

Investigasi Kecelakaan Kerja yang Berakibat pada Amputasi Jari Pekerja Manufaktur Logam

Occupational Accident Investigation Which Results in the Amputation of Metal Manufacturing Workers ' Fingers

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Abstrak

Setiap orang yang melakukan manual handling akan berisiko untuk mengalami cedera. Cedera bukan hanya disebabkan karena beban berat yang ditanganinya saja akan tetapi pekerjaan yang ringan namun dilakukan secara berulang pun dapat menimbulkan risiko cedera. Penelitian ini melakukan analisa terhadap penyebab terjadinya kecelakaan kerja pada manual handling yang berakibat pada diamputasinya ruas jari tangan pada pekerja manufaktur logam. Penelitian dilakukan secara kualitatif dengan studi kasus. Informan utama merupakan pekerja yang mengalami terjepit plat besi hingga cedera pada bagian tangan dan dilakukan amputasi. Informan pendukung merupakan petugas HSE pada industri tersebut. Analisa data melalui interactive model dengan validasi data menggunakan triangulasi sumber. Penyebab utama terjadinya kecelakaan kerja adalah karena gerakan yang dilakukan pada saat pengangkatan potongan plat besi yang dilakukan bersama dengan rekan kerjanya secara manual handling tidak terkoordinasi. Rekan informan mengangkat plat tanpa memberikan komando, sehingga posisi jari tangan informan utama terjepit. Cedera yang dialami oleh informan menjadi lebih parah karena potongan plat besi yang akan diangkat masih terdapat sisa potongan yang kasar dan tajam yang pada akhirnya dilakukan amputasi pada salah satu ruas jari tangan kanan.

Kata Kunci: Cedera akibat pekerjaan, kecelakaan kerja, investigasi kecelakaan kerja, pekerjaan manual, perilaku tidak aman

Abstract

Everyone who performs manual handling will be at risk for injury. Injuries are not only caused by the heavy burden that is handled but the light and repetitive work can pose a risk of injury. This research analyses the cause of the work accident on manual handling which resulted in the amputation of the fingers of the hand on the metal manufacturing workers. Research is done qualitatively with case studies. The main informant is a worker who has the iron plate clamping to the injury of the hand and amputation. The supporting informant is the HSE officer of the industry. Data analysis through interactive models with data validation using source triangulation. The main cause of the work accident is because of the movements performed at the time of removal of the piece of iron plates that were performed along with the co-worker manually handling were not coordinated. His fellow informant lifts the plate without giving command, so that the finger position of the main informant is pinned. The injuries experienced by the informant are more severe because the pieces of iron plates that will be lifted are still contained the remaining rough and sharp pieces that are eventually amputated on one of the right hand fingers.

Keywords: occupational accident; occupational accident investigation; occupational injury; manual handling; unsafe act

INTRODUCTION

Manual handling includes a wide range of activities such as lifting, pulling, carrying, etc., even including packing activities, assembling, operation of the machine, and so on (1). Everyone who performs manual handling has the risk of injury, even when handling objects with a mild burden even if the work is done repeatedly, it will still be risky to suffer injuries (2). In fact, mistakes in lifting can lead to permanent injury (3).

Injuries caused by manual handling are a cost-depleted injury. The report of the injury annually almost occurs in one-third of all workdays, which includes injuries caused by lifting weights by hand or other body parts. The work accident caused by manual handling largely resulted in an average back injury even resulted in the worker having a 17-day work leave. Even in some cases, injuries inflicted on victims are permanent (4). As many as 28% of injuries to employees in Victoria are caused by manual handling (1).

Every worker who performs manual handling should understand the characteristics of the material, the characteristics of his work, the characteristics of the environment, and the characteristics of the worker itself. If these characteristics can be well understood by each worker, it can reduce potential injuries arising from manual handling (2) (5). The risk of injury from manual handling can occur in all sectors of the work, but the manufacturing, health, agriculture, and construction sectors are the industry with a high risk of injury. Therefore, the research tried to analyze the cause of the work accident due to manual handling which resulted in the amputation of the fingers of the hand on the metal manufacturing workers. Through this research is expected to cause accidents can be known so that preventive measures can be done, so that a similar accident does not happen again (2).

