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Compliance of the Use of Personal Protective Equipment for Workers

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***Abstract*—The obligation to use personal protective equipment (PPE) for workers is regulated in the Regulation of the Minister of Manpower and Transmigration No. 08/Men/VII/2010. Ship crew accidents include slipping, falling into the sea, hitting the wall of the ship and being shocked by electricity. Health problems at work are: cough, fever, dizziness and nausea and vomiting. Workers use PPE when there is supervision. Employee compliance is still a job rule rather than workers' needs and awareness for work safety. The purpose of this study is to uncover the obedience of ship crew in using PPE, as well as the role of officers at the port health office. The research used a descriptive qualitative approach. The data was collected through interview and observation. Research findings: PPE was provided by the ship management and was not standardized yet with complete equipment, such as masks, safety shoes, helmets, light jackets, and glasses. Workers used PPE while working because of the supervision carried out by the ship's supervisor. Supervision was carried out by 3 officers as a form of responsibility for ship safety. Workers' perception of accidents was that accidents occurred under God's will and one should accept every accident that occurred. Health workers from the Port Health Office carried out their roles and responsibilities in terms of work facilitation and health advocacy at the port. It is recommended that ship managers increase awareness of workers in using personal protective equipment, provide guidance before work, conduct prayer together, give awards, and generate spiritual motivation in workers.**

Keywords: compliance, crew, personal protective equipment, supervision, workers' awareness

I. INTRODUCTION

Working at sea, such as in fishing boats, passenger ships, and freight carriers, has a greater tendency to be hazardous than working on land. Poor weather conditions are the cause of accidents at sea. Moreover, the number of passengers that exceeds capacity, the availability of standard personal protective equipment and the fact that not many ship workers use Personal Protective Equipment (PPE) are other factors that contribute to accidents. In addition to accidents, ship workers also have the potential to experience work sickness and illness. This could be seen from observations made at the XYZ ship research site. The ship was loaded with goods and food items that were stored closely with each other, such as corn, cement and urea fertilizer. The ship's room was dark (with minimum lighting), damp and cold. In addition, the ship workers did not use personal protective equipment while sailing onboard. The boat crew traveled at sea for a very long time, i.e. 3 weeks - 1 month. Health complaints made by the workers included injury due to hitting the wall/door of the ship, slipping, falling, dizziness, nausea and vomiting, and fever.

The government has made regulations regarding the protection of workers to work safely and comfortably. The regulation is regulated in Regulation of the Minister of Manpower and Transmigration Number 08/Men/VII/2010 which states that workers and everyone in a workplace must use personal protective equipment in accordance with the risk of hazards in the workplace [1]. The accident of the Sinar Bangun passenger ship in Simalungun Regency, North Sumatra Province, resulted in 188 victims with 3 people found dead, 21 injured survivors, and 164 missing people (Kompas, 2018). The number of passenger seats available was 60 seats, but the life jacket available was only 9 sets [2]. The lack of workers who used PPE had been investigated previously by Riantoro (2017) in workers working at carrying fish carriers in Pelabuhan Ratu, West Java. Based on observations in the field, there were no officers who used PPE. The number of passengers that exceeded the capacity, the narrow vessel, and the unavailability of PPE made it possible for accidents to happen to passengers [3]. The territory of Indonesia is mostly waters, so that the waters are used as a means of transportation with 77% of transportation is made at sea [4]. The cause of work accidents onboard was revealed by researchers before by using qualitative design. It was found that accidents that occurred on the boat, among others, were mostly due to falling while cleaning the ship and this happened due to the negligence of workers. Other cases were beig exposed to sparks when welding due to not using the hood and hand weld and being exposed to rust when chipping because of not using safety goggles [5]. The last two data show that accidents occurred because the workers did not use PPE. The study explained that the availability of PPE on the boat needed to be in accordance with the number of crew on board. However, in reality, the crew did not use PPE because they were restrained by the equipment while working, according to them.

