

THE MALAYSIAN MEDICAL GAZETTE

MANAGING RISK IN AN OCCUPATIONAL ENVIRONMENT

VOLUME 2

DR LIM JAC FANG

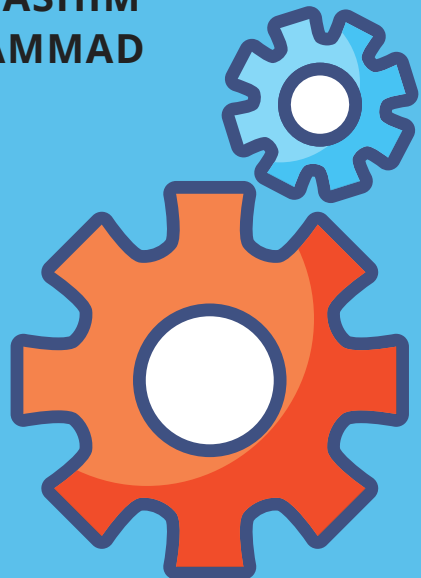
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DR ZURAIDA MOHAMMAD



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PREFACE

The practice of Occupational Health, Safety and Hygiene (OHS) requires technical knowledge and could be intimidating for some in its understanding and implementation. The authors have written topics of interest in simple everyday language without losing the importance of the material delivered. The application of OHS in every workplace has become increasingly necessary to prevent accidents, injuries, and the risk to health for all workers. The book aims to deliver OHS on a variety of topics to facilitate understanding and implementation of occupational safety and health to the public by a qualified OHS practitioners. The principles and discussions would be in-line with the latest policies and standards of the Department of Occupational Safety and Health, Ministry of Human Resources, Malaysia.

BIOGRAPHY

Dr Lim Jac Fang, Dr Nelbon Giloi, Dr Tam Jenn Zhueng, Dr Mohd Suhaimi Yaakof, Dr Siti Raihana Hashim and Dr Zuraida Mohammad are Occupational Health Doctors (OHD) and practitioners of Occupational Health, Safety and Hygiene (OHS) serving in different sectors in various facilities and capacities in Malaysia.

They all have on an average ten years or more in the field of Occupational Health (OH) and in their own way pioneered and led the development of the OH in their respective work area to secure the health and safety of workers in general.

They have been invited to speak at seminars and conferences over the years and have contributed articles in magazines and published their work in local and international journals. They are also active in governmental and non-governmental bodies and have membership in various professional bodies both locally and abroad.

INTRODUCTION

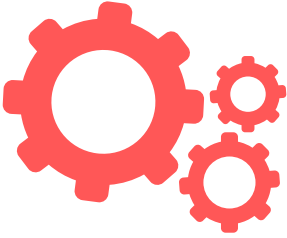
The Malaysian Medical Gazette is an online hub for doctors, specialists and healthcare professionals to spread awareness and health education to members of the public in an easily accessible and reliable platform.

With the advent of social media and information technology, the public has unlimited access to information at the click of a mouse. Their enthusiasm to take an active part in their own healthcare management coupled with the ease of information sharing is unfortunately often at times detrimental due largely to the fact that they are unable to differentiate between valid sources of information and unreliable ones.

In an effort to provide a more reliable source of medical and health related information, a group of doctors & healthcare professionals set up an online hub namely The Malaysian Medical Gazette (www.mm Gazette.com).

Dr Lim Jac Fang is a columnist for this publication and all content in this e-book is based on his MMG articles, in collaboration with the other named authors here.

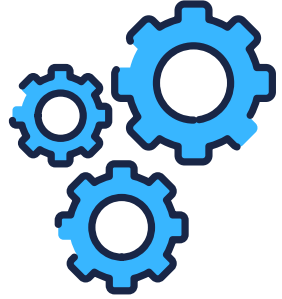
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RECOGNISING OCCUPATIONAL DISEASE

by Dr Lim Jac Fang

Occupational exposures contribute to the morbidity and mortality of many diseases. Occupational diseases continue to be under-recognized even though they are responsible for an estimated 860,000 illnesses and 60,300 deaths each year (USA).