METHOD

This research is a type of qualitative research with case study design. The selection of samples in this study used purposive sampling. The main informant was

chosen based on the researchers' consideration of injuries inflicted by accidents that resulted in a work accident resulting in an amputated section of the hands of the informant. The supporting informant in this research is the HSE officer in the company collection is done through in-depth interviews with primary informant and supporting informant. Questions are arranged in interview guidelines and the interview results are documented in the voice recorder. The results of the record are created in the data transcription first for further analysis. Analyze the data done in this diffuser using the interactive model. Data retrieval is conducted through in-depth interviews on primary informant and supporting informant. The Data in this study was taken through the ductility time method. Data validation in this study uses source triangulation.

RESULT

The main informant of this research is a worker in the construction section in one of the metal manufacturing industries. 43-year-old informant, male gender, and has been working for the company for 15 years. The accident occurred during the overtime work on Sunday, at 10.00 about 6 years ago. At that time, the informant was lifting a steel plate of 800mm x 800mm and a thickness of 80 mm weighing about 10kg which would later be assembled according to the predefined pattern.

The informant lifts the iron plates manually with a co-worker. However, the iron plate is removed simultaneously when the informant is not ready. When his co-worker raises one side of the iron plate that's the finger of the informant pinned by the iron plate that is removed unjointly. In fact, the iron Plate is an iron plate that comes from the results of pieces that are still rough and sharp, so it easily hurt the hands of workers. Workers' injuries are increasingly severe because of the rough and sharp plates in the position of finger-clamp informant.

DISCUSSION

When conducting manual handling together with the associate, the informant has used a protective equipment in the form of

gloves, but the injury is inevitable, as expressed by the following major informant:

"Itu waktu saya di kontruksi saya mengangkat plat, hah persisnya kaya gini (seperti ini) misalnya (menunjukkan plat) ... saya sudah pake (memakai) kaos tangan sudah pake (sudah memakai kaos tangan), pokoknya saat itu sudah pake (sudah memakai kaos tangan), saya mau mengangkat plat ini dua orang (plat diangkat oleh informan utama dan seorang pekerja lain) dari yang satu ngga bilang udah siap belum karna (karena) posisi masih gini(begini) (sambil menunjukkan posisi tangan yang belum siap untuk mengangkat)"

"It was my time in the construction I lifted the plate, hah is exactly rich like this (like this) for example (show plates)... I already pake (wearing) hand shirts have pake (already wearing a hand shirt), anyway when it has pake (already wearing a hand shirt), I want to lift this plate two people (plates appointed by the main informant and a worker) from the one guns Say already ready yet because (because) the position is still like this (as shown) (while showing the position of the hand that is not ready to lift) "



Picture 1. Hand position of the informant that is pinned by sharp iron plates

Based on the statement from the informant we can analyze that the iron plate result of the cutting still has a rough plate texture and sharp. The informant coworker lifts the iron plate without any confirmation of the readiness of the main informant, when

the informant co-worker lifts the iron plate, the informant is not ready. Workers who lift material manually should consider the weight of the burden to be lifted, if possible the material is lifted using the assistance of the machine. The use of AIDS can avoid physical fatigue in workers, prevent injuries, and reduce the risk of workplace accidents (3) (6).

If the condition is not possible, the removal of the material can be done by two or more people so as to avoid the risk of injury. However, if the material is to be lifted by some people, it is important to note that lifting movements must be coordinated and some are responsible for the coordination of the Movement (5) (6). Good coordination is important to be aware when material removal is done jointly with other workers (3). Team members in charge of lifting an object should also have a shape, body structure, and similar physical abilities (5) (6).

Every worker should be able to implement a work safety program by making planning and implementing safe work as part of an inseparable work process. In addition, workers also have to provide information to their colleagues about the dangers of safety and use personal protective equipment that suits the job (7). Each worker must be responsible for complying with a safe work system to avoid potential injuries, and must properly use the equipment provided (4). Based on the interview data with supporting informant, it is known that many work accidents occur due to carelessness, as expressed as follows:

"...banyak itu ceroboh bu, yang banyak itu ceroboh saat melaksanakan pekerjaan..."

