



Unsafe Condition and Unsafe Action Risk Control Efforts for Medical Equipment Repair Workers at the Haji General Hospital Medan

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<p>Track Record Article Accepted : 10 December 2022 Publication: 20 December 2022</p>	<p style="text-align: center;">Abstract</p> <p>Medical device repair workers have a potential risk of work accidents due to unsafe actions and unsafe conditions when repairing medical devices which can endanger and eliminate their work. The purpose of this study is to know unsafe actions and unsafe conditions for medical technicians and efforts to control the risk of harm due to unsafe conditions and unsafe conditions. This study uses a qualitative method with an observational approach using loss studies. This research was conducted for 1 month at the Medan Hajj General Hospital in the Social Sciences Room of the Hospital from January 16 to February 16 2023. Data collection was through secondary data and interviews. Sampling in research with Purposive Sampling. The number of samples was 4 informants, namely the main informants, and 3 informants (medical device technicians). Workers work in standard time, namely 8 hours/day with 1 hour break. In the work environment, informants stated that the work environment was very good and friendly, mutually supportive. In the workplace, cleaning, cleaning and tagging are reduced, so that the workplace is potentially hazardous to workers. The behavior of workers in carrying out their work, the SOP of workers has carried out well, but the use of PPE workers has not implemented it, and resulted in workers being stabbed by tool bolts, electrocuted, and burned while doing work which if allowed to continue will be fatal which will harm workers and hospital.</p> <p>Keywords: <i>Unsafe Action ;Unsafe Condition; Potential Risk; Work Accidents.</i></p>
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INTRODUCTION

Hospitals are healthcare institutions that provide comprehensive individual health services, including inpatient, outpatient, and emergency care (Saifullah, 2019). There are many human activities in the hospital environment, starting with patients, patient caregivers, nurses, and other workers; hospital workers are nurses, doctors, and medical equipment repair workers. Medical equipment repair workers / medical technicians are part of the hospital that must be protected; the safety and health of workers are the hospital's responsibility. Occupational Safety and Health is supervising humans, machines, materials, and methods that include the work environment so that workers are not injured (Yusril, 2020).

Occupational safety and health indicators include three (three) indicators: work environment, humans (employees), and work tools and machinery (Pratama, 2015).

Some unsafe actions or mistakes from health workers that result in injury are working not under occupational health management standards and safety procedures (Putra, 2020), not using PPE (personal protective equipment) such as gloves, rushing when working so as not to pay attention to the caution, which leads to injuries such as slipping, being cut, and even bumping into several items, misplacing or disposing of used syringes, and using unskilled health workers (Mapanawang, 2017). As for unsafe conditions, such as the unavailability of puncture-resistant sharp waste disposal sites (Istih, 2017), the availability of PPE runs out quickly, so re-supply is sometimes too late to do. These factors directly influence the incidence of injuries and near misses, becoming a proximal cause of work accidents .

According to ILO data, every year, there are more than 250 million accidents in the workplace, and more than 160 million workers suffer from diseases due to hazards in the workplace. In addition, 1.2 million workers die from accidents or illnesses at work (Sovira, 2015). Accident data in Indonesia based on the Social Security Agency of Health (BPJS) Employment Report from 2017 until August showed 80,392 accident cases. Heinrich's domino theory says that unsafe actions cause 88% of accidents and unsafe conditions cause 10%. Then, according to statistics from Indonesia, 80% of accidents are caused by unsafe actions, and unsafe conditions cause 20% (Primadianto, 2018).

Accidents that occur in the workplace are generally caused by two things, namely, human actions that do not meet safety requirements (unsafe action) and unsafe work environment conditions (unsafe condition) (Suma'mur, 2018). According to Heinrich's research, it was found that 88% of accidents that occurred in the work environment were caused by unsafe actions of humans (unsafe action), 10% were caused by unsafe work environment conditions (unsafe condition), and 2% were caused by God's destiny (Salim, 2019).

Unsafe actions, consciously and unconsciously carried out by workers, harm the hospital and the workers themselves (Bijani, 2018); (Putri, 2015). One example of the impact of unsafe actions that are detrimental to workers is the sanction of violating the rules set by the hospital and being exposed to potential hazards (Larasatie, 2022).