In Malaysia, even though there are many systems for collecting data through the various agencies like the Ministry of Health (MOH), SOSCO and DOSH, under reporting continue to occur.

At the primary care level (MOH), doctors and allied health personnel are the first contact. In the industrial setting, the panel doctor would be the first contact.

The management, perhaps through the Human Resources Manager, would monitor the trend of absenteeism amongst the staff. The safety and health personnel can assist in recognizing potential health and safety problems that can arise through the use of chemicals etc in the workplace.

In short it is a proactive and multidisciplinary team work.

The general practitioners can play an important role in improving the recognition of occupational disease, preventing progressive illness and disability in their own patients, and contributing to the protection of other workers similarly exposed.

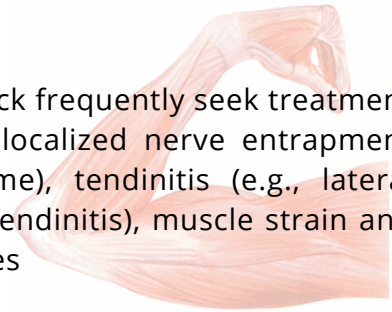
Occupational disease is surprisingly common. 75 percent of hospitalized and primary care patients report hazardous exposures and 17 percent suspect that their illness is linked to their job.

Work-related illness is diagnosed in approximately 10 percent of these patients.

The spectrum of occupational diseases is extremely broad and many conditions commonly encountered in primary care practice may be work related.

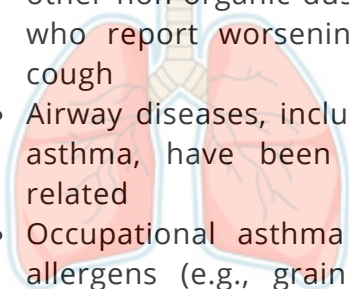
Musculoskeletal disorders

- >60% of occupational illness
- Disorders involving arm & neck frequently seek treatment
- Specific diagnoses, such as localized nerve entrapment (e.g., carpal tunnel syndrome), tendinitis (e.g., lateral epicondylitis, de Quervain's tendinitis), muscle strain and other regional pain syndromes



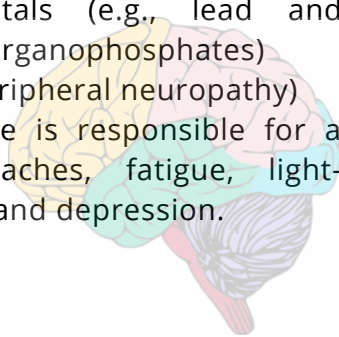
Respiratory diseases

- Pneumoconiosis due to inhalation of asbestos, silica or other non-organic dust should be considered in patients who report worsening difficulty in breathing and dry cough
- Airway diseases, including rhino-sinusitis, bronchitis and asthma, have been increasingly recognized as work related
- Occupational asthma related to possible exposure to allergens (e.g., grain dust), respiratory irritants (e.g., sulfur dioxide) or substances acting through other mechanisms (e.g., isocyanates).



Neurologic disorders

- Toxins, including organic solvents (e.g., toluene and chlorinated hydrocarbons), metals (e.g., lead and manganese) and pesticides (e.g., organophosphates)
- Numbness/pain of extremities (peripheral neuropathy)
- Chronic organic solvent exposure is responsible for a syndrome that includes headaches, fatigue, light-headedness, cognitive difficulties and depression.





Cancer and heart disease

- Work exposures also contribute to a notable percentage of cancers and have been increasingly recognized as factors in the development of coronary artery disease.

Stress-related illnesses

- Stress has been associated with a range of emotional and physical ailments, including coronary artery disease and heart attacks (myocardial infarction).
- Jobs with high emotional/psychological demands and low potential for control by the worker are more likely to cause stress-related illness.

Work conditions and illness

As the focus of business has shifted from manufacturing to service in most industrialized countries, traditional notions of hazardous work have, by necessity, been expanded.

Occupational illnesses continue to occur in manufacturing, construction and agricultural sectors, but they are also increasingly being recognized in the service sector.

