13.0

4.1 The level of Stress, Anxiety, and Depression and the Level of Psychosocial Risk Factor

According to Table 2, under the stress domain, the highest score was standard (88.3%, n=68), followed by mild and moderate (5.2%, n=4), then severe (1.3%, n=1). For the anxiety domain, many of the respondents scored normal (81.8%, n=63), followed by moderate (9.1%, n=7), mild (6.5%, n=5), and severe and very severe (1.3%, n=1). For the depression domain, the standard score (79.2%, n=61) was the highest, followed by mild (14.3%, n=11), severe (5.2%, n=4), and moderate (1.3%, n=1).

Table 2. A score of Stress Anxiety and Depression (DASS-21)

Characteristics	Frequency(n)	Percentage (%)
Stress		
Normal	68	88.3
Mild	4	5.2
Moderate	4	5.2
Severe	1	1.3
Very Severe	0	0.0
Anxiety		
Normal	63	81.8
Mild	5	6.5
Moderate	7	9.1
Severe	1	1.3
Very Severe	1	1.3
Depression		
Normal	61	79.2
Mild	11	14.3
Moderate	1	1.3
Severe	4	5.2
Very Severe	0	0.0

Table 3 shows the score of psychosocial risks. Respondents mostly had a high risk of job control (76.6%, n=59), then low risk (23.4%, n=18). For work demand, respondents scored high risk of work demand (92.2%, n=71) and low risk (7.8%, n=6). Lastly, for job support, the majority scored low risk (98.7%, n=76) and followed with high risk (1.3%, n=1).

Table 3. Score of Psychosocial Risk (LEO26)

Characteristics	Frequency(n)	Percentage (%)
Job Control		
Low Risk	18	23.4
High Risk	59	76.6
Work Demand		
Low Risk	6	7.8
High Risk	71	92.2
Job Support		
Low Risk	76	98.7
High Risk	1	1.3

4.2 Relationship between Level of Stress, Anxiety, and Depression and Psychosocial Risk Factor and Between Demographic Characteristics and Psychosocial Risk Factors

A Pearson's chi-square test was conducted to examine the relationship between levels of stress, anxiety, depression, and psychosocial risk factors, and between demographic characteristics and psychosocial risk factors for any traits that meet the assumptions of the test. If the assumptions of the chi-square test were not met, Fisher's exact test was used instead. Based on Table 4, there is no significant association between the level of stress, anxiety, and depression with job control, work demand, and job support, as all the p-values>0.05.

Table 4. Chi-square statistic test for level of stress, anxiety and depression with psychosocial risk factors

Variables	Job Control n (%)		X^2	P-value
	Low Risk	High Risk		
Stress				
Normal	17(25.0)	51(75.0)	1.412	[a] 0.856
Mild	0(0.0)	4(100.0)		
Moderate	1(25.0)	3(75.0)		
Severe	0(0.0)	1(100.0)		
Very Severe	0(0.0)	0(0.0)		
Anxiety				
Normal	16(25.4)	47(74.6)	2.285	[a]0.743
Mild	0(0.0)	5(100.0)		
Moderate	2(28.6)	5(71.4)		
Severe	0(0.0)	1(100.0)		
Very Severe	0(0.0)	1(100.0)		
Depression				
Normal	16(26.2)	45(73.8)	4.683	[a] 0.176
Mild	1(9.1)	10(90.9)		
Moderate	1(100.0)	0(0.0)		
Severe	0(0.0)	4(100.0)		

Very Severe	0(0.0)	0(0.0)		
Variables	**Work Demand n (%)**		**X²**	**P-value**
	Low Risk	**High Risk**		
Stress				
Normal	6(8.8)	62(91.2)	1.284	[a] 1.000
Mild	0(0.0)	4(100.0)		
Moderate	0(0.0)	4(100.0)		
Severe	0(0.0)	1(100.0)		
Very Severe	0(0.0)	0(0.0)		
Anxiety				
Normal	6(9.5)	57(90.5)	2.326	[a] 1.000
Mild	0(0.0)	5(100.0)		
Moderate	0(0.0)	7(100.0)		
Severe	0(0.0)	1(100.0)		
Very Severe	0(0.0)	1(100.0)		
Depression				
Normal	6(9.8)	55(90.2)	1.738	[a] 0.724
Mild	0(0.0)	11(100.0)		
Moderate	0(0.0)	1(100.0)		
Severe	0(0.0)	4(100.0)		
Very Severe	0(0.0)	0(0.0)		
Variables	**Job Support n (%)**		**X²**	**P-value**
	Low Risk	**High Risk**		
Stress				
Normal	67(98.5)	1(1.5)	5.157	[a] 1.000
Mild	4(100.0)	0(0.0)		
Moderate	4(100.0)	0(0.0)		
Severe	1(100.0)	0(0.0)		
Very Severe	0(0.0)	0(0.0)		
Anxiety				
Normal	62(98.4)	1(1.6)	7.123	[a] 1.000
Mild	5(100.0)	0(0.0)		
Moderate	7(100.0)	0(0.0)		
Severe	1(100.0)	0(0.0)		
Very Severe	1(100.0)	0(0.0)		
Depression				
Normal	60(98.4)	1(1.6)	4.472	[a] 1.000
Mild	11(100.0)	0(0.0)		
Moderate	1(100.0)	0(0.0)		
Severe	4(100.0)	0(0.0)		
Very Severe	0(0.0)	0(0.0)		