Unsafe attitudes and actions, lack of knowledge and skills, invisible body defects, fatigue, and lethargy are the definitions of unsafe actions. In contrast, unsafe conditions are defined as unsuitable protective equipment and work clothes, hazardous materials, lack of ventilation and irradiation, and unsafe and ineffective tools or machines (Rafiq, 2015). For

this reason, researchers conducted this study to determine workers' unsafe actions and unsafe behavior that resulted in work accidents and risk control due to unsafe actions and unsafe behavior (Kanmali, 2015); (Salim, 2019).

METHOD

This research is based on a case study and uses a qualitative method that involves observation and a study of unsafe acts and conditions that were recorded. This research was conducted for one month at the Haji General Hospital in Medan in the Hospital IPS Room. Data collection through secondary data and interviews regarding risk control efforts for unsafe acts and unsafe conditions workers have experienced as medical device repair workers / medical technicians. Sampling in this study was carried out by purposive sampling. Purposive sampling is the selection of a sample member according to the judgment of the sample researcher as to who is best to be sampled in his research. This study used interview instruments and conducted interviews related to working hours and rest hours, the work environment, worker behavior, and standard operating procedures; the number of samples used was four: the main informant and three informants (medical device technicians) who were workers at risk of unsafe action and unsafe condition. The main informant is experienced and the head of the hospital's IPS. Data analysis using Triangulation is a triangulation technique that is a way to check the reliability of data by comparing the results of interviews to the thing being studied.

RESULT

Table 1 Characteristics of Informants Workers at the Haji General Hospital Medan

Characteristics	Informant 1	Informant 2	Informant 3	Informant 4
Name	RNS	GRY	RKY	BRA
Gender	Male	Male	Male	Male
Profession	Head of Tool Repair	Medical Device Technician	Medical Device Technician	Medical Device Technician
Age	30	32	33	30
Education	D3	D3	D3	D3
Period of Employment	9	3	3	4

Researchers talked to informants to find out who they were based on their gender, age, education level, and service length. It was found that tool repair workers / medical

technicians were mostly men with an average age of 30; the last educational attainment was a diploma, and the working period was three to nine years.

Tabel 2 Informant Characteristics Based on Work Environment, Workplace, Behaviour

Karakteristik	Informan	Pernyataan
Work Environment	Informan 1	Based on the results of the observations made, it was found that the environmental conditions were good because the social environment was friendly and did not discriminate between one another, all workers were equalized, and mutual care and good brotherhood at work; they had superiors who cared about workers, listened to and received input from workers. Based on the statements of 1–4 informants:
	Informan 4	In our work, we help and remind each other so that there are no mistakes in making friends, everyone is happy together, and our superiors have never reprimanded us because we always work according to procedures. The services provided by our superiors are always good to us.
Workplace	Informan 2	Based on the results of observations carried out directly, it is found that the workplace has the potential to cause work accidents, because the workspace is not neatly arranged with medical devices in the room, medical devices are arranged on top of a medical device cabinet that is crowded and irregular which has the potential to cause the tool to fall down. Based on informant 2's statement:
		Markers of damaged tools and undamaged tools are differentiated with damaged tools placed at the back and undamaged tools placed in front, the location of the tool is also according to storage if the tool whose storage is specifically placed in the warehouse has an ac. The workplace is not maintained and has the potential for dust, because the room is not always cleaned coupled with a large number of medical devices resulting in narrow space for workers which can result in potential damage to medical devices because the tools are put together crammed and overwritten.
Behaviour	Informan 2	Based on the statements from informants 1-4 Informants, it is found that the use of PPE and the use of PPE on workers cannot be fully used because the PPE provided does not function properly and hinders the work that must be done. The use of PPE is the final stage used in controlling the risk of work hazards, the use of PPE can reduce the impact of work accidents. Based on informant 2's statement regarding PPE: If the PPE that we use when unloading this tool is only using Handscoon, but because the handscoon is easily torn, and slippery when it gets on the oil so we don't use it, because the same thing is used also torn by the same pinch.
	Informan 3	The most common unsafe behaviour among workers is when repairing tools that come into contact with electricity, such as electric shocks and fire. Informant 3's statement: When repairing tools related to electricity, you can get shocked and many have, if you hold a soldering iron, you can get burned. It is also when repairing tools with large bolts that they are often punctured because the bolts are large and sharp.

