INDONESIAN HEALTH JOURNAL
https://ihj.rivierapublishing.id/index.php/rp
Volume 5 Number 2, June 2026
P-ISSN: 2963-3044
E-ISSN: 2963-3036

An Overview of Occupational Health Protection in the Informal Sector Among Female Traditional Textile Artisans in Karangasem, Bali

Adi Saputra*, Komang Wulan Trisnandari Widyaratri, Ni Putu Ayu Wulan Noviyanti
Universitas Udayana, Indonesia
Email: adisaputra.fis@unud.ac.id*

Keywords
OHS Protection; Weavers; Informal Workers; Work Environment; Insurance Ownership

Abstract

Female workers in the informal sector, such as traditional weavers, are vulnerable to occupational health and safety risks due to the lack of implementation of occupational health and safety (OHS), unsuitable working environments, and limited access to social security. Weak regulations and low participation of BPJS employment insurance have exacerbate this situation, so requiring a special attention to improve occupational health protection in the informal sector. This study aims to describe occupational health protection in the informal sector of traditional weavers in Karangasem, Bali. This was a descriptive study with a quantitative research method that involving 65 samples that selected by accidental sampling. The result showed that OSH aspects have not been optimally implemented, as evidenced by the lack of occupational safety and health training, the use of PPE, and noisy and non-ergonomic work environments. In addition, social protection is still lacking, as indicated by the low enrollment in BPJS employment insurance and insufficient concern for occupational health at the workplace. This study concludes that occupational health protection among the informal sector for female traditional weavers in Karangasem, Bali is still low, so that making the workers more vulnerable to occupational accidents and diseases. Therefore, it is recommended that workers be more proactive in understanding occupational risks and the importance of social protection. The owner, the government, and the agency of BPJS employment insurance need to collaborate in implementing OSH and expanding social security coverage for the informal workers.

INTRODUCTION

Every worker has the right to a healthy, safe and comfortable work environment in accordance with Permenaker Number 5 of 2018 concerning occupational safety and health in the work environment (Irianingtyas et al., 2022). The implementation of Occupational Safety and Health (K3) is not only the responsibility of the government, but also the responsibility of all parties involved, especially industry players (Nurul Fitri Qur'ani, 2020). The application of K3 principles is not only important in the formal sector but also crucial in the informal sector which absorbs most of the workforce in developing countries such as Indonesia (Zahra & Prastawa, 2023). Basically, labor is not just a means of production but a valuable asset that plays an important role in the sustainability of the company so that its safety and health must be protected (S & Ferijani, 2019). The application of the concept of K3 in the work environment is one of the means applied with the aim of preventing the risk of work accidents for workers (Prabaswari et al., 2017). However, in the informal sector itself, the aspect of K3 is often ignored and not implemented as it should. Based on the results of the Labor Force Survey

(Sakernas), the number of informal sector workers in Indonesia still dominates with a percentage of 59.17% in February 2024 with a female labor force of 43.13% (Central Statistics Agency, 2024). This informal sector includes various types of jobs such as small construction workers, day laborers, street vendors, small-scale textile craftsmen, home workers and all types of jobs that are classified outside the business as assisted by permanent and paid workers and/or laborers/employees/employees (Sunaryani et al., 2024).

The shift in economic structure towards the dominance of the industrial sector, especially the textile and garment industry, which is global, encourages informal sector actors to take advantage of local resources with simple technology and relatively low quality of resources. One form of economic activity that grows in this context is traditional woven fabric crafts. This sector is developing very rapidly because it is home based production so that it can be done by most women because it does not require high skills and can be done without having to leave daily tasks as housewives (Sofiani, 2017). Artisans consisting of female workers generally work independently or in small groups without any training or assistance in terms of occupational safety and health. The lack of understanding and application of K3 in the work process that is carried out increases the potential for health problems due to static work posture, the use of unergonomic tools, and inadequate working conditions. This results in craftsmen, especially female workers in the informal sector, not only experiencing physical complaints such as muscle and joint pain, but also the potential to experience a decrease in work productivity (Awaluddin et al., 2019).

The characteristics of the informal sector with flexible working hours encourage women, especially housewives, to be segmented into informal sectors with unclear work rules, low wages, and inadequate social security and health (Satarudin et al., 2021). The dual role of women as workers as well as housewives often makes them positioned only as additional breadwinners so that female workers in the informal sector are considered cheap labor (Indrawanti & Pradhanawati, 2019). In addition, this condition causes women to not get enough rest time because they still have to complete domestic tasks as housewives after work. The existence of physiological and anatomical differences between men and women, such as physical strength and metabolic system, which is also influenced by the incompatibility of work design and PPE with women's characteristics, increases the risk of exposure received by female workers in the work environment (Bolghanabadi et al., 2024). This makes women more vulnerable to accidents or diseases due to work because more than half of informal sector workers work without social protection, without health insurance, and without the implementation of proper K3 standards. In reality, every worker faces the same work risks or even experiences higher risks than the formal sector due to inadequate working environment conditions which are exacerbated by low knowledge of K3 and the absence of supervision or regulations that uphold their rights (Roudlotull Jannah & Sunaryo, 2021).