"... Many it's sloppy, which a lot is sloppy while carrying out jobs... "

The injuries suffered by the informant resulted in one of the finger parts of the informant should eventually be amputated, this is because the hand of the informant is pinned to the material that has a sharp surface, as the informant presented as follows:

“...kalo (kalau) plat hasil potongan itu ada bekas hasil potongannya disini apa disinilah (bekas potongan plat yang masih kasar dan tajam)...”

“... If (if) the plate result of the cut is used the result of the cut here what is here (the former plate pieces are still rough and sharp)... ”

Each material has a distinctive characteristic that must be scaled when we will lift it, so that we can do the proper lifting of each material, as conveyed by the main informant that the material raised is Iron plate material results from cutting in the previous production process, where the plate pieces still contained the remaining rough and sharp cuts (8). The risk of injury at the time of manual handling will increase depending on the characteristics of the object, namely the weight of objects, size, shape, the ease of objects to be gripped or held by the hand (e.g. slippery or sharp object surfaces) and balance of objects (4) (5) . Weight of objects and difficulties to reach objects is one of the factors that can increase the risk of injury (1).

It is important to inform the workers about all potential hazards and risks to the work it does, and it is important to build awareness on the safety of the hands. Workers are given the understanding that safety at the hands of workers is not only useful for himself, but also useful for fellow workers. Through awareness between one worker and other workers, the workers will arise mutual care so that each worker will work carefully and carefully, and not act unilaterally (9), as presented by the informant as follows:

“Dari yang sebelumnya langsung angkat ajah (rekan kerja langsung mengangkat plat besi tanpa konfirmasi terlebih dahulu), saya kan belum diangkat, langsung gini, kejepit (terjepit).”

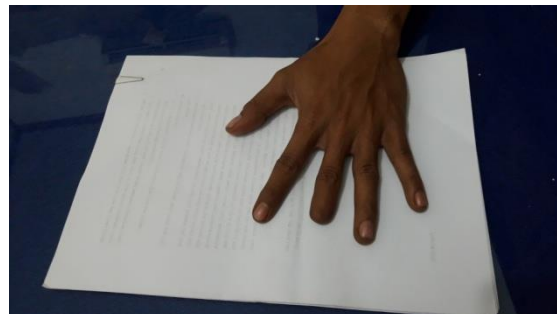
"From the next one just directly raise (direct coworkers remove the iron plate without confirmation first), I

have not lifted, directly like this, the clamp (pinned).

A lot of costs that we have to remove if we have injuries to the hand, whether the treatment of wounds, or other costs that can not directly be calculated such as loss of productivity or the addition of the workload Because of sick leave coworkers. Even injuries experienced can be permanent (9), as experienced by the main informant that must be amputated by the finger of his hand as presented by the following informant:

“.....di rumah sakit ya.. diobati terus dintrograsi sama perawat sama petugas medis.. katanya ada uratnya yang putus, ‘terus gimana dok untuk selanjutnya?’ ya.. ‘ini harus diamputasi’ ”

"..... in the hospital, yes.. continue to be treated with the same interrogation nurse medical officer.. He said there is a break, ' then say how about it? ' Yes.. ' It must be amputated ' "



Picture 2. Hand-amputated informant

CONCLUSION

Based on the data of interviews with the informant can be known that the accident work experienced by the informant due to lack of coordination at the appointment of goods. The informant conducts manual handling by lifting pieces of iron plates along with a colleague. But when doing the rapture is not done together, the informant coworkers first raise one side of the iron plate, while the informant is not ready, so that the hand of the informant is trapped and injured. The hand of the informant is exposed to the sharp scrap of iron, so that the injury to the hands of serious

informant until the end of one of his fingers amputated. It is important to provide understanding to the workers on the principle of occupational safety at the time of the group manual handling.

ADVICE

It's best to reduce manual handling work by replacing it using a machine or other assistive device. If there is no alternative in addition to completing the work manually handling, then the worker should be given an understanding of the safe work procedure on manual handling, both done individually and in teams.

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RESEARCH LIMITATIONS

The accident occurred six years prior to the study, so the data in this study have limitations regarding the chronological details of work accidents. Researchers tried to minimize data limitations by collecting data through two indepth interviews with informans.

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