DISCUSSION

Unsafe actions are actions that violate/do not comply with safe work standards so that they have the opportunity to cause work accidents, such as working at the wrong speed, using work tools in the wrong way, failing to wear the correct Personal Protective Equipment (PPE), repairing equipment when the tool is in operation, joking in the workplace, and so on. Unsafe actions can occur due to internal factors, such as unsafe attitudes and behaviors, a lack of knowledge and skills, invisible body defects, and fatigue; personal factors are also a factor in developing unsafe behavior (Ernawati, 2016).

Medical device repair workers/medical technicians have the responsibility to repair medical devices, maintain medical devices, and perform medical device maintenance. Medical equipment plays an important role in organizing public health services (Widitia, 2020); (Etianopa, 2019). Health services must be supported by equipment that is always ready to use and in proper condition based on its function (Berek, 2019). If health and safety at work have been realized, it will have a good impact on increasing optimal work productivity to prevent and reduce accidents in the work environment (Ramadhany, 2019).

Workers repairing medical devices / medical technicians work without using PPE in the form of hand scoops because the PPE provided needs to function properly when used, follow work procedures, follow work safety regulations, and work carelessly (Kurniawan, 2018); (Siregar, 2020). Unsafe actions and unsafe conditions pose a risk of work accidents; based on the informant's statement, during the repair of the tool, he was electrocuted and burned; this unsafe behavior occurred due to the lack of workers obeying the rules that had been applied, but also based on observations made, PPE is only available in the form of Handscoon. Its function could be more functional because the rubber handscoon is easily torn and slippery when used (Sangaji, 2018).

Based on the results of interviews conducted with four related informants, unsafe behavior at work is promoted by not using PPE, the use of PPE is the last line of defense to prevent work accidents in workers; according to information from informants, the PPE used does not function properly for the repair of sharp and slippery medical equipment (Hardiyono, 2019). Unsafe action is an action that can endanger the worker himself or others and cause accidents that can be caused by various things such as not wearing PPE, not following work procedures, not following work safety regulations, and working carelessly;

For every 300 unsafe actions, there will be one accident that results in loss of working days (Setiarsih, 2017); (Widjasena, 2019).

The use of PPE is important to avoid the risk of harm that will occur; PPE must also be tailored to the needs of the job; the use of Handscoon in the repair of medical devices / medical technicians: Handscoon Rubber Gloves to protect hands when working or dealing with electricity; Handscoon Padded cloth gloves to protect hands from sharp and bumpy objects; Handscoon Head resistant gloves to protect hands from the heat of the fire; Metal mesh gloves protect hands from sharp objects and also provide prevention so that sharp objects do not cut hands.

Unsafe actions can occur because they are motivated by internal factors, such as unsafe attitudes and behavior, lack of knowledge and skills, invisible body defects, and fatigue. In addition, personal factors are also one of the factors that influence the formation of unsafe actions.

CONCLUSION

In interviews with four informants who are directly involved in the work, workers work in a standard time of 8 hours/day with a 1-hour break so that there is no fatigue at work which will result in work accidents due to unsafe conditions in the work environment; informants stated that the work environment is very good and friendly, mutually supportive, with superiors who always accept input, a low noise level environment, and good lighting. In the workplace, there needs to be more cleaning, preparation, and markers, so the workplace is potentially dangerous for workers because it has many medical devices that need to be neatly arranged, which can cause medical devices to fall, kick, or even be punctured. According to the SOP, workers' behavior in carrying out their work has been excellent. However, in the use of PPE, workers have not applied it, resulting in workers being punctured by bolts of tools, receiving an electric shock, and burns while doing work, which, if allowed to continue, will have fatal consequences to harm workers and hospitals.

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