a. Fisher-Freeman-Halton Exact Test

Based on Table 5, there is no significant association between demographic characteristics and job control, work demand, and job support as all the p-values>0.05.

Table 5. Chi-square statistic test for characteristics (gender, age, marital status, and type of work) with psychosocial risk factors

Variables	**Job Control n (%)**		**X²**	**P-value**
	Low Risk	**High Risk**		
Gender				
Male	16(23.9)	51(76.1)	-	[a] 1.000
Female	2(20.0)	8(80.0)		
Age				
Young Adult	8(24.2)	25(75.8)	-	[a] 1.000
Middle Adult	10(22.7)	33(77.3)		
Marital Status				
Single	1(25.0)	3(75.0)	0.651	[a] 1.000
Married	17(23.6)	55(76.4)		
Divorced	0(0.0)	1(100.0)		
Type of Work				
Production-Related	15(22.4)	52(77.6)	-	[a] 0.691
Administrative/ support	3(30.0)	7(70.0)		
Variables	**Work Demand n (%)**		**`X²**	**P-value**
	Low Risk	**High Risk**		
Gender				
Male	4(6.0)	63(94.0)	-	[a] 0.172

Female	2(10.0)	8(80.0)		
Age				
Young Adult	3(9.1)	30(90.9)	-	[a] 1.000
Middle Adult	3(6.8)	41(93.2)		
Marital Status				
Single	1(25.0)	3(75.0)	3.159	[a] 0.341
Married	5(6.9)	67(93.1)		
Divorced	0(0.0)	1(100.0)		
Type of Work				
Production-Related	5(7.5)	62(92.5)	-	[a] 0.579
Administrative/ support	1(10.0)	9(90.0)		

Variables	**Job Support n (%)**		**X^2**	**P-value**
	Low Risk	**High Risk**		
Gender				
Male	66(98.5)	1(1.5)	-	[a] 1.000
Female	10(100.0)	0(0.0)		
Age				
Young Adult	33(100.0)	0(0.0)	-	[a] 1.000
Middle Adult	43(97.7)	1(2.3)		
Marital Status				
Single	4(100.0)	0(0.0)		
Married	71(98.6)	1(1.4)		
Divorced	1(100.0)	0(0.0)		
Type of Work				
Production-Related	7(100.0)	0(0.0)	-	[a] 1.000
Administrative/ support	31(100.0)	0(0.0)		

a. Fisher-Freeman-Halton Exact Test

5.0 Discussion

This study found that most respondents had a high risk of psychosocial risk, especially in work demand, followed by job control. Similar to a study performed by Nuruzzakiyah et al. (2020), it has been found that significant psychosocial risk factors are present in the manufacturing industry, including high job demands, moderate job control levels, a moderate level of the physical work environment, and a moderate level of job content satisfaction among workers. The presence of symptoms such as stress, anxiety, and depression among workers most likely were scored normal despite having few participants scored mild, moderate, severe, and very severe for each domain. This indicates that a significant majority of the workers are experiencing manageable stress, anxiety, and depression levels, likely due to an effectively managed work environment and job demands due to the presence of job support. A suitable coping mechanism can promote better mental health and well-being. A study conducted by Kone et al. (2022) found that respondents who indicated that they used physical activity and exercise as a coping mechanism were less likely to experience symptoms of anxiety, depression, PTSD, and suicidal thoughts. Generally, adopting a healthy lifestyle that includes regular exercise and a balanced diet has been recognized as a protective measure against negative mental health consequences (Lassale et al., 2018).