Although the obligation to use PPE applies to all workers on land and at sea, land and sea workers do not comply with this regulation. The following data describes land workers who do not comply with PPE. Previous quantitative research found that the use of personal protective equipment for construction workers was low (15.5%) in Uganda. This condition resulted in increased cases of injury and workplace accidents. Factors related to the use of PPE for construction workers were gender (women used PPE with p-value = 0.001), form of work (not fixed with p-value = 0.005), and prior knowledge of work safety (p-value = 0.001) [6]. This study focused on observing the use of PPE

for crew members, which was different from previous studies: the study revealed the causes of non-compliant phenomena in using PPE so that solutions could be made and provided to improve the compliance of ship crew members in using PPE. There was no variable included in this study that was predicted to be the cause of worker non-compliance in using PPE. The findings of data from key informants were reasons that were considered to be the cause of the phenomenon were revealed. There has been no previous qualitative research revealing the phenomenon of compliance in using PPE, especially in ship crew workers. The assumption of the study was that the awareness of the crew was low and non-compliant was related to the perceptions of the crew on safety and health in the workplace. The purpose of this study is to reveal the compliance of crew members in using PPE, as well as the roles of officers at the port health office.

II. METHOD

The study is a qualitative study with a descriptive approach. The research informants were the crew members of the ship found in the Port Area with a total of 10 people as the main informants and 2 health personnels at the Port Health Office as the supporting informants . The study was conducted in December 2018 - April 2019. The data collection was carried out through two interview and observation. The validity of the information was tested by triangulating data sources and exploring the truth of research data information with various data sources. This was done to obtain correct information from various documents, namely interviews, observations and written documents in the form of records from the port health office. The data analysis was done by data reduction, presentation, and conclusion.

III. RESULTS

PPE was provided by the ship manager. Based on the observations, the available PPE included such as masks, safety shoes, helmets, light jackets, and glasses. Workers only briefly used personal protective equipment when working, then took it off. Based on the results of interviews, they used PPE because of the supervision. It means that the awareness of workers to comply with the rules and their awareness of the dangers and risks of occupational diseases were still low. Workers considered that as long as they worked there would be no problem. They understood that the risk of working on ships was greated than that on land.

A. Characteristics of informants

Compliance is influenced by one's background, so it is necessary to describe the characteristics of research informants, such as age and tenure. The following figure shows the characteristics of the key informants of the crew. The data was collected from 10 main informants and 2 supporting informants.

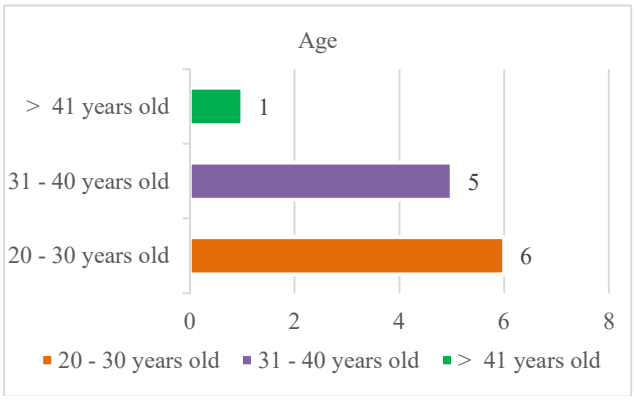

Fig. 1. The majority of informants were aged 20-30 years old amounting to 6 people and aged 31 - 40 amounting to 5 people. These five people were divided into 3 main informants and 2 supporting informants. The main informants were the crew and the supporting informants were port office health employees.