Workers in the informal sector, especially women, are categorized as vulnerable workers because they generally do not have adequate social protection. The results of research from BPJS Ketenagakerjaan show that many of them work hard to support their families but still lack understanding and importance of social security. In addition, there is still an assumption from the public that BPJS Employment is only intended for formal workers such as office employees (BPJS Employment, 2023). Workers in the informal sector themselves often do not have a fixed income level and are not bound by employment contracts, so they do not have

access to social security (Maulana et al., 2022). This condition causes them to be among workers who are very vulnerable to economic risks, work accidents, and the potential for poverty due to unwanted things. Based on research conducted by (Ko Ko et al., 2020), it shows that female workers are more at risk of experiencing various types of diseases due to risk factors in the work environment which include environmental pollution, weather, and ergonomic risks. In addition, a study conducted by (Akhter et al., 2018) on female workers in the garment industry in Bangladesh also showed that female workers in the informal sector suffer from various health problems but do not get access to appropriate treatment for their health problems. This shows that workers in the informal sector have not received health services that are in accordance with the type of problems they face. So far, the available health services are still general and have not considered specific risk factors related to their working conditions (Nurul Fitri Qur'ani, 2020).

Based on BPJS Ketenagakerjaan, the number of work accidents in the industrial sector is still fluctuating. The number of work accidents in 2023 reached 370,474 cases from various sectors, including the industrial sector which currently dominates the economy in Indonesia (BPJS Ketenagakerjaan, 2023). However, this number of cases still does not include cases of work accidents in other informal sectors due to the existence of the informal sector that stands alone outside the formal legal entity so that it is not officially registered (Saputra & Ramberson, 2023). This causes the informal sector to have a higher risk of accidents or diseases due to work accidents or diseases because they do not receive legal protection equivalent to formal workers and do not pay attention to the safety and health of workers (Putri Pratiwi & Diah, 2022). Based on Permenaker Number 5 of 2021, every employer has the obligation to register their workers in the health insurance program which includes Work Accident Insurance, Death Insurance, and Old Age Insurance. However, in practice, weak supervision and lack of law enforcement cause the implementation of K3 in the sector to still not be carried out optimally (N. Lalitha & Ghatak, 2015). Data on BPJS Ketenagakerjaan membership coverage in the informal sector also shows that there are still many workers in the informal sector who work without work accident insurance. Until the end of 2023, of the total number of informal workers in Indonesia, which reached more than 84 million people, only 10.17 million people were BPJS Employment participants. Seeing these conditions, it is time to increase attention to the protection of K3 in the informal sector. These efforts are not only important to protect the basic rights of workers, but also contribute to the development of a productive and sustainable workforce.

The novelty of this research lies in several key contributions. First, this study provides a comprehensive assessment of occupational health protection across multiple dimensions: sociodemographic characteristics, health problems and work accidents, PPE use, work environment hazards (noise, waste management), disease history, treatment-seeking behavior, and insurance ownership. Second, the research focuses specifically on female traditional textile artisans in Karangasem, Bali a cultural and economic context underexamined in occupational health literature. Third, the study quantifies specific gaps: 100% of weavers had never received OHS training, 100% had never used PPE, 0% had BPJS Employment coverage, and only 6.15% reported receiving workplace health attention. Fourth, the research identifies specific health complaints (80% low back pain, dizziness as most common disease) and work hazards (noise from non-machine looms, inappropriate wages as most common complaint). Fifth, the study provides actionable recommendations for multiple stakeholders: workers (proactive

understanding of risks), employers (gradual K3 implementation), government (strengthened supervision and regulation), and BPJS Employment (expanded coverage and socialization).

Based on the above phenomenon, it is necessary to study the Overview of Occupational Health Protection in the Informal Sector, especially for women workers who are traditional cloth craftsmen in Karangasem, Bali so that the resulting implications can be used as input for decision-makers regarding women's employment issues in the informal sector. From the background described above, the problem to be studied is the characteristics of women workers in the informal sector, namely traditional cloth craftsmen in Sidemen Village, seen from sociodemographic characteristics, work history, work attitudes, occupational diseases and accidents, Personal Protective Equipment (PPE), work environment, healthy living behavior, work psychology, health history, and insurance ownership.

METHOD

This study used a quantitative descriptive research design to describe the results obtained from the research sample. The target population of this study is all traditional weaving artisans in Bali with an affordable population in this study, namely the group of traditional weaving craftsmen in Sidemen Village in 2025. The sample in this study is traditional weaving craftsmen who meet the following criteria:

1. Kriteria Inclusive:
    a. Weaving craftsmen who have been working for ≥6 months
    b. Weaving craftsmen from a group of weaving craftsmen in Sidemen Village who are willing to be research samples.
2. Exclusion Criteria:
    a. Craftsmen who have congenital abnormalities in the spine or have spinal injuries due to a history of accidents.
    b. Craftsmen who do not complete the research questionnaire.

The sample size used in this study was 65 samples. Sampling in this study uses a non-probability sampling technique, namely accidental sampling. The data collection technique carried out in this study was by filling out a questionnaire. The data source in this study consists of primary data obtained through questionnaires. This study uses descriptive statistical analysis techniques using StataSE-64 Software.

RESULTS AND DISCUSSION

Overview of Sociodemographic Characteristics of Women Workers of Traditional Cloth Craftsmen in Karangasem, Bali

Table 1. Overview of Sociodemographic Characteristics

Sociodemographic Characteristics	Frequency (n)	Propose yourself (%)
Respondent Age		
Unproductive	5	7,69
Productive	60	92,31
Marital Status		
Not Married	13	20,00
Marriage	52	80,00

Insurance Ownership		
None	4	6,15
BPJS Kesehatan	61	93,85
BPJS Employment	0	0,0
Private Insurance	0	0,0

The age of the respondents was dominated by the productive age, which was in the range of 15-64 years (92.31%) with the average age of the respondents being 41 years. In terms of marital status, most respondents are married (80%). Meanwhile, in terms of insurance ownership, most respondents only have BPJS Kesehatan (93.85%) and none of the respondents have BPJS Employment or other private insurance.