There was no significant correlation between psychosocial risk factors and levels of stress, anxiety, and depression among manufacturing workers in Perak and sociodemographic sociodemographic data. Results suggest that factors such as a person's demographic and workplace stressors assessed in this study do not demonstrate a meaningful association with the mental health outcomes of manufacturing workers in this region. This study contrasts with the findings by Timotius and Octavius (2022), who reported an increase in stress, anxiety, and depression among manufacturing workers, possibly due to factors such as workload exceeding capacity. As a country's population grows, industries such as chemical processing, manufacturing, warehousing, mining, logistics, retail, maintenance, hospitality, and transportation services must shift to operating 24 hours a day to fulfil critical societal demands, such as ensuring food supply and managing imports and exports (Norazahar & Suppiah, 2023). This will result in working long hours or shifts, increasing the psychosocial risk among the workers. Work-related stressors include extended work hours, high job demands and workload, limited job control, hazardous physical work environments, unclear roles, strained work relationships, and instances of workplace injustice (Tijani et al., 2021), which could lead to reduced utilization of social, family, and workplace support, thereby contributing to a highly stressful work environment (Milner et al., 2019). Even this study's finding suggests that despite the presence of high job demands, low job control, and other psychosocial stressors, the mental health of these workers remains unaffected. One strong support system, both at work and in their personal lives, might buffer the impact of these risk factors. Workers who perceive high levels of social support are inclined to seek help during challenging times, effectively reducing stress and mitigating the risk of burnout (Bakker

& Demerouti, 2007). Another study by Lakey and Orehek (2011) states that perceived social support plays a crucial role in alleviating stress and enhancing psychological well-being. Psychosocial working conditions significantly contribute to mental health issues such as exhaustion and depression (Berglund et al., 2024). Promoting a workplace intervention such as a workplace health promotion program or training program can contribute to better mental health. Regular occupational safety training and workplace mental health counselling have been linked to lower chances of experiencing depressive symptoms (Yang et al., 2024). While training programs may not directly address mental health issues, they can indirectly enhance workers' well-being by fostering a safe work environment, boosting their skills and confidence, and alleviating stress (Rhoades & Eisenberger, 2002).

Although the study found no significant relationship between psychosocial risk factors and the levels of stress, anxiety, and depression among manufacturing workers, it is essential to consider that other factors may still contribute to worsening mental health. These factors could include personal circumstances or other external factors, such as the outdoor environment of the workplace. Jiang et al. (2019) found through regression analysis that an unsupportive environment, particularly one characterized by extreme crowding, was significantly associated with higher levels of reported stress and anxiety among workers. The scenarios included many workers rushing through factory gates during shifts, crowding canteens for quick meals, and trying to find space in crowded outdoor areas for brief breaks. These frequent exposures and the inability to avoid them could potentially lead to a sense of "learned helplessness" and mental health issues such as chronic stress, anxiety, and depression (Overmier & Molet, 2017).

6.0 Conclusion, limitations & recommendations

In conclusion, while this study's findings provide valuable insights, further research is needed to explore additional dimensions and factors of psychosocial risk factors that may impact the mental health of manufacturing workers. This study believes that psychosocial risks in the workplace can be addressed with enforcement by the ministry, as well as employers' sense of responsibility for the well-being of their employees. With this report, employers need to take active action to ensure that psychosocial risks in the workplace are always under control. Employers are advised to refer to the PRisMA 2024 guidelines for the details of the intervention action plan in dealing with this issue. Future workplace psychosocial risk studies should refer to the latest guidelines issued by the ministry. This is to provide uniformity in reports and action plans at the national level.

This study has several limitations. It was conducted in only one state in Malaysia, which limits the generalizability of its findings to the entire manufacturing workforce nationwide. Despite robust statistical analysis, the relatively small sample size affects the results' reliability and generalizability. Additionally, focusing on a single manufacturing facility may not reflect the diversity of other manufacturing environments. Future research should include a larger, more varied sample and consider multiple manufacturing settings to provide a broader perspective. Future research should consist of data from various states and manufacturing settings to improve representativeness and capture diverse perspectives. Recognizing these limitations highlights the need for careful interpretation and further investigation to deepen understanding of the subject.

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Paper Contribution to Related Field of Study

Research using the latest guidelines from DOSH Malaysia is important because it can support Malaysia's occupational health and safety system. The results of this study provide an overview to employers and the government regarding the psychosocial risk situation experienced by industrial workers at their workplace. It can be used as a reference in the future regarding the situation experienced by some workers in Malaysia. Other parties can also use this information as a basic reference in assessing psychosocial risk in their respective workplaces. Finally, this latest study supports the launch and proves the usability of PRisMA 2024 in the field. A series of studies at the national level is being drawn up and will involve other industry categories as well. Findings from this study will also be used in some of the Psychosocial Trained Person (PTP) training and certification sessions.

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