B. Main Informant Tenure

The following chart represents the data on the ten main informants' tenure:

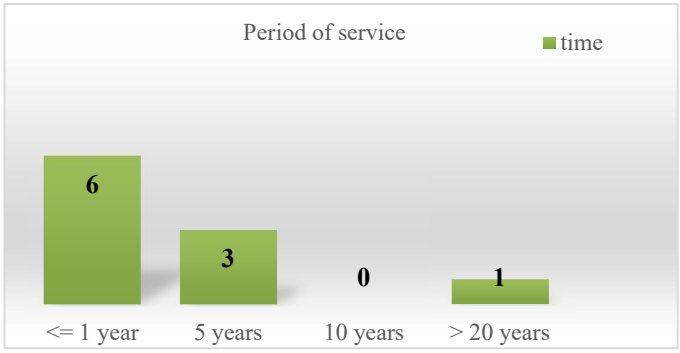

Fig. 2. The majority of the main informants had a work period of 1 year or less than 1 year with as many as 6 informants, and there was only one informant who had a work period of more than 20 years.

C. Main Informant Health Examination

The following chart represents the data on the main informants who had carried out medical check-up in the last 6 months - 1 year:

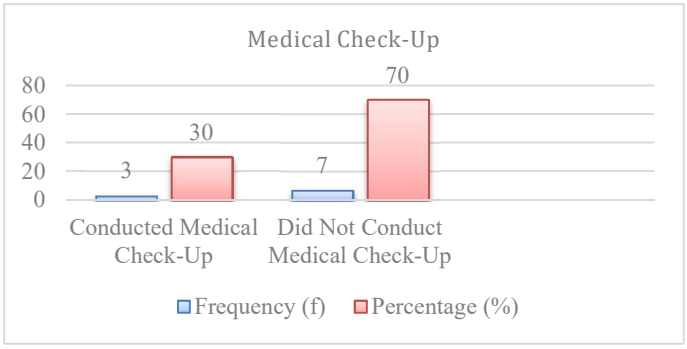

Fig. 3. From the table, it can be seen that the majority of the main informants did not carry out periodic medical check-up with a total of 7 people (70%). Only 3 people (30%) did a medical check-up.

D. Results of compliance interviews in using PPE and the roles of Port Health Office Officers

The main informants explained that PPE was available, and was provided by the ship's manager. However, each time they worked, they would board a ship then would just do their job.

Informant 1: "Safety equipment is already on board, but we do not use it when working. It is not comfortable to use a life jacket, Ma'am."
Informant 2: "I used it Ma'am, but then it I took it off because I was not free to move. Then, afterwards, I would use it again because I was watched by the supervisor."
Informant 3: "I use it, Ma'am, just for a minute. If there is no supervision, I will take it off ."
Informant 4: "Sometimes I use it Ma'am ... I am afraid to be scolded by the supervisor if I don't use it. But sometimes, because it is uncomfortable when working, I take it off again".
Informant 5: "It is more convenient not to use the equipment, Ma'am. We are free to work. Sometimes we are reminded to use it by the supervisor, Ma'am."

The conclusion of the five main informants is that they used PPE but took it off again later on because it was uncomfortable and they were not free to work. the informants also explained that the use of PPE was monitored and forced. Supervision was still carried out by the person in charge of the ship. Five other main informants stated that they used PPE only if they were supervised by the supervisor. The informants who were still working under 1 year stated that the accidents and human destiny were of God's will. So far, they had never experienced problems while working. Based on interviews with 10 main informants, only 2 people had health complaints in the past 6 months - 1 year. Health complaints that they made were flu and cough, and they would recover in 1-2 weeks. There were no severe health complaints. The informants said that there was no need to do an examination because there were no serious problems with their health. The health officers of the port health office carried out inspections on the ship to find out about the health of the ship's workers. The examination that was carried out included: measurement of blood pressure, the checking of the work environment on the ship, such as boat cleanliness and health interviews. Officers at the port health office also told the crew members to carry out routine medical check-up when they were on land.