Overview of Health Problems and Work Accidents of Female Workers of Traditional Cloth Craftsmen in Karangasem, Bali

Table 2. Overview of Health Problems and Work Accidents

Health Problems and Work Accidents	Frequency (n)	Propose yourself (%)
Health Issues		
Back Pain	52	80,00
Joint Pain	1	1,54
ISPA	0	0,0
Others	12	18,46
Complaints During Work		
Ya	14	21,54
No	51	78,46
Work Accidents		
Ya	2	3,08
No	63	96,92
Hazard Work Tools		
Panas	0	0,0
Bising	65	100
Construction	0	0,0
Others	0	0,0

Based on data on health problems and work accidents, it shows that most respondents (80%) experience health problems in the form of low back pain where as many as (18.46%) respondents experience other health problems that are not detailed in the main choice. As many as 14 respondents (21.54%) had complaints during work and as many as 2 respondents (3.08%) had experienced work accidents. Even though it is only a little, this indicates that the work environment still has potential dangers that can endanger workers. In addition, all respondents (100%) mentioned that Non-Machine Looms are work tools that they use during work and noise is the main form of work environment hazards that come from the work tools used.

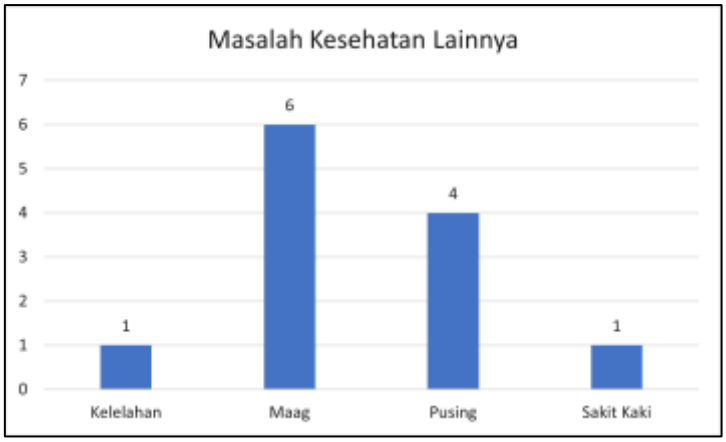

Figure 1. Distribution of Other Health Problems

The types of health problems experienced by respondents are presented in the graph image above. Figure 1 shows four other types of health problems experienced by respondents where of the 12 respondents who suffered from other health problems, 6 of them experienced health problems in the form of ulcers.

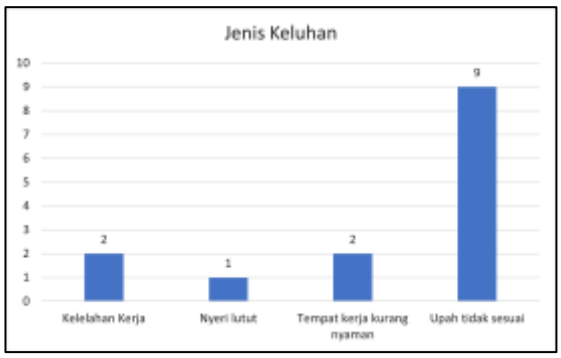

Figure 2. Distribution of Complaint Types

Figure 3. Distribution of Types of Work Accidents

The distribution of the types of complaints and types of work accidents experienced by the respondents is presented through the image above. Figure 2 shows that there are four types of work complaints experienced by respondents where of the 14 existing complaints, 9 of them have complaints in the form of inappropriate wages. Meanwhile, Figure 3 shows that there are two work accidents that have occurred in the work environment, namely 1 incident of hitting a non-machine loom and 1 incident of falling while moving a non-machine loom.

Figure 4. Hazard Work Tool Description

Based on Figure 4 regarding the description of work tools, the most dominant sound felt by respondents came from the impact of wood on the loom mentioned by 17 respondents. This sound is a form of noise that appears repeatedly during the work process. Other noises that were also quite felt were the loud sound from the impact of the loom (14 respondents), and the noise from the impact of wood (8 respondents).

Overview of PPE and the Work Environment of Women Workers of Traditional Cloth Craftsmen in Karangasem, Bali

Table 3. Overview of PPE and Work Environment

Personal Protective Equipment	Frequency (n)	Propose yourself (%)
Knowledge About PPE		
Ya	0	0,0
No	65	100
Use of PPE		
Ya	0	0,0
No	65	100
PPE Education and Training		
Pernah	0	0,0
Never Have You Ever	65	100
Work Environment		
Noise Level		
No Noise	0	0,0
Bising	56	86,15
Very noisy	9	13,85
Waste Treatment		
Stockpiled	0	0,0
Burnt	39	60,00
Dumped into sewers/rivers	22	33,85
Others	4	6,15

Based on Table 3, all respondents (100%) did not have knowledge, experience in use, or training regarding Personal Protective Equipment (PPE). This shows the low awareness and implementation of K3 in the informal sector. In terms of the work environment, as many as 56 respondents (86.15%) stated that their workplace was in a noisy condition and another 9 respondents (13.85%) stated that their workplace was in a very noisy condition. Meanwhile, related to the management of waste from work, the majority of respondents (60%) said that the process of managing waste from work is carried out by burning.

Overview of the Disease History and Medical Behavior of Female Workers of Traditional Cloth Craftsmen in Karangasem, Bali

Table 4. Overview of Treatment History and Behavior

Health-Related	Frequency (n)	Propose yourself (%)
Pain History		
Ya	65	100
No	0	0,0
Treatment Behavior		
Ya	46	70,77

No	19	29,23
Self-Medicating Fund		
Yes	23	35,38
No	42	64,62
Worker Health Concerns		
Yes	4	6,15
No	61	93,85

Based on Table 4, all respondents (100%) had a history of illness, but only (70.77%) chose to take treatment when sick. Most respondents (64.62%) did not use medical funds independently and only (6.15%) respondents stated that they received attention for health at work. This shows that there is a lack of health protection in the work environment.

