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DISORDERS IN GIANYAR BALI MASK MAKING CRAFTSMAN

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ABSTRACT
In the process of making masks, many occupational health problems are found, such as workers working in a sitting posture with their bodies bent and their legs bent while sitting on an uneven surface and working for quite a long time, which will have an impact on the emergence of health problems such as the emergence of complaints. musculoskeletal disorders. This study aims to analyze the relationship between the incidence of complaints of musculoskeletal disorders in mask making craftsmen. The method used in this research uses a quantitative research design with a cross-sectional analytical approach, the sampling technique in this research uses a total sampling technique from all 17 workers, the data collected is primary data and univariate analysis and analysis tests are carried out. bivariate with Chi-square test to look for relationships. The results of the research found that 64.7% of respondents experienced complaints of musculoskeletal disorders (MSDs) and based on the results of the chi-square test it was found that complaints of musculoskeletal disorders (MSDs) were significantly higher in age groupat age ≥30, work period ≥ 10 years, length of work, medium and heavy workload, risky work attitude and lighting levels that do not meet the requirements.

Keywords: craftsman; masks; musculoskeletal disorders (MSDS)

INTRODUCTION

One of the areas on the island of Bali that is known for works of art is Gianyar Regency which is known as an area that produces crafts with high artistic value. One of the famous crafts originating from Gianyar Regency is the center for making barong and rangda masks which is located in Batuan Banjar Puaya Village, Gianyar Regency. . Banjar Puaya, Batuan Village, Gianyar is one of the areas in Bali which is known as a place for producing mask crafts. A complete set of barong and rangda is sold from 75-95 million rupiah depending on the complexity of the order. Most of the village residents work as mask artists. Most people in Bali, if they want to make masks for religious ceremonies (Tapakan Ida Betara), take them and order them from this village. The center for making barong and rangda originating from the Puaya banjar has been passed down from generation to generation(Wayan Mudra, 2021). In the work of mask making workers in the Puaya Ginyar banjar, they spend more time in a sitting position accompanied by a bent position, where working in a sitting and bending work position will result in repeated static loads on the muscles for quite a long time which can cause complaints of health problems, according to(Maya, 2020)pushing muscle abilities even beyond the limits of ability so that problems are often found related to disorders of the musculoskeletal muscle system which can appear at any time in manual workers. skeleton, joints and nerves caused by unergonomic worker attitudes, long work duration, monotonous or repetitive movement frequency or doing work in inappropriate or tiring positions(Health Safety and Executive, 2021).

Every job has its own risks, both occupational risks and health risks. All of these risks are related to the type of work and the working environment. One of the health risks most often complained about by workers is Musculoskeletal Disorders, musculoskeletal complaints are complaints in the skeletal muscles that are felt by a person ranging from very mild complaints to very painful, factors that can cause musculoskeletal system complaints include poor work posture. awkward, repetitive movements too often, and long working periods(Sari et al., 2017). Many studies related to MSDs complaints have

been carried out in various companies and industries. Like research conducted by(Tjahayuningtyas, 2019)In informal workers, it is known that MSDs complaints are mostly felt on the right wrist (86%) and right foot (68%). Based on research conducted by(Rasyidah et al., 2019)It is known that of the 78 respondents, the majority of respondents experienced low back pain, namely moderate pain, 45 (57.7%) due to work and research conducted by(Saputra et al., 2023)Research results showed that 80% of workers making traditional coffee powder experienced MSDs complaints due to unergonomic working positions. Based on the results of observations and interviews conducted by the author, three mask-making workers said they experienced complaints of pain in their bodies, such as in the calves, feet, neck and back during the mask-making process. Based on the problems described above, the author is interested in analyzing the relationship that influences the incidence of Musculoskeletal Disorders complaints in mask-making workers, so that with the results of this research it is hoped that control efforts will be obtained in the mask-making work environment.

METHOD

This research uses a quantitative descriptive research design with a cross-sectional approach. This research was conducted in Banjar Puaya, Batuan Village, Gianyar in March 2024. The sample in this research was all 17 workers making barong and rangda masks. The sampling technique in research is total sampling, the data collected is primary data. The measuring tools and methods used in this research are the self-identity questionnaire, the Nordic body map questionnaire to assess the incidence of MSDS complaints, the Manual Task Risk Assessment (ManTRA) questionnaire to assess work attitudes, using the 10 pulse method by calculating CVL% to see the load. work and use a work environment parameter measuring tool in the form of a lux meter to see the lighting level. In this research, data analysis was carried out in the form of univariate analysis to describe the characteristics of the research and bivariate analysis, with the Chi-square test to look for close relationships between the variables in this research using the help of the SPSS Version 22 data analysis program.