A significant proportion of occupational illnesses are related to building conditions, such as inadequate fresh-air ventilation, low humidity and the presence of cigarette smoke, volatile organic compounds and fibers, molds or other microbiologic materials.

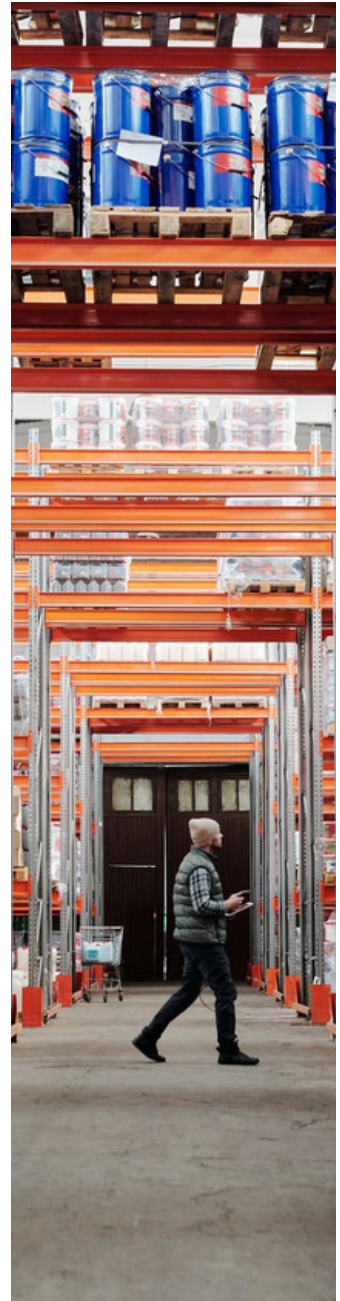
Typically, workers with symptoms related to indoor air quality report sore throat and eye irritation, fatigue and difficulty concentrating. These symptoms generally occur in a group of workers in the same environment. The workers report rapid clearing of the symptoms when they leave the workplace.

Index of suspicion

An occupational aetiology or cause should be considered if an illness fails to respond to standard treatment, does not fit the typical demographic profile (i.e., lung cancer in a 40-year-old nonsmoker) or is of unknown origin.

Much is still unknown about the health effects of most workplace exposures. The introduction of new chemicals and other materials has far outpaced general knowledge of their potential toxicity.

Management and doctors continue to play a crucial role in recognizing unsuspected links between exposures and specific illnesses.



Symptoms among co-workers

The probability that work contributes to a common illness is strengthened if the patient's co-workers experience similar symptoms. Workers with occupational illness commonly report others who are also affected. The history should allow the doctor to evaluate the relative contribution of exposures, both on and off the job, to an illness.

The need for consultation or referral depends on the doctor's skill, confidence and time, as well as the specifics of a given case. A telephone consultation or referral to an occupational medicine specialist can provide information on the extent of a patient's exposure, the likely health effects of the exposure, appropriate diagnostic tests, possible workplace interventions to reduce exposure and recommendations on the patient's return to work.

Occupational disease by its long latent period between exposure and disease reinforces the notion of 'all is well' because 'no one is sick'.

Management can assist by adherence to the OSHA '94 guidelines as far as is practicable in ensuring that the place of work is both 'healthy' and safe. In this regard, adoption of a 'Healthy Workplace' as recommended by World Health Organization can be implemented.

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- American Academy Of Family Physicians, Article September 15 1998



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ERGONOMICS IN THE LOCAL AIRLINE INDUSTRY

by Dr Mohd Suhaimi Yaakof & Dr Lim Jac Fang

The word ergonomics derived from the Greek words, *ergon* (work) and *nomos* (natural laws) which means “fit the job to worker”; that work, equipment and the environment should be suitable for workers. Ergonomics accounts for all physical aspects of a person such as body measurement, fitness, strength and posture and the psychological aspects such as mental abilities, personalities, knowledge and experience to carry out their work.

In most of the airline industry, the common ergonomic problems are those associated with manual handling which includes lifting and carrying, pushing and pulling, restraining an object, supporting a weight and even throwing or dropping something into a receptacle.

Some ergonomic problems arise from handling various sizes and shapes of cargo items, heavy equipment and spares during aircraft maintenance, awkward posture while answering phone calls, using computers, during serving of passengers on board aircraft.