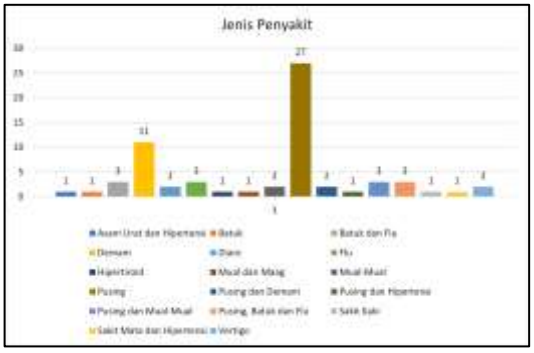

Figure 5. Distribution of Types of Diseases Experienced

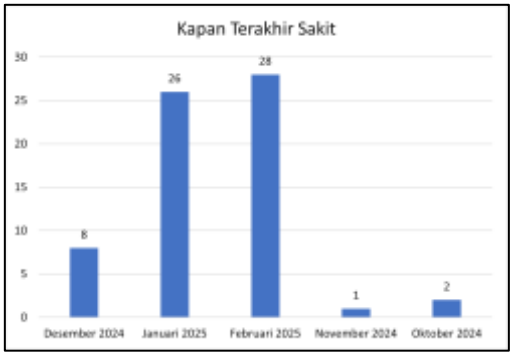

Figure 6. Distribution of Time When Respondents Are Sick

The distribution of the type of disease that the respondents have experienced and the distribution of time when the respondents are sick are presented through the picture above. Figure 5 shows the distribution of the types of diseases experienced by the respondents, where based on the figure, complaints of dizziness are the most dominant diseases experienced by the respondents. In addition to the 27 respondents who complained of dizziness, a small percentage of respondents complained of several combinations of complaints such as dizziness and fever, dizziness and hypertension, dizziness and nausea, as well as dizziness, cough and flu. Meanwhile, based on the distribution of time when respondents are sick shown in Figure 6, it is known that most of the respondents will be sick in February 2025, which is 28 respondents and in January 2025, which will be 26 people.

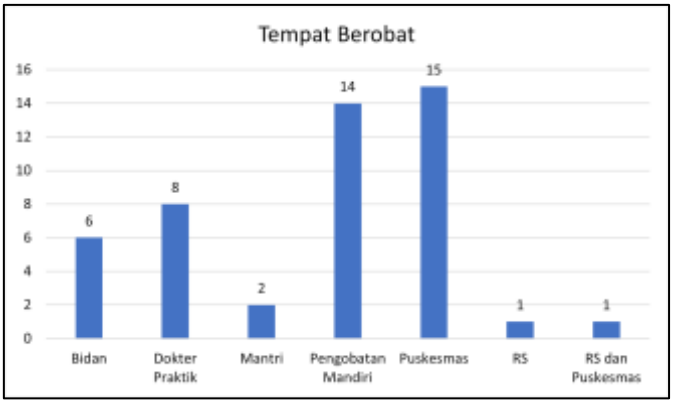

Figure 7. Distribution of Respondents' Treatment

The distribution where the respondents did treatment is presented in the image above. Figure 7 shows that most of the respondents who received treatment for the diseases suffered preferred to seek treatment at the health center, namely 15 respondents. This is slightly proportional to respondents who chose to do treatment independently, which was as many as 14 respondents. As many as 2 respondents who carried out treatment for non-formal health workers such as mantri. Meanwhile, only one respondent underwent treatment at the hospital and the other accessed services at the hospital and health center at the same time.

Characteristics of Female Workers in the Informal Sector of Traditional Fabric Craftsmen in Karangasem, Bali

Karangasem Regency is one of the centers of weaving crafts in Bali that has been widely known, not only at the national level but also in the international arena. One of the areas that is the center of this weaving craft activity is Sidemen Village. As an area known as a weaving center, the majority of its residents, especially women, work as weaving fabric craftsmen. Weaving produced from this area has strong motifs, techniques, and cultural values, so that it is a superior product that is in demand by various groups (Berliana & Purbadharmaja, 2018). This industry develops from generation to generation so that the working environment tends to be simple and traditional which is characterized by the use of Non-Machine Looms (ATBM) as the main tool in the production process. Its household-based production characteristics form a collective system of work in which artisans generally work in small groups within a single environment. However, despite the existence of a collective work system, attention to occupational health and health insurance is still very minimal because there has been no adequate intervention or education.

The results of the respondents' characteristics show that the majority of workers in this sector are of productive age with an average age of 41 years and most of the respondents are married. This shows that this sector is dominated by female workers who carry out the dual role of housewives and breadwinners. This dual role has the potential to create greater physical and psychological stress due to the time and energy spent split between domestic tasks and production work. Based on research conducted by (Indrawanti & Pradhanawati, 2019) shows that female workers in the informal sector often face multiple workloads that have not been balanced with adequate social support systems or job protection. This is supported by data on insurance ownership from respondents which shows that almost all respondents only have BPJS Kesehatan where none of the respondents have BPJS Employment. In addition, there is still a small percentage of respondents who do not even have health insurance at all. This condition shows that there is still a gap in occupational health protection for female workers in the informal sector. However, even so, artisans continue to live this profession because weaving skills are the only potential they have to be able to increase their family's economic income (Putra, 2025).