RESULTS

Table 1.
Characteristics of Respondents

Variable	f	%
Age		
< 30 years	7	41.2
≥ 30 years	10	58.8
Years of service		
< 10 years	4	23.5
≥ 10 years	13	76.5
Length of working		
< 8 hours	7	41.2
≥ 8 hours	10	58.8
Workload		
Light	7	41.2
Medium and heavy	10	58.8
Work attitude		
No risk	9	52.9
Risky	8	47.1
Lighting		
Meet the requirements	10	58.8
Not eligible	7	41.2

The characteristics of respondents based on age range from 20-65 years, where the largest age range of respondents is aged ≥ 30 years, based on length of work the most respondents are with a period of work ≥ 10 years, based on length of work the largest number of respondents are with a period of work ≥ 8 hours, based on workload, 58.8% of respondents had medium and heavy workload, based on work

attitudes, 47.1% of respondents had risky work attitudes and based on the results of measuring lighting levels, 41.2% of respondents' lighting levels at work were classified as not meeting the requirements.

Table 2.
Distribution of MSDS Complaints among Respondents

MSDs Complaints	f	%
No	6	35.3
Yes	11	64.7

Table 2, it can be found that 64.7% of respondents experienced complaints of musculoskeletal disorders and 35.3% did not experience complaints of musculoskeletal disorders. Bivariate analysis was carried out to determine the relationship between respondent characteristics in the form of age, length of service, length of work, workload, work attitude and level of lighting and the incidence of complaints of musculoskeletal disorders in respondents.

Table 3.
Relationship between Respondent Characteristics and the Incidence of Musculoskeletal Disorders Complaints

Variable	MSDs Complaints				*p-value*
	There isn't any		There is		
	f	%	f	%	
Age					
< 30 years	4	57.14	3	42.86	0.039
≥ 308 years	2	20.00	8	80.00	
Years of service					
< 10 years	2	50.00	2	50.00	0.001
≥ 10 years	4	30.76	9	69.24	
Length of working					
< 8 hours	4	57.14	3	42.86	0.039
≥ 8 hours	2	20.00	8	80.00	
Workload					
Light	3	42.85	4	57.15	0.012
Medium and heavy	3	30.00	7	70.00	
Work attitude					
No risk	3	33.33	6	66.67	0.023
Risky	3	37.5	5	62.5	
Lighting					
Qualify	4	40.00	6	60.00	0.001
Not eligible	2	28.57	5	74.43	

The proportion of musculoskeletal disorders (MSDS) complaints was significantly higher at age ≥30 years (p=0.039), work period ≥ 10 years (p=0.001), work time ≥ 8 hours (p=0.039), medium and heavy workload (p=0.012), risky work attitudes (p=0.023) and lighting levels that do not meet the requirements for value (p=0.001).

DISCUSSION

According to research conducted by(Amalia & Widajati, 2019)A person's physical strength is greatly influenced by age, where age will influence the worker's level of capacity in carrying out each job and obeying(Hudriah & Kalla, 2023)Age is something that is very important in life. The older a person gets, the more it affects the quality of health in living creatures. Based on the results of research conducted by the author, it shows that there is a significant relationship between age ≥ 30 years and the incidence of complaints of musculoskeletal disorders in mask making workers with a p value <0.05, the research results obtained by the author are in line with research conducted by(Sari et al., 2017)From the results of statistical tests using ChiSquare, it was found that the p value was 0.005 < α (0.05). This means that there is a significant relationship between age and MSDS complaints felt by respondents and the results of this study are also in line with research conducted by(Indriyani et al., 2022)There is a

relationship between the age of complaints of musculoskeletal disorders (MSDS), obtained p-value <0.005, complaints of musculoskeletal disorders generally begin to be experienced at the age of more than 30 years and continue to increase at the age of 40 years and above. Increasing age is accompanied by a decrease in maximum VO2 so it is expected that work capacity will decrease.

The work period carried out in this research is calculated based on the year the worker started working until the research took place, where this work period shows the length of time the individual was exposed to exposure at work until the research was carried out. Based on the results of research conducted by the author, it shows that there is a significant relationship between working period ≥ 10 years and the incidence of complaints of musculoskeletal disorders in mask making workers with a p value <0.05, the results of this study are in line with research conducted by Rika et al., 2022. From the results of statistical tests using ChiSquare, it was found that the p value was 0.005 < α (0.05). This means that there is a significant relationship between age and MSDS complaints felt by respondents and the results of this study are in line with research conducted byYanti Syahdan and Febriyanto, 2022.According to bivariate analysis, the Chi-Square test produces a p-value that is smaller, namely 0.000, than the significant level value, namely α = 0.05 or p < 0.05, therefore there is a relationship between length of service and the risk of musculoskeletal disorders in firefighters. The working period symbolizes the risk aspects that affect a person in the workplace which can increase the risk of Musculoskeletal Disorders complaints, especially in types of activities that use quite a lot of energy.(Tawarka & Bakri, 2018).