Cargo and traffic handlers, engineers, technicians, ticketing, reservation and flight attendants are some of the categories of staff who are at risk of ergonomic injuries.

Some of the ergonomic problems faced by flight attendants include closing and opening of the aircraft doors; pulling, pushing and restraining the meal cart, loading and unloading hand luggage from the overhead stowage compartment and arranging the meal tray in the galley which involves bending, twisting, repetitive motion and the use of excessive force.

This may result in physical injuries and accidents for example slip, trips, falls and musculoskeletal diseases (MSDs). MSDs can develop as a result of an injury to tendons, ligaments, joints, nerves, and blood vessels.



Areas of the body affected include the back, neck, shoulders, arms, elbows, wrist and fingers. Common complaints are discomfort, pain or swelling of the affected joint or muscle and tingling sensation, numbness or weakness when a nerve is involved.

The affected worker will not be able to work, resulting in absenteeism which incurs high medical costs and even psychosocial problems such as low morale. Performance and productivity are compromised. Therefore, the application of ergonomic principles is needed to reduce accidents, injuries and illnesses at the workplace.

Some steps to reduce ergonomics problems are:

1. Identify hazard/risk factors in the workplace.
2. Communicate with employees and involve them in problem-solving.
3. Implement an efficient and effective reporting or notification system.
4. Improve workplace design, tools and equipments.
5. Good maintenance of equipment e.g., meal cart wheels, aircraft entry door, Unit Load Device (ULD) container, cargo rollers.
6. Health education
7. Ergonomic training and awareness
8. Regular exercise

The Occupational Safety and Health Act 1994 states that an employer must ensure the work and the working environment is safe for their workers and the employee to cooperate with the employers in all aspects of safety and health in the workplace.

Good ergonomics sense makes good economic sense.





STANDARD & ADDITIONAL PRECAUTIONS: PROTECTING HEALTHCARE WORKERS

*by Dr Lim Jac Fang, Dr Nelbon Giloi &
Dr Mohd Suhaimi Yaakof*

In the healthcare setting (hospital, clinics, laboratories, etc.) there are physical, chemical, ergonomic, psychosocial, biological and safety hazards. One of the hazards that healthcare workers (HCW) are exposed to is biological hazards like bacteria, virus, fungi and spores. These are encountered when managing patients and contact with visitors or contractors who may be carriers of the various organisms. HCWs must practice safe work procedures to ensure they can manage the biological hazards in their daily work. Infection control strategies can minimize the risk of exposure to these invisible pathogens in blood and body fluids.

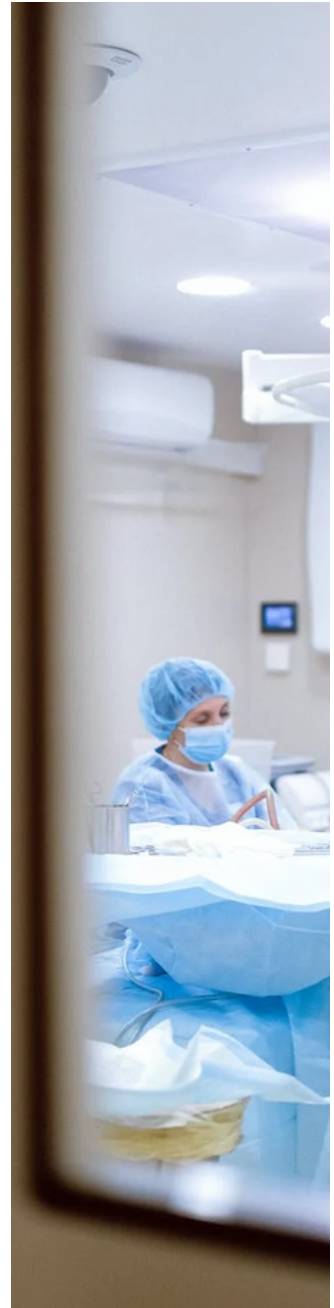
An effective risk reduction method is the use of Standard Precautions (SP) & Additional Precautions (AP) routinely in health facilities, as well as identify risky procedures and the use of safety devices and equipment where applicable.