Occupational Health Risks of Women Workers in the Informal Sector of Traditional Fabric Artisans in Karangasem, Bali

Legally, the rights of women workers have been regulated in various national regulations and international conventions, but at the implementation level, their implementation is still not optimal and often not in accordance with expectations (Susiana, 2017). Women workers in the

informal sector often face various problems that include serious occupational safety and health risks, but are often ignored. Workplace risks are not only limited to accidents, but also include the possibility of work-related illnesses (Warseno & Ediyono, 2022). This risk comes from the work environment that can come from materials, the use of tools or machines, as well as from the production process itself which has the potential to harm or injure workers so that the aspect of K3 is a common need and demand that must be implemented at work (Roudlotull Jannah & Sunaryo, 2021). Based on the research conducted, it shows that the most common health problem experienced by respondents is low back pain. This health problem is the main complaint from respondents who indicate muscle load due to static working positions without the support of ergonomic tools for long working durations. These results are in line with research conducted by (Awaluddin et al., 2019) which states that workers in the informal sector with repetitive activities are at high risk of experiencing musculoskeletal disorders due to large mechanical loads on muscles. In addition, respondents also complained of other health problems such as ulcers, dizziness, leg pain, and fatigue. Although in smaller proportions, these findings suggest that the quality of occupational health is closely related to work productivity and production results. With suboptimal health quality, the performance achieved will not be in accordance with the specified targets, which can be detrimental to the company (Seme et al., 2023). The results of the study also showed that respondents had several complaints when working such as inappropriate wages, uncomfortable workplaces, work fatigue, and knee pain. These findings indicate a mismatch between working conditions and the physical capacity of workers. In addition, there are 2 incidents of work accidents that have occurred that show the absence of an adequate K3 management system to prevent incidents or provide post-incident handling. This condition ultimately increases the likelihood of injury to workers because there is no safe work culture in the workplace. The absence of a work culture that prioritizes occupational safety and health is the main factor in the occurrence of work accidents, which reflects the failure of management in providing knowledge, facilities, and a safe and healthy work environment (Setyaji et al., 2019).

The work environment is a major source of harmful factors that can cause PAK. The results of the study show that there is noise exposure in the work environment where the majority of respondents tend to state that the noise level is at the noise level and is very noisy. This noise comes from the use of production equipment in the form of Non-Machine Looms (ATBM) which causes repeated loud noises. High levels of noise exposure can pose a significant risk to occupational health and safety. In addition to affecting hearing, noise can also increase the risk of cardiovascular disease, so preventive efforts are needed to reduce noise exposure in the work environment (Indriyanti et al., 2019). Apart from noise exposure, this study also shows that in terms of waste management from work in the respondents' work environment, there are still practices of incineration and waste disposal into waterways that can have an impact on the health of workers and the surrounding community indirectly. Inadequate waste management systems have the potential to lead to a decrease in air and water quality around the work area which can ultimately create sustainable environmental damage. These conditions not only increase health risks due to exposure to pollutants, but also increase the potential for occupational safety and health disturbances more broadly (Nugraha et al., 2023).

Work accidents and work-related diseases are not only caused by the threat of unsafe working environment conditions but also from the negligence of personnel and compliance

with the use of personal protective equipment (PPE) (Banunu et al., 2024). The results of the study showed that none of the respondents knew, used, or received training on PPE. This condition indicates that the K3 system has not been implemented both in terms of policy and daily practice in the work environment of traditional fabric craftsmen. The weak implementation of K3 in this sector makes workers vulnerable to the risk of physical injury and creates unsafe working conditions (Sholikin, 2024). In addition, these findings also indicate that all respondents have never received training or education on the use of PPE, which shows that the workers do not have basic knowledge about PPE. The use of PPE itself is intended to protect workers from the risk of accidents and occupational diseases. Based on research conducted by (Nurul Fitri Qur'ani, 2020), the provision and use of PPE is one of the preventive activities that can be used to reduce the potential for accidents in workers.

Disease History and Medical Behavior of Female Workers in the Informal Sector of Traditional Cloth Craftsmen in Karangasem, Bali

Health is the basis for individual or household work productivity. A physically and mentally healthy workforce will be stronger and more productive so that they can earn higher income (Satriawan et al., 2021). The findings showed that all respondents had experienced health problems while working as craftsmen. Based on the distribution of diseases that have been experienced, it shows that the majority of workers complain of dizziness and several combinations of complaints such as dizziness and fever, as well as dizziness and nausea. In addition, based on the distribution of time when respondents were last sick, it shows that the majority of the time illness occurred between January and February 2025. This condition indicates that the disease pattern experienced by workers in the informal sector can lead to long-term health problems due to occupational exposure such as hypertension or vertigo (Thomas Asare et al., 2019). These findings are in line with research conducted by (Maycfana Djamaluddin et al., 2024), which states that some people who are susceptible to noise can cause complaints such as dizziness, headaches, high blood pressure which can be followed by stomach ulcers and difficulty sleeping. This is also in line with the findings of the previous work environment conditions, where workers complained about the noisy conditions of their work environment so that this condition supports the results of disease distribution experienced by workers who are dominated by dizziness complaints. However, the results of the study showed that the treatment behavior carried out by respondents to the disease suffered was still relatively low. This shows that some workers consider the health complaints they experience to be something ordinary and do not need to be followed up seriously. These findings are in line with research conducted by (Mandaha et al., 2022) which shows that even though artisans feel health complaints, they will still work because they consider the complaints they feel as something natural and part of the risk of the job they undertake. In addition, this is related to the dual role they play as breadwinners so that female workers are required to continue working to support the family's economic needs (Chotimah, 2022).