IV. DISCUSSION

The majority of the informants were aged 20-30 years old. This age belongs to young adulthood. From their tenure, the majority of them had been working for less than 1 year. This means that the crew of the ship just started working and did not have much experience working on the ship. Young age is the time when someone likes adventure and challenges; one wants to get experience but is lacking of good judgment. Awareness of the importance of using PPE during work was still low since they assumed that one's safety is determined by fate. Previous research revealed that accident incidents experienced by workers occurred due to human error where workers paid less attention and did not prioritize safety. This is related to human factors [5].

In accordance with the findings of the study that the informants had worked for under 1 year, they still had a little experience causing them not to be aware of the risks of occupational hazards. Ideally, every worker needs to understand the risks at work, and employers must provide an explanation of the risks of hazards at work According to Riantoro et al., (2017) the risk of accidents is influenced by certain job characteristics; if one works in a transport ship, competencies related to safety on board are needed for him/ her. The competencies include knowledge and skills in safety and health on board (3). The Occupational Safety and Health Administration (OSHA) proposes guidelines for workers to understand: 1) Understanding the types of PPE, 2) Having basic understanding and knowledge of hazards in the workplace, 3) Choosing the PPE, and 4) Understanding the type of training needed [7].

A person's working period affects the experience gained. The longer the work is, the more experience someone will gain in order to understand the work situation more. Then, it can be assumed that the more professional one does work, the more skilled and proficient he/ she is. According to Afifah et al., (2018) there is a positive and significant relationship between years of service and job management. Correlation value obtained was (r = 0.653) with a significant value (p-value = 0,000134). The work experience of informants which was still low about occupational safety and health might be related to the fact that they only used PPE for a short period of time and then took it off again. The awareness of informants about occupational safety and health as a priority was still low because they had not been experienced and they were young people who did not have maturity and wisdom in dealing with work situations. On the other hand, young people also like challenges, so they considered using PPE would only restrain them from work freedom. The informant's perception of workplace accidents was not appropriate so it needed to be improved. Minimum work experience affects one's maturity and knowledge. Awareness of safety is influenced by their perceptions and experiences. This assumption in accordance with the results of previous studies conducted on fishing fishermen workers who did not give a positive response to safety on board when sailing on the sea, so fishermen did not consider it necessary to use PPE. Based on observations, there were no fishermen who had PPE. This was due to lack of information and ignorance of the fishermen (3). According to Bandori et. al (2018) compliance of PT. PAL in using PPE was determined by worker knowledge factor with a p-value of 0.003 and supervision with a p-value of 0.04. Workers violated the rules if supervision was not carried out [8.9].

Research related to the use of PPE on ship workers was also carried out by Sulaiman (2018) who explained that the crew members were found to obey more with 66.67% compared to those who were non-compliant with 33.33%. This shows that government regulations requiring all workers to use PPE is needed. Safety management in the sea needs to be improved. Fishing workers in the Port are more prone to accidents due to human error [10]. Stikersen et al. (2017) describe that sea safety management is very important so that the application of regulations can to be monitored and evaluated. The results of monitoring these regulations are useful for preventing various types of accidents. The

findings of his research show that regulation functions as a standard to improve safety in a work organization. Regulations and management of marine transportation safety effectively prevent accidents in ship workers. The frequency of work accident cases will decrease after good workplace management is applied [11]. Some concepts state that the incidence of work accidents is due to human factors, equipment (machinery) and the environment. Potential hazards can be sourced from work equipment. In line with Suganda's opinion (2014), because equipment can cause harm to workers and engineering control cannot be done, it is best to use PPE properly and correctly [12,13].

V. CONCLUSION

Workers used PPE while working because routine supervision was carried out by the person in charge of the ship. It is necessary to increase the awareness of workers in using PPE so that it becomes a necessity for workers by implementing a system of rewards and punishments, as well as a cooperation with the person in charge of ships and health workers at the Port Health Office.

This study provides recommendations to ship managers in the form of an interpersonal approach to the crew, through the improvement of work mechanisms and reward systems. The workplace needs to provide briefing before working that is led by the person in charge of the ship. The briefing needs to begin with a prayer together on the ship to provide spiritual motivation to the workers.

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