According to(Ramadani, 2021)Long working hours have a negative impact on workers' health, both general health and mental health. Long working hours have been proven to have a negative impact on workers' health, workers who work long hours have a higher chance of experiencing occupational health problems. Based on the results of research conducted by the author, it shows that there is a significant relationship between working hours ≥ 8 hours and the incidence of complaints of musculoskeletal disorders in mask making workers with a p value <0.05, the results of this study are in line with research conducted by(Utami et al., 2017)From the results of statistical tests using ChiSquare, it was found that the p value was 0.005 < α (0.05). This means that there is a significant relationship between length of work and MSDs complaints felt by respondents. Workload according to Hermanto in(Pambudi, 2018)is a number of activities that must be completed by a person or an organization within a certain period under normal working conditions. Workload itself includes two types, namely physical workload and mental workload. Physical workload can be found in jobs that make more use of the operator's physicality in completing their tasks, while mental workload is often found in jobs that have a large mental responsibility in carrying out tasks. carry out his work. In this research, the workload uses the 10 pulse method by calculating CVL% to categorize the physical workload that workers suffer while working. Based on the results of research conducted by the author, it shows that there is a significant relationship between workload and the incidence of complaints of musculoskeletal disorders in mask making workers with a p value <0.05, the results of this research are in line with research conducted by(Saputra et al., 2023)The research results show that there is a relationship between physical workload and complaints of musculoskeletal disorders and work fatigue with a p value <0.05 and the results of this research are also in line with research conducted by(Alfaridz & Agustina Harahap, 2023)hthe results of research on 33 street sweepers in Kec. Medan Johor, it can be concluded that there is a correlation between workload and MSDS complaints among street sweepers in Kec. Medan Johor using the Chi-Square test to get p-value = 0.000 or p-value < 0.05.

Work attitude is the position of the body during activities. Natural work attitude is the worker's attitude in carrying out their work in accordance with the body's anatomy, normal attitude is directly related to work attitude, work attitude is the worker's body position when working and is usually related to the

design of the work area and the requirements of work activities(Rika et al., 2022).Based on the results of research conducted by the author, it shows that there is a significant relationship between risky work attitudes and the incidence of complaints of musculoskeletal disorders in mask making workers with a p value <0.05, the results of this research are in line with research conducted by(Oley et al., 2018)The results of tests conducted on the relationship between work attitudes and musculoskeletal complaints at a significance level of 0.05 (95%) obtained a value of p = 0.005. This research shows that there is a significant relationship between length of work and musculoskeletal complaints in fishermen in Batukota Village, North Lembeh District, Bitung City.

Lighting level refers to the amount of light that reaches or enters a surface area(Odi et al., 2018). According to Asali in(Odi et al., 2018)Good lighting refers to lighting that can enable workers to see objects being processed quickly, clearly and without excessive effort, tired eyes, reduced energy and work efficiency, mental fatigue, complaints of pain in the eye area, headaches around the eyes, Visual impairment and increased accidents are caused by poor lighting.Based on the results of research conducted by the author, it shows that there is a significant relationship between lighting levels that do not meet the requirements and the incidence of complaints of musculoskeletal disorders in mask making workers with a p value <0.05, the results of this research are in line with research conducted by(Rika et al., 2022)From the results of statistical tests using ChiSquare, the p value was 0.005 < α (0.05) which can be concludedThere is a relationship between lighting and MSDS complaints from ikat weavers in Ternate Village. According to research conducted by(Asali et al., 2017)If the level of light intensity or lighting in a place does not meet the requirements, this can cause the neck posture to flex forward (bow) and the body posture to flex (bend) and workers will be at higher risk of experiencing complaints of musculoskeletal disorders.

CONCLUSION

Based on the results of research that has been carried out, data was obtained that 64.7% of workers experienced complaints of musculoskeletal disorders and 35.3% did not experience complaints. Based on the data analysis carried out, it was found that the incidence of complaints of musculoskeletal disorders was significantly higher in the age group.at age ≥30, work period ≥ 10 years, length of work, medium and heavy workload, risky work attitude and lighting levels that do not meet the requirements.

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