When viewed from the distribution of respondents' places to carry out treatment, which is dominated by primary services such as health centers and independent treatment, it shows the tendency of respondents to choose health facilities that are easily accessible and not administratively complicated. The majority of respondents who are only registered with BPJS Kesehatan with a tiered referral system are often considered a difficult thing for informal

workers. The administrative process that requires time, completeness of membership documents, and long queues make workers tend to avoid formal health facilities and prefer non-formal medical facilities or independent treatment (Satriawan et al., 2021). This condition shows that informal workers tend to prioritize the ease of procedure over the long-term benefits of health insurance services. In addition, BPJS Ketenagakerjaan as a body tasked with protecting workers through various social security programs still faces various obstacles in the implementation of the program, such as a lack of public understanding and low employer compliance (Sitanggang et al., 2025). Based on research conducted by (Jufri & Sabar, 2021), it was revealed that apart from employers, some of the inhibiting factors that cause the low participation of informal workers in insurance ownership are social constraints originating from the workers themselves, which include income, education level, age, and the number of family dependents.

In terms of finances and workers' access to treatment, it shows that most respondents do not use independent funds in obtaining treatment and utilizing BPJS Kesehatan services. These findings show that workers in the informal sector are in a limited financial situation with irregular incomes, which directly impacts their ability to access health services. As workers in the informal sector with a wholesale wage system, the amount of income they earn depends largely on how much weaving they can complete. The existence of this wholesale wage system indirectly requires them to continue working. This condition ultimately triggers workers in the informal sector to ignore the diseases they suffer from or choose to treat them independently. These findings are in line with research conducted by (Akhter et al., 2018) which states that female workers who have health problems are forced to return to their hometowns because they cannot bear the burden of costs when accessing proper health care for the health problems they suffer. The challenges faced by informal workers are closely related to their status as not having an adequate protection system so that they often do not receive compensation for accidents or illnesses due to work experienced (Dewi, 2024).

The informal sector, which generally stands alone without supervision and enforcement related to the K3 aspect, results in informal sector workers, especially women traditional fabric artisans, receiving less attention in the work environment. This is strengthened by the results of the study which showed that almost all respondents stated that they did not receive attention related to the K3 aspect from the employer. These findings show the lack of intervention and socialization from the government and health institutions related to the importance of implementing K3 in the informal sector. This problem ultimately has an impact on the limited access that informal workers have to information about occupational safety and health rights, how to prevent occupational diseases, and the compensation they receive for occupational accidents or diseases. Based on Article 15 of Law Number 24 of 2011 concerning the Social Security Administration Agency (BPJS), employers, including foundation administrators, cooperatives, and independent business actors, are required to register themselves and all their workers as BPJS participants. In addition to these administrative obligations, employers also have a responsibility to support the improvement of labor welfare, which is adjusted to the ability and level of business progress that has been achieved. However, in practice, most informal sector workers are still not covered by the BPJS Employment program due to the prevailing policies tending to be limited to the formal sector (Warseno & Ediyono, 2022). This low coverage of participation not only stems from the lack of access of women workers in the

informal sector to forms of social protection, but in general is caused by the heterogeneity of the sector, so that the scope of this program has not been maximized (Sholikin, 2024). Therefore, a more targeted and sustainable strategic step is needed to expand social security coverage, especially for vulnerable working groups. Synergy between the government and BPJS Ketenagakerjaan is important to increase public awareness of social security and expand protection for all workers. By creating a safe work environment and protecting workers' rights, it can support workforce welfare and sustainable national development.

CONCLUSION

Occupational health protection for women workers who are traditional cloth craftsmen in the informal sector of Sidemen Village, Karangasem, is still at a low level as shown by the lack of understanding of occupational safety and health (K3) aspects, the availability and use of personal protective equipment (PPE) which is still low, and limited access to social security such as BPJS Ketenagakerjaan. This condition reflects the weak employment protection system which is exacerbated by a lack of education, lack of attention to the K3 aspect, and the lack of optimal coverage of social security programs. Low awareness of the importance of social protection and weak supervision make workers vulnerable to the risk of accidents and occupational diseases. Therefore, strategic steps are needed through synergy between the government and BPJS Ketenagakerjaan in improving education, expanding the scope of protection, and strengthening the quality of occupational health for women workers in the informal sector. Women workers in the informal sector, especially traditional fabric artisans, are advised to be more proactive in increasing their understanding of work risks and the importance of social protection through participation in socialization and encouraging the creation of a work culture that prioritizes the K3 aspect. For employers, it is expected to start implementing the principles of K3 gradually and create a safe work environment through improving work facilities and reducing hazardous sources such as noise and waste management. From the government and BPJS Ketenagakerjaan, it is necessary to strengthen supervision and regulation of the implementation of K3 in the informal sector and increase active socialization about the benefits of social security programs to informal sector workers, especially women, which includes contribution schemes and administrative procedures so as to increase the coverage of membership.

REFERENCES

Akhter, S., Salahuddin, A., Iqbal, M., Malek, A., & Jahan, N. (2018). Health and Occupational Safety For Female Workforce of Garment Industries in Bangladesh. Transaction of the Mech. Eng. Div, 41(1).

Awaluddin, Mawaddah Syafitri, N., Rum Rahim, M., Thamrin, Y., Rachmat, M., Ansar, J., & Muhammad, L. (2019). Hubungan Beban Kerja dan Sikap Kerja Dengan Keluhan Low Back Pain Pada Pekerja Rumah Jahit Akhwat Makasar. JKMM, 2(1).