This is based on the philosophy of “all patients are infective until proven otherwise”.

It goes without saying that regular training and retraining of all staff in SP and AP is needed to ensure its effectiveness.

The terms SP and AP were first introduced in 1996 as an improvement over Universal Precautions (1985) and Body Substance Isolation (1987). The need for HCWs to protect themselves was identified in the 1980s when there was the AIDS outbreak, which also infected caregivers.

In a nutshell, it is about good hygiene practices, managing sharps and clinical wastes and incorporating aseptic techniques when managing patients.



Standard Precautions

SP is the most important infection control strategy in health facilities. All patients are considered to have infectious blood and bodily fluids (except sweat), with non-intact skin and mucous membranes. They should be handled appropriately.

Good practices are:

- **Hand washing/hygiene**

Hands easily transmit pathogens from one person to another or pass them to surfaces which can then be picked up unknowingly by others.

Thorough washing takes about 40-60 seconds and include the 10 steps as below. Alcohol-based hand rubs can be used in the absence of soap and water, however hands must still be washed with soap and water whenever possible.

The 5 moments of hand washing should also be adhered to closely.

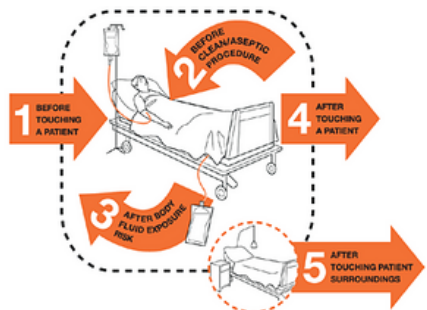
How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

⌚ Duration of the entire procedure: 40-60 seconds

- 0 Wet hands with water;
- 1 Apply enough soap to cover all hand surfaces;
- 2 Rub hands palm to palm;
- 3 Right palm over left dorsum with interlaced fingers and vice versa;
- 4 Palm to palm with fingers interlaced;
- 5 Backs of fingers to opposing palms with fingers interlocked;
- 6 Rotational rubbing of left thumb clasped in right palm and vice versa;
- 7 Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;
- 8 Rinse hands with water;
- 9 Dry hands thoroughly with a single use towel;
- 10 Use towel to turn off faucet;
- 11 Your hands are now safe.

World Health Organization | Patient Safety | SAVE LIVES Clean Your Hands



- **Personal Protective Equipment (PPE)**

PPE like gloves, masks, eye goggles/face shields, plastic aprons/gowns, rubber boots/overshoes are required according to the situation. Proper procedure on donning and doffing is required.

- **Patient care equipment**

These include equipment for cleaning, disinfection and sterilisation. Single-use disposables are used as much as possible. Safety precautions for sharps are to be followed as per facility protocols. Disinfection should be at 70-80°C or at a rolling boil of water for 10-30 minutes for heat resistant instruments.

- **Housekeeping and spillage management**

Housekeeping is done on a scheduled basis by trained personnel and spillage clean up is done as soon as possible to limiting the spread. Appropriate PPE must be worn. Bleach at 1% dilution should be used to mop up the spillage and the cleaning equipment soaked in bleach for 30 minutes before being dried. Glass pieces should be disposed in a sharps bin. Finally, the area should be cleaned with soap and water and air-dried thoroughly.

- **Management of soiled/contaminated laundry**

Appropriate PPE like gloves and masks must be worn. Handling should only be done when necessary and no sorting is allowed. Laundry bags are placed on site and soiled linen (blood or body fluids) must be put into the correct bags.

There are 5 categories of clinical waste:

- **Blood and body fluid waste - Yellow bag**

All human tissue, including blood (whether infected or not), animal carcasses and tissue from hospitals/clinics or laboratories; as well as all related swabs and dressings - soiled surgical dressings, swabs and other soiled waste from treatment areas and waste material.

- **Waste posing the risk of injury - Sharps bin**

Discarded syringe needles, cartridges, broken glass and any other contaminated disposable sharp instruments or items.

- **Infectious waste - Blue bag**

Microbiological cultures and potentially infected waste from pathology departments and other clinical or research laboratories.