Banunu, M., Oga, Y. P., Tokan, M. B., Mauguru, S. B., Ruli, L. P., & Roga, A. U. (2024). Penerapan Keselamatan dan Kesehatan Kerja Dengan Metode HIRARC Pada Pekerja Informal di Pabrik Tahu Oebufu, Kota Kupang Nusa Tenggara Timur. Jurnal Abdi Insani, 11(4), 2496–2506. https://doi.org/10.29303/abdiinsani.v11i4.2147

Berliana, I. D. A. T., & Purbadharmaja, I. B. P. (2018). Determinan Pendapatan Perajin Tenun Songket di Kecamatan Sidemen Kabupaten Karangasem. E-Jurnal EP Unud, 7(12).

Bolghanabadi, S., Haghighi, A., & Jahangiri, M. (2024). Insights into Women's Occupational Health and Safety: A Decade in Review of Primary Data Studies. In Safety (Vol. 10, Issue 2). Multidisciplinary Digital Publishing Institute (MDPI). https://doi.org/10.3390/safety10020047

BPJS Ketenagakerjaan. (2023). Laporan Tahunan Terintegrasi : Pengayaan Pengalaman Peserta Untuk Pertumbuhan Berkelanjutan.

Chotimah, N. (2022). Peran Perempuan Pengerajin Tenun Ikat Dalam Meningkatkan Pendapatan Keluarga Desa Kajowair. FIRM Journal of Management Studies, 7(1), 11. https://doi.org/10.33021/firm.v7i1.1569

Dewi, R. P. (2024). Pelatihan Keselamatan dan Kesehatan Kerja Pada Pekerja di Industri Batu Bata. Abdi Wiralodra : Jurnal Pengabdian Kepada Masyarakat, 6(1). https://doi.org/10.31943/abdi.v6i1.153

Indrawanti, A., & Pradhanawati, A. (2019). Peran Ganda dan Fleksibilitas Jam Kerja Terhadap Produktivitas Kerja Buruh Perempuan Pada UKM Konveksi Batik Semarang 16. Jurnal Ilmu Administrasi Bisnis, 8(4). https://www.thebalancecareers.com/advantages-and-disadvantages-of-flexible-work-

Indriyanti, L. H., Kurnia Wangi, P., & Simanjuntak, K. (2019). Hubungan Paparan Kebisingan terhadap Peningkatan Tekanan Darah pada Pekerja. Jurnal Kedokteran Dan Kesehatan, 15(1). https://jurnal.umj.ac.id/index.php/JKK

Irianingtyas, R., Dwiyanti, E., & Prahadinata, A. (2022). Evaluation of the Occupational Health and Safety Work Environment at PT. Japfa Comfeed Indonesia Tbk. Gedangan–Sidoarjo Unit. *The Indonesian Journal of Occupational Safety and Health*, *11*(3), 354–366.

Jufri, S. N., & Sabar, W. (2021). Decision of Informal Workers in Ownership of Employment BPJS Insurance in Makassar City. Bulletin of Economic Studies (BEST), 1(2). https://doi.org/10.24252/best.v1i2.24125

Ko Ko, T., Dickson-Gomez, J., Yasmeen, G., Han, W. W., Quinn, K., Beyer, K., & Glasman, L. (2020). Informal Workplaces and Their Comparative Effects on The Health of Street Vendors and Home-Based Garment Workers in Yangon, Myanmar: A Qualitative Study. BMC Public Health, 20(1). https://doi.org/10.1186/s12889-020-08624-6

Mandaha, H., Setyobudi, A., Ch Berek, N., & Kesehatan Lingkungan dan Kesehatan Kerja, B. (2022). Gambaran Faktor Risiko Keluhan Muskuloskeletal Pada Pengrajin Tenun Motif Sumba di Desa Rindi Kabupaten Sumba Timur. Media Kesehatan Masyarakat, 4(1), 115–121. https://doi.org/10.35508/mkm

Maulana, A. N., Purwaningrum, F., Thabrany, H., Fitrianti, Y., & Tri Hartini, F. (2022). Mengukur Kemampuan Mengiur untuk Jaminan Kesehatan Nasional (JKN) tahun 2021 di Indonesia. Jurnal Jaminan Kesehatan Nasional, 2(1). https://doi.org/10.53756/jjkn.v2i1.51

Maycfana Djamaluddin, N., Suriah, S., Wahyu, A., Russeng, S. S., Muhammad Saleh, L., & Salam, A. (2024). The Effect of Noise and Pulse Rate on Blood Pressure Through Work Fatigue as an Intervening Variable in PT. Indonesian Ship Industry (PERSERO) Makassar. In Journal of Chemical Health Risks www.jchr.org JCHR (Vol. 14, Issue 4). www.jchr.org

N. Lalitha, & Ghatak, A. (2015). Occupational Health Among Workers in the Informal Sector in India. Gujarat Institute of Development Research.

Nugraha, T. C. L., Setiawan, M. C. A., & Putri, S. Y. (2023). Dampak Strategi Offshore Outsourcing Dalam Bisnis Fast Fashion Terhadap Degradasi Lingkungan di Bangladesh. Journal of Political Issues, 5(1), 110–123. https://doi.org/10.33019/jpi.v5i1.132

Nurul Fitri Qur'ani, W. (2020). Program Upaya Kesehatan Kerja pada Sektor Informal. HIGEIA JOURNAL OF PUBLIC HEALTH RESEARCH AND DEVELOPMENT , 4(1). https://doi.org/10.15294/higeia.v4iSpecial%201/35737

Prabaswari, A. D., Maulda, M., & Sari, A. D. (2017). Analisis Resiko Keselamatan dan Kesehatan Kerja pada Pekerja Bagian Pengemasan Minipack Menggunakan Metode Job Safety Analysis (JSA) pada CV. XYZ. Jurnal Ergonomi Dan K3, 2(1), 27–34. https://doi.org/10.5614/j.ergo.2017.2.1.3

Putra, I. P. A. P. (2025). Perempuan dan Ketenagakerjaan: Fenomenologi Pengalaman Hidup Penenun Endek di Bali. Indonesian Gender and Society Journal, 5(2). https://doi.org/10.23887/igsj.v5i2.89779

Putri Pratiwi, A., & Diah, T. T. (2022). Faktor-Faktor Yang Berhubungan Dengan Keluhan Carpal Tunnel Syndrom Pada Pekerja Informal. In JUKEKE (Vol. 1, Issue 3).