- **Pharmaceutical and cytotoxic waste - Sharps bin**

Expired drugs or those that can no longer be used. Also waste arising from the use, manufacture and preparation of oncological treatment of patients with pharmaceuticals with cytotoxic (mutagenic, carcinogenic and teratogenic) properties.

- **Other infectious waste - Yellow bag**

Items used to dispose of urine, faeces and other bodily secretions or excretions not otherwise classified. This includes used disposable bed pans or bed pan liners, incontinence pads, stoma bags and urine containers.

Additional Precautions

When SP practices are inadequate to interrupt the transmission of pathogens, AP is employed. AP is used for patients in whom the pathogen is suspected to be spread by airborne transmission, droplets, contact or a combination of factors. Therefore, AP includes airborne precautions, droplet precautions and contact precautions.

Airborne precautions

These apply to pathogens transmitted through air. Patients are preferably placed in single, well-ventilated room. A high efficiency respirator, like an N95 mask, is needed for respiratory protection. Patients are also advised to use a mask and patient transport should be kept at a minimum.

Droplet precautions

This refers to patients who transmit the pathogen through cough or sneezing. Patients are placed at least 1 meter apart and treated at that minimum distance. General ventilation is adequate for such cases. Respiratory protection is necessary for both HCW and patient and minimal patient transport is recommended.

Contact precautions

These precautions are for pathogens that are spread through touch/contact. Patients are advised to use their own utensils and practice frequent hand washing. HCWs should use gloves, perform hand washing and wear gowns/plastic aprons when handling patients. Minimal patient transport is recommended.

Further details can be obtained from the following references:

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HEARING IMPAIRMENT: AN INCIDENTAL DIAGNOSIS IN A NOISE-COMPLIANT WORKPLACE

*by Dr Tam Jenn Zhueng, Dr Lim Jac Fang,
Dr Siti Raihana Hashim & Dr Zuraida Muhammad*

"Why is the boss always shouting at us? Does he/she think that we are deaf? Shouting, shouting only!"

Have you experienced this? What could be the problem? What can be done?

This is an example that demonstrates the need for employers and employees to recognize hearing impairment/loss and take the necessary action for to reduce this insidious cause of stress due to poor communication.

P is a 35-year-old supervisor working in a large grocery retail shop in a suburban town. After working for more than 10 years, she was finally promoted to a supervisor position in charge of goods, housekeeping and distribution. She also handles the overall grocery stock from delivery to storefront display.

P oversees 20 staff working 2 shifts. She is a good, strict, near-perfectionist supervisor and always ensures all staff are on their toes. She regularly reprimands under-performing staff. Her subordinates claim that P speaks in a raised tone throughout the day. They accept P's demanding behavior and loud voice but it puts them under stress as they too have to respond loudly and it makes communication difficult.

During our assessment, we found that P had chronic left ear discharge following a motor vehicle accident 10 years ago. She was under ENT specialist follow up for *Suspected Conductive Hearing Disease with Moderate to Severe Hearing Loss*, but subsequently defaulted follow-up and did not disclose this medical problem to her employer.

On examination in a quiet room, it was apparent that P was a lip reader and had to turn to make eye contact with the person who was talking to have a conversation.

P responded normally during the distraction test but could not hear any whispered words. P was advised for an ENT specialist follow up with the support of her employer.

Most individuals similar to P can be assisted with a hearing aid or otherwise will develop deep anger, anxiety and depression when communication starts to collapse.

This is accurately described by Lustig & Olson:

“Always accompanying this depression was anger. There was anger at my hearing, anger at my colleagues, anger at my husband. I was short with my kids. I was estranged from my friends. I was angry with the hearing aid industry for not coming up with better products. I was angry at my audiologist for not being able to make me hear again. I was angry at science. I was angry at the world.”

- Lustig & Olson (2014)

Generally, there are 2 types of hearing aids. The behind the ear (BTE) hearing aid is suitable for P.

With the assisted hearing device, P's productivity is likely to improve with regards to communication with her staff. Instructions can definitely be better received and executed. The working environment can be less hostile and unnecessary work stress is prevented once P receives appropriate care. P's confidence as a supervisor can also improve.

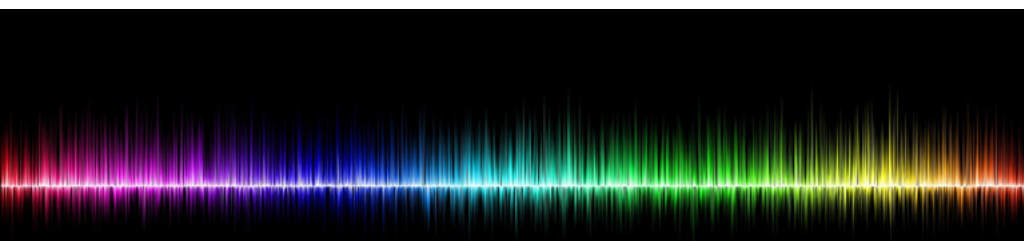
Unfortunately this issue was never picked up by management, but was accepted due to the job demands simply because the environment at work is not presumed to be 'noisy' or it's the usual behavior of that particular worker.

The occupational health doctor is crucial in screening workers and informing both affected employees and their employers regarding the issue at hand, as well as suggest appropriate treatment and management. The environmental noise also should be monitored and complied with; it must not exceed the permissible limit of 90dBA and/or the action level set at 85dBA according to the Factories Machinery Act.

The principles of selecting a hearing rehabilitation program include safety and efficacy, cost of treatment, and patient and social values. It is worthwhile investing in the wellbeing of workers with hearing impairment.

A one-stop multidisciplinary platform - to secure self-fitting and self-adjustable hearing correction modalities, provide health education and empowerment, as well as psychosocial intervention - can support and help patients like P who have long suffered in silence.

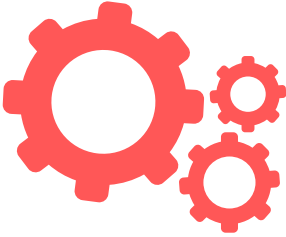
This case is surely an eye opener for occupational health doctors in managing workers with hearing impairment at work. It should also encourage physicians involved in social security organizations in Malaysia to assist workers with hearing disabilities and collaborate with occupational physicians, rehabilitation specialists and ENT specialists to improve hearing disabled workers' welfare.



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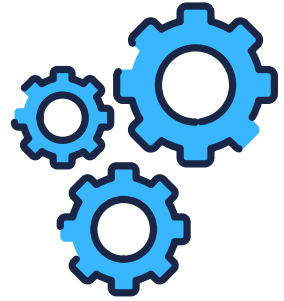
SUMMARY



PREFACE



BIOGRAPHY



INTRODUCTION



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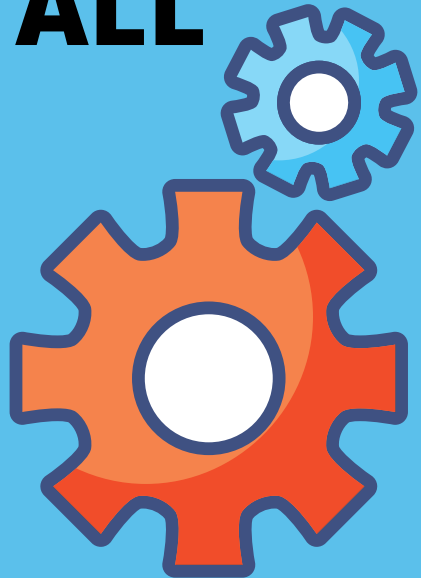


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The practice of Occupational Health, Safety and Hygiene (OHS) requires technical knowledge and could be intimidating for some in its understanding and implementation. The authors have written topics of interest in simple everyday language without losing the importance of the material delivered. The application of OHS in every workplace has become increasingly necessary to prevent accidents, injuries, and the risk to health for all workers. The book aims to deliver OHS on a variety of topics to facilitate understanding and implementation of occupational safety and health to the public by a qualified OHS practitioners. The principles and discussions would be in-line with the latest policies and standards of the Department of Occupational Safety and Health, Ministry of Human Resources, Malaysia.

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