Roudlotull Jannah, F., & Sunaryo, M. (2021). Analisis Kejadian Musculoskeletal Disorders Menggunakan Nordic Body Map Pada Industri Sarung Tenun Ikat Desa Parengan Kabupaten Lamongan. JIMKesmas Jurnal Ilmiah Mahasiswa Kesehatan Masyarakat, 6(4), 2502–2731. https://doi.org/10.37887/jimkesmas

S, W. N., & Ferijani, A. (2019). Deskripsi Pelaksanaan Kesehatan Dan Keselamatan Kerja (K3) Di Perusahaan Panca Jaya. JEMAP: Jurnal Ekonomi, Manajemen, Akuntansi, Dan Perpajakan, 2(2).

Saputra, R., & Ramberson, R. (2023). Hubungan Penggunaan Alat Pelindung Diri Dengan Kecelakaan Kerja Pada PEengrajin Kayu di Kecamatan Rumbai Timur Kota Pekanbaru Riau Tahun 2023. Jurnal Keperawatan Abdurrab, 07(01).

Satarudin, Suprianto, & Sujadi. (2021). Survey Pekerja Sektor informal Dan Sektor Formal Era Revolusi Industri di Kota Mataram. Ekonobis, 7(2). http://www.ekonobis.unram.ac.id

Satriawan, D., Pitoyo, A. J., & Giyarsih, S. R. (2021a). Faktor-faktor yang Memengaruhi Kepemilikan Jaminan Kesehatan Pekerja Sektor Informal di Indonesia. TATALOKA, 23(2), 263–280. https://doi.org/10.14710/tataloka.23.2.263-280

Satriawan, D., Pitoyo, A. J., & Giyarsih, S. R. (2021b). Faktor-faktor yang Memengaruhi Kepemilikan Jaminan Kesehatan Pekerja Sektor Informal di Indonesia. TATALOKA, 23(2), 263–280. https://doi.org/10.14710/tataloka.23.2.263-280

Seme, J. S. A., Jacob M Ratu, & Soleman Landi. (2023). Analisis Kualitas Kesehatan Kerja dan Pengaruhnya pada Produktivitas Pengrajin Tenun Ikat Tradisional di Dusun Fopo Kelurahan Onatali Kecamatan Rote Tengah Kabupaten Rote Ndao. SEHATMAS: Jurnal Ilmiah Kesehatan Masyarakat, 2(3), 692–699. https://doi.org/10.55123/sehatmas.v2i3.2061

Setyaji, R. B., Wijayanto, D. S., & Saputra, T. W. (2019). Analisis Pentingnya Kesadaran Keselamatan Dan Kesehatan Kerja (K3) Di Perusahaan Tekstil. NOZEL Jurnal Pendidikan Teknik Mesin, 1(1).

Sholikin, A. (2024). “Social Security” bagi Tenaga Kerja Informal pada Sektor Industri Ekstraktif di Bojonegoro. MADANI:Jurnal Politik Dan Sosial Kemasyarakatan , 16(2).

Sitanggang, A., Shelomita, R., Lituhayu, J., Widya, D., & Sitanggang, A. : (2025). Pelaksanaan BPJS Ketenagakerjaan Sebagai Perlindungan Hukum Terhadap Tenaga Kerja. Journal of Multidisciplinary Inquiry in Science Technology and Educational Research, 2(1b), 1311–1317. https://doi.org/10.32672/mister.v2i1b.2668

Sofiani, T. (2017). Perlindungan Hukum Pekerja Perempuan Sektor Informal. Muwazah, 9(2).

Sunaryani, R. P., Sunaryo, M., Ayu, F., Nurani, I. T., Sugiantoro, & Reynaldi, I. A. (2024). Peningkatan Kesadaran Dan Gambaran Pengetahuan Pekerja Mengenai Pentingnya Pengunaan APD Dalam Upaya Mencegah Risiko Kesehatan Dan Keselamatan Pada Pekerja UD. Radalla Collection. Jurnal Pengabdian Kepada Masyarakat Nusantara (JPKMN), 5(3).

Susiana, S. (2017). Perlindungan Hak Pekerja Perempuan Dalam Perspektif Feminisme. Aspirasi, 8(2).

Thomas Asare, A. O., Ibrahim, A. F., & Obeng Nyarko, M. (2019). Occupational Health and Safety Status of Workers in The Garment Industry in Ghana. FTR, 1.

Warseno, A., & Ediyono, S. (2022). Analisis Pemenuhan layanan Kesehatan pada Pengrajin Batik melalui Pos Upaya Kesehatan Kerja. Jurnal Indonesia Sehat, 1(3).

Zahra, S. F., & Prastawa, H. (2023). Analisis Keluhan Musculoskeletal Menggunakan Metode Nordic Body Map (Studi Kasus: Pekerja Area Muat PT Charoen Pokphand Indonesia Semarang). Industrial Engineering Online Journal